

# Filter Summary Report: TIA,some,parasitic,Z1,Z3,ZL

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## Contents

<b>1</b>	<b>Examined <math>H(z)</math> for TIA some parasitic Z1 Z3 ZL:</b>	$\frac{Z_1 Z_3 Z_L (g_m r_o + 1)}{Z_1 Z_3 g_m r_o + Z_1 Z_3 + Z_1 Z_L g_m r_o + Z_1 Z_L + Z_3 Z_L + Z_3 r_o + Z_L r_o}$	<b>57</b>
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10.10INVALID-ORDER-10 $Z(s) = \left(R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$	96
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10.18INVALID-ORDER-18 $Z(s) = \left(R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$	98
10.19INVALID-ORDER-19 $Z(s) = \left(R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L\right)$	98
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10.21INVALID-ORDER-21 $Z(s) = \left(R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$	98
10.22INVALID-ORDER-22 $Z(s) = \left(R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$	99

10.23INVALID-ORDER-23	$Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	99
10.24INVALID-ORDER-24	$Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	99
10.25INVALID-ORDER-25	$Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	99
10.26INVALID-ORDER-26	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	99
10.27INVALID-ORDER-27	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	100
10.28INVALID-ORDER-28	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	100
10.29INVALID-ORDER-29	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	100
10.30INVALID-ORDER-30	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	100
10.31INVALID-ORDER-31	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	100
10.32INVALID-ORDER-32	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	101
10.33INVALID-ORDER-33	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	101
10.34INVALID-ORDER-34	$Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	101
10.35INVALID-ORDER-35	$Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	101
10.36INVALID-ORDER-36	$Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	101
10.37INVALID-ORDER-37	$Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	102
10.38INVALID-ORDER-38	$Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	102
10.39INVALID-ORDER-39	$Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	102
10.40INVALID-ORDER-40	$Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	102
10.41INVALID-ORDER-41	$Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	102
10.42INVALID-ORDER-42	$Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	103
10.43INVALID-ORDER-43	$Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	103
10.44INVALID-ORDER-44	$Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	103

10.45INVALID-ORDER-45	$Z(s) = \left( R_1, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	103
10.46INVALID-ORDER-46	$Z(s) = \left( R_1, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	103
10.47INVALID-ORDER-47	$Z(s) = \left( R_1, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	104
10.48INVALID-ORDER-48	$Z(s) = \left( R_1, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	104
10.49INVALID-ORDER-49	$Z(s) = \left( R_1, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	104
10.50INVALID-ORDER-50	$Z(s) = \left( R_1, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	104
10.51INVALID-ORDER-51	$Z(s) = \left( R_1, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	104
10.52INVALID-ORDER-52	$Z(s) = \left( R_1, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	105
10.53INVALID-ORDER-53	$Z(s) = \left( R_1, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	105
10.54INVALID-ORDER-54	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{1}{C_Ls} \right)$	105
10.55INVALID-ORDER-55	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	105
10.56INVALID-ORDER-56	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	105
10.57INVALID-ORDER-57	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	106
10.58INVALID-ORDER-58	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	106
10.59INVALID-ORDER-59	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	106
10.60INVALID-ORDER-60	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	106
10.61INVALID-ORDER-61	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	106
10.62INVALID-ORDER-62	$Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	107
10.63INVALID-ORDER-63	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{1}{C_Ls} \right)$	107
10.64INVALID-ORDER-64	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	107

10.65INVALID-ORDER-65	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	107
10.66INVALID-ORDER-66	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	107
10.67INVALID-ORDER-67	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$	108
10.68INVALID-ORDER-68	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	108
10.69INVALID-ORDER-69	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	108
10.70INVALID-ORDER-70	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$	108
10.71INVALID-ORDER-71	$Z(s) = \left( R_1, \infty, \frac{R_3(L_3s + \frac{1}{C_3s})}{L_3s + R_3 + \frac{1}{C_3s}}, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	108
10.72INVALID-ORDER-72	$Z(s) = (L_1s, \infty, R_3, \infty, \infty, R_L)$	109
10.73INVALID-ORDER-73	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	109
10.74INVALID-ORDER-74	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$	109
10.75INVALID-ORDER-75	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	109
10.76INVALID-ORDER-76	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	109
10.77INVALID-ORDER-77	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$	109
10.78INVALID-ORDER-78	$Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	110
10.79INVALID-ORDER-79	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	110
10.80INVALID-ORDER-80	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	110
10.81INVALID-ORDER-81	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$	110
10.82INVALID-ORDER-82	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	110
10.83INVALID-ORDER-83	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	111
10.84INVALID-ORDER-84	$Z(s) = \left( L_1s, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$	111



10.85INVALID-ORDER-85	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	111
10.86INVALID-ORDER-86	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	111
10.87INVALID-ORDER-87	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	111
10.88INVALID-ORDER-88	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	112
10.89INVALID-ORDER-89	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	112
10.90INVALID-ORDER-90	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	112
10.91INVALID-ORDER-91	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	112
10.92INVALID-ORDER-92	$Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	112
10.93INVALID-ORDER-93	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	113
10.94INVALID-ORDER-94	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	113
10.95INVALID-ORDER-95	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	113
10.96INVALID-ORDER-96	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	113
10.97INVALID-ORDER-97	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	113
10.98INVALID-ORDER-98	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	113
10.99INVALID-ORDER-99	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	114
10.100INVALID-ORDER-100	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	114
10.101INVALID-ORDER-101	$Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	114
10.102INVALID-ORDER-102	$Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	114
10.103INVALID-ORDER-103	$Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	114
10.104INVALID-ORDER-104	$Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	115
10.105INVALID-ORDER-105	$Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	115
10.106INVALID-ORDER-106	$Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	115

10.107INVALID-ORDER-107	$Z(s) = \left( L_1s, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	115
10.108INVALID-ORDER-108	$Z(s) = \left( L_1s, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	115
10.109INVALID-ORDER-109	$Z(s) = \left( L_1s, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	116
10.110INVALID-ORDER-110	$Z(s) = \left( L_1s, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	116
10.111INVALID-ORDER-111	$Z(s) = \left( L_1s, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	116
10.112INVALID-ORDER-112	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L \right)$	116
10.113INVALID-ORDER-113	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{1}{C_Ls} \right)$	116
10.114INVALID-ORDER-114	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	117
10.115INVALID-ORDER-115	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	117
10.116INVALID-ORDER-116	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	117
10.117INVALID-ORDER-117	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	117
10.118INVALID-ORDER-118	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	117
10.119INVALID-ORDER-119	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	117
10.120INVALID-ORDER-120	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	118
10.121INVALID-ORDER-121	$Z(s) = \left( L_1s, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	118
10.122INVALID-ORDER-122	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$	118
10.123INVALID-ORDER-123	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$	118
10.124INVALID-ORDER-124	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	118
10.125INVALID-ORDER-125	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	119
10.126INVALID-ORDER-126	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	119
10.127INVALID-ORDER-127	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	119
10.128INVALID-ORDER-128	$Z(s) = \left( L_1s, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	119

10.12 <del>9</del> INVALID-ORDER-129	$Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	119
10.13 <del>0</del> INVALID-ORDER-130	$Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	120
10.13INVALID-ORDER-131	$Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	120
10.13 <del>2</del> INVALID-ORDER-132	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	120
10.13 <del>3</del> INVALID-ORDER-133	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	120
10.13 <del>4</del> INVALID-ORDER-134	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	120
10.13 <del>5</del> INVALID-ORDER-135	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	121
10.13 <del>6</del> INVALID-ORDER-136	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	121
10.13 <del>7</del> INVALID-ORDER-137	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	121
10.13 <del>8</del> INVALID-ORDER-138	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	121
10.13 <del>9</del> INVALID-ORDER-139	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	121
10.14 <del>0</del> INVALID-ORDER-140	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	122
10.14INVALID-ORDER-141	$Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	122
10.14 <del>2</del> INVALID-ORDER-142	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	122
10.14 <del>3</del> INVALID-ORDER-143	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	122
10.14 <del>4</del> INVALID-ORDER-144	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	122
10.14 <del>5</del> INVALID-ORDER-145	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	123
10.14 <del>6</del> INVALID-ORDER-146	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	123
10.14 <del>7</del> INVALID-ORDER-147	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	123
10.14 <del>8</del> INVALID-ORDER-148	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	123

10.14	INVALID-ORDER-149	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	123
10.15	INVALID-ORDER-150	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	124
10.15	INVALID-ORDER-151	$Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	124
10.15	INVALID-ORDER-152	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	124
10.15	INVALID-ORDER-153	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	124
10.15	INVALID-ORDER-154	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	124
10.15	INVALID-ORDER-155	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	125
10.15	INVALID-ORDER-156	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	125
10.15	INVALID-ORDER-157	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	125
10.15	INVALID-ORDER-158	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	125
10.15	INVALID-ORDER-159	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	125
10.16	INVALID-ORDER-160	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	126
10.16	INVALID-ORDER-161	$Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	126
10.16	INVALID-ORDER-162	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L \right)$	126
10.16	INVALID-ORDER-163	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	126
10.16	INVALID-ORDER-164	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	126
10.16	INVALID-ORDER-165	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	127
10.16	INVALID-ORDER-166	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	127
10.16	INVALID-ORDER-167	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	127

10.16 <del>8</del> INVALID-ORDER-168	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	127
10.16 <del>9</del> INVALID-ORDER-169	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	127
10.17 <del>0</del> INVALID-ORDER-170	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	128
10.17 <del>1</del> INVALID-ORDER-171	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	128
10.17 <del>2</del> INVALID-ORDER-172	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	128
10.17 <del>3</del> INVALID-ORDER-173	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	128
10.17 <del>4</del> INVALID-ORDER-174	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	128
10.17 <del>5</del> INVALID-ORDER-175	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	128
10.17 <del>6</del> INVALID-ORDER-176	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	129
10.17 <del>7</del> INVALID-ORDER-177	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	129
10.17 <del>8</del> INVALID-ORDER-178	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	129
10.17 <del>9</del> INVALID-ORDER-179	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	129
10.18 <del>0</del> INVALID-ORDER-180	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	129
10.18 <del>1</del> INVALID-ORDER-181	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	130
10.18 <del>2</del> INVALID-ORDER-182	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	130
10.18 <del>3</del> INVALID-ORDER-183	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	130
10.18 <del>4</del> INVALID-ORDER-184	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	130
10.18 <del>5</del> INVALID-ORDER-185	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	130
10.18 <del>6</del> INVALID-ORDER-186	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	131
10.18 <del>7</del> INVALID-ORDER-187	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	131
10.18 <del>8</del> INVALID-ORDER-188	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	131
10.18 <del>9</del> INVALID-ORDER-189	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	131

10.190INVALID-ORDER-190	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	131
10.191INVALID-ORDER-191	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	131
10.192INVALID-ORDER-192	$Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	132
10.193INVALID-ORDER-193	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	132
10.194INVALID-ORDER-194	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	132
10.195INVALID-ORDER-195	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	132
10.196INVALID-ORDER-196	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	132
10.197INVALID-ORDER-197	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	133
10.198INVALID-ORDER-198	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	133
10.199INVALID-ORDER-199	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	133
10.200INVALID-ORDER-200	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	133
10.201INVALID-ORDER-201	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	133
10.202INVALID-ORDER-202	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	134
10.203INVALID-ORDER-203	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	134
10.204INVALID-ORDER-204	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	134
10.205INVALID-ORDER-205	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	134
10.206INVALID-ORDER-206	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	134
10.207INVALID-ORDER-207	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	134
10.208INVALID-ORDER-208	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	135
10.209INVALID-ORDER-209	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	135
10.210INVALID-ORDER-210	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	135
10.211INVALID-ORDER-211	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	135

10.21 <del>INVALID</del> -ORDER-212	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	135
10.21 <del>INVALID</del> -ORDER-213	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	136
10.21 <del>INVALID</del> -ORDER-214	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	136
10.21 <del>INVALID</del> -ORDER-215	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	136
10.21 <del>INVALID</del> -ORDER-216	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	136
10.21 <del>INVALID</del> -ORDER-217	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	136
10.21 <del>INVALID</del> -ORDER-218	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	136
10.21 <del>INVALID</del> -ORDER-219	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	137
10.22 <del>INVALID</del> -ORDER-220	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	137
10.22 <del>INVALID</del> -ORDER-221	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	137
10.22 <del>INVALID</del> -ORDER-222	$Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	137
10.22 <del>INVALID</del> -ORDER-223	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	137
10.22 <del>INVALID</del> -ORDER-224	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	138
10.22 <del>INVALID</del> -ORDER-225	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	138
10.22 <del>INVALID</del> -ORDER-226	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	138
10.22 <del>INVALID</del> -ORDER-227	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	138
10.22 <del>INVALID</del> -ORDER-228	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	138
10.22 <del>INVALID</del> -ORDER-229	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	139
10.23 <del>INVALID</del> -ORDER-230	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	139
10.23 <del>INVALID</del> -ORDER-231	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	139

10.232INVALID-ORDER-232	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	139
10.233INVALID-ORDER-233	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	139
10.234INVALID-ORDER-234	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	140
10.235INVALID-ORDER-235	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	140
10.236INVALID-ORDER-236	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	140
10.237INVALID-ORDER-237	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	140
10.238INVALID-ORDER-238	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	140
10.239INVALID-ORDER-239	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	140
10.240INVALID-ORDER-240	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	141
10.241INVALID-ORDER-241	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	141
10.242INVALID-ORDER-242	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	141
10.243INVALID-ORDER-243	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	141
10.244INVALID-ORDER-244	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	141
10.245INVALID-ORDER-245	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	142
10.246INVALID-ORDER-246	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	142
10.247INVALID-ORDER-247	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	142
10.248INVALID-ORDER-248	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	142
10.249INVALID-ORDER-249	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	142
10.250INVALID-ORDER-250	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	143



10.25	INVALID-ORDER-251	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	143
10.25	INVALID-ORDER-252	$Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	143
10.25	INVALID-ORDER-253	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, R_L \right)$	143
10.25	INVALID-ORDER-254	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	143
10.25	INVALID-ORDER-255	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	144
10.25	INVALID-ORDER-256	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	144
10.25	INVALID-ORDER-257	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	144
10.25	INVALID-ORDER-258	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	144
10.25	INVALID-ORDER-259	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	144
10.26	INVALID-ORDER-260	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	145
10.26	INVALID-ORDER-261	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	145
10.26	INVALID-ORDER-262	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	145
10.26	INVALID-ORDER-263	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	145
10.26	INVALID-ORDER-264	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	145
10.26	INVALID-ORDER-265	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	145
10.26	INVALID-ORDER-266	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	146
10.26	INVALID-ORDER-267	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	146
10.26	INVALID-ORDER-268	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	146
10.26	INVALID-ORDER-269	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	146
10.27	INVALID-ORDER-270	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	146
10.27	INVALID-ORDER-271	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	147

10.272INVALID-ORDER-272	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	147
10.273INVALID-ORDER-273	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	147
10.274INVALID-ORDER-274	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	147
10.275INVALID-ORDER-275	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	147
10.276INVALID-ORDER-276	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	148
10.277INVALID-ORDER-277	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	148
10.278INVALID-ORDER-278	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	148
10.279INVALID-ORDER-279	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	148
10.280INVALID-ORDER-280	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	148
10.281INVALID-ORDER-281	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	148
10.282INVALID-ORDER-282	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	149
10.283INVALID-ORDER-283	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	149
10.284INVALID-ORDER-284	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	149
10.285INVALID-ORDER-285	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	149
10.286INVALID-ORDER-286	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	149
10.287INVALID-ORDER-287	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	150
10.288INVALID-ORDER-288	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	150
10.289INVALID-ORDER-289	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	150
10.290INVALID-ORDER-290	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	150
10.291INVALID-ORDER-291	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	150
10.292INVALID-ORDER-292	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	151
10.293INVALID-ORDER-293	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	151

10.29	INVALID-ORDER-294	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	151
10.29	INVALID-ORDER-295	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	151
10.29	INVALID-ORDER-296	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	151
10.29	INVALID-ORDER-297	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	151
10.29	INVALID-ORDER-298	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	152
10.29	INVALID-ORDER-299	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	152
10.30	INVALID-ORDER-300	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	152
10.30	INVALID-ORDER-301	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	152
10.30	INVALID-ORDER-302	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	152
10.30	INVALID-ORDER-303	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	153
10.30	INVALID-ORDER-304	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	153
10.30	INVALID-ORDER-305	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	153
10.30	INVALID-ORDER-306	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	153
10.30	INVALID-ORDER-307	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	153
10.30	INVALID-ORDER-308	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	153
10.30	INVALID-ORDER-309	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	154
10.31	INVALID-ORDER-310	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	154
10.31	INVALID-ORDER-311	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	154
10.31	INVALID-ORDER-312	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	154
10.31	INVALID-ORDER-313	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	154
10.31	INVALID-ORDER-314	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	155

10.31 <del>5</del> INVALID-ORDER-315	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	155
10.31 <del>6</del> INVALID-ORDER-316	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	155
10.31 <del>7</del> INVALID-ORDER-317	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	155
10.31 <del>8</del> INVALID-ORDER-318	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	155
10.31 <del>9</del> INVALID-ORDER-319	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	156
10.32 <del>0</del> INVALID-ORDER-320	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	156
10.32INVALID-ORDER-321	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	156
10.32 <del>2</del> INVALID-ORDER-322	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	156
10.32 <del>3</del> INVALID-ORDER-323	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	156
10.32 <del>4</del> INVALID-ORDER-324	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	157
10.32 <del>5</del> INVALID-ORDER-325	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	157
10.32 <del>6</del> INVALID-ORDER-326	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	157
10.32 <del>7</del> INVALID-ORDER-327	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	157
10.32 <del>8</del> INVALID-ORDER-328	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	157
10.32 <del>9</del> INVALID-ORDER-329	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	157
10.33 <del>0</del> INVALID-ORDER-330	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	158
10.33INVALID-ORDER-331	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	158
10.33 <del>2</del> INVALID-ORDER-332	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	158
10.33 <del>3</del> INVALID-ORDER-333	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	158
10.33 <del>4</del> INVALID-ORDER-334	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	158

10.335INVALID-ORDER-335	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	159
10.336INVALID-ORDER-336	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	159
10.337INVALID-ORDER-337	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	159
10.338INVALID-ORDER-338	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	159
10.339INVALID-ORDER-339	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	159
10.340INVALID-ORDER-340	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	160
10.341INVALID-ORDER-341	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	160
10.342INVALID-ORDER-342	$Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	160
10.343INVALID-ORDER-343	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L \right)$	160
10.344INVALID-ORDER-344	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	160
10.345INVALID-ORDER-345	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	161
10.346INVALID-ORDER-346	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	161
10.347INVALID-ORDER-347	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	161
10.348INVALID-ORDER-348	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	161
10.349INVALID-ORDER-349	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	161
10.350INVALID-ORDER-350	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	162
10.351INVALID-ORDER-351	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	162
10.352INVALID-ORDER-352	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	162
10.353INVALID-ORDER-353	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	162
10.354INVALID-ORDER-354	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	162

10.355INVALID-ORDER-355	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	162
10.356INVALID-ORDER-356	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	163
10.357INVALID-ORDER-357	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	163
10.358INVALID-ORDER-358	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	163
10.359INVALID-ORDER-359	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	163
10.360INVALID-ORDER-360	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	163
10.361INVALID-ORDER-361	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	164
10.362INVALID-ORDER-362	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	164
10.363INVALID-ORDER-363	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	164
10.364INVALID-ORDER-364	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	164
10.365INVALID-ORDER-365	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	164
10.366INVALID-ORDER-366	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	165
10.367INVALID-ORDER-367	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	165
10.368INVALID-ORDER-368	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	165
10.369INVALID-ORDER-369	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	165
10.370INVALID-ORDER-370	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	165
10.371INVALID-ORDER-371	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	165
10.372INVALID-ORDER-372	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	166
10.373INVALID-ORDER-373	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	166
10.374INVALID-ORDER-374	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	166
10.375INVALID-ORDER-375	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	166
10.376INVALID-ORDER-376	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	166

10.37	INVALID-ORDER-377	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	167
10.37	INVALID-ORDER-378	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	167
10.37	INVALID-ORDER-379	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	167
10.38	INVALID-ORDER-380	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	167
10.38	INVALID-ORDER-381	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	167
10.38	INVALID-ORDER-382	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	168
10.38	INVALID-ORDER-383	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	168
10.38	INVALID-ORDER-384	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	168
10.38	INVALID-ORDER-385	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	168
10.38	INVALID-ORDER-386	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	168
10.38	INVALID-ORDER-387	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	168
10.38	INVALID-ORDER-388	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	169
10.38	INVALID-ORDER-389	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	169
10.39	INVALID-ORDER-390	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	169
10.39	INVALID-ORDER-391	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	169
10.39	INVALID-ORDER-392	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	169
10.39	INVALID-ORDER-393	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	170
10.39	INVALID-ORDER-394	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	170
10.39	INVALID-ORDER-395	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	170
10.39	INVALID-ORDER-396	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	170
10.39	INVALID-ORDER-397	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	170
10.39	INVALID-ORDER-398	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	171

10.39	INVALID-ORDER-399	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	171
10.40	INVALID-ORDER-400	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	171
10.40	INVALID-ORDER-401	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	171
10.40	INVALID-ORDER-402	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	171
10.40	INVALID-ORDER-403	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	172
10.40	INVALID-ORDER-404	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	172
10.40	INVALID-ORDER-405	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	172
10.40	INVALID-ORDER-406	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	172
10.40	INVALID-ORDER-407	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	172
10.40	INVALID-ORDER-408	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	173
10.40	INVALID-ORDER-409	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	173
10.41	INVALID-ORDER-410	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	173
10.41	INVALID-ORDER-411	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	173
10.41	INVALID-ORDER-412	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	173
10.41	INVALID-ORDER-413	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	174
10.41	INVALID-ORDER-414	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	174
10.41	INVALID-ORDER-415	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	174
10.41	INVALID-ORDER-416	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	174
10.41	INVALID-ORDER-417	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	174
10.41	INVALID-ORDER-418	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	175



10.41 <del>1</del> INVALID-ORDER-419	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	175
10.42 <del>0</del> INVALID-ORDER-420	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	175
10.42INVALID-ORDER-421	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	175
10.42 <del>2</del> INVALID-ORDER-422	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	175
10.42 <del>3</del> INVALID-ORDER-423	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	176
10.42 <del>4</del> INVALID-ORDER-424	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	176
10.42 <del>5</del> INVALID-ORDER-425	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	176
10.42 <del>6</del> INVALID-ORDER-426	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	176
10.42 <del>7</del> INVALID-ORDER-427	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	176
10.42 <del>8</del> INVALID-ORDER-428	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	177
10.42 <del>9</del> INVALID-ORDER-429	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	177
10.43 <del>0</del> INVALID-ORDER-430	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	177
10.43INVALID-ORDER-431	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	177
10.43 <del>2</del> INVALID-ORDER-432	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	177
10.43 <del>3</del> INVALID-ORDER-433	$Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	178
10.43 <del>4</del> INVALID-ORDER-434	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	178
10.43 <del>5</del> INVALID-ORDER-435	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	178
10.43 <del>6</del> INVALID-ORDER-436	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	178
10.43 <del>7</del> INVALID-ORDER-437	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	178

10.43 <del>3</del> INVALID-ORDER-438	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	179
10.43 <del>9</del> INVALID-ORDER-439	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	179
10.44 <del>0</del> INVALID-ORDER-440	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	179
10.44 <del>1</del> INVALID-ORDER-441	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	179
10.44 <del>2</del> INVALID-ORDER-442	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	179
10.44 <del>3</del> INVALID-ORDER-443	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	180
10.44 <del>4</del> INVALID-ORDER-444	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	180
10.44 <del>5</del> INVALID-ORDER-445	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	180
10.44 <del>6</del> INVALID-ORDER-446	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	180
10.44 <del>7</del> INVALID-ORDER-447	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	180
10.44 <del>8</del> INVALID-ORDER-448	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	180
10.44 <del>9</del> INVALID-ORDER-449	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	181
10.45 <del>0</del> INVALID-ORDER-450	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	181
10.45 <del>1</del> INVALID-ORDER-451	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	181
10.45 <del>2</del> INVALID-ORDER-452	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	181
10.45 <del>3</del> INVALID-ORDER-453	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	181
10.45 <del>4</del> INVALID-ORDER-454	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	182
10.45 <del>5</del> INVALID-ORDER-455	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	182
10.45 <del>6</del> INVALID-ORDER-456	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	182
10.45 <del>7</del> INVALID-ORDER-457	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	182
10.45 <del>8</del> INVALID-ORDER-458	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	182
10.45 <del>9</del> INVALID-ORDER-459	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	182

10.460INVALID-ORDER-460	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	183
10.461INVALID-ORDER-461	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	183
10.462INVALID-ORDER-462	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	183
10.463INVALID-ORDER-463	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$	183
10.464INVALID-ORDER-464	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$	183
10.465INVALID-ORDER-465	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	184
10.466INVALID-ORDER-466	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	184
10.467INVALID-ORDER-467	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	184
10.468INVALID-ORDER-468	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	184
10.469INVALID-ORDER-469	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	184
10.470INVALID-ORDER-470	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	185
10.471INVALID-ORDER-471	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	185
10.472INVALID-ORDER-472	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	185
10.473INVALID-ORDER-473	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L \right)$	185
10.474INVALID-ORDER-474	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$	185
10.475INVALID-ORDER-475	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$	186
10.476INVALID-ORDER-476	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	186
10.477INVALID-ORDER-477	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	186
10.478INVALID-ORDER-478	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$	186
10.479INVALID-ORDER-479	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	186
10.480INVALID-ORDER-480	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	187
10.481INVALID-ORDER-481	$Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$	187

10.482	INVALID-ORDER-482	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	187
10.483	INVALID-ORDER-483	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	187
10.484	INVALID-ORDER-484	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	187
10.485	INVALID-ORDER-485	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	188
10.486	INVALID-ORDER-486	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	188
10.487	INVALID-ORDER-487	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	188
10.488	INVALID-ORDER-488	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	188
10.489	INVALID-ORDER-489	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	188
10.490	INVALID-ORDER-490	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	189
10.491	INVALID-ORDER-491	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	189
10.492	INVALID-ORDER-492	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	189
10.493	INVALID-ORDER-493	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	189
10.494	INVALID-ORDER-494	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	189
10.495	INVALID-ORDER-495	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	190
10.496	INVALID-ORDER-496	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	190
10.497	INVALID-ORDER-497	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	190
10.498	INVALID-ORDER-498	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	190
10.499	INVALID-ORDER-499	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	190
10.500	INVALID-ORDER-500	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	191
10.501	INVALID-ORDER-501	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	191
10.502	INVALID-ORDER-502	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	191
10.503	INVALID-ORDER-503	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	191

10.501INVALID-ORDER-504	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	191
10.505INVALID-ORDER-505	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	192
10.506INVALID-ORDER-506	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	192
10.507INVALID-ORDER-507	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	192
10.508INVALID-ORDER-508	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	192
10.509INVALID-ORDER-509	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	192
10.510INVALID-ORDER-510	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	193
10.511INVALID-ORDER-511	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	193
10.512INVALID-ORDER-512	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	193
10.513INVALID-ORDER-513	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	193
10.514INVALID-ORDER-514	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	193
10.515INVALID-ORDER-515	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	194
10.516INVALID-ORDER-516	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	194
10.517INVALID-ORDER-517	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	194
10.518INVALID-ORDER-518	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	194
10.519INVALID-ORDER-519	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	194
10.520INVALID-ORDER-520	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	195
10.521INVALID-ORDER-521	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	195
10.522INVALID-ORDER-522	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	195
10.523INVALID-ORDER-523	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	195

10.521INVALID-ORDER-524	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	195
10.522INVALID-ORDER-525	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	196
10.523INVALID-ORDER-526	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	196
10.524INVALID-ORDER-527	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	196
10.525INVALID-ORDER-528	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	196
10.526INVALID-ORDER-529	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	196
10.530INVALID-ORDER-530	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	197
10.531INVALID-ORDER-531	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	197
10.532INVALID-ORDER-532	$Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	197
10.533INVALID-ORDER-533	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	197
10.534INVALID-ORDER-534	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	197
10.535INVALID-ORDER-535	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	198
10.536INVALID-ORDER-536	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	198
10.537INVALID-ORDER-537	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	198
10.538INVALID-ORDER-538	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	198
10.539INVALID-ORDER-539	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	198
10.540INVALID-ORDER-540	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	198
10.541INVALID-ORDER-541	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	199
10.542INVALID-ORDER-542	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	199
10.543INVALID-ORDER-543	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	199

10.541INVALID-ORDER-544	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	199
10.545INVALID-ORDER-545	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	199
10.546INVALID-ORDER-546	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	199
10.547INVALID-ORDER-547	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	200
10.548INVALID-ORDER-548	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	200
10.549INVALID-ORDER-549	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	200
10.550INVALID-ORDER-550	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	200
10.551INVALID-ORDER-551	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	200
10.552INVALID-ORDER-552	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	201
10.553INVALID-ORDER-553	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	201
10.554INVALID-ORDER-554	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	201
10.555INVALID-ORDER-555	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	201
10.556INVALID-ORDER-556	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	201
10.557INVALID-ORDER-557	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	201
10.558INVALID-ORDER-558	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	202
10.559INVALID-ORDER-559	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	202
10.560INVALID-ORDER-560	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	202
10.561INVALID-ORDER-561	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	202
10.562INVALID-ORDER-562	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	202
10.563INVALID-ORDER-563	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	203
10.564INVALID-ORDER-564	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	203
10.565INVALID-ORDER-565	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	203

10.566INVALID-ORDER-566	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	203
10.567INVALID-ORDER-567	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	203
10.568INVALID-ORDER-568	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	203
10.569INVALID-ORDER-569	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	204
10.570INVALID-ORDER-570	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	204
10.571INVALID-ORDER-571	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	204
10.572INVALID-ORDER-572	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	204
10.573INVALID-ORDER-573	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	204
10.574INVALID-ORDER-574	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	205
10.575INVALID-ORDER-575	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	205
10.576INVALID-ORDER-576	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	205
10.577INVALID-ORDER-577	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	205
10.578INVALID-ORDER-578	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	205
10.579INVALID-ORDER-579	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	206
10.580INVALID-ORDER-580	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	206
10.581INVALID-ORDER-581	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	206
10.582INVALID-ORDER-582	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	206
10.583INVALID-ORDER-583	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	206
10.584INVALID-ORDER-584	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	207
10.585INVALID-ORDER-585	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	207
10.586INVALID-ORDER-586	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	207
10.587INVALID-ORDER-587	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	207



10.58	INVALID-ORDER-588	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	207
10.58	INVALID-ORDER-589	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	207
10.59	INVALID-ORDER-590	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	208
10.59	INVALID-ORDER-591	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	208
10.59	INVALID-ORDER-592	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	208
10.59	INVALID-ORDER-593	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	208
10.59	INVALID-ORDER-594	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	208
10.59	INVALID-ORDER-595	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	209
10.59	INVALID-ORDER-596	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	209
10.59	INVALID-ORDER-597	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	209
10.59	INVALID-ORDER-598	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	209
10.59	INVALID-ORDER-599	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	209
10.60	INVALID-ORDER-600	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	210
10.60	INVALID-ORDER-601	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	210
10.60	INVALID-ORDER-602	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	210
10.60	INVALID-ORDER-603	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	210
10.60	INVALID-ORDER-604	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	210
10.60	INVALID-ORDER-605	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	211
10.60	INVALID-ORDER-606	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	211
10.60	INVALID-ORDER-607	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	211

10.608INVALID-ORDER-608	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	211
10.609INVALID-ORDER-609	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	211
10.610INVALID-ORDER-610	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	212
10.611INVALID-ORDER-611	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	212
10.612INVALID-ORDER-612	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	212
10.613INVALID-ORDER-613	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	212
10.614INVALID-ORDER-614	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	212
10.615INVALID-ORDER-615	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	213
10.616INVALID-ORDER-616	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	213
10.617INVALID-ORDER-617	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	213
10.618INVALID-ORDER-618	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	213
10.619INVALID-ORDER-619	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	213
10.620INVALID-ORDER-620	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	214
10.621INVALID-ORDER-621	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	214
10.622INVALID-ORDER-622	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	214
10.623INVALID-ORDER-623	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	214
10.624INVALID-ORDER-624	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	214
10.625INVALID-ORDER-625	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	215
10.626INVALID-ORDER-626	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	215

10.62	INVALID-ORDER-627	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	215
10.62	INVALID-ORDER-628	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	215
10.62	INVALID-ORDER-629	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	215
10.63	INVALID-ORDER-630	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	216
10.63	INVALID-ORDER-631	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	216
10.63	INVALID-ORDER-632	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	216
10.63	INVALID-ORDER-633	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	216
10.63	INVALID-ORDER-634	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	216
10.63	INVALID-ORDER-635	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	217
10.63	INVALID-ORDER-636	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	217
10.63	INVALID-ORDER-637	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	217
10.63	INVALID-ORDER-638	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	217
10.63	INVALID-ORDER-639	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	217
10.64	INVALID-ORDER-640	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	218
10.64	INVALID-ORDER-641	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	218
10.64	INVALID-ORDER-642	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	218
10.64	INVALID-ORDER-643	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	218
10.64	INVALID-ORDER-644	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	218
10.64	INVALID-ORDER-645	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	219
10.64	INVALID-ORDER-646	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	219
10.64	INVALID-ORDER-647	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	219

10.648INVALID-ORDER-648	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	219
10.649INVALID-ORDER-649	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	219
10.650INVALID-ORDER-650	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	220
10.651INVALID-ORDER-651	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	220
10.652INVALID-ORDER-652	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	220
10.653INVALID-ORDER-653	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	220
10.654INVALID-ORDER-654	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	220
10.655INVALID-ORDER-655	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	221
10.656INVALID-ORDER-656	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	221
10.657INVALID-ORDER-657	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	221
10.658INVALID-ORDER-658	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	221
10.659INVALID-ORDER-659	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	221
10.660INVALID-ORDER-660	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	222
10.661INVALID-ORDER-661	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	222
10.662INVALID-ORDER-662	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	222
10.663INVALID-ORDER-663	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	222
10.664INVALID-ORDER-664	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	222
10.665INVALID-ORDER-665	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	223
10.666INVALID-ORDER-666	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	223
10.667INVALID-ORDER-667	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	223
10.668INVALID-ORDER-668	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	223
10.669INVALID-ORDER-669	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	223

10.670INVALID-ORDER-670	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	224
10.671INVALID-ORDER-671	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L \right)$	224
10.672INVALID-ORDER-672	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$	224
10.673INVALID-ORDER-673	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_L R_Ls + 1} \right)$	224
10.674INVALID-ORDER-674	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	224
10.675INVALID-ORDER-675	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	225
10.676INVALID-ORDER-676	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_L L_Ls^2 + 1} \right)$	225
10.677INVALID-ORDER-677	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	225
10.678INVALID-ORDER-678	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	225
10.679INVALID-ORDER-679	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_L L_Ls^2 + 1} + R_L \right)$	225
10.680INVALID-ORDER-680	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	226
10.681INVALID-ORDER-681	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, R_L \right)$	226
10.682INVALID-ORDER-682	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{1}{C_Ls} \right)$	226
10.683INVALID-ORDER-683	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_Ls + 1} \right)$	226
10.684INVALID-ORDER-684	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$	226
10.685INVALID-ORDER-685	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$	227
10.686INVALID-ORDER-686	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{L_Ls}{C_L L_Ls^2 + 1} \right)$	227
10.687INVALID-ORDER-687	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$	227
10.688INVALID-ORDER-688	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$	227
10.689INVALID-ORDER-689	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{L_Ls}{C_L L_Ls^2 + 1} + R_L \right)$	227
10.690INVALID-ORDER-690	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3 L_3s^2 + 1}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$	228
10.691INVALID-ORDER-691	$Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$	228

10.692INVALID-ORDER-692	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	228
10.693INVALID-ORDER-693	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	228
10.694INVALID-ORDER-694	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	228
10.695INVALID-ORDER-695	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	229
10.696INVALID-ORDER-696	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	229
10.697INVALID-ORDER-697	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	229
10.698INVALID-ORDER-698	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	229
10.699INVALID-ORDER-699	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	229
10.700INVALID-ORDER-700	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	230
10.701INVALID-ORDER-701	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	230
10.702INVALID-ORDER-702	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	230
10.703INVALID-ORDER-703	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	230
10.704INVALID-ORDER-704	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	230
10.705INVALID-ORDER-705	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	231
10.706INVALID-ORDER-706	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	231
10.707INVALID-ORDER-707	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	231
10.708INVALID-ORDER-708	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	231
10.709INVALID-ORDER-709	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	231
10.710INVALID-ORDER-710	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	232
10.711INVALID-ORDER-711	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	232

10.712	INVALID-ORDER-712	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	232
10.713	INVALID-ORDER-713	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	232
10.714	INVALID-ORDER-714	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	232
10.715	INVALID-ORDER-715	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	233
10.716	INVALID-ORDER-716	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	233
10.717	INVALID-ORDER-717	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	233
10.718	INVALID-ORDER-718	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	233
10.719	INVALID-ORDER-719	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	233
10.720	INVALID-ORDER-720	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	234
10.721	INVALID-ORDER-721	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	234
10.722	INVALID-ORDER-722	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	234
10.723	INVALID-ORDER-723	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	234
10.724	INVALID-ORDER-724	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	234
10.725	INVALID-ORDER-725	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	235
10.726	INVALID-ORDER-726	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	235
10.727	INVALID-ORDER-727	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	235
10.728	INVALID-ORDER-728	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	235
10.729	INVALID-ORDER-729	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	235
10.730	INVALID-ORDER-730	$Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	236

10.731	INVALID-ORDER-731	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	236
10.732	INVALID-ORDER-732	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	236
10.733	INVALID-ORDER-733	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	236
10.734	INVALID-ORDER-734	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	236
10.735	INVALID-ORDER-735	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	237
10.736	INVALID-ORDER-736	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	237
10.737	INVALID-ORDER-737	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	237
10.738	INVALID-ORDER-738	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	237
10.739	INVALID-ORDER-739	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	237
10.740	INVALID-ORDER-740	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	238
10.741	INVALID-ORDER-741	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	238
10.742	INVALID-ORDER-742	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	238
10.743	INVALID-ORDER-743	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	238
10.744	INVALID-ORDER-744	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	238
10.745	INVALID-ORDER-745	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	239
10.746	INVALID-ORDER-746	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	239
10.747	INVALID-ORDER-747	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	239
10.748	INVALID-ORDER-748	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	239



10.749	INVALID-ORDER-749	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	239
10.750	INVALID-ORDER-750	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	240
10.751	INVALID-ORDER-751	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	240
10.752	INVALID-ORDER-752	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	240
10.753	INVALID-ORDER-753	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	240
10.754	INVALID-ORDER-754	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	240
10.755	INVALID-ORDER-755	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	241
10.756	INVALID-ORDER-756	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	241
10.757	INVALID-ORDER-757	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	241
10.758	INVALID-ORDER-758	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	241
10.759	INVALID-ORDER-759	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	241
10.760	INVALID-ORDER-760	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	242
10.761	INVALID-ORDER-761	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	242
10.762	INVALID-ORDER-762	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	242
10.763	INVALID-ORDER-763	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	242
10.764	INVALID-ORDER-764	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	242
10.765	INVALID-ORDER-765	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	243
10.766	INVALID-ORDER-766	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	243

10.767	INVALID-ORDER-767	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	243
10.768	INVALID-ORDER-768	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	243
10.769	INVALID-ORDER-769	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	243
10.770	INVALID-ORDER-770	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	244
10.771	INVALID-ORDER-771	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	244
10.772	INVALID-ORDER-772	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	244
10.773	INVALID-ORDER-773	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	244
10.774	INVALID-ORDER-774	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	244
10.775	INVALID-ORDER-775	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	245
10.776	INVALID-ORDER-776	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	245
10.777	INVALID-ORDER-777	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	245
10.778	INVALID-ORDER-778	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	245
10.779	INVALID-ORDER-779	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	245
10.780	INVALID-ORDER-780	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	246
10.781	INVALID-ORDER-781	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	246
10.782	INVALID-ORDER-782	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	246
10.783	INVALID-ORDER-783	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	246
10.784	INVALID-ORDER-784	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	246

10.785	INVALID-ORDER-785	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	247
10.786	INVALID-ORDER-786	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	247
10.787	INVALID-ORDER-787	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	247
10.788	INVALID-ORDER-788	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	247
10.789	INVALID-ORDER-789	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	247
10.790	INVALID-ORDER-790	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	248
10.791	INVALID-ORDER-791	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	248
10.792	INVALID-ORDER-792	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	248
10.793	INVALID-ORDER-793	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	248
10.794	INVALID-ORDER-794	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	248
10.795	INVALID-ORDER-795	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	249
10.796	INVALID-ORDER-796	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	249
10.797	INVALID-ORDER-797	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	249
10.798	INVALID-ORDER-798	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	249
10.799	INVALID-ORDER-799	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	249
10.800	INVALID-ORDER-800	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	250
10.801	INVALID-ORDER-801	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	250
10.802	INVALID-ORDER-802	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	250

10.803	INVALID-ORDER-803	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	250
10.804	INVALID-ORDER-804	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	250
10.805	INVALID-ORDER-805	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	251
10.806	INVALID-ORDER-806	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	251
10.807	INVALID-ORDER-807	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	251
10.808	INVALID-ORDER-808	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	251
10.809	INVALID-ORDER-809	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	251
10.810	INVALID-ORDER-810	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	252
10.811	INVALID-ORDER-811	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	252
10.812	INVALID-ORDER-812	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	252
10.813	INVALID-ORDER-813	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	252
10.814	INVALID-ORDER-814	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	252
10.815	INVALID-ORDER-815	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	253
10.816	INVALID-ORDER-816	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	253
10.817	INVALID-ORDER-817	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	253
10.818	INVALID-ORDER-818	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	253
10.819	INVALID-ORDER-819	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$	253
10.820	INVALID-ORDER-820	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 (L_3 s + \frac{1}{C_3 s})}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	254

10.82	INVALID-ORDER-821	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	254
10.82	INVALID-ORDER-822	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	254
10.82	INVALID-ORDER-823	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	254
10.82	INVALID-ORDER-824	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	254
10.82	INVALID-ORDER-825	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	255
10.82	INVALID-ORDER-826	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	255
10.82	INVALID-ORDER-827	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	255
10.82	INVALID-ORDER-828	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	255
10.82	INVALID-ORDER-829	$Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	255
10.83	INVALID-ORDER-830	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	256
10.83	INVALID-ORDER-831	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	256
10.83	INVALID-ORDER-832	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	256
10.83	INVALID-ORDER-833	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	256
10.83	INVALID-ORDER-834	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	256
10.83	INVALID-ORDER-835	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	256
10.83	INVALID-ORDER-836	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	257
10.83	INVALID-ORDER-837	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	257
10.83	INVALID-ORDER-838	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	257
10.83	INVALID-ORDER-839	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	257
10.84	INVALID-ORDER-840	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	257

10.84	INVALID-ORDER-841	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	258
10.84	INVALID-ORDER-842	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	258
10.84	INVALID-ORDER-843	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	258
10.84	INVALID-ORDER-844	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	258
10.84	INVALID-ORDER-845	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	258
10.84	INVALID-ORDER-846	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	259
10.84	INVALID-ORDER-847	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	259
10.84	INVALID-ORDER-848	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	259
10.84	INVALID-ORDER-849	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	259
10.85	INVALID-ORDER-850	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	259
10.85	INVALID-ORDER-851	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	260
10.85	INVALID-ORDER-852	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	260
10.85	INVALID-ORDER-853	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	260
10.85	INVALID-ORDER-854	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	260
10.85	INVALID-ORDER-855	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	260
10.85	INVALID-ORDER-856	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	261
10.85	INVALID-ORDER-857	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	261
10.85	INVALID-ORDER-858	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	261
10.85	INVALID-ORDER-859	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	261
10.86	INVALID-ORDER-860	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	261
10.86	INVALID-ORDER-861	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	262
10.86	INVALID-ORDER-862	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	262

10.863INVALID-ORDER-863	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	262
10.864INVALID-ORDER-864	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	262
10.865INVALID-ORDER-865	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	262
10.866INVALID-ORDER-866	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	263
10.867INVALID-ORDER-867	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	263
10.868INVALID-ORDER-868	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	263
10.869INVALID-ORDER-869	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	263
10.870INVALID-ORDER-870	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	263
10.871INVALID-ORDER-871	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	264
10.872INVALID-ORDER-872	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	264
10.873INVALID-ORDER-873	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	264
10.874INVALID-ORDER-874	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	264
10.875INVALID-ORDER-875	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	264
10.876INVALID-ORDER-876	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	265
10.877INVALID-ORDER-877	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	265
10.878INVALID-ORDER-878	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	265
10.879INVALID-ORDER-879	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	265
10.880INVALID-ORDER-880	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	265
10.881INVALID-ORDER-881	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	266
10.882INVALID-ORDER-882	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	266
10.883INVALID-ORDER-883	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	266
10.884INVALID-ORDER-884	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	266

10.885INVALID-ORDER-885	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	266
10.886INVALID-ORDER-886	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$	267
10.887INVALID-ORDER-887	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	267
10.888INVALID-ORDER-888	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	267
10.889INVALID-ORDER-889	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	267
10.890INVALID-ORDER-890	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	267
10.891INVALID-ORDER-891	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	268
10.892INVALID-ORDER-892	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	268
10.893INVALID-ORDER-893	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	268
10.894INVALID-ORDER-894	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	268
10.895INVALID-ORDER-895	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	268
10.896INVALID-ORDER-896	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$	269
10.897INVALID-ORDER-897	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	269
10.898INVALID-ORDER-898	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	269
10.899INVALID-ORDER-899	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L \right)$	269
10.900INVALID-ORDER-900	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{1}{C_L s} \right)$	269
10.901INVALID-ORDER-901	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	270
10.902INVALID-ORDER-902	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	270
10.903INVALID-ORDER-903	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	270
10.904INVALID-ORDER-904	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	270



10.905	INVALID-ORDER-905	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	270
10.906	INVALID-ORDER-906	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	271
10.907	INVALID-ORDER-907	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	271
10.908	INVALID-ORDER-908	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	271
10.909	INVALID-ORDER-909	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	271
10.910	INVALID-ORDER-910	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	271
10.911	INVALID-ORDER-911	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	272
10.912	INVALID-ORDER-912	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	272
10.913	INVALID-ORDER-913	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	272
10.914	INVALID-ORDER-914	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	272
10.915	INVALID-ORDER-915	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	272
10.916	INVALID-ORDER-916	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	273
10.917	INVALID-ORDER-917	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	273
10.918	INVALID-ORDER-918	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	273
10.919	INVALID-ORDER-919	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	273
10.920	INVALID-ORDER-920	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	273
10.921	INVALID-ORDER-921	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	274
10.922	INVALID-ORDER-922	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	274
10.923	INVALID-ORDER-923	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	274

10.924	INVALID-ORDER-924	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	274
10.925	INVALID-ORDER-925	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	274
10.926	INVALID-ORDER-926	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	275
10.927	INVALID-ORDER-927	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	275
10.928	INVALID-ORDER-928	$Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	275
10.929	INVALID-ORDER-929	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$	275
10.930	INVALID-ORDER-930	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	275
10.931	INVALID-ORDER-931	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	276
10.932	INVALID-ORDER-932	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	276
10.933	INVALID-ORDER-933	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	276
10.934	INVALID-ORDER-934	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	276
10.935	INVALID-ORDER-935	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	276
10.936	INVALID-ORDER-936	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	277
10.937	INVALID-ORDER-937	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	277
10.938	INVALID-ORDER-938	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	277
10.939	INVALID-ORDER-939	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	277
10.940	INVALID-ORDER-940	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	277

10.94	INVALID-ORDER-941	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	278
10.94	INVALID-ORDER-942	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	278
10.94	INVALID-ORDER-943	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	278
10.94	INVALID-ORDER-944	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	278
10.94	INVALID-ORDER-945	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	278
10.94	INVALID-ORDER-946	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	279
10.94	INVALID-ORDER-947	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	279
10.94	INVALID-ORDER-948	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$	279
10.94	INVALID-ORDER-949	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	279
10.95	INVALID-ORDER-950	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	279
10.95	INVALID-ORDER-951	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	280
10.95	INVALID-ORDER-952	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	280
10.95	INVALID-ORDER-953	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	280
10.95	INVALID-ORDER-954	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	280
10.95	INVALID-ORDER-955	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	280
10.95	INVALID-ORDER-956	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	281
10.95	INVALID-ORDER-957	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	281

10.958INVALID-ORDER-958	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	281
10.959INVALID-ORDER-959	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	281
10.960INVALID-ORDER-960	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	281
10.961INVALID-ORDER-961	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	282
10.962INVALID-ORDER-962	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	282
10.963INVALID-ORDER-963	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	282
10.964INVALID-ORDER-964	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	282
10.965INVALID-ORDER-965	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$	282
10.966INVALID-ORDER-966	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	283
10.967INVALID-ORDER-967	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	283
10.968INVALID-ORDER-968	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	283
10.969INVALID-ORDER-969	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	283
10.970INVALID-ORDER-970	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	283
10.971INVALID-ORDER-971	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	284
10.972INVALID-ORDER-972	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	284
10.973INVALID-ORDER-973	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	284
10.974INVALID-ORDER-974	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	284

10.975INVALID-ORDER-975	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	284
10.976INVALID-ORDER-976	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	285
10.977INVALID-ORDER-977	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	285
10.978INVALID-ORDER-978	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$	285
10.979INVALID-ORDER-979	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$	285
10.980INVALID-ORDER-980	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	285
10.981INVALID-ORDER-981	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	286
10.982INVALID-ORDER-982	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	286
10.983INVALID-ORDER-983	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	286
10.984INVALID-ORDER-984	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	286
10.985INVALID-ORDER-985	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	286
10.986INVALID-ORDER-986	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	287
10.987INVALID-ORDER-987	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	287
10.988INVALID-ORDER-988	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$	287
10.989INVALID-ORDER-989	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$	287
10.990INVALID-ORDER-990	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	287
10.991INVALID-ORDER-991	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	288

10.992INVALID-ORDER-992	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	288
10.993INVALID-ORDER-993	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	288
10.994INVALID-ORDER-994	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	288
10.995INVALID-ORDER-995	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	288
10.996INVALID-ORDER-996	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	289
10.997INVALID-ORDER-997	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	289
10.998INVALID-ORDER-998	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$	289
10.999INVALID-ORDER-999	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	289
10.1000INVALID-ORDER-1000	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	289
10.1001INVALID-ORDER-1001	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	290
10.1002INVALID-ORDER-1002	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	290
10.1003INVALID-ORDER-1003	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	290
10.1004INVALID-ORDER-1004	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	290
10.1005INVALID-ORDER-1005	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	290
10.1006INVALID-ORDER-1006	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	291
10.1007INVALID-ORDER-1007	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	291
10.1008INVALID-ORDER-1008	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$	291

10.100 <del>9</del> INVALID-ORDER-1009	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$	291
10.101 <del>0</del> INVALID-ORDER-1010	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	291
10.102 <del>1</del> INVALID-ORDER-1011	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	292
10.103 <del>2</del> INVALID-ORDER-1012	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	292
10.104 <del>3</del> INVALID-ORDER-1013	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	292
10.105 <del>4</del> INVALID-ORDER-1014	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	292
10.106 <del>5</del> INVALID-ORDER-1015	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	292
10.107 <del>6</del> INVALID-ORDER-1016	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	293
10.108 <del>7</del> INVALID-ORDER-1017	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	293
10.109 <del>8</del> INVALID-ORDER-1018	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$	293
10.110 <del>9</del> INVALID-ORDER-1019	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$	293
10.111 <del>0</del> INVALID-ORDER-1020	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$	293
10.112 <del>1</del> INVALID-ORDER-1021	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$	294
10.113 <del>2</del> INVALID-ORDER-1022	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$	294
10.114 <del>3</del> INVALID-ORDER-1023	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$	294
10.115 <del>4</del> INVALID-ORDER-1024	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$	294
10.116 <del>5</del> INVALID-ORDER-1025	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$	294

10.1026	INVALID-ORDER-1026	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$	295
10.1027	INVALID-ORDER-1027	$Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$	295



1 Examined  $H(z)$  for TIA some parasitic Z1 Z3 ZL:  $\frac{Z_1 Z_3 Z_L (g_m r_o + 1)}{Z_1 Z_3 g_m r_o + Z_1 Z_3 + Z_1 Z_L g_m r_o + Z_1 Z_L + Z_3 Z_L + Z_3 r_o + Z_L r_o}$

$$H(z) = \frac{Z_1 Z_3 Z_L (g_m r_o + 1)}{Z_1 Z_3 g_m r_o + Z_1 Z_3 + Z_1 Z_L g_m r_o + Z_1 Z_L + Z_3 Z_L + Z_3 r_o + Z_L r_o}$$

2 HP

3 BP

3.1 BP-1  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 R_3 s (g_m r_o + 1)}{C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_3 r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_3 r_o}$$

Parameters:

Q:  $\frac{C_L R_3 \sqrt{\frac{1}{C_L L_L}} (R_1 g_m r_o + R_1 + r_o)}{R_1 g_m r_o + R_1 + R_3 + r_o}$

wo:  $\sqrt{\frac{1}{C_L L_L}}$

bandwidth:  $\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_L R_3 (R_1 g_m r_o + R_1 + r_o)}$

K-LP: 0

K-HP: 0

K-BP:  $\frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o}$

QZ: 0

WZ: None

3.2 BP-2  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_3 R_L s (g_m r_o + 1)}{C_L L_L R_1 R_3 R_L g_m r_o s^2 + C_L L_L R_1 R_3 R_L s^2 + C_L L_L R_3 R_L r_o s^2 + L_L R_1 R_3 g_m r_o s + L_L R_1 R_3 s + L_L R_1 R_L g_m r_o s + L_L R_1 R_L s + L_L R_3 R_L s + L_L R_3 r_o s + L_L R_L r_o s + R_1 R_3 R_L g_m r_o + R_1 R_3 R_L + R_3 R_L r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}} (R_1 g_m r_o + R_1 + r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\
\text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{3.3 \quad BP-3} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1)}{C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2 + C_3 L_L r_o s^2 + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L r_o s^2 + L_L s + R_1 g_m r_o + R_1 + r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o) \\
\text{wo: } & \sqrt{\frac{1}{L_L (C_3 + C_L)}} \\
\text{bandwidth: } & \frac{1}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & R_1 (g_m r_o + 1) \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{3.4 \quad BP-4} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (g_m r_o + 1)}{C_3 L_L R_1 R_L g_m r_o s^2 + C_3 L_L R_1 R_L s^2 + C_3 L_L R_L r_o s^2 + C_L L_L R_1 R_L g_m r_o s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_L r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_L s + L_L r_o s + R_1 R_L g_m r_o + R_1 R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_L \sqrt{\frac{1}{L_L(C_3+C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_L(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_L + r_o}{R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.5 \quad BP-5} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 R_3 s (g_m r_o + 1)}{C_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_L R_1 R_3 s^2 + C_3 L_L R_3 r_o s^2 + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_3 r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 +}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_3 \sqrt{\frac{1}{L_L(C_3+C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_L(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_3 + r_o}{R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.6 \quad BP-6} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_3 R_L s (g_m r_o + 1)}{C_3 L_L R_1 R_3 R_L g_m r_o s^2 + C_3 L_L R_1 R_3 R_L s^2 + C_3 L_L R_3 R_L r_o s^2 + C_L L_L R_1 R_3 R_L g_m r_o s^2 + C_L L_L R_1 R_3 R_L s^2 + C_L L_L R_3 R_L r_o s^2 + L_L R_1 R_3 g_m r_o s + L_L R_1 R_3 s + L_L R_1 R_L g_m r_o s}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_3 R_L \sqrt{\frac{1}{L_L(C_3+C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_L(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{Qz: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.7 \quad BP-7} \quad Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3 R_1 R_L s (g_m r_o + 1)}{C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2 + L_3 R_1 g_m r_o s + L_3 R_1 s + L_3 R_L s + L_3 r_o s + R_1 R_L g_m r_o + R_1 R_L + R_L r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_3 R_L \sqrt{\frac{1}{C_3 L_3}} (R_1 g_m r_o + R_1 + r_o)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{Qz: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.8 \quad BP-8} \quad Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1)}{C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_L L_3 R_1 g_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 r_o s^2 + L_3 s + R_1 g_m r_o + R_1 + r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \sqrt{\frac{1}{L_3(C_3+C_L)}} (C_3R_1g_mr_o + C_3R_1 + C_3r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o) \\ \text{wo: } & \sqrt{\frac{1}{L_3(C_3+C_L)}} \\ \text{bandwidth: } & \frac{1}{C_3R_1g_mr_o + C_3R_1 + C_3r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & R_1(g_mr_o + 1) \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.9 \quad BP-9} \quad Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_3R_1R_Ls(g_mr_o + 1)}{C_3L_3R_1R_Lg_mr_oss^2 + C_3L_3R_1R_Ls^2 + C_3L_3R_Lr_oss^2 + C_LR_1R_Lg_mr_oss^2 + C_LR_1R_Ls^2 + C_LR_Lr_oss^2 + L_3R_1g_mr_oss + L_3R_1s + L_3R_Ls + L_3r_oss + R_1R_Lg_mr_o + R_1R_L + L_Lr_oss + R_LR_Ls + R_Lr_oss + R_Ls + R_Lr_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_L \sqrt{\frac{1}{L_3(C_3+C_L)}} (C_3R_1g_mr_o + C_3R_1 + C_3r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o)}{R_1g_mr_o + R_1 + R_L + r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_3(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1g_mr_o + R_1 + R_L + r_o}{R_L(C_3R_1g_mr_o + C_3R_1 + C_3r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.10 \quad BP-10} \quad Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_3L_LR_1s(g_mr_o + 1)}{C_3L_3L_LR_1g_mr_oss^2 + C_3L_3L_LR_1s^2 + C_3L_3L_Lr_oss^2 + C_LL_3L_LR_1g_mr_oss^2 + C_LL_3L_LR_1s^2 + C_LL_3L_Lr_oss^2 + L_3L_Ls + L_3R_1g_mr_o + L_3R_1 + L_3r_o + L_LR_1g_mr_o + L_LR_1 + L_Lr_oss + R_LR_Ls + R_Lr_oss + R_Ls + R_Lr_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}} (C_3R_1g_mr_o + C_3R_1 + C_3r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o) \\ \text{wo: } & \sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}} \\ \text{bandwidth: } & \frac{1}{C_3R_1g_mr_o+C_3R_1+C_3r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & R_1(g_mr_o + 1) \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.11 \quad BP-11} \quad Z(s) = \left( R_1, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{L_3L_LR_1R_Ls(g_mr_o + 1)}{C_3L_3L_LR_1R_Lg_mr_oss^2 + C_3L_3L_LR_1R_Ls^2 + C_3L_3L_LR_Lr_oss^2 + C_LL_3L_LR_1R_Lg_mr_oss^2 + C_LL_3L_LR_1R_Ls^2 + C_LL_3L_LR_Lr_oss^2 + L_3L_LR_1g_mr_oss + L_3L_LR_1s + L_3L_LR_Ls + L_3L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_L \sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}} (C_3R_1g_mr_o+C_3R_1+C_3r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o)}{R_1g_mr_o+R_1+R_L+r_o} \\ \text{wo: } & \sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1g_mr_o+R_1+R_L+r_o}{R_L(C_3R_1g_mr_o+C_3R_1+C_3r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1R_L(g_mr_o+1)}{R_1g_mr_o+R_1+R_L+r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.12 \quad BP-12} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3s+\frac{1}{R_3}+\frac{1}{L_3s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3R_1R_3R_Ls(g_mr_o + 1)}{C_3L_3R_1R_3R_Lg_mr_oss^2 + C_3L_3R_1R_3R_Ls^2 + C_3L_3R_3R_Lr_oss^2 + L_3R_1R_3g_mr_oss + L_3R_1R_3s + L_3R_1R_Lg_mr_oss + L_3R_1R_Ls + L_3R_3R_Ls + L_3R_3r_oss + L_3R_Lr_oss + R_1R_3R_Lg_mr_oss}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}} (R_1 g_m r_o + R_1 + r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\
\text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_3 R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{3.13 \quad BP-13} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 s (g_m r_o + 1)}{C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_3 r_o s^2 + C_L L_3 R_1 R_3 g_m r_o s^2 + C_L L_3 R_1 R_3 s^2 + C_L L_3 R_3 r_o s^2 + L_3 R_1 g_m r_o s + L_3 R_1 s + L_3 R_3 s + L_3 r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_3}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{R_3 \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{wo: } & \sqrt{\frac{1}{L_3 (C_3 + C_L)}} \\
\text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_3 + r_o}{R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{3.14 \quad BP-14} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_3 R_1 R_3 R_L g_m r_o s^2 + C_L L_3 R_1 R_3 R_L s^2 + C_L L_3 R_3 R_L r_o s^2 + L_3 R_1 R_3 g_m r_o s + L_3 R_1 R_3 s + L_3 R_1 R_L g_m r_o s + L_3 R_1 R_L s + L_3 R_3 R_L g_m r_o s + L_3 R_3 R_L s + L_3 R_3 R_L r_o s + L_3 R_3 R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_3 R_L \sqrt{\frac{1}{L_3(C_3+C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_3(C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.15 \quad BP-15} \quad Z(s) = \left( R_1, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L R_1 R_3 s (g_m r_o + 1)}{C_3 L_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_3 L_L R_1 R_3 s^2 + C_3 L_3 L_L R_3 r_o s^2 + C_L L_3 L_L R_1 R_3 g_m r_o s^2 + C_L L_3 L_L R_1 R_3 s^2 + C_L L_3 L_L R_3 r_o s^2 + L_3 L_L R_1 g_m r_o s + L_3 L_L R_1 s + L_3 L_L R_3 s + L_3 L_L R_3 r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_3 \sqrt{\frac{L_3+L_L}{L_3 L_L (C_3+C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\ \text{wo: } & \sqrt{\frac{L_3+L_L}{L_3 L_L (C_3+C_L)}} \\ \text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_3 + r_o}{R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.16 \quad BP-16} \quad Z(s) = \left( R_1, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_3 L_L R_1 R_3}{C_3 L_3 L_L R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 L_L R_1 R_3 R_L s^2 + C_3 L_3 L_L R_3 R_L r_o s^2 + C_L L_3 L_L R_1 R_3 R_L g_m r_o s^2 + C_L L_3 L_L R_1 R_3 R_L s^2 + C_L L_3 L_L R_3 R_L r_o s^2 + L_3 L_L R_1 R_3 g_m r_o s + L_3 L_L R_1 R_3 s + L_3 L_L R_3 R_L s + L_3 L_L R_3 R_L r_o}$$



**Parameters:**

$$\begin{aligned}
Q: & \frac{R_3 R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{wo:} & \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} \\
\text{bandwidth:} & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\
\text{K-LP:} & 0 \\
\text{K-HP:} & 0 \\
\text{K-BP:} & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{QZ:} & 0 \\
\text{Wz:} & \text{None}
\end{aligned}$$

**3.17 BP-17**  $Z(s) = \left( L_1 s, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1)}{C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_3 r_o s + L_1 g_m r_o s + L_1 s + R_3 + r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_L L_1 R_3 \sqrt{\frac{R_3 + r_o}{C_L L_1 R_3 (g_m r_o + 1)}} (g_m r_o + 1)}{C_L R_3 r_o + L_1 g_m r_o + L_1} \\
\text{wo:} & \sqrt{\frac{R_3 + r_o}{C_L L_1 R_3 (g_m r_o + 1)}} \\
\text{bandwidth:} & \frac{C_L R_3 r_o + L_1 g_m r_o + L_1}{C_L L_1 R_3 (g_m r_o + 1)} \\
\text{K-LP:} & 0 \\
\text{K-HP:} & 0 \\
\text{K-BP:} & \frac{L_1 R_3 (g_m r_o + 1)}{C_L R_3 r_o + L_1 g_m r_o + L_1} \\
\text{QZ:} & 0 \\
\text{Wz:} & \text{None}
\end{aligned}$$

**3.18 BP-18**  $Z(s) = \left( L_1 s, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_L L_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_3 R_L s^2 + C_L R_3 R_L r_o s + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_3 R_L + R_3 r_o + R_L r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_L L_1 R_3 R_L \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{C_L L_1 R_3 R_L (g_m r_o + 1)}} (g_m r_o + 1)}{C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\
wo: & \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{C_L L_1 R_3 R_L (g_m r_o + 1)}} \\
bandwidth: & \frac{C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L}{C_L L_1 R_3 R_L (g_m r_o + 1)} \\
K-LP: & 0 \\
K-HP: & 0 \\
K-BP: & \frac{L_1 R_3 R_L (g_m r_o + 1)}{C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\
QZ: & 0 \\
Wz: & \text{None}
\end{aligned}$$

**3.19 BP-19**  $Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_3 L_1 R_L \sqrt{\frac{R_L + r_o}{C_3 L_1 R_L (g_m r_o + 1)}} (g_m r_o + 1)}{C_3 R_L r_o + L_1 g_m r_o + L_1} \\
wo: & \sqrt{\frac{R_L + r_o}{C_3 L_1 R_L (g_m r_o + 1)}} \\
bandwidth: & \frac{C_3 R_L r_o + L_1 g_m r_o + L_1}{C_3 L_1 R_L (g_m r_o + 1)} \\
K-LP: & 0 \\
K-HP: & 0 \\
K-BP: & \frac{L_1 R_L (g_m r_o + 1)}{C_3 R_L r_o + L_1 g_m r_o + L_1} \\
QZ: & 0 \\
Wz: & \text{None}
\end{aligned}$$

**3.20 BP-20**  $Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1)}{C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 \sqrt{\frac{1}{L_1(C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} (g_m r_o + 1)}{r_o} \\ \text{wo: } & \sqrt{\frac{1}{L_1(C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} \\ \text{bandwidth: } & \frac{r_o}{L_1(g_m r_o + 1)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{L_1(g_m r_o + 1)}{r_o(C_3 + C_L)} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.21 \quad BP-21} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_L r_o s + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 R_L \sqrt{\frac{R_L + r_o}{L_1 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}{C_3 R_L r_o + C_L R_L r_o + L_1 g_m r_o + L_1} \\ \text{wo: } & \sqrt{\frac{R_L + r_o}{L_1 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} \\ \text{bandwidth: } & \frac{C_3 R_L r_o + C_L R_L r_o + L_1 g_m r_o + L_1}{L_1 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{L_1 R_L (g_m r_o + 1)}{C_3 R_L r_o + C_L R_L r_o + L_1 g_m r_o + L_1} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.22 \quad BP-22} \quad Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 R_3 R_L r_o s + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_3 R_L + R_3 r_o + R_L r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_3 L_1 R_3 R_L \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{C_3 L_1 R_3 R_L (g_m r_o + 1)}} (g_m r_o + 1)}{C_3 R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\
wo: & \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{C_3 L_1 R_3 R_L (g_m r_o + 1)}} \\
bandwidth: & \frac{C_3 R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L}{C_3 L_1 R_3 R_L (g_m r_o + 1)} \\
K-LP: & 0 \\
K-HP: & 0 \\
K-BP: & \frac{L_1 R_3 R_L (g_m r_o + 1)}{C_3 R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\
QZ: & 0 \\
Wz: & \text{None}
\end{aligned}$$

**3.23 BP-23**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1)}{C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_3 r_o s + L_1 g_m r_o s + L_1 s + R_3 + r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{L_1 R_3 \sqrt{\frac{R_3 + r_o}{L_1 R_3 (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}{C_3 R_3 r_o + C_L R_3 r_o + L_1 g_m r_o + L_1} \\
wo: & \sqrt{\frac{R_3 + r_o}{L_1 R_3 (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} \\
bandwidth: & \frac{C_3 R_3 r_o + C_L R_3 r_o + L_1 g_m r_o + L_1}{L_1 R_3 (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)} \\
K-LP: & 0 \\
K-HP: & 0 \\
K-BP: & \frac{L_1 R_3 (g_m r_o + 1)}{C_3 R_3 r_o + C_L R_3 r_o + L_1 g_m r_o + L_1} \\
QZ: & 0 \\
Wz: & \text{None}
\end{aligned}$$

**3.24 BP-24**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 R_3 R_L r_o s + C_L L_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_3 R_L s^2 + C_L R_3 R_L r_o s + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_3 R_L + R_3 r_o + R_L r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 R_3 R_L \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{L_1 R_3 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}{C_3 R_3 R_L r_o + C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\ \text{wo: } & \sqrt{\frac{R_3 R_L + R_3 r_o + R_L r_o}{L_1 R_3 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}} \\ \text{bandwidth: } & \frac{C_3 R_3 R_L r_o + C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L}{L_1 R_3 R_L (C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{L_1 R_3 R_L (g_m r_o + 1)}{C_3 R_3 R_L r_o + C_L R_3 R_L r_o + L_1 R_3 g_m r_o + L_1 R_3 + L_1 R_L g_m r_o + L_1 R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**3.25 BP-25**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_3 R_L + R_3 r_o + R_L r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 \sqrt{\frac{1}{C_1 L_1}} (R_3 R_L + R_3 r_o + R_L r_o)}{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 (R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**3.26 BP-26**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + L_1 R_1 R_3 g_m r_o s + L_1 R_1 R_3 s + L_1 R_1 R_L g_m r_o s + L_1 R_1 R_L s + L_1 R_3 R_L s + L_1 R_3 r_o s + L_1 R_L r_o s + R_1 R_3 R_L + R_1 R_3 r_o + R_1 R_L r_o}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_1 R_1 \sqrt{\frac{1}{C_1 L_1}} (R_3 R_L + R_3 r_o + R_L r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
wo: & \sqrt{\frac{1}{C_1 L_1}} \\
bandwidth: & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 R_1 (R_3 R_L + R_3 r_o + R_L r_o)} \\
K-LP: & 0 \\
K-HP: & 0 \\
K-BP: & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
Qz: & 0 \\
Wz: & \text{None}
\end{aligned}$$

## 4 LP

**4.1 LP-1**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1)}{C_1 C_L R_3 r_o s^2 + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + g_m r_o + 1}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_1 C_L R_3 r_o \sqrt{\frac{g_m r_o + 1}{C_1 C_L R_3 r_o}}}{C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3} \\
wo: & \sqrt{\frac{g_m r_o + 1}{C_1 C_L R_3 r_o}} \\
bandwidth: & \frac{C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3}{C_1 C_L R_3 r_o} \\
K-LP: & R_3 \\
K-HP: & 0 \\
K-BP: & 0 \\
Qz: & \text{None} \\
Wz: & \text{None}
\end{aligned}$$

**4.2 LP-2**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1)}{C_1 C_L R_3 R_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_L R_3 R_L g_m r_o s + C_L R_3 R_L s + R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_3 R_L r_o \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_L R_3 R_L r_o}}}{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_L R_3 R_L g_m r_o + C_L R_3 R_L}$

wo:  $\sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_L R_3 R_L r_o}}$

bandwidth:  $\frac{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_L R_3 R_L g_m r_o + C_L R_3 R_L}{C_1 C_L R_3 R_L r_o}$

K-LP:  $\frac{R_3 R_L}{R_3 + R_L}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

**4.3 LP-3**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1)}{C_1 C_3 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s + g_m r_o + 1}$$

**Parameters:**

Q:  $\frac{C_1 C_3 R_L r_o \sqrt{\frac{g_m r_o + 1}{C_1 C_3 R_L r_o}}}{C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L}$

wo:  $\sqrt{\frac{g_m r_o + 1}{C_1 C_3 R_L r_o}}$

bandwidth:  $\frac{C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L}{C_1 C_3 R_L r_o}$

K-LP:  $R_L$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

**4.4 LP-4**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (g_m r_o + 1)}{C_1 C_3 R_L r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s + C_L R_L g_m r_o s + C_L R_L s + g_m r_o + 1}$$

**Parameters:**

Q:  $\frac{C_1 R_L r_o \sqrt{\frac{g_m r_o + 1}{C_1 R_L r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L + C_L R_L g_m r_o + C_L R_L}$   
 wo:  $\sqrt{\frac{g_m r_o + 1}{C_1 R_L r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L + C_L R_L g_m r_o + C_L R_L}{C_1 R_L r_o (C_3 + C_L)}$   
 K-LP:  $R_L$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.5 LP-5**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1)}{C_1 C_3 R_3 R_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_3 R_3 R_L g_m r_o s + C_3 R_3 R_L s + R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

**Parameters:**

Q:  $\frac{C_1 C_3 R_3 R_L r_o \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_3 R_3 R_L r_o}}}{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L}$   
 wo:  $\sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_3 R_3 R_L r_o}}$   
 bandwidth:  $\frac{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L}{C_1 C_3 R_3 R_L r_o}$   
 K-LP:  $\frac{R_3 R_L}{R_3 + R_L}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None



**4.6 LP-6**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1)}{C_1 C_3 R_3 r_o s^2 + C_1 C_L R_3 r_o s^2 + C_1 R_3 s + C_1 r_o s + C_3 R_3 g_m r_o s + C_3 R_3 s + C_L R_3 g_m r_o s + C_L R_3 s + g_m r_o + 1}$$

**Parameters:**

Q:  $\frac{C_1 R_3 r_o \sqrt{\frac{g_m r_o + 1}{C_1 R_3 r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_3 + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_L R_3 g_m r_o + C_L R_3}$   
 wo:  $\sqrt{\frac{g_m r_o + 1}{C_1 R_3 r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_3 + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_L R_3 g_m r_o + C_L R_3}{C_1 R_3 r_o (C_3 + C_L)}$   
 K-LP:  $R_3$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.7 LP-7**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1)}{C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_3 R_3 R_L g_m r_o s + C_3 R_3 R_L s + C_L R_3 R_L g_m r_o s + C_L R_3 R_L s + R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

**Parameters:**

Q:  $\frac{C_1 R_3 R_L r_o \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 R_3 R_L r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L + C_L R_3 R_L g_m r_o + C_L R_3 R_L}$   
 wo:  $\sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 R_3 R_L r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L + C_L R_3 R_L g_m r_o + C_L R_3 R_L}{C_1 R_3 R_L r_o (C_3 + C_L)}$   
 K-LP:  $\frac{R_3 R_L}{R_3 + R_L}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.8 LP-8**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1)}{C_1 C_L R_1 R_3 r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_1 R_3 r_o \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 C_L R_1 R_3 r_o}}}{C_1 R_1 R_3 + C_1 R_1 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_3 r_o}$   
 wo:  $\sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 C_L R_1 R_3 r_o}}$   
 bandwidth:  $\frac{C_1 R_1 R_3 + C_1 R_1 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_3 r_o}{C_1 C_L R_1 R_3 r_o}$   
 K-LP:  $\frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.9 LP-9**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_L R_1 R_3 R_L g_m r_o s + C_L R_1 R_3 R_L s + C_L R_3 R_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_1 R_3 R_L r_o \sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 C_L R_1 R_3 R_L r_o}}}{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_L R_1 R_3 R_L g_m r_o + C_L R_1 R_3 R_L + C_L R_3 R_L r_o}$   
 wo:  $\sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 C_L R_1 R_3 R_L r_o}}$   
 bandwidth:  $\frac{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_L R_1 R_3 R_L g_m r_o + C_L R_1 R_3 R_L + C_L R_3 R_L r_o}{C_1 C_L R_1 R_3 R_L r_o}$   
 K-LP:  $\frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.10 LP-10**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1)}{C_1 C_3 R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**Parameters:**

Q:  $\frac{C_1 C_3 R_1 R_L r_o \sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 C_3 R_1 R_L r_o}}}{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_L r_o}$   
 wo:  $\sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 C_3 R_1 R_L r_o}}$   
 bandwidth:  $\frac{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_L r_o}{C_1 C_3 R_1 R_L r_o}$   
 K-LP:  $\frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 Wz: None

**4.11 LP-11**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1)}{C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**Parameters:**

Q:  $\frac{C_1 R_1 r_o \sqrt{\frac{1}{C_1 R_1 r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_1 + C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}$   
 wo:  $\sqrt{\frac{1}{C_1 R_1 r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_1 + C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}{C_1 R_1 r_o (C_3 + C_L)}$   
 K-LP:  $R_1 (g_m r_o + 1)$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 Wz: None

**4.12 LP-12**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1)}{C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**Parameters:**

Q:  $\frac{C_1 R_1 R_L r_o \sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 R_1 R_L r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_L r_o + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_L r_o}$   
 wo:  $\sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 R_1 R_L r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_L r_o + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_L r_o}{C_1 R_1 R_L r_o (C_3 + C_L)}$   
 K-LP:  $\frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o}$   
 K-HP: 0  
 K-BP: 0  
 Qz: None  
 Wz: None

**4.13 LP-13**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_L}$$

**Parameters:**

Q:  $\frac{C_1 C_3 R_1 R_3 R_L r_o \sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 C_3 R_1 R_3 R_L r_o}}}{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_3 R_1 R_3 R_L g_m r_o + C_3 R_1 R_3 R_L + C_3 R_3 R_L r_o}$   
 wo:  $\sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 C_3 R_1 R_3 R_L r_o}}$   
 bandwidth:  $\frac{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_3 R_1 R_3 R_L g_m r_o + C_3 R_1 R_3 R_L + C_3 R_3 R_L r_o}{C_1 C_3 R_1 R_3 R_L r_o}$   
 K-LP:  $\frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$   
 K-HP: 0  
 K-BP: 0  
 Qz: None  
 Wz: None

**4.14 LP-14**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1)}{C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

**Parameters:**

Q:  $\frac{C_1 R_1 R_3 r_o \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 R_1 R_3 r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_1 R_3 + C_1 R_1 r_o + C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_3 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_3 r_o}$   
 wo:  $\sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 R_1 R_3 r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_1 R_3 + C_1 R_1 r_o + C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_3 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_3 r_o}{C_1 R_1 R_3 r_o (C_3 + C_L)}$   
 K-LP:  $\frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o}$   
 K-HP: 0  
 K-BP: 0  
 Qz: None  
 Wz: None

**4.15 LP-15**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + C_L R_1 R_3 R_L g_m r_o s + C_L R_1 R_3 R_L s}$$

**Parameters:**

Q:  $\frac{C_1 R_1 R_3 R_L r_o \sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 R_1 R_3 R_L r_o (C_3 + C_L)}} (C_3 + C_L)}{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_3 R_1 R_3 R_L g_m r_o + C_3 R_1 R_3 R_L + C_3 R_3 R_L r_o + C_L R_1 R_3 R_L g_m r_o + C_L R_1 R_3 R_L + C_L R_3 R_L r_o}$   
 wo:  $\sqrt{\frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{C_1 R_1 R_3 R_L r_o (C_3 + C_L)}}$   
 bandwidth:  $\frac{C_1 R_1 R_3 R_L + C_1 R_1 R_3 r_o + C_1 R_1 R_L r_o + C_3 R_1 R_3 R_L g_m r_o + C_3 R_1 R_3 R_L + C_3 R_3 R_L r_o + C_L R_1 R_3 R_L g_m r_o + C_L R_1 R_3 R_L + C_L R_3 R_L r_o}{C_1 R_1 R_3 R_L r_o (C_3 + C_L)}$   
 K-LP:  $\frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$   
 K-HP: 0  
 K-BP: 0  
 Qz: None  
 Wz: None

## 5 BS

**5.1 BS-1**  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

**Parameters:**

$$Q: \frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_1 g_m r_o + R_1 + R_3 + r_o)}{R_3 (R_1 g_m r_o + R_1 + r_o)}$$

$$wo: \sqrt{\frac{1}{C_L L_L}}$$

$$bandwidth: \frac{R_3 (R_1 g_m r_o + R_1 + r_o)}{L_L (R_1 g_m r_o + R_1 + R_3 + r_o)}$$

$$K-LP: \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o}$$

$$K-HP: \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o}$$

$$K-BP: 0$$

$$QZ: \text{None}$$

$$WZ: \sqrt{\frac{1}{C_L L_L}}$$

**5.2 BS-2**  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_1 R_L g_m r_o s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_3 R_L s^2 + C_L L_L R_3 r_o s^2 + C_L L_L R_L r_o s^2 + C_L R_1 R_3 R_L g_m r_o s + C_L R_1 R_3 R_L s + C_L R_3 R_L}$$

**Parameters:**

$$Q: \frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_3 R_L (R_1 g_m r_o + R_1 + r_o)}$$

$$wo: \sqrt{\frac{1}{C_L L_L}}$$

$$bandwidth: \frac{R_3 R_L (R_1 g_m r_o + R_1 + r_o)}{L_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}$$

$$K-LP: \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$K-HP: \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$K-BP: 0$$

$$\begin{aligned} \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

$$\mathbf{5.3 \quad BS-3} \quad Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_1 g_m r_o + R_1 + R_L + r_o)}{R_L (R_1 g_m r_o + R_1 + r_o)} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_L (R_1 g_m r_o + R_1 + r_o)}{L_3 (R_1 g_m r_o + R_1 + R_L + r_o)} \\ \text{K-LP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{K-HP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

$$\mathbf{5.4 \quad BS-4} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o s^2 + C_3 L_3 R_L r_o s^2 + C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + R_1 g_m r_o + R_1 + R_3 + R_L + r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 R_L (R_1 g_m r_o + R_1 + r_o)}{L_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \end{aligned}$$

$$\begin{aligned} \text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

$$\mathbf{5.5 \quad BS-5} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}} (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}{R_3 R_L + R_3 r_o + R_L r_o} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_3 R_L + R_3 r_o + R_L r_o}{L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)} \\ \text{K-LP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{K-HP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_1 L_1}} \end{aligned}$$

$$\mathbf{5.6 \quad BS-6} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + R_1 R_3}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_1 (R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_1 (R_3 R_L + R_3 r_o + R_L r_o)}{L_1 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \end{aligned}$$



$$\begin{aligned}
\text{K-LP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{K-BP: } & 0 \\
\text{QZ: } & \text{None} \\
\text{Wz: } & \sqrt{\frac{1}{C_1 L_1}}
\end{aligned}$$

## 6 GE

$$6.1 \quad \text{GE-1 } Z(s) = \left( R_1, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_3 R_L s + C_L R_3 r_o s + C_L R_L r_o s + R_1 g_m r_o + R_1}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_1 g_m r_o + R_1 + R_3 + r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\
\text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{L_L (R_1 g_m r_o + R_1 + R_3 + r_o)} \\
\text{K-LP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{K-HP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\
\text{Wz: } & \sqrt{\frac{1}{C_L L_L}}
\end{aligned}$$

$$6.2 \quad \text{GE-2 } Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_1 R_L g_m r_o s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_3 R_L s^2 + C_L L_L R_3 r_o s^2 + C_L L_L R_L r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_3 s + L_L r_o s + R_L}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
wo: & \sqrt{\frac{1}{C_L L_L}} \\
bandwidth: & \frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\
K-LP: & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
K-HP: & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
K-BP: & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
QZ: & C_L R_L \sqrt{\frac{1}{C_L L_L}} \\
Wz: & \sqrt{\frac{1}{C_L L_L}}
\end{aligned}$$

**6.3 GE-3**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + R_1 g_m r_o + R_1 + R_L}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_1 g_m r_o + R_1 + R_L + r_o)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
wo: & \sqrt{\frac{1}{C_3 L_3}} \\
bandwidth: & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{L_3 (R_1 g_m r_o + R_1 + R_L + r_o)} \\
K-LP: & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\
K-HP: & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\
K-BP: & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
QZ: & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\
Wz: & \sqrt{\frac{1}{C_3 L_3}}
\end{aligned}$$

#### 6.4 GE-4 $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o s^2 + C_3 L_3 R_L r_o s^2 + L_3 R_1 g_m r_o s + L_3 R_1 s + L_3 R_L s + L_3 r_o s + R_1 R_3 g_m r_o + R_1 R_3 s + R_1 R_L s + R_3 R_L s + R_3 r_o s + R_L r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_3 \sqrt{\frac{1}{C_3 L_3}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{K-BP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\ \text{QZ: } & C_3 R_3 \sqrt{\frac{1}{C_3 L_3}} \\ \text{Wz: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

#### 6.5 GE-5 $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + R_3 g_m r_o + R_3 s + R_L s + R_3 r_o + R_L r_o}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}} (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}{L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)} \\ \text{K-LP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{K-HP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{K-BP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{QZ: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}}}{R_1} \end{aligned}$$

$$\text{Wz: } \sqrt{\frac{1}{C_1 L_1}}$$

$$\mathbf{6.6 \quad GE-6} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_1}$$

**Parameters:**

$$\text{Q: } \frac{C_1 \sqrt{\frac{1}{C_1 L_1}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

$$\text{wo: } \sqrt{\frac{1}{C_1 L_1}}$$

$$\text{bandwidth: } \frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}$$

$$\text{K-LP: } \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$\text{K-HP: } \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$\text{K-BP: } \frac{R_3 R_L}{R_3 + R_L}$$

$$\text{Qz: } C_1 R_1 \sqrt{\frac{1}{C_1 L_1}}$$

$$\text{Wz: } \sqrt{\frac{1}{C_1 L_1}}$$

## 7 AP

## 8 INVALID-NUMER

$$\mathbf{8.1 \quad INVALID-NUMER-1} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_L r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_3 C_L R_L \sqrt{\frac{1}{C_3 C_L R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o} \\
\text{wo: } & \sqrt{\frac{1}{C_3 C_L R_L (R_1 g_m r_o + R_1 + r_o)}} \\
\text{bandwidth: } & \frac{C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o}{C_3 C_L R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & R_1 (g_m r_o + 1) \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_L R_1 R_L (g_m r_o + 1)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 8.2 INVALID-NUMER-2 $Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_3 r_o s + C_L R_L r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_3 C_L R_3 R_L \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_3 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o} \\
\text{wo: } & \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} \\
\text{bandwidth: } & \frac{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_3 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_L R_1 R_3 R_L (g_m r_o + 1)}{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_3 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 8.3 INVALID-NUMER-3 $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_3 r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 R_3 s + C_3 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**Parameters:**

Q:  $\frac{C_3 C_L R_3 \sqrt{\frac{1}{C_3 C_L R_3 (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}$   
wo:  $\sqrt{\frac{1}{C_3 C_L R_3 (R_1 g_m r_o + R_1 + r_o)}}$   
bandwidth:  $\frac{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}{C_3 C_L R_3 (R_1 g_m r_o + R_1 + r_o)}$   
K-LP:  $R_1 (g_m r_o + 1)$   
K-HP: 0  
K-BP:  $\frac{C_3 R_1 R_3 (g_m r_o + 1)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}$   
QZ: 0  
Wz: None

#### 8.4 INVALID-NUMER-4 $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_L r_o}$$

**Parameters:**

Q:  $\frac{C_3 C_L R_3 R_L \sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_L r_o}$   
wo:  $\sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}}$   
bandwidth:  $\frac{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_L r_o}{C_3 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}$   
K-LP:  $\frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o}$   
K-HP: 0  
K-BP:  $\frac{C_3 R_1 R_3 R_L (g_m r_o + 1)}{C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_L r_o}$   
QZ: 0  
Wz: None

#### 8.5 INVALID-NUMER-5 $Z(s) = \left( L_1 s, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L R_L s + 1)}{C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L R_3 R_L s + C_L R_3 r_o s + C_L R_L r_o s + L_1 g_m r_o s + L_1 s + R_3 + r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_L L_1 \sqrt{\frac{R_3 + r_o}{C_L L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}{C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o + L_1 g_m r_o + L_1} \\
\text{wo: } & \sqrt{\frac{R_3 + r_o}{C_L L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} \\
\text{bandwidth: } & \frac{C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o + L_1 g_m r_o + L_1}{C_L L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & \frac{R_3 R_L}{R_3 + R_L} \\
\text{K-BP: } & \frac{L_1 R_3 (g_m r_o + 1)}{C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o + L_1 g_m r_o + L_1} \\
\text{Qz: } & C_L R_L \sqrt{\frac{R_3 + r_o}{C_L L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 8.6 INVALID-NUMER-6 $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

Parameters:

$$\begin{aligned}
\text{Q: } & \frac{C_3 L_1 \sqrt{\frac{R_L + r_o}{C_3 L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}{C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + L_1 g_m r_o + L_1} \\
\text{wo: } & \sqrt{\frac{R_L + r_o}{C_3 L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} \\
\text{bandwidth: } & \frac{C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + L_1 g_m r_o + L_1}{C_3 L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)} \\
\text{K-LP: } & 0 \\
\text{K-HP: } & \frac{R_3 R_L}{R_3 + R_L} \\
\text{K-BP: } & \frac{L_1 R_L (g_m r_o + 1)}{C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o + L_1 g_m r_o + L_1} \\
\text{Qz: } & C_3 R_3 \sqrt{\frac{R_L + r_o}{C_3 L_1 (R_3 g_m r_o + R_3 + R_L g_m r_o + R_L)}} \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 8.7 INVALID-NUMER-7 $Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + C_L R_L g_m r_o s + C_L R_L s + g_m r_o + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 C_L \sqrt{\frac{g_m r_o + 1}{C_1 C_L (R_3 R_L + R_3 r_o + R_L r_o)}} (R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_L (R_3 R_L + R_3 r_o + R_L r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L}{C_1 C_L (R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_L R_3 R_L (g_m r_o + 1)}{C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L} \\ \text{QZ: } & 0 \\ \text{WZ: } & \text{None} \end{aligned}$$

**8.8 INVALID-NUMER-8**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 R_3 g_m r_o s + C_3 R_3 s + C_3 R_L g_m r_o s + C_3 R_L s + g_m r_o + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 C_3 \sqrt{\frac{g_m r_o + 1}{C_1 C_3 (R_3 R_L + R_3 r_o + R_L r_o)}} (R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_3 (R_3 R_L + R_3 r_o + R_L r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L}{C_1 C_3 (R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_3 R_3 R_L (g_m r_o + 1)}{C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L} \\ \text{QZ: } & 0 \\ \text{WZ: } & \text{None} \end{aligned}$$

**8.9 INVALID-NUMER-9**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_3 R_L s + C_L R_3 r_o s + C_L R_L}$$



**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 C_L R_1 \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 C_L R_1 (R_3 R_L + R_3 r_o + R_L r_o)}} (R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_1 R_3 + C_1 R_1 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o} \\
\text{wo: } & \sqrt{\frac{R_1 g_m r_o + R_1 + R_3 + r_o}{C_1 C_L R_1 (R_3 R_L + R_3 r_o + R_L r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 R_3 + C_1 R_1 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o}{C_1 C_L R_1 (R_3 R_L + R_3 r_o + R_L r_o)} \\
\text{K-LP: } & \frac{R_1 R_3 (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_3 + r_o} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_L R_1 R_3 R_L (g_m r_o + 1)}{C_1 R_1 R_3 + C_1 R_1 r_o + C_L R_1 R_3 g_m r_o + C_L R_1 R_3 + C_L R_1 R_L g_m r_o + C_L R_1 R_L + C_L R_3 R_L + C_L R_3 r_o + C_L R_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

**8.10 INVALID-NUMER-10**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 C_3 R_1 \sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 C_3 R_1 (R_3 R_L + R_3 r_o + R_L r_o)}} (R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o} \\
\text{wo: } & \sqrt{\frac{R_1 g_m r_o + R_1 + R_L + r_o}{C_1 C_3 R_1 (R_3 R_L + R_3 r_o + R_L r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o}{C_1 C_3 R_1 (R_3 R_L + R_3 r_o + R_L r_o)} \\
\text{K-LP: } & \frac{R_1 R_L (g_m r_o + 1)}{R_1 g_m r_o + R_1 + R_L + r_o} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_3 R_1 R_3 R_L (g_m r_o + 1)}{C_1 R_1 R_L + C_1 R_1 r_o + C_3 R_1 R_3 g_m r_o + C_3 R_1 R_3 + C_3 R_1 R_L g_m r_o + C_3 R_1 R_L + C_3 R_3 R_L + C_3 R_3 r_o + C_3 R_L r_o} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

**8.11 INVALID-NUMER-11**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_3 r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + g_m r_o + 1}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 C_L R_3 \sqrt{\frac{g_m r_o + 1}{C_1 C_L R_3 (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3} \\
\text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_L R_3 (R_1 g_m r_o + R_1 + r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3}{C_1 C_L R_3 (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & R_3 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_1 R_1 R_3 (g_m r_o + 1)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{8.12 \quad INVALID-NUMER-12} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_L R_3 R_L g_m r_o}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 C_L R_3 R_L \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_L R_3 R_L g_m r_o + C_L R_3 R_L} \\
\text{wo: } & \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_L R_3 R_L g_m r_o + C_L R_3 R_L}{C_1 C_L R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & \frac{R_3 R_L}{R_3 + R_L} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_1 R_1 R_3 R_L (g_m r_o + 1)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_L R_3 R_L g_m r_o + C_L R_3 R_L} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

$$\mathbf{8.13 \quad INVALID-NUMER-13} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s + g_m r_o + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 C_3 R_L \sqrt{\frac{g_m r_o + 1}{C_1 C_3 R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_3 R_L (R_1 g_m r_o + R_1 + r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L}{C_1 C_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_1 R_1 R_L (g_m r_o + 1)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{8.14 \quad INVALID-NUMER-14} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 R_L \sqrt{\frac{g_m r_o + 1}{C_1 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L + C_L R_L g_m r_o + C_L R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L + C_L R_L g_m r_o + C_L R_L}{C_1 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_1 R_1 R_L (g_m r_o + 1)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_L g_m r_o + C_3 R_L + C_L R_L g_m r_o + C_L R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{8.15 \quad INVALID-NUMER-15} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_3 R_3 R_L g_m r_o s}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 C_3 R_3 R_L \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_3 R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} (R_1 g_m r_o + R_1 + r_o)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L} \\
\text{wo: } & \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 C_3 R_3 R_L (R_1 g_m r_o + R_1 + r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L}{C_1 C_3 R_3 R_L (R_1 g_m r_o + R_1 + r_o)} \\
\text{K-LP: } & \frac{R_3 R_L}{R_3 + R_L} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_1 R_1 R_3 R_L (g_m r_o + 1)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

**8.16 INVALID-NUMER-16**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_3 r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_3 s + C_1 r_o s + C_3 R_3 g_m r_o s + C_3 R_3 s +}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 R_3 \sqrt{\frac{g_m r_o + 1}{C_1 R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_L R_3 g_m r_o + C_L R_3} \\
\text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_L R_3 g_m r_o + C_L R_3}{C_1 R_3 (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\
\text{K-LP: } & R_3 \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_1 R_1 R_3 (g_m r_o + 1)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_L R_3 g_m r_o + C_L R_3} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

**8.17 INVALID-NUMER-17**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_1 R_L g_m r_o s +}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_1 R_3 R_L \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L + C_L R_3 R_L g_m r_o + C_L R_3 R_L} \\
\text{wo: } & \sqrt{\frac{R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}{C_1 R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)}} \\
\text{bandwidth: } & \frac{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L + C_L R_3 R_L g_m r_o + C_L R_3 R_L}{C_1 R_3 R_L (C_3 R_1 g_m r_o + C_3 R_1 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o)} \\
\text{K-LP: } & \frac{R_3 R_L}{R_3 + R_L} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & \frac{C_1 R_1 R_3 R_L (g_m r_o + 1)}{C_1 R_1 R_3 g_m r_o + C_1 R_1 R_3 + C_1 R_1 R_L g_m r_o + C_1 R_1 R_L + C_1 R_3 R_L + C_1 R_3 r_o + C_1 R_L r_o + C_3 R_3 R_L g_m r_o + C_3 R_3 R_L + C_L R_3 R_L g_m r_o + C_L R_3 R_L} \\
\text{QZ: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 9 INVALID-WZ

### 9.1 INVALID-WZ-1 $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 R_3 s + 1) (C_L R_L s + 1)}{C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 r_o s^2 + C_3 C_L R_L r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 R_3 s + C_3 r_o s + C_L R}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_3 C_L \sqrt{\frac{1}{C_3 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o} \\
\text{wo: } & \sqrt{\frac{1}{C_3 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} \\
\text{bandwidth: } & \frac{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o}{C_3 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\
\text{K-LP: } & R_1 (g_m r_o + 1) \\
\text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\
\text{K-BP: } & \frac{R_1 (C_3 R_3 g_m r_o + C_3 R_3 + C_L R_L g_m r_o + C_L R_L)}{C_3 R_1 g_m r_o + C_3 R_1 + C_3 R_3 + C_3 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o} \\
\text{QZ: } & \frac{C_3 C_L R_3 R_L \sqrt{\frac{1}{C_3 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}}}{C_3 R_3 + C_L R_L} \\
\text{Wz: } & \sqrt{\frac{1}{C_3 C_L R_3 R_L}}
\end{aligned}$$

## 9.2 INVALID-WZ-2 $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 R_1 s + 1) (C_L R_L s + 1)}{C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + C_L R_L g_m r_o s + C_L R_L s}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_1 C_L \sqrt{\frac{g_m r_o + 1}{C_1 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L}{C_1 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{K-BP: } & \frac{R_3 (C_1 R_1 g_m r_o + C_1 R_1 + C_L R_L g_m r_o + C_L R_L)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_3 + C_1 r_o + C_L R_3 g_m r_o + C_L R_3 + C_L R_L g_m r_o + C_L R_L} \\ \text{QZ: } & \frac{C_1 C_L R_1 R_L \sqrt{\frac{g_m r_o + 1}{C_1 C_L (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}}}{C_1 R_1 + C_L R_L} \\ \text{WZ: } & \sqrt{\frac{1}{C_1 C_L R_1 R_L}} \end{aligned}$$

## 9.3 INVALID-WZ-3 $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 R_1 s + 1) (C_3 R_3 s + 1)}{C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 R_3 g_m r_o s + C_3 R_3 s + C_3 R_L g_m r_o s + C_3 R_L s}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_1 C_3 \sqrt{\frac{g_m r_o + 1}{C_1 C_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L} \\ \text{wo: } & \sqrt{\frac{g_m r_o + 1}{C_1 C_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}} \\ \text{bandwidth: } & \frac{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L}{C_1 C_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o} \\ \text{K-BP: } & \frac{R_L (C_1 R_1 g_m r_o + C_1 R_1 + C_3 R_3 g_m r_o + C_3 R_3)}{C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L + C_1 r_o + C_3 R_3 g_m r_o + C_3 R_3 + C_3 R_L g_m r_o + C_3 R_L} \\ \text{QZ: } & \frac{C_1 C_3 R_1 R_3 \sqrt{\frac{g_m r_o + 1}{C_1 C_3 (R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o)}}}{C_1 R_1 + C_3 R_3} \end{aligned}$$

$$W_Z: \sqrt{\frac{1}{C_1 C_3 R_1 R_3}}$$

## 10 INVALID-ORDER

**10.1 INVALID-ORDER-1**  $Z(s) = (R_1, \infty, R_3, \infty, \infty, R_L)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

**10.2 INVALID-ORDER-2**  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1)}{C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

**10.3 INVALID-ORDER-3**  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_L R_1 R_3 R_L g_m r_o s + C_L R_1 R_3 R_L s + C_L R_3 R_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

**10.4 INVALID-ORDER-4**  $Z(s) = \left( R_1, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L R_L s + 1)}{C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_3 R_L s + C_L R_3 r_o s + C_L R_L r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

**10.5 INVALID-ORDER-5**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1)}{C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**10.6 INVALID-ORDER-6**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1)}{C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.7 INVALID-ORDER-7**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1)}{C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + C_L R_1 R_L g_m r_o s + C_L R_1 R_L s + C_L R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**10.8 INVALID-ORDER-8**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.9 INVALID-ORDER-9**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_L r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.10 INVALID-ORDER-10**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2 + C_3 L_L r_o s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s + C_L L_L r_o s + 1}$$



$$10.11 \quad \text{INVALID-ORDER-11} \quad Z(s) = \left( R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_L s^2 + C_L L_L r_o s^2 + C_L R_1}$$

$$10.12 \quad \text{INVALID-ORDER-12} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$10.13 \quad \text{INVALID-ORDER-13} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1)}{C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + R_1 g_m r_o + R_1 + R_3 + r_o}$$

$$10.14 \quad \text{INVALID-ORDER-14} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_3 R_L (g_m r_o + 1)}{C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + C_L R_1 R_3 R_L g_m r_o s + C_L R_1 R_3 R_L s + C_L R_3 R_L r_o s + R_1 R_3 g_m r_o + R_1 R_3 + R_1 R_L g_m r_o + R_1 R_L + R_3 R_L + R_3 r_o + R_L r_o}$$

$$10.15 \quad \text{INVALID-ORDER-15} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_1 R_3}$$

$$10.16 \quad \text{INVALID-ORDER-16} \quad Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_1 R_3}$$

**10.17 INVALID-ORDER-17**  $Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_L R_1 R_3 s^2 + C_3 L_L R_3 r_o s^2 + C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o}{C_3 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_L R_1 R_3 s^2 + C_3 L_L R_3 r_o s^2 + C_3 R_1 R_3 R_L g_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o}$$

**10.18 INVALID-ORDER-18**  $Z(s) = \left( R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_1 R_3}{C_3 C_L L_L R_1 R_3 R_L q_m r_o s^3 + C_3 C_L L_L R_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 R_1 R_3 R_L q_m r_o s + C_3 R_1 R_3 R_L s + C_3 R_3 R_L r_o s + C_L L_L R_1 R_3 q_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_1 R$$

**10.19 INVALID-ORDER-19**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

**10.20 INVALID-ORDER-20**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 R_3 s + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_3 r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 R_3 s + C_3 r_o s + C_L L_L}$$

**10.21 INVALID-ORDER-21**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2 + C_3 L_L R_3 s^2 + C_3 L_L r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L L_L R_1 g}$$

**10.22 INVALID-ORDER-22**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 R_3 s + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 s^2}$$

**10.23 INVALID-ORDER-23**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L}{C_3 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_L R_1 R_3 s^2 + C_3 L_L R_1 R_L g_m r_o s^2 + C_3 L_L R_1 R_L s^2 + C_3 L_L R_3 R_L s^2 + C_3 L_L R_3 s^2}$$

**10.24 INVALID-ORDER-24**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1}{C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2}$$

**10.25 INVALID-ORDER-25**  $Z(s) = \left( R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_L}{C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 s^2}$$

**10.26 INVALID-ORDER-26**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.27 INVALID-ORDER-27**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_L r_o s + C_L R_1 R_L g_m r_o}$$

**10.28 INVALID-ORDER-28**  $Z(s) = \left( R_1, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L R_L s + 1)}{C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_L r_o s^2 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_L}$$

**10.29 INVALID-ORDER-29**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L}$$

**10.30 INVALID-ORDER-30**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_{3s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 L_3 L_L s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2 + C_3 L_L r_o s^2 + C_L L_L R_1}$$

**10.31 INVALID-ORDER-31**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_1 R_L}$$

**10.32 INVALID-ORDER-32**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1}{C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L R_L s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s}.$$

**10.33 INVALID-ORDER-33**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 L_3 L_L s^3 + C_3 L_3 R_1 g_m r_o s^2}$$

**10.34 INVALID-ORDER-34**  $Z(s) = \left( R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 C_L L_L r_o s^3}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 C_L L_L r_o s^3}$$

**10.35 INVALID-ORDER-35**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_L L_3 R_1 g_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 R_L s^2 + C_L L_3 r_o s^2 + C_L R_1 s}$$

**10.36 INVALID-ORDER-36**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_3 L_L R_1 q_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 L_3 R_1 q_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_L L_3 L_L s^3 + C_L L_3 R_1 q_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 r_o s^2 + C_L L_L R_1}$$

**10.37 INVALID-ORDER-37**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1)}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_L L_3}$$

**10.38 INVALID-ORDER-38**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2}{C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2}$$

**10.39 INVALID-ORDER-39**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{L_3}{C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2 + C_L L_3 L_L R_1 g_m r_o s^3 + C_L L_3 L_L R_1 s^3 + C_L L_3 L_L R_L r_o s^3 + C_L L_3 L_L R_L s^3 + C_L L_3 L_L R_L s^3 + C_L L_3 L_L R_L s^3}.$$

**10.40 INVALID-ORDER-40**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_3 r_o s^2 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 R_3 s + C_3 r_o s + C_L R_1 g_m r_o s}$$

**10.41 INVALID-ORDER-41**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 R_L r_o)}{C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 R_L r_o}$$

**10.42 INVALID-ORDER-42**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L R_L s + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 r_o s^2 + C_3 C_L R_3 s^2 + C_3 C_L R_L r_o s^2 + C_3 C_L R_L s^2 + C_3 C_L r_o s^2 + C_3 C_L s^2 + C_3 L_3 R_1 g_m r_o s^3 + C_3 L_3 R_1 s^3 + C_3 L_3 R_L s^3 + C_3 L_3 r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o s^2 + C_3 L_3 R_3 s^2 + C_3 L_3 R_L r_o s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 L_3 s^2 + C_3 R_1 R_3 g_m r_o s^2 + C_3 R_1 R_3 s^2 + C_3 R_1 R_L g_m r_o s^2 + C_3 R_1 R_L s^2 + C_3 R_3 R_L s^2 + C_3 R_3 r_o s^2 + C_3 R_3 s^2 + C_3 R_L r_o s^2 + C_3 R_L s^2 + C_3 r_o s^2 + C_3 s^2}$$

**10.43 INVALID-ORDER-43**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 R_3 s + C_3 C_L R_1 R_3}$$

**10.44 INVALID-ORDER-44**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1)}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 L_3 L_L s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3}$$

**10.45 INVALID-ORDER-45**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1(g_m r_o)}{C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_1 R_3 g_m r_o}$$

10.46 INVALID-ORDER-46  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L}{\dots}$$

**10.47 INVALID-ORDER-47**  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L R_1 R_L g_m r_o s^3}$$

10.48 INVALID-ORDER-48  $Z(s) = \left( R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 q_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_L q_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L L_L R_1 R_3 q_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_3 r_o s^3 + C_3 C_L L_L R_1 R_3 s^3}{C_3 C_L L_3 L_L R_1 q_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_L q_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L L_L R_1 R_3 q_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_3 r_o s^3 + C_3 C_L L_L R_1 R_3 s^3}$$

**10.49 INVALID-ORDER-49**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1}{C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 R_L s^3 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_3 r_o s^2 + C_L L_3 R_1 R_3 g_m r_o s^2 + C_L L_3 R_1 R_3 s^2 + C_L L_3 R_1 R_L}$$

**10.50 INVALID-ORDER-50**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1}{C_3 C_L L_3 L_L R_1 R_3 q_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_3 R_1 R_3 q_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_3 r_o s^2 + C_L L_3 L_L R_1 q_m r_o s^3 + C_L L_3 L_L R_1 s^3 + C_L L_3 L_L R_3}$$

**10.51 INVALID-ORDER-51**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 R_L s^3 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_3 r_o s^2 + C_3 L_3 R_1 R_3 s^2}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 R_L s^3 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_3 r_o s^2 + C_3 L_3 R_1 R_3 s^2}$$



**10.52 INVALID-ORDER-52**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_3 r_o s^3 + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2}{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_3 r_o s^3 + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2}$$

**10.53 INVALID-ORDER-53**  $Z(s) = \left( R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_3 L_L R_1 R_3 g_m r_o s^3 + C_L L_3 L_L R_1 R_3 R_L s^3 + C_L L_3 L_L R_3 R_L r_o s^3 + C_L L_3 L_L R_3 R_L s^3}{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_3 L_L R_1 R_3 g_m r_o s^3 + C_L L_3 L_L R_1 R_3 R_L s^3 + C_L L_3 L_L R_3 R_L r_o s^3 + C_L L_3 L_L R_3 R_L s^3}$$

**10.54 INVALID-ORDER-54**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_3 s^2 + C_3 L_3 r_o s^2 + C_L L_3 R_1 g_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 r_o s^2 + C_L R_1 R_3}$$

**10.55 INVALID-ORDER-55**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{1}{C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 R_L s^3 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o}$$

**10.56 INVALID-ORDER-56**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1(s)}{C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_3 R_L s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2}$$

**10.57 INVALID-ORDER-57**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2}$$

**10.58 INVALID-ORDER-58**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L R_3 s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L R_3 s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2}$$

**10.59 INVALID-ORDER-59**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C$$

10.60 INVALID-ORDER-60  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_3 L_L R_1 R_L s^3 + C_3 L_3}{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_3 L_L R_1 R_L s^3 + C_3 L_3}$$

**10.61 INVALID-ORDER-61**  $Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 L_L}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_3 L_L}$$

$$\mathbf{10.62 \quad INVALID-ORDER-62} \quad Z(s) = \left( R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}$$

$$\mathbf{10.63 \quad INVALID-ORDER-63} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_3 s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}$$

$$\mathbf{10.64 \quad INVALID-ORDER-64} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_3 R_L}{C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 R_L s^3 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o s^2 + C_3 L_3 R_3 s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}$$

$$\mathbf{10.65 \quad INVALID-ORDER-65} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_3 R_L s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L g_m r_o s^2 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_L g_m r_o s^2 + C_3 C_L R_L s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}{C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_3 R_L s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_3 R_L g_m r_o s^2 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_L g_m r_o s^2 + C_3 C_L R_L s^2 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}$$

$$\mathbf{10.66 \quad INVALID-ORDER-66} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_L g_m r_o s^3 + C_3 C_L L_L R_L s^3 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_L g_m r_o s^3 + C_3 C_L L_L R_L s^3 + C_3 R_1 R_3 g_m r_o s + C_3 R_1 R_3 s + C_3 R_3 r_o s + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s + C_L R_3 r_o s + C_L R_3 s}$$

**10.67 INVALID-ORDER-67**  $Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_3 L_L R_1 g_m r_o s^3 + C_3 L_3 L_L R_1 s^3 + C_3 L_3 L_L R_3 s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2}$$

$$10.68 \quad \text{INVALID-ORDER-68} \quad Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C$$

10.69 INVALID-ORDER-69  $Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_3 L_L R_1 R_L s^3 + C_3 L_3}{C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_3 L_L R_1 R_3 s^3 + C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_3 L_L R_1 R_L s^3 + C_3 L_3}$$

**10.70 INVALID-ORDER-70**  $Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}$$

**10.71 INVALID-ORDER-71**  $Z(s) = \left( R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}{C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_3 s^4 + C_3 C_L L_3 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_3 L_L R_1 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_3 L_L R_L s^4}$$

**10.72 INVALID-ORDER-72**  $Z(s) = (L_1s, \infty, R_3, \infty, \infty, R_L)$

$$H(s) = \frac{L_1R_3R_Ls(g_mr_o + 1)}{L_1R_3g_mr_oss + L_1R_3s + L_1R_Lg_mr_oss + L_1R_Ls + R_3R_L + R_3r_o + R_Lr_o}$$

**10.73 INVALID-ORDER-73**  $Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_1R_3s(g_mr_o + 1)(C_LL_Ls^2 + 1)}{C_LL_1L_Lg_mr_oss^3 + C_LL_1L_Ls^3 + C_LL_1R_3g_mr_oss^2 + C_LL_1R_3s^2 + C_LL_LR_3s^2 + C_LL_Lr_oss^2 + C_LR_3r_oss + L_1g_mr_oss + L_1s + R_3 + r_o}$$

**10.74 INVALID-ORDER-74**  $Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$

$$H(s) = \frac{L_1L_LR_3s^2(g_mr_o + 1)}{C_LL_1L_LR_3g_mr_oss^3 + C_LL_1L_LR_3s^3 + C_LL_LR_3r_oss^2 + L_1L_Lg_mr_oss^2 + L_1L_Ls^2 + L_1R_3g_mr_oss + L_1R_3s + L_LR_3s + L_Lr_oss + R_3r_o}$$

**10.75 INVALID-ORDER-75**  $Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_1R_3s(g_mr_o + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{C_LL_1L_Lg_mr_oss^3 + C_LL_1L_Ls^3 + C_LL_1R_3g_mr_oss^2 + C_LL_1R_3s^2 + C_LL_1R_Lg_mr_oss^2 + C_LL_1R_Ls^2 + C_LL_LR_3s^2 + C_LL_Lr_oss^2 + C_LR_3R_Ls + C_LR_3r_oss + C_LR_Lr_oss + L_1g_mr_oss + L_1s + R_L + \frac{1}{C_Ls}}$$

**10.76 INVALID-ORDER-76**  $Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{L_1L_LR_3R_Ls^2(g_mr_o + 1)}{C_LL_1L_LR_3R_Lg_mr_oss^3 + C_LL_1L_LR_3R_Ls^3 + C_LL_LR_3R_Lr_oss^2 + L_1L_LR_3g_mr_oss^2 + L_1L_LR_3s^2 + L_1L_LR_Lg_mr_oss^2 + L_1L_LR_Ls^2 + L_1R_3R_Lg_mr_oss + L_1R_3R_Ls + L_LR_3R_Ls + L_LR_3R_Ls + L_Ls + R_L + \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}}$$

**10.77 INVALID-ORDER-77**  $Z(s) = \left( L_1s, \infty, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1R_3s(g_mr_o + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_LL_1L_LR_3g_mr_oss^3 + C_LL_1L_LR_3s^3 + C_LL_1L_LR_Lg_mr_oss^3 + C_LL_1L_LR_Ls^3 + C_LL_LR_3R_Ls^2 + C_LL_LR_3r_oss^2 + C_LL_LR_Lr_oss^2 + L_1L_Lg_mr_oss^2 + L_1L_Ls^2 + L_1R_3g_mr_oss + L_1R_3s + R_L + \frac{L_Ls}{C_LL_Ls^2 + 1}}$$

$$10.78 \quad \text{INVALID-ORDER-78} \quad Z(s) = \left( L_1 s, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 s^3 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L s^3 + C_L L_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_3 R_L s^2 + C_L L_L R_3 R_L s^2 + C_L L_L R_3 r_o s^2 + C_L L_L R_L r_o s^2 + C_L R_3 R_L s^2 + C_L R_3 r_o s^2 + C_L R_L r_o s^2 + C_L r_o s^2 + 1}$$

$$10.79 \quad \text{INVALID-ORDER-79} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L R_L r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L R_L s + C_L r_o s + 1}$$

$$10.80 \quad \text{INVALID-ORDER-80} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_L r_o s^3 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L r_o s + 1}$$

$$10.81 \quad \text{INVALID-ORDER-81} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + 1)}{C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L s^3 + C_3 L_L r_o s^2 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_L r_o s^2 + L_1 g_m r_o s + L_1 s + L_L s + r_o}$$

$$10.82 \quad \text{INVALID-ORDER-82} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_L r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L R_L s + C_L r_o s + 1}$$

$$\mathbf{10.83 \quad INVALID-ORDER-83} \quad Z(s) = \left( L_1 s, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_L R_L g_m r_o s^3 + C_3 L_1 L_L R_L s^3 + C_3 L_L R_L r_o s^2 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L s^3 + C_L L_L R_L r_o s^2 + L_1 L_L g_m r_o s^2 + L_1 L_L s^2 + L_1 R_L g_m r_o s + L_1 R_L s + L_L R_L s + L_L s}$$

$$\mathbf{10.84 \quad INVALID-ORDER-84} \quad Z(s) = \left( L_1 s, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_L R_L r_o s^3 + C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L s^3 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 L_L r_o s^2 + C_3 R_L r_o s + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L L_L R_L r_o s + C_L L_L s}$$

$$\mathbf{10.85 \quad INVALID-ORDER-85} \quad Z(s) = \left( L_1 s, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_L R_L r_o s^3 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_L r_o s + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L L_L R_L r_o s + C_L L_L s}$$

$$\mathbf{10.86 \quad INVALID-ORDER-86} \quad Z(s) = \left( L_1 s, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L L_L R_L r_o s + C_L L_L s}$$

$$\mathbf{10.87 \quad INVALID-ORDER-87} \quad Z(s) = \left( L_1 s, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_L R_3 r_o s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_L R_3 r_o s + C_L L_L s}$$

**10.88 INVALID-ORDER-88**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_3 s^2 (g_m r_o + 1)}{C_3 L_1 L_L R_3 g_m r_o s^3 + C_3 L_1 L_L R_3 s^3 + C_3 L_L R_3 r_o s^2 + C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 s^3 + C_L L_L R_3 r_o s^2 + L_1 L_L g_m r_o s^2 + L_1 L_L s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s + L_L R_3 s + L_L r_o s}$$

**10.89 INVALID-ORDER-89**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_L R_3 r_o)}{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_L R_3 r_o}$$

**10.90 INVALID-ORDER-90**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_3 R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_L R_3 R_L g_m r_o s^3 + C_3 L_1 L_L R_3 R_L s^3 + C_3 L_L R_3 R_L r_o s^2 + C_L L_1 L_L R_3 R_L g_m r_o s^3 + C_L L_1 L_L R_3 R_L s^3 + C_L L_L R_3 R_L r_o s^2 + L_1 L_L R_3 g_m r_o s^2 + L_1 L_L R_3 s^2 + L_1 L_L R_L g_m r_o s}$$

**10.91 INVALID-ORDER-91**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 L_L R_3 g_m r_o s^3 + C_3 L_1 L_L R_3 s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 L_L R_3 r_o s^2 + C_3 R_3 R_L r_o}{C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 L_L R_3 g_m r_o s^3 + C_3 L_1 L_L R_3 s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 L_L R_3 r_o s^2 + C_3 R_3 R_L r_o}$$

**10.92 INVALID-ORDER-92**  $Z(s) = \left( L_1 s, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{L_1}{C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 R_3 R_L r_o s + C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 s^3 + C_L L_1 L_L R_3}.$$



**10.93 INVALID-ORDER-93**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

**10.94 INVALID-ORDER-94**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + C_L L_1 R_L s}$$

**10.95 INVALID-ORDER-95**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 R_3 s + 1) (C_L R_L s + 1)}{C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 r_o s^2 + C_3 C_L R_L r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o s + C_L L_1 R_L s}$$

**10.96 INVALID-ORDER-96**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 R_3 s + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o s + C_L L_1 L_L s}$$

**10.97 INVALID-ORDER-97**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + 1) (C_3 R_3 s + 1)}{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_L R_3 r_o s^3 + C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_L R_3 s^2 + C_3 L_L r_o s^2 + C_3 R_3 r_o s + C_L L_1 L_L s}$$

**10.98 INVALID-ORDER-98**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 R_3 s + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^3 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 r_o s + C_L L_1 L_L s}$$

**10.99 INVALID-ORDER-99**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{1}{C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 L_L R_3 g_m r_o s^3 + C_3 L_1 L_L R_3 s^3 + C_3 L_1 L_L R_L g_m r_o s^3 + C_3 L_1 L_L R_L s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 s^2 + C_3 R_3 R_L g_m r_o s + C_3 R_3 R_L s + C_3 R_3 s + C_3 s + 1}$$

**10.100 INVALID-ORDER-100**  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L}{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_L R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L}$$

10.101 INVALID-ORDER-101  $Z(s) = \left( L_1 s, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 C_L L_L R_L s^3}{C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L L_L R_3 R_L s^3 + C_3 C_L L_L R_3 r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L R_L r_o s^3 + C_3 C_L L_L R_L s^3}.$$

**10.102 INVALID-ORDER-102**  $Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

**10.103 INVALID-ORDER-103**  $Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_3 r_o s^3 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 L_3 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

$$10.104 \quad \text{INVALID-ORDER-104} \quad Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_L r_o s + C_L L_1 R_L}$$

$$10.105 \quad \text{INVALID-ORDER-105} \quad Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L R_L s + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_L r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 L_3 s^2 + C_3 r_o s + C_L L_1 R_L}$$

$$10.106 \quad \text{INVALID-ORDER-106} \quad Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L r_o s^3 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 L_3 s^2 + C_3 r_o s + C_L L_1 R_L}$$

$$10.107 \quad \text{INVALID-ORDER-107} \quad Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_3 L_L r_o s^4 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L s^3 + C_3 L_3 L_L s^3 + C_3 L_3 r_o s^2 + C_3 L_L r_o s^2 + C_L L_1 L_L R_L}$$

$$10.108 \quad \text{INVALID-ORDER-108} \quad Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L r_o s^2 + C_L L_1 L_L R_L}$$

10.109 INVALID-ORDER-109  $Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_{Ls + \frac{1}{R_L} + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{L}{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L s^4 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_1 L_L R_L g_m r_o s^3 + C_3 L_1 L_L R_L s^3 + C_3 L_1 L_L R_L r_o s^2 + C_3 L_1 L_L R_L s^2 + C_3 L_1 L_L s^2 + C_3 L_1 L_L s + C_3 L_1 L_L}.$$

**10.110 INVALID-ORDER-110**  $Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_L r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3}$$

10.111 INVALID-ORDER-111  $Z(s) = \left( L_1 s, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L s^4}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L s^4}$$

**10.112 INVALID-ORDER-112**  $Z(s) = \left( L_1 s, \infty, \frac{L_{3s}}{C_{L_3 s^2 + 1}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 L_3 R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 R_L r_o s^2 + L_1 L_3 g_m r_o s^2 + L_1 L_3 s^2 + L_1 R_L g_m r_o s + L_1 R_L s + L_3 R_L s + L_3 r_o s + R_L r_o}$$

**10.113 INVALID-ORDER-113**  $Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1)}{C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_3 r_o s^2 + C_L L_1 L_3 g_m r_o s^3 + C_L L_1 L_3 s^3 + C_L L_3 r_o s^2 + L_1 g_m r_o s + L_1 s + L_3 s + r_o}$$

$$10.114 \quad \text{INVALID-ORDER-114} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 L_3 R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 R_L r_o s^2 + C_L L_1 L_3 R_L g_m r_o s^3 + C_L L_1 L_3 R_L s^3 + C_L L_3 R_L r_o s^2 + L_1 L_3 g_m r_o s^2 + L_1 L_3 s^2 + L_1 R_L g_m r_o s + L_1 R_L s + L_3 R_L s + L_3 r_o s}$$

$$10.115 \quad \text{INVALID-ORDER-115} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1) (C_L R_L s + 1)}{C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_3 r_o s^2 + C_L L_1 L_3 g_m r_o s^3 + C_L L_1 L_3 s^3 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L L_3 r_o s}$$

$$10.116 \quad \text{INVALID-ORDER-116} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_3 L_L r_o s^4 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_3 r_o s^2 + C_L L_1 L_3 g_m r_o s^3 + C_L L_1 L_3 s^3 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_3 r_o s}$$

$$10.117 \quad \text{INVALID-ORDER-117} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_3 L_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 L_L g_m r_o s^3 + C_3 L_1 L_3 L_L s^3 + C_3 L_3 L_L r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^3 + C_L L_1 L_3 L_L s^3 + C_L L_3 L_L r_o s^2 + L_1 L_3 g_m r_o s + L_1 L_3 s + L_1 L_L g_m r_o s + L_1 L_L s + L_3 L_L s + L_3 r_o + L_L s}$$

$$10.118 \quad \text{INVALID-ORDER-118} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1)}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_3 r_o s^2 + C_L L_1 L_3 g_m r_o s^3 + C_L L_1 L_3 s^3 + C_L L_3 r_o s}$$

$$10.119 \quad \text{INVALID-ORDER-119} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_3 L_L R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 L_L R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_L s^3 + C_3 L_3 L_L R_L r_o s^2 + C_L L_1 L_3 L_L R_L g_m r_o s^3 + C_L L_1 L_3 L_L R_L s^3 + C_L L_3 L_L R_L r_o s^2 + L_1 L_3 L_L g_m r_o s^2 + L_1 L_3 L_L s^2 + L_1 L_3 R_L g_m r_o s + L_1 L_3 R_L s + L_3 R_L s + L_3 r_o + L_L s}$$

$$10.120 \quad \text{INVALID-ORDER-120} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L s^4 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_L r_o s^3}{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L s^4 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 L_L r_o s^3 + C_3 L_3 R_L r_o s^3}$$

$$10.121 \quad \text{INVALID-ORDER-121} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 R_L r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^4 + C_L L_1 L_3 L_L s^4 + C_L L_1 L_3 R_L g_m r_o s^3 + C_L L_1 L_3 R_L s^3 + C_L L_3 R_L r_o s^2 + C_L R_L r_o s + L_1 g_m r_o s + L_1 s}$$

$$10.122 \quad \text{INVALID-ORDER-122} \quad Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3 R_L r_o s + L_1 g_m r_o s + L_1 s}$$

$$10.123 \quad \text{INVALID-ORDER-123} \quad Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 L_3 s^2 + C_3 R_3 s + C_3 r_o s + C_L L_1 g_m r_o s^3 + C_L L_1 s^3 + C_L R_3 r_o s^2 + C_L R_L r_o s + L_1 g_m r_o s + L_1 s}$$

$$10.124 \quad \text{INVALID-ORDER-124} \quad Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 C_L R_3 R_L r_o s^2 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_3 R_L r_o s^2 + C_3 R_3 R_L r_o s + L_1 g_m r_o s + L_1 s}$$

**10.125 INVALID-ORDER-125**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L R_L s + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_3 R_L s^2 + C_3 C_L R_3 r_o}$$

**10.126 INVALID-ORDER-126**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s^2 + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 C_L L_L r_o s^2}$$

**10.127 INVALID-ORDER-127**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_L R_3 r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 L_L g_m r_o s^3 +$$

**10.128 INVALID-ORDER-128**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m}{C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L L_3 L_L s^4 + C_3 C_L$$

**10.129 INVALID-ORDER-129**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L R_L s^4}{C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 C_L L_L R_3 R_L r_o s^3 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L R_L s^4}.$$

**10.130 INVALID-ORDER-130**  $Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_3 L_L R_L s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L}{\dots}$$

$$\textbf{10.131 INVALID-ORDER-131 } Z(s) = \left( L_1 s, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4}$$

**10.132 INVALID-ORDER-132**  $Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 L_3 R_3 R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_3 R_L s^3 + C_3 L_3 R_3 R_L r_o s^2 + L_1 L_3 R_3 g_m r_o s^2 + L_1 L_3 R_3 s^2 + L_1 L_3 R_L g_m r_o s^2 + L_1 L_3 R_L s^2 + L_1 R_3 R_L g_m r_o s + L_1 R_3 R_L s + L_3 R_3 R_L s + L_3 R_3 s}$$

**10.133 INVALID-ORDER-133**  $Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 L_3 R_3 s^2 (g_m r_o + 1)}{C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 R_3 g_m r_o s^3 + C_L L_1 L_3 R_3 s^3 + C_L L_3 R_3 r_o s^2 + L_1 L_3 g_m r_o s^2 + L_1 L_3 s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s + L_3 R_3 s + L_3 r_o s +}$$

10.134 INVALID-ORDER-134  $Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 L_3 R_3 R_L s^2 (g_m r_o + 1)}{C_3 L_1 L_3 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_3 R_L s^3 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_1 L_3 R_3 R_L g_m r_o s^3 + C_L L_1 L_3 R_3 R_L s^3 + C_L L_3 R_3 R_L r_o s^2 + L_1 L_3 R_3 g_m r_o s^2 + L_1 L_3 R_3 s^2 + L_1 L_3 R_L g_m r_o s^2 +}$$



$$10.135 \quad \text{INVALID-ORDER-135} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 L_L R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 R_3 g_m r_o s^3 + C_L L_1 L_3 R_3 s^3 + C_L L_1 L_3 R_L g_m r_o s^3}{C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 R_3 g_m r_o s^3 + C_L L_1 L_3 R_3 s^3 + C_L L_1 L_3 R_L g_m r_o s^3}$$

$$10.136 \quad \text{INVALID-ORDER-136} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^4 + C_L L_1 L_3 L_L s^4 + C_L L_1 L_3 R_3 g_m r_o s^3}{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^4 + C_L L_1 L_3 L_L s^4 + C_L L_1 L_3 R_3 g_m r_o s^3}$$

$$10.137 \quad \text{INVALID-ORDER-137} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_3 L_L R_3 s^2 (g_m r_o + 1)}{C_3 L_1 L_3 L_L R_3 g_m r_o s^3 + C_3 L_1 L_3 L_L R_3 s^3 + C_3 L_3 L_L R_3 r_o s^2 + C_L L_1 L_3 L_L R_3 g_m r_o s^3 + C_L L_1 L_3 L_L R_3 s^3 + C_L L_3 L_L R_3 r_o s^2 + L_1 L_3 L_L g_m r_o s^2 + L_1 L_3 L_L s^2 + L_1 L_3 R_3 g_m r_o s + L_1 L_3 R_3 s}$$

$$10.138 \quad \text{INVALID-ORDER-138} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3}{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3}$$

$$10.139 \quad \text{INVALID-ORDER-139} \quad Z(s) = \left( L_1 s, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_3 L_L R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_3 R_L s^3 + C_3 L_3 L_L R_3 R_L r_o s^2 + C_L L_1 L_3 L_L R_3 R_L g_m r_o s^3 + C_L L_1 L_3 L_L R_3 R_L s^3 + C_L L_3 L_L R_3 R_L r_o s^2 + L_1 L_3 L_L R_3 g_m r_o s^2 + L_1 L_3 L_L R_3 s^2}{C_3 L_1 L_3 L_L R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_3 R_L s^3 + C_3 L_3 L_L R_3 R_L r_o s^2 + C_L L_1 L_3 L_L R_3 R_L g_m r_o s^3 + C_L L_1 L_3 L_L R_3 R_L s^3 + C_L L_3 L_L R_3 R_L r_o s^2 + L_1 L_3 L_L R_3 g_m r_o s^2 + L_1 L_3 L_L R_3 s^2}$$



$$10.145 \quad \text{INVALID-ORDER-145} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s}{C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 s^4 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_3 R_3 R_L s^3 + C_3 C_L L_3 R_3 r_o s^3 + C_3 C_L L_3 R_L r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + \dots}$$

$$10.146 \quad \text{INVALID-ORDER-146} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 R_3 r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + \dots}$$

$$10.147 \quad \text{INVALID-ORDER-147} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 s}{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 L_1 L_3 L_L g_m r_o s^4 + C_3 L_1 L_3 L_L s^4 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 L_L R_3 s^3 + C_3 L_3 L_L r_o s^3 + \dots}$$

$$10.148 \quad \text{INVALID-ORDER-148} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s}{C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 s^4 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_3 L_L R_3 s^4 + C_3 C_L L_3 L_L r_o s^4 + C_3 C_L L_3 L_L s^4 + \dots}$$

$$10.149 \quad \text{INVALID-ORDER-149} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 s}{C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 R_L s^5 + C_3 C_L L_3 L_L R_3 R_L r_o s^4 + C_3 L_1 L_3 L_L R_3 g_m r_o s^4 + C_3 L_1 L_3 L_L R_3 s^4 + C_3 L_1 L_3 L_L R_L g_m r_o s^4 + C_3 L_1 L_3 L_L R_L s^4 + C_3 L_1 L_3 L_L s^4 + \dots}$$

$$10.150 \quad \text{INVALID-ORDER-150} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^4 + C_3 L_1 L_3 R_3 s^4 + C_3 L_1 L_3 R_L g_m r_o s^4 + C_3 L_1 L_3 R_L s^4 + C_3 L_1 R_3 R_L g_m r_o s^4 + C_3 L_1 R_3 R_L s^4 + C_3 L_1 R_3 r_o s^4 + C_3 L_1 R_L g_m r_o s^4 + C_3 L_1 R_L s^4 + C_3 R_3 R_L g_m r_o s^4 + C_3 R_3 R_L s^4 + C_3 R_3 r_o s^4 + C_3 R_L g_m r_o s^4 + C_3 R_L s^4 + C_3 g_m r_o s^4 + C_3 s^4}{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^4 + C_3 L_1 L_3 R_3 s^4 + C_3 L_1 L_3 R_L g_m r_o s^4 + C_3 L_1 L_3 R_L s^4 + C_3 L_1 R_3 R_L g_m r_o s^4 + C_3 L_1 R_3 R_L s^4 + C_3 L_1 R_3 r_o s^4 + C_3 L_1 R_L g_m r_o s^4 + C_3 L_1 R_L s^4 + C_3 R_3 R_L g_m r_o s^4 + C_3 R_3 R_L s^4 + C_3 R_3 r_o s^4 + C_3 R_L g_m r_o s^4 + C_3 R_L s^4 + C_3 g_m r_o s^4 + C_3 s^4}$$

$$10.151 \quad \text{INVALID-ORDER-151} \quad Z(s) = \left( L_1 s, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^4 + C_3 L_1 L_3 R_3 s^4 + C_3 L_1 L_3 R_L g_m r_o s^4 + C_3 L_1 L_3 R_L s^4 + C_3 L_1 R_3 R_L g_m r_o s^4 + C_3 L_1 R_3 R_L s^4 + C_3 L_1 R_3 r_o s^4 + C_3 L_1 R_L g_m r_o s^4 + C_3 L_1 R_L s^4 + C_3 R_3 R_L g_m r_o s^4 + C_3 R_3 R_L s^4 + C_3 R_3 r_o s^4 + C_3 R_L g_m r_o s^4 + C_3 R_L s^4 + C_3 g_m r_o s^4 + C_3 s^4}{C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_3 s^5 + C_3 C_L L_1 L_3 L_L R_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_L s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 R_L s^4 + C_3 C_L L_3 L_L R_3 r_o s^4 + C_3 C_L L_3 L_L R_L r_o s^4 + C_3 L_1 L_3 R_3 g_m r_o s^4 + C_3 L_1 L_3 R_3 s^4 + C_3 L_1 L_3 R_L g_m r_o s^4 + C_3 L_1 L_3 R_L s^4 + C_3 L_1 R_3 R_L g_m r_o s^4 + C_3 L_1 R_3 R_L s^4 + C_3 L_1 R_3 r_o s^4 + C_3 L_1 R_L g_m r_o s^4 + C_3 L_1 R_L s^4 + C_3 R_3 R_L g_m r_o s^4 + C_3 R_3 R_L s^4 + C_3 R_3 r_o s^4 + C_3 R_L g_m r_o s^4 + C_3 R_L s^4 + C_3 g_m r_o s^4 + C_3 s^4}$$

$$10.152 \quad \text{INVALID-ORDER-152} \quad Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L s^2 + C_3 L_3 R_3 r_o s^2 + C_3 L_3 R_L r_o s^2 + C_3 R_3 R_L r_o s^2 + C_3 R_3 R_L s^2 + C_3 R_3 r_o s^2 + C_3 R_L g_m r_o s^2 + C_3 R_L s^2 + C_3 g_m r_o s^2 + C_3 s^2}$$

$$10.153 \quad \text{INVALID-ORDER-153} \quad Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 s^4 + C_3 C_L L_3 R_3 r_o s^3 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_3 R_3 s^2 + C_3 L_3 r_o s^2 + C_3 R_3 r_o s + C_L L_1 R_3 g_m r_o s + C_L L_1 R_3 s + C_L R_3 g_m r_o s + C_L R_3 s + C_L g_m r_o s + C_L s}$$

$$10.154 \quad \text{INVALID-ORDER-154} \quad Z(s) = \left( L_1 s, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_3}{C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 R_L s^4 + C_3 C_L L_3 R_3 R_L r_o s^3 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 L_1 R_3 r_o s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_3 R_L g_m r_o s^2 + C_3 R_3 R_L s^2 + C_3 R_3 r_o s^2 + C_3 R_L g_m r_o s^2 + C_3 R_L s^2 + C_3 g_m r_o s^2 + C_3 s^2}$$





$$10.165 \quad \text{INVALID-ORDER-165} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_3 s + C_1 r_o s + C_L L_L g_m r_o s^2 + C_L L_L s^2 + C_L R_3 g_m r_o s + C_L R_3 s + C_L R_L g_m r_o s + C_L R_L s}$$

$$10.166 \quad \text{INVALID-ORDER-166} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_3 R_L s (g_m r_o + 1)}{C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_3 R_L s^2 + C_1 L_L R_3 r_o s^2 + C_1 L_L R_L r_o s^2 + C_1 R_3 R_L r_o s + C_L L_L R_3 R_L g_m r_o s^2 + C_L L_L R_3 R_L s^2 + L_L R_3 g_m r_o s + L_L R_3 s + L_L R_L g_m r_o s + L_L R_L s}$$

$$10.167 \quad \text{INVALID-ORDER-167} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_L L_L R_3 g_m r_o s^2 + C_L L_L R_3 s^2 + C_L L_L R_L g_m r_o s^2 + C_L L_L R_L s}$$

$$10.168 \quad \text{INVALID-ORDER-168} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_L L_L R_3 g_m r_o s^2 + C_L L_L R_3 s^2 + C_L L_L R_L g_m r_o s^2 + C_L L_L R_L s}$$

$$10.169 \quad \text{INVALID-ORDER-169} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{g_m r_o + 1}{s (C_1 C_3 r_o s + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

**10.170 INVALID-ORDER-170**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_L R_L s + 1)}{s(C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 r_o s + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L R_L g_m r_o s + C_3 C_L R_L s + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

**10.171 INVALID-ORDER-171**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_L L_L s^2 + 1)}{s(C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L r_o s + C_1 + C_3 C_L L_L g_m r_o s^2 + C_3 C_L L_L s^2 + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

**10.172 INVALID-ORDER-172**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s(g_m r_o + 1)}{C_1 C_3 L_L r_o s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 r_o s + C_3 L_L g_m r_o s^2 + C_3 L_L s^2 + C_L L_L g_m r_o s^2 + C_L L_L s^2 + g_m r_o + 1}$$

**10.173 INVALID-ORDER-173**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_L L_L s^2 + C_L R_L s + 1)}{s(C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L L_L g_m r_o s^2 + C_3 C_L L_L s^2 + C_3 C_L R_L g_m r_o s + C_3 C_L R_L s + C_3 g_m r_o + C_3)}$$

**10.174 INVALID-ORDER-174**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_L s(g_m r_o + 1)}{C_1 C_3 L_L R_L r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_L s^2 + C_1 L_L r_o s^2 + C_1 R_L r_o s + C_3 L_L R_L g_m r_o s^2 + C_3 L_L R_L s^2 + C_L L_L R_L g_m r_o s^2 + C_L L_L R_L s^2 + L_L g_m r_o s + L_L s + R_L g_m r_o + R_L}$$

**10.175 INVALID-ORDER-175**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 R_L s + C_1 r_o s + C_3 C_L L_L R_L g_m r_o s^3 + C_3 C_L L_L R_L s^3 + C_3 L_L g_m r_o s^2 + C_3}$$



$$10.176 \quad \text{INVALID-ORDER-176} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 C_L L_L R_L g_m r_o s^3 + C_3 C_L L_L R_L s^3 + C_3 R_L g_m r_o s + C_3 R_L s + C_L L_L g_m r_o s^2 + C_L L_L R_L s^2 + C_L L_L r_o s^2 + C_L R_L s + C_L r_o s}$$

$$10.177 \quad \text{INVALID-ORDER-177} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_3 s + C_1 r_o s + C_3 C_L R_3 R_L g_m r_o s^2 + C_3 C_L R_3 R_L s^2 + C_3 R_3 g_m r_o s + C_3 R_3 s + C_L R_L g_m r_o s^2 + C_L R_L R_3 s^2 + C_L R_L r_o s^2 + C_L R_3 s + C_L r_o s}$$

$$10.178 \quad \text{INVALID-ORDER-178} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 r_o s^2 + C_1 R_3 s + C_1 r_o s + C_3 C_L L_L R_3 g_m r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 R_3 g_m r_o s + C_3 R_3 s + C_L L_L g_m r_o s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_3 s + C_L r_o s}$$

$$10.179 \quad \text{INVALID-ORDER-179} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1)}{C_1 C_3 L_L R_3 r_o s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 r_o s + C_3 L_L R_3 g_m r_o s^2 + C_3 L_L R_3 s^2 + C_L L_L R_3 g_m r_o s^2 + C_L L_L R_3 s^2 + L_L g_m r_o s + L_L s + R_3 g_m r_o + R_3 s + C_L L_L g_m r_o s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_3 s + C_L r_o s}$$

$$10.180 \quad \text{INVALID-ORDER-180} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_3 s + C_1 r_o s + C_3 C_L L_L R_3 g_m r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 R_3 g_m r_o s + C_3 R_3 s + C_L L_L g_m r_o s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L R_3 s + C_L r_o s}$$

$$10.181 \quad \text{INVALID-ORDER-181} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_3 R_L s^2 + C_1 L_L R_3 r_o s^2 + C_1 L_L R_L r_o s^2 + C_1 R_3 R_L r_o s + C_3 L_L R_3 R_L g_m r_o s^2 + C_3 L_L R_3 R_L s^2 + C_L L_L R_3 R_L g_m r_o s^2 + C_L L_L R_3 R_L s^2}$$

$$10.182 \quad \text{INVALID-ORDER-182} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1)}{C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_3 C_L L_L R_3 R_L g_m r_o s^2 + C_3 C_L L_L R_3 R_L s^2}$$

$$10.183 \quad \text{INVALID-ORDER-183} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1)}{C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_3 C_L L_L R_3 R_L g_m r_o s^2 + C_3 C_L L_L R_3 R_L s^2}$$

$$10.184 \quad \text{INVALID-ORDER-184} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1) (C_3 R_3 s + 1)}{s (C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L r_o s + C_1 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

$$10.185 \quad \text{INVALID-ORDER-185} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 C_L R_3 R_L g_m r_o s^2 + C_3 C_L R_3 R_L s^2 + C_3 R_3 g_m r_o s + C_3 R_3 s + C_3 R_L s}$$

$$10.186 \quad \text{INVALID-ORDER-186} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1)(C_3 R_3 s + 1)(C_L R_L s + 1)}{s(C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 C_L R_L g_m r_o s + C_3 C_L R_L s)}$$

$$10.187 \quad \text{INVALID-ORDER-187} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1)(C_3 R_3 s + 1)(C_L L_L s^2 + 1)}{s(C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L r_o s + C_1 + C_3 C_L L_L g_m r_o s^2 + C_3 C_L L_L s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s)}$$

$$10.188 \quad \text{INVALID-ORDER-188} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L s (g_m r_o + 1)(C_3 R_3 s + 1)}{C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 r_o s + C_3 C_L L_L R_3 g_m r_o s^3 + C_3 C_L L_L R_3 s^3 + C_3 L_L g_m r_o s^2 + C_3 L_L s^2 + C_3 R_3 s}$$

$$10.189 \quad \text{INVALID-ORDER-189} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1)(C_3 R_3 s + 1)(C_L L_L s^2 + C_L R_L s + 1)}{s(C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L L_L R_3 s)}$$

$$10.190 \quad \text{INVALID-ORDER-190} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_L}{C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_L R_3 R_L s^3 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_3 L_L R_L r_o s^3 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_L s^2 + C_1 L_L r_o s^2 + C_1 R_L r_o s + C_3 C_L L_L R_3 R_L s}$$

$$10.191 \quad \text{INVALID-ORDER-191} \quad Z(s) = \left( \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_L R_L}{C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L r_o s^3}$$







**10.208 INVALID-ORDER-208**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_3 L_L s (g_m r_o + 1)}{C_1 C_3 L_3 L_L r_o s^3 + C_1 C_L L_3 L_L r_o s^3 + C_1 L_3 L_L s^2 + C_1 L_3 r_o s + C_1 L_L r_o s + C_3 L_3 L_L g_m r_o s^2 + C_3 L_3 L_L s^2 + C_L L_3 L_L g_m r_o s^2 + C_L L_3 L_L s^2 + L_3 g_m r_o + L_3 + L_L g_m r_o + L_L}$$

**10.209 INVALID-ORDER-209**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 s (g_m r_o + 1) (C_L s + R_L + \frac{1}{C_L s})}{C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 L_L s^4 + C_1 C_L L_3 R_L s^3 + C_1 C_L L_3 r_o s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_L r_o s^2 + C_1 L_3 s^2 + C_1 r_o s + C_3 C_L L_3 L_L g_m r_o s^2 + C_3 C_L L_3 L_L s^2 + C_3 C_L L_3 R_L s^2 + C_3 C_L L_3 r_o s^2 + C_3 C_L L_L s^2 + C_3 C_L R_L s^2 + C_3 C_L r_o s^2 + C_3 C_L s^2 + C_3 C_L}$$

**10.210 INVALID-ORDER-210**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_3 L_L R_L s (g_m r_o + 1)}{C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_3 L_L R_L r_o s^3 + C_1 L_3 L_L R_L s^2 + C_1 L_3 L_L r_o s^2 + C_1 L_3 R_L r_o s + C_1 L_L R_L r_o s + C_3 L_3 L_L R_L g_m r_o s^2 + C_3 L_3 L_L R_L s^2 + C_L L_3 L_L R_L g_m r_o s^2 + C_L L_3 L_L R_L s^2 + C_L L_3 L_L s^2 + C_L L_3 R_L s^2 + C_L L_L s^2 + C_L R_L s^2 + C_L s^2 + C_L}$$

**10.211 INVALID-ORDER-211**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_3 L_L s (g_m r_o + 1) (C_L s + R_L + \frac{1}{C_L s})}{C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_L s^4 + C_1 C_L L_3 L_L r_o s^4 + C_1 C_L L_L R_L r_o s^3 + C_1 L_3 L_L s^3 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 L_L r_o s^2 + C_1 C_L s^2 + C_1 R_L s^2 + C_1 s^2 + C_1}$$

**10.212 INVALID-ORDER-212**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{L_3 R_L s (g_m r_o + 1) (C_L s + R_L + \frac{1}{C_L s})}{C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_L s^4 + C_1 C_L L_3 L_L r_o s^4 + C_1 C_L L_3 R_L r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_L r_o s + C_3 C_L L_3 L_L R_L g_m r_o s^2 + C_3 C_L L_3 L_L s^2 + C_3 C_L L_3 R_L s^2 + C_3 C_L L_3 r_o s^2 + C_3 C_L L_L s^2 + C_3 C_L R_L s^2 + C_3 C_L s^2 + C_3 C_L}$$

**10.213 INVALID-ORDER-213**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 L_3 g_m r_o s^2 + C_3 L_3 s^2 + C_3 R_3 g_m r_o s + C_3 R_3 s + C_3 R_L g_m r_o s + C_3 R_L s + 1}$$

**10.214 INVALID-ORDER-214**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{s (C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L r_o s + C_1 + C_3 C_L L_3 g_m r_o s^2 + C_3 C_L L_3 s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + 1)}$$

**10.215 INVALID-ORDER-215**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_3 C_L L_3 R_L g_m r_o s^2 + C_3 C_L L_3 s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + 1}$$

**10.216 INVALID-ORDER-216**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_L R_L s + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{s (C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L L_3 g_m r_o s^2 + C_3 C_L L_3 s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + 1)}$$

**10.217 INVALID-ORDER-217**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_L L_L s^2 + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{s (C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L r_o s + C_1 + C_3 C_L L_3 g_m r_o s^2 + C_3 C_L L_3 s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + 1)}$$

**10.218 INVALID-ORDER-218**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_3 L_L s^4 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 r_o s + C_3 C_L L_3 L_L g_m r_o s^2 + C_3 C_L L_3 s^2 + C_3 C_L R_3 g_m r_o s + C_3 C_L R_3 s + C_3 g_m r_o + C_3 + 1}$$





$$10.224 \quad \text{INVALID-ORDER-224} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_3 s (g_m r_o + 1)}{C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 L_3 R_3 s^2 + C_1 L_3 r_o s^2 + C_1 R_3 r_o s + C_3 L_3 R_3 g_m r_o s^2 + C_3 L_3 R_3 s^2 + C_L L_3 R_3 g_m r_o s^2 + C_L L_3 R_3 s^2 + L_3 g_m r_o s + L_3 s + R_3 g_m r_o + R_3}$$

$$10.225 \quad \text{INVALID-ORDER-225} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_3 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 L_3 R_3 R_L s^2 + C_1 L_3 R_3 r_o s^2 + C_1 L_3 R_L r_o s^2 + C_1 R_3 R_L r_o s + C_3 L_3 R_3 R_L g_m r_o s^2 + C_3 L_3 R_3 R_L s^2 + C_L L_3 R_3 R_L g_m r_o s^2 + C_L L_3 R_3 R_L s^2}$$

$$10.226 \quad \text{INVALID-ORDER-226} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_3 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 R_3 R_L s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_L r_o s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 L_3 R_3 s^2 + C_1 L_3 r_o s^2 + C_1 R_3 r_o s + C_3 C_L L_3 R_3 R_L g_m r_o s^2 + C_3 C_L L_3 R_3 R_L s^2}$$

$$10.227 \quad \text{INVALID-ORDER-227} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_3 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 L_L R_3 s^4 + C_1 C_L L_3 L_L r_o s^4 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_3 R_3 s^2 + C_1 L_3 r_o s^2 + C_1 R_3 r_o s + C_3 C_L L_3 L_L R_3 g_m r_o s^2 + C_3 C_L L_3 L_L R_3 s^2}$$

$$10.228 \quad \text{INVALID-ORDER-228} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L R_3 s (g_m r_o + 1)}{C_1 C_3 L_3 L_L R_3 r_o s^3 + C_1 C_L L_3 L_L R_3 r_o s^3 + C_1 L_3 L_L R_3 s^2 + C_1 L_3 L_L r_o s^2 + C_1 L_3 R_3 r_o s + C_1 L_L R_3 r_o s + C_3 L_3 L_L R_3 g_m r_o s^2 + C_3 L_3 L_L R_3 s^2 + C_L L_3 L_L R_3 g_m r_o s^2 + C_L L_3 L_L R_3 s^2}$$



**10.234 INVALID-ORDER-234**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 r_o s^3 + C_1 C_L R_3 r_o s^2 + C_1 L_3 s^2 + C_1 R_3 s + C_1 r_o s + C_3 C_L L_3 R_3 g_m r_o s^3 + C_3 C_L L_3 R_3 s^3 + C_3 L_3 g_m r_o s^2 + C_3 L_3 s^2}$$

**10.235 INVALID-ORDER-235**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 R_L r_o s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L s}$$

**10.236 INVALID-ORDER-236**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 R_L s^3 + C_1 C_L L_3 r_o s^3 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2}$$

**10.237 INVALID-ORDER-237**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 L_L s^4 + C_1 C_L L_3 r_o s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 r_o s^2}$$

**10.238 INVALID-ORDER-238**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 L_L r_o s^4 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_3 L_L s^3 + C_1 L_3 r_o s^2 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 s}$$

**10.239 INVALID-ORDER-239**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 R_3 s^2 + L_3 s + R_3)}{C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 L_L s^4 + C_1 C_L L_3 R_L s^3 + C_1 C_L L_3 r_o s^2}$$







**10.255 INVALID-ORDER-255**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 R_3 s (g_m r_o + 1)}{C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 r_o s + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_3 r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o s}$$

**10.256 INVALID-ORDER-256**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L R_3 s^2 + C_L L_L R_3 r_o s^2 + L_L R_1 g_m r_o s + L_L R_1 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o s}$$

**10.257 INVALID-ORDER-257**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_L L_L R_1 R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 R_L s^2 + C_1 L_L R_1 R_3 r_o s^2 + C_1 L_L R_1 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_L L_L R_1 R_3 R_L g_m r_o s^2 + C_L L_L R_1 R_3 R_L s^2 + C_L L_L R_3 R_L r_o s^2 + L_L R_1 R_3 g_m r_o s + L_L R_1 R_3 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o s}$$

**10.258 INVALID-ORDER-258**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_3 R_L r_o s^2 + L_L R_1 R_3 g_m r_o s + L_L R_1 R_3 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o s}$$

**10.259 INVALID-ORDER-259**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_L (L_L s + \frac{1}{C_L s}) (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 s^2 + C_L L_L R_3 R_L r_o s^2 + L_L R_1 R_3 g_m r_o s + L_L R_1 R_3 s + L_L R_3 s + L_L r_o s + R_1 R_3 g_m r_o s}$$



$$10.260 \quad \text{INVALID-ORDER-260} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L R_1 R_L g_m r_o s^2 + C_3 C_L R_1 R_L s^2 + C_3 C_L R_L r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L R_L s}$$

$$10.261 \quad \text{INVALID-ORDER-261} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L s}$$

$$10.262 \quad \text{INVALID-ORDER-262} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1)}{C_1 C_3 L_L R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 r_o s + C_3 L_L R_1 g_m r_o s^2 + C_3 L_L R_1 s^2 + C_3 L_L r_o s^2 + C_L L_L R_1 g_m r_o s^2 + C_L L_L R_1 s^2 + C_L L_L r_o s^2 + L_L s + R_1 g_m r_o + R_1 s}$$

$$10.263 \quad \text{INVALID-ORDER-263} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s)}{C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^3 + C_3 C_L L_L r_o s^3 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L s}$$

$$10.264 \quad \text{INVALID-ORDER-264} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_L r_o s + C_3 L_L R_1 R_L g_m r_o s^2 + C_3 L_L R_1 R_L s^2 + C_3 L_L R_L r_o s^2 + C_L L_L R_1 R_L g_m r_o s^2 + C_L L_L R_1 R_L s^2}$$

$$10.265 \quad \text{INVALID-ORDER-265} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s)}{C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3 C_L L_L r_o s^3 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s + C_L L_L s}$$

10.266 INVALID-ORDER-266  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_1 R_L (g_r}{C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_3 C_L L_L R_1 R_L s^3 + C_3}$$

**10.267 INVALID-ORDER-267**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o}{C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_3 C_L R_1 R_3 R_L q_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C}$$

**10.268 INVALID-ORDER-268**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 R_3 (g_m r_o)}{C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_3 r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_3 r_o s^2 + C_3 C_L L_L R_1 R_3 r_o s + C_3 C_L L_L R_1 R_3}.$$

**10.269 INVALID-ORDER-269**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 R_3 s (g_m r_o + 1)}{C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 r_o s + C_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_L R_1 R_3 s^2 + C_3 L_L R_3 r_o s^2 + C_L L_L R_1 R_3 g_m r_o s^2 + C_L L_L R_1 R_3 r_o s^2 + C_L L_L R_1 R_3 s^2}$$

**10.270 INVALID-ORDER-270**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_3 s}{C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_3 s}$$

10.271 INVALID-ORDER-271  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 R_L s^2 + C_1 L_L R_1 R_3 r_o s^2 + C_1 L_L R_1 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_L R_1 R_3 R_L g_m r_o s^2 + C_3 L_L R_1 R_3 R_L s^2 + C_3 L_L R_1 R_3 R_L r_o s}{C_1 C_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 R_L s^2 + C_1 L_L R_1 R_3 r_o s^2 + C_1 L_L R_1 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_L R_1 R_3 R_L g_m r_o s^2 + C_3 L_L R_1 R_3 R_L s^2 + C_3 L_L R_1 R_3 R_L r_o s}$$

**10.272 INVALID-ORDER-272**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 s^2}{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 s^2}$$

**10.273 INVALID-ORDER-273**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1}{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1}.$$

**10.274 INVALID-ORDER-274**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_3 r_o s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 R_3 s + C_3 r_o s}$$

**10.275 INVALID-ORDER-275**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (g_m r_o)}{C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 C_L R_1 R_3 R_L g_m r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_1 R_3 R_L s}$$

**10.276 INVALID-ORDER-276**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2)}{C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L R_1 R_3 g_m r_o s^2 + C_3 C_L R_1 R_3 s^2}$$

**10.277 INVALID-ORDER-277**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s)}{C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_L R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s}$$

**10.278 INVALID-ORDER-278**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (g C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 r_o s + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_3 r_o s^3)}{C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 r_o s + C_3 C_L L_L R_1 R_3 g_m r_o s^3 + C_3 C_L L_L R_1 R_3 s^3 + C_3 C_L L_L R_1 R_3 r_o s^3}$$

**10.279 INVALID-ORDER-279**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 +$$

10.280 INVALID-ORDER-280  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 R_L s^2 + C_1 R_1 R_3 r_o s^2 + C_1 R_1 L_L s^2 + C_1 R_1 r_o s^2 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 r_o s^2 + C_1 R_3 s^2 + C_1 L_L s^2 + C_1 r_o s^2 + C_1}{C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 R_L s^2 + C_1 R_1 R_3 r_o s^2 + C_1 R_1 L_L s^2 + C_1 R_1 r_o s^2 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 r_o s^2 + C_1 R_3 s^2 + C_1 L_L s^2 + C_1 r_o s^2 + C_1}$$

**10.281 INVALID-ORDER-281**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_3 R_1 R_L r_o s}{C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_3 R_1 R_L r_o s}$$

$$10.282 \quad \text{INVALID-ORDER-282} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3}{C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3}$$

$$10.283 \quad \text{INVALID-ORDER-283} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_1 r_o s + C_3 r_o s}$$

$$10.284 \quad \text{INVALID-ORDER-284} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s}$$

$$10.285 \quad \text{INVALID-ORDER-285} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1)}{C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s}$$

$$10.286 \quad \text{INVALID-ORDER-286} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 L_3 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s}$$

$$10.287 \quad \text{INVALID-ORDER-287} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 + C_L)}{C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_3 L_L s^4 + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_L R_1 s^4 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_1 r_o s^2 + C_3 C_L R_1 r_o s + C_3 C_L R_1}$$

$$10.288 \quad \text{INVALID-ORDER-288} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (g_m r_o + 1) (C_3 + C_L)}{C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 r_o s + C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_L R_1 s^4 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_1 r_o s^2 + C_3 C_L R_1 r_o s + C_3 C_L R_1}$$

$$10.289 \quad \text{INVALID-ORDER-289} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 + C_L)}{C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 r_o s + C_1 C_L R_1}$$

$$10.290 \quad \text{INVALID-ORDER-290} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 + C_L)}{C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 r_o s^2 + C_1 L_L R_1 r_o s + C_1 L_L R_1}$$

$$10.291 \quad \text{INVALID-ORDER-291} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 + C_L)}{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_3 R_1 r_o s + C_1 C_3 R_1}$$

$$\mathbf{10.292 \quad INVALID-ORDER-292} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L r_o s + C_1 C_L L_L R_1 R_L}{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_1 R_L r_o s^2 + C_1 C_L L_L R_1 R_L r_o s + C_1 C_L L_L R_1 R_L}$$

$$\mathbf{10.293 \quad INVALID-ORDER-293} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3 R_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_L r_o s + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2 + L_3 R_1 g_m r_o s + L_3 R_1 s + L_3 R_L s + L_3 r_o s + R_1 R_L g_m r_o s + R_1 R_L s + R_1 R_L r_o s + R_1 R_L}$$

$$\mathbf{10.294 \quad INVALID-ORDER-294} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 L_3 R_1 s^2 + C_1 R_1 r_o s + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_L L_3 R_1 g_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 r_o s^2 + L_3 s + R_1 g_m r_o + R_1 + R_1 r_o + R_1}$$

$$\mathbf{10.295 \quad INVALID-ORDER-295} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_3 R_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_L L_3 R_1 R_L r_o s^3 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_L r_o s + C_3 L_3 R_1 R_L g_m r_o s^2 + C_3 L_3 R_1 R_L s^2 + C_3 L_3 R_L r_o s^2 + C_L L_3 R_1 R_L g_m r_o s^2 + C_L L_3 R_1 s^2 + C_L L_3 r_o s^2 + L_3 s + R_1 g_m r_o + R_1 + R_1 r_o + R_1}$$

$$\mathbf{10.296 \quad INVALID-ORDER-296} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 R_1 R_L s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L R_1 R_L r_o s^2 + C_1 L_3 R_1 s^2 + C_1 R_1 r_o s + C_3 C_L L_3 R_1 R_L g_m r_o s^3 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_1 R_L r_o s^2 + C_3 C_L L_3 R_1 R_L r_o s + C_3 C_L L_3 R_1 R_L}$$

$$\mathbf{10.297 \quad INVALID-ORDER-297} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 L_L R_1 s^4 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_3 R_1 s^2 + C_1 R_1 r_o s + C_3 C_L L_3 L_L R_1 g_m r_o s^4 + C_3 C_L L_3 L_L R_1 s^4 + C_3 C_L L_3 L_L R_1 r_o s^3 + C_3 C_L L_3 L_L R_1 r_o s^2 + C_3 C_L L_3 L_L R_1 r_o s + C_3 C_L L_3 L_L R_1}$$

$$10.298 \quad \text{INVALID-ORDER-298} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L R_1 s (g_m r_o + 1)}{C_1 C_3 L_3 L_L R_1 r_o s^3 + C_1 C_L L_3 L_L R_1 r_o s^3 + C_1 L_3 L_L R_1 s^2 + C_1 L_3 R_1 r_o s + C_1 L_L R_1 r_o s + C_3 L_3 L_L R_1 g_m r_o s^2 + C_3 L_3 L_L R_1 s^2 + C_3 L_3 L_L r_o s^2 + C_L L_3 L_L R_1 g_m r_o s^2 + C_L L_3 L_L R_1 s^2}$$

$$10.299 \quad \text{INVALID-ORDER-299} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 L_L R_1 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 L_L R_1 s^4 + C_1 C_L L_3 R_1 R_L s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_L r_o s^2 + C_1 L_3 R_1 s^2}$$

$$10.300 \quad \text{INVALID-ORDER-300} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_3 L_L R_1 s (g_m r_o + 1)}{C_1 C_3 L_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L r_o s^3 + C_1 L_3 L_L R_1 R_L s^2 + C_1 L_3 L_L R_1 r_o s^2 + C_1 L_3 R_1 R_L r_o s + C_1 L_L R_1 R_L r_o s + C_3 L_3 L_L R_1 R_L g_m r_o s^2 + C_3 L_3 L_L R_1 R_L s^2 + C_3 L_3 L_L R_1 r_o s^2}$$

$$10.301 \quad \text{INVALID-ORDER-301} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_3 L_L R_1 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L s^4 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_3 L_L R_1 s^3 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_1 r_o s^2}$$

$$10.302 \quad \text{INVALID-ORDER-302} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_3 L_L R_1 s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L s^4 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_3 R_1 R_L r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_1 r_o s^2 + C_1 L_3 R_1 s^2}$$



$$\mathbf{10.303 \quad INVALID-ORDER-303} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 L_3 R_1 g_m r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 +}$$

$$\mathbf{10.304 \quad INVALID-ORDER-304} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_3 C_L L_3 R_1 g_m r_o s^3 + C_3 C_L L_3 R_1 s^3 + C_3 C_L L_3 r_o s^3 + C_3 C}$$

$$\mathbf{10.305 \quad INVALID-ORDER-305} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 R_1 R_L s +}$$

$$\mathbf{10.306 \quad INVALID-ORDER-306} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 +}$$

$$\mathbf{10.307 \quad INVALID-ORDER-307} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 +}$$

$$\mathbf{10.308 \quad INVALID-ORDER-308} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 +}$$

**10.309 INVALID-ORDER-309**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 C_L R_1 R_L r_o s^3 -$$

**10.310 INVALID-ORDER-310**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_3 L_L R_1 R_3}.$$

**10.311 INVALID-ORDER-311**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1}{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1}$$

**10.312 INVALID-ORDER-312**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + \dots}{\dots}$$

**10.313 INVALID-ORDER-313**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 L_3 R_1 R_3 R_L s^2 + C_1 L_3 R_1 R_3 r_o s^2 + C_1 L_3 R_1 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + L_3 R_1 R_3 g_m r_o}$$

$$10.314 \quad \text{INVALID-ORDER-314} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 r_o s^3 + C_1 L_3 R_1 R_3 s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_3 r_o s + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_3 r_o s^2 + C_L L_3 R_1 R_3 g_m r_o s^2 + C_L L_3 R_1 R_3 s^2}$$

$$10.315 \quad \text{INVALID-ORDER-315} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L r_o s^3 + C_1 L_3 R_1 R_3 R_L s^2 + C_1 L_3 R_1 R_3 r_o s^2 + C_1 L_3 R_1 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_3 R_1 R_3 R_L g_m r_o s^2 + C_L L_3 R_1 R_3 R_L s^2}$$

$$10.316 \quad \text{INVALID-ORDER-316} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 L_3 R_1 R_3 s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 R_1 R_3 R_L s^2 + C_3 L_3 R_3 R_L r_o s^2 + C_L L_3 R_1 R_3 R_L g_m r_o s^2 + C_L L_3 R_1 R_3 R_L s^2}$$

$$10.317 \quad \text{INVALID-ORDER-317} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 s^4 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_3 R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_3 R_1 R_3 s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_3 L_3 R_1 R_3 R_L g_m r_o s^2 + C_3 L_3 L_L R_1 R_3 s^2 + C_3 L_3 L_L R_1 r_o s^2 + C_L L_3 R_1 R_3 R_L g_m r_o s^2 + C_L L_3 R_1 R_3 R_L s^2}$$

$$10.318 \quad \text{INVALID-ORDER-318} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 r_o s^3 + C_1 L_3 L_L R_1 R_3 s^2 + C_1 L_3 L_L R_1 r_o s^2 + C_1 L_3 R_1 R_3 r_o s + C_1 L_L R_1 R_3 r_o s + C_3 L_3 L_L R_1 R_3 g_m r_o s^2 + C_3 L_3 L_L R_1 R_3 s^2 + C_3 L_3 L_L R_3 r_o s^2 + C_L L_3 R_1 R_3 R_L g_m r_o s^2 + C_L L_3 R_1 R_3 R_L s^2}$$

**10.319 INVALID-ORDER-319**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 s^4 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 R_1}{\dots}$$

10.320 INVALID-ORDER-320  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 L_3 L_L R_1 R_3 R_L s^2 + C_1 L_3 L_L R_1 R_3 r_o s^2 + C_1 L_3 L_L R_1 R_L r_o s^2 + C_1 L_3 R_1 R_3 R_L r_o s + C_1 L_L R_1 R_3 R_L r_o s + C_3 L_3 L_L R_1 R_3 r_o s^3}{C_1 C_3 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 L_3 L_L R_1 R_3 R_L s^2 + C_1 L_3 L_L R_1 R_3 r_o s^2 + C_1 L_3 L_L R_1 R_L r_o s^2 + C_1 L_3 R_1 R_3 R_L r_o s + C_1 L_L R_1 R_3 R_L r_o s + C_3 L_3 L_L R_1 R_3 r_o s^3}$$

**10.321 INVALID-ORDER-321**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L s^4 + C_1 C_L L_3 L_L R_1 R_3 r_o s^4 + C_1 C_L L_3 L_L R_1 R_L r_o s^4 + C_1 C_L L_L R_1 R_3 R_L r_o s^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L s^4 + C_1 C_L L_3 L_L R_1 R_3 r_o s^4 + C_1 C_L L_3 L_L R_1 R_L r_o s^4 + C_1 C_L L_L R_1 R_3 R_L r_o s^4}$$

**10.322 INVALID-ORDER-322**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

**10.323 INVALID-ORDER-323**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (g_{m1} + g_{m2})}{C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_1 r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_3 L_3 R_1 R_3 g_{m1} r_o s^2 + C_3 L_3 R_1 R_3 g_{m2} r_o s^2 + C_3 L_3 R_1 R_3 r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 r_o s^2 + C_3 L_3 R_1 s^2 + C_3 L_3 r_o s^2 + C_3 R_1 R_3 g_{m1} s + C_3 R_1 R_3 g_{m2} s + C_3 R_1 R_3 r_o s + C_3 R_1 R_3 s + C_3 R_1 r_o s + C_3 R_1 s + C_3 r_o s + C_3 s}$$

**10.324 INVALID-ORDER-324**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (g_m)}{C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L R_1 R_3 r_o s^2 + C_1 L_3 R_1 s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3}$$

**10.325 INVALID-ORDER-325**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

**10.326 INVALID-ORDER-326**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 R_1 R_L s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 C_L r_o s^2}{C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 R_1 R_L s^3 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 C_L r_o s^2}$$

**10.327 INVALID-ORDER-327**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_3 L_L R_1 s^4 + C_1 C_L L_3 R_1 r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L$$

**10.328 INVALID-ORDER-328**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_3 L_L R_1 s^3 + C_1 L_3 R_1 r_o s^2 + C_1 L_L R_1 r_o s}{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 r_o s^4 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_3 L_L R_1 s^3 + C_1 L_3 R_1 r_o s^2 + C_1 L_L R_1 r_o s}$$

**10.329 INVALID-ORDER-329**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$\mathbf{10.330 \quad INVALID-ORDER-330} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{R_1 R_3}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L r_o s^4 + C_1 C_L L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 R_L r_o s + C_1 C_L L_L R_1 R_3 R_L r_o}$$

$$\mathbf{10.331 \quad INVALID-ORDER-331} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 R_3}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^2 + C_1 C_3 L_3 R_1 R_L r_o s + C_1 C_3 L_3 R_1 R_L r_o}$$

$$\mathbf{10.332 \quad INVALID-ORDER-332} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_1 R_3}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^2 + C_1 C_3 L_3 R_1 R_L r_o s + C_1 C_3 L_3 R_1 R_L r_o}$$

$$\mathbf{10.333 \quad INVALID-ORDER-333} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_3}{C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L r_o s + C_3 L_3 R_1 R_3 g_m r_o s^2 + C_3 L_3 R_1 R_3 s^2 + C_3 L_3 R_1 R_3 r_o s + C_3 L_3 R_1 R_3 r_o s^2 + C_3 L_3 R_1 R_3 r_o s + C_3 L_3 R_1 R_3 r_o}$$

$$\mathbf{10.334 \quad INVALID-ORDER-334} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 R_3 (g_m r_o + 1)}{C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L R_1 R_3 r_o s^2 + C_1 R_1 R_3 s + C_1 R_1 r_o s + C_3 C_L L_3 R_1 R_3 g_m r_o s^3 + C_3 C_L L_3 R_1 R_3 s^3 + C_3 C_L L_3 R_1 R_3 r_o s^2 + C_3 C_L L_3 R_1 R_3 r_o s + C_3 C_L L_3 R_1 R_3 r_o}$$

10.335 INVALID-ORDER-335  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L}{C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L s + C_1 R_1 R_3 r_o s + C_1 R_1 R_L}$$

**10.336 INVALID-ORDER-336**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2}{C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2}.$$

**10.337 INVALID-ORDER-337**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^2 + C_1 C_L L_L R_1 s^2}{C_1 C_3 C_L L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 s^6 + C_1 C_3 C_L L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_3 R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 s^5 + C_1 C_3 C_L L_L R_1 R_3 s^5 + C_1 C_3 C_L L_L R_1 r_o s^5 + C_1 C_3 C_L L_L R_1 s^5 + C_1 C_3 L_3 R_1 R_3 s^4 + C_1 C_3 L_3 R_1 r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 C_3 L_L R_1 R_3 s^4 + C_1 C_3 L_L R_1 r_o s^4 + C_1 C_3 L_L R_1 s^4 + C_1 C_3 R_1 R_3 s^3 + C_1 C_3 R_1 r_o s^3 + C_1 C_3 R_1 s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_R R_1 R_3 s^2 + C_1 C_L L_R R_1 r_o s^2 + C_1 C_L L_R R_1 s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 s^2 + C_1 C_R R_1 R_3 s + C_1 C_R R_1 r_o s + C_1 C_R R_1 s}.$$

10.338 INVALID-ORDER-338  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 s^2 + C_1 R_1 r_o s^2 + C_1 R_1 s^2}{C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 r_o s^3 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 r_o s^2 + C_1 R_1 R_3 s^2 + C_1 R_1 r_o s^2 + C_1 R_1 s^2}$$

**10.339 INVALID-ORDER-339**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L r_o^2 s^2 + C_1 C_3 C_L R_1 R_3 r_o^2 s^2 + C_1 C_3 C_L R_1 R_3 r_o^3 s + C_1 C_3 C_L R_1 R_3 r_o^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^2 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^3 s^4 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^4 s^3 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^5 s^2 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^6 s + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o^7}.$$

**10.340 INVALID-ORDER-340**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L r_o s^2}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L r_o s^2 + C_1 R_1 R_3 R_L r_o s + C_1 R_1 R_3}.$$

10.341 INVALID-ORDER-341  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3}$$

**10.342 INVALID-ORDER-342**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3}$$

**10.343 INVALID-ORDER-343**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + R_3 g_m r_o + R_3 + R_L g_m r_o + R_L}$$

**10.344 INVALID-ORDER-344**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3(g_m r_o + 1)(C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_3 r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_3 s + C_1 r_o s + C_L L_L}$$



**10.345 INVALID-ORDER-345**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_L R_1 g_m r_o s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_1 R_3 g_m r_o s + C_1 R_1 R_3 s + C_1 R_3 r_o s + C_L L_L R_3 g_m r_o}$$

**10.346 INVALID-ORDER-346**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 R_1 s + 1) (C_L L_L s^2)}{C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3}$$

10.347 INVALID-ORDER-347  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{L_L R_3 R_L s (C_1 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 g_m r_o s^2 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 R_L g_m r_o s^2 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_3 R_L s^2 + C_1 L_L R_3 R_L s)}{C_1 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 g_m r_o s^2 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 R_L g_m r_o s^2 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_3 R_L s^2 + C_1 L_L R_3 R_L s}$$

**10.348 INVALID-ORDER-348**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_1 g_m r_o s^2 + C_1 L_L R_1}{C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_1 g_m r_o s^2 + C_1 L_L R_1}$$

$$10.349 \quad \text{INVALID-ORDER-349} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 C_L r_o s^2 + C_1 C_L s^2 + C_1 C_L}{C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 C_L r_o s^2 + C_1 C_L s^2 + C_1 C_L}$$

**10.350 INVALID-ORDER-350**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)}{s(C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

**10.351 INVALID-ORDER-351**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)(C_L R_L s + 1)}{s(C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3 C_L)}$$

**10.352 INVALID-ORDER-352**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{s(C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 C_L)}$$

**10.353 INVALID-ORDER-353**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (g_m r_o + 1)(C_1 R_1 s + 1)}{C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 r_o s + C_3 L_L g_m r_o s^2 + C_3 L_L}$$

**10.354 INVALID-ORDER-354**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{s(C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L L_L s^2 + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 C_L)}$$

**10.355 INVALID-ORDER-355**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_L s (g_m r_o + 1)(C_1 R_1 s + 1)}{C_1 C_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_L s^3 + C_1 C_3 L_L R_L r_o s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_1 g_m r_o s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_L s^2 + C_1 + C_3 C_L}$$

**10.356 INVALID-ORDER-356**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, \infty, \frac{1}{C_{3s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 R_L s^2 + C_1 C_3 r_o s^2 + C_1 C_3 s^2}{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 R_L s^2 + C_1 C_3 r_o s^2 + C_1 C_3 s^2}$$

10.357 INVALID-ORDER-357  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L}{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L}$$

**10.358 INVALID-ORDER-358**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_3}{C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_3}$$

**10.359 INVALID-ORDER-359**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L R_3 s^3}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L R_3 s^3}$$

**10.360 INVALID-ORDER-360**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

**10.361 INVALID-ORDER-361**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}$$

**10.362 INVALID-ORDER-362**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 g_m r_o s^2 + C_1 L_L R_1 R_3 r_o s^2 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_3 s^2 + C_1 L_L R_3 r_o s + C_1 L_L R_3 + C_1 L_L R_1 + C_1 L_L + C_1 R_1 + C_1 R_3 + C_1 R_L + C_1 g_m r_o + C_1 g_m + C_1 r_o + C_1}{C_1 C_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_L R_1 R_3 g_m r_o s^2 + C_1 L_L R_1 R_3 r_o s^2 + C_1 L_L R_1 R_3 s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_3 s^2 + C_1 L_L R_3 r_o s + C_1 L_L R_3 + C_1 L_L R_1 + C_1 L_L + C_1 R_1 + C_1 R_3 + C_1 R_L + C_1 g_m r_o + C_1 g_m + C_1 r_o + C_1}$$

**10.363 INVALID-ORDER-363**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 k}{\dots}$$

10.364 INVALID-ORDER-364  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 C_L L_L R_3 R_L s^3}{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 C_L L_L R_3 R_L s^3}$$

**10.365 INVALID-ORDER-365**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)(C_3 R_3 s + 1)}{s(C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 C_L R_1)}$$

**10.366 INVALID-ORDER-366**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

**10.367 INVALID-ORDER-367**  $Z(s) = \left(R_1 + \frac{1}{C_{1s}}, \infty, R_3 + \frac{1}{C_{3s}}, \infty, \infty, R_L + \frac{1}{C_{Ls}}\right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)}{s(C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 + C_1 C_3 R_3 + C_1 C_3 R_L + C_3 R_1 + C_3 R_3 + C_3 R_L + 1)}$$

**10.368 INVALID-ORDER-368**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + s(C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s$$

**10.369 INVALID-ORDER-369**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}$$

**10.370 INVALID-ORDER-370**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L L R_1 g_m r_o s^3 + C_1 C_3 C_L L L R_1 s^3 + C_1 C_3 C_L L L R_3 s^3 + C_1 C_3 C_L L L r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s + C_1 C_3 C_L R_1 R_L s + C_1 C_3 C_L R_1 R_L g_m r_o + C_1 C_3 C_L R_1 R_L}{s^4 + C_1 C_3 C_L L L R_1 g_m r_o s^3 + C_1 C_3 C_L L L R_1 s^3 + C_1 C_3 C_L L L R_3 s^3 + C_1 C_3 C_L L L r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s + C_1 C_3 C_L R_1 R_L s + C_1 C_3 C_L R_1 R_L g_m r_o + C_1 C_3 C_L R_1 R_L}$$

10.371 INVALID-ORDER-371  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

**10.372 INVALID-ORDER-372**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 C_L L_L R_L s^4}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 C_L L_L R_L s^4}$$

**10.373 INVALID-ORDER-373**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 C_L L_L R_L s^4}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 C_L L_L R_L s^4}$$

**10.374 INVALID-ORDER-374**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 R_1 s + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 L_3 g_m r_o s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L s + C_3 L_3 r_o s + C_3 L_3 s}$$

**10.375 INVALID-ORDER-375**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_1 R_1 s + 1) (C_3 L_3 s^2 + 1)}{s (C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 L_3 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 C_L L_3 R_1 g_m r_o s^2 + C_3 C_L L_3 R_1 s + C_3 C_L L_3 R_L s + C_3 C_L L_3 r_o s + C_3 C_L L_3 s)}$$

**10.376 INVALID-ORDER-376**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 C_L L_3 R_1 g_m r_o s^2 + C_3 C_L L_3 R_1 s + C_3 C_L L_3 R_L s + C_3 C_L L_3 r_o s + C_3 C_L L_3 s}{C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 C_L L_3 R_1 g_m r_o s^2 + C_3 C_L L_3 R_1 s + C_3 C_L L_3 R_L s + C_3 C_L L_3 r_o s + C_3 C_L L_3 s}$$

$$10.377 \quad \text{INVALID-ORDER-377} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)}{s(C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_1 g_m r_o s^2 + 1)}$$

$$10.378 \quad \text{INVALID-ORDER-378} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)}{s(C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 L_3 s^2 + C_1 C_3 R_1 g_m r_o s^2 + 1)}$$

$$10.379 \quad \text{INVALID-ORDER-379} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_3 L_L s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + 1}$$

$$10.380 \quad \text{INVALID-ORDER-380} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{1}{s(C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_1 g_m r_o s^2 + C_1 C_3 C_L R_1 s^2 + 1)}$$

$$10.381 \quad \text{INVALID-ORDER-381} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L R_L s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + 1}$$

$$10.382 \quad \text{INVALID-ORDER-382} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_L r_o s + C_3 L_3 R_L g_m r_o s^2 + C_3 L_3 s^2 -$$

$$10.383 \quad \text{INVALID-ORDER-383} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_L R_1 R_L s^3 + C_1 C_3 C_L L_L R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_L r_o s + C_3 L_3 R_L g_m r_o s^2 + C_3 L_3 s^2 -$$

$$10.384 \quad \text{INVALID-ORDER-384} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3 R_L s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_L r_o s + C_3 L_3 R_L g_m r_o s^2 + C_3 L_3 s^2 -$$

$$10.385 \quad \text{INVALID-ORDER-385} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3 + C_1 C_L L_3 r_o s^3 + C_1 L_3 s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 r_o s + C_3 L_3 g_m r_o s^2 + C_3 L_3 s^2 -$$

$$10.386 \quad \text{INVALID-ORDER-386} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_3 R_L s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 R_1 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_L s^3 + C_1 C_L L_3 R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_L r_o s + C_3 L_3 R_L g_m r_o s^2 + C_3 L_3 s^2 -$$

$$10.387 \quad \text{INVALID-ORDER-387} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3 + C_1 C_L L_3 R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_L s^2 + C_1 L_3 r_o s^2 + C_1 R_1 R_L g_m r_o s + C_1 R_1 R_L s + C_1 R_L r_o s + C_3 L_3 R_L g_m r_o s^2 + C_3 L_3 s^2 -$$



$$10.388 \quad \text{INVALID-ORDER-388} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 L_L s^4 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 L_L s^4 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3}$$

$$10.389 \quad \text{INVALID-ORDER-389} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 L_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 s^3 + C_1 C_3 L_3 L_L r_o s^3 + C_1 C_L L_3 L_L R_1 g_m r_o s^3 + C_1 C_L L_3 L_L R_1 s^3 + C_1 C_L L_3 L_L r_o s^3 + C_1 L_3 L_L s^2 + C_1 L_3 R_1 g_m r_o s + C_1 L_3 R_1 s + C_1 L_3 r_o}$$

$$10.390 \quad \text{INVALID-ORDER-390} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}$$

$$10.391 \quad \text{INVALID-ORDER-391} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_L s^3 + C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_3 L_L R_1 R_L s^3 + C_1 C_L L_3 L_L R_L r_o s^3 + C_1 L_3 L_L R_1 g_m r_o s^2 + C_1 L_3 L_L R_1 s^2}{C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_L s^3 + C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_3 L_L R_1 R_L s^3 + C_1 C_L L_3 L_L R_L r_o s^3 + C_1 L_3 L_L R_1 g_m r_o s^2 + C_1 L_3 L_L R_1 s^2}$$

$$10.392 \quad \text{INVALID-ORDER-392} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}$$

10.393 INVALID-ORDER-393  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_3 L_L R_1 R_L s^4 + C_1 C_L L_3 L_L R_L r_o s^4 + C_1 C_L L_3 L_L s^4}{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_3 L_L R_1 R_L s^4 + C_1 C_L L_3 L_L R_L r_o s^4 + C_1 C_L L_3 L_L s^4}$$

**10.394 INVALID-ORDER-394**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, \infty, L_3s + R_3 + \frac{1}{C_{3s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 R_1 s + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2}$$

**10.395 INVALID-ORDER-395**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 R_1 s + 1)(C_3 L_3 s + 1)}{s(C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3)}$$

**10.396 INVALID-ORDER-396**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}{C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3}$$

**10.397 INVALID-ORDER-397**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s + C_1 C_3 C_L R_1 R_L s}{s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s + C_1 C_3 C_L R_1 R_L s}$$

**10.398 INVALID-ORDER-398**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L$$

**10.399 INVALID-ORDER-399**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_3 L_L s^4 + C_1 C_3 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 C_3 L_3 r_o s^4 + C_1 C_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_3 L_L s^3 + C_1 C_3 R_1 g_m r_o s^2 + C_1 C_3 R_1 s^2 + C_1 C_3 r_o s^2 + C_1 C_3 s^2 + C_1 C_L L_3 L_L R_1 g_m r_o s + C_1 C_L L_3 L_L R_1 s + C_1 C_L L_3 L_L r_o s + C_1 C_L L_L R_1 R_3 g_m r_o + C_1 C_L L_L R_1 R_3 + C_1 C_L L_L R_3 r_o + C_1 C_L L_L R_3 + C_1 C_L L_L r_o + C_1 C_L L_L + C_1 C_L R_1 g_m r_o + C_1 C_L R_1 + C_1 C_L r_o + C_1 C_L + C_1 R_1 g_m r_o + C_1 R_1 + C_1 r_o + C_1 + g_m r_o + 1}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_3 s^4 + C_1 C_3 C_L L_L r_o s^4 + C_1 C_3 C_L L_L s^4 + C_1 C_3 C_L R_1 g_m r_o s^3 + C_1 C_3 C_L R_1 s^3 + C_1 C_3 C_L R_3 r_o s^3 + C_1 C_3 C_L R_3 s^3 + C_1 C_3 C_L r_o s^3 + C_1 C_3 C_L s^3 + C_1 C_3 C_R g_m r_o s^2 + C_1 C_3 C_R s^2 + C_1 C_3 C r_o s^2 + C_1 C_3 C s^2 + C_1 C_C L_3 L_L R_1 g_m r_o s + C_1 C_C L_3 L_L R_1 s + C_1 C_C L_3 L_L r_o s + C_1 C_C L_L R_1 R_3 g_m r_o + C_1 C_C L_L R_1 R_3 + C_1 C_C L_L R_3 r_o + C_1 C_C L_L R_3 + C_1 C_C L_L r_o + C_1 C_C L_L + C_1 C_C R_1 g_m r_o + C_1 C_C R_1 + C_1 C_C r_o + C_1 C_C + C_1 C_R g_m r_o + C_1 C_R + C_1 C r_o + C_1 C + C_1 g_m r_o + C_1 + 1}$$

**10.400 INVALID-ORDER-400**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L R_3 r_o s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L R_3 r_o s^3}{s^4 + C_1 C_3 C_L L_3 L_L s^3 + C_1 C_3 C_L L_3 R_1 g_m r_o s^2 + C_1 C_3 C_L L_3 R_1 s^2 + C_1 C_3 C_L L_3 R_L s^2 + C_1 C_3 C_L L_3 r_o s^2 + C_1 C_3 C_L L_L R_1 g_m r_o s^2 + C_1 C_3 C_L L_L R_1 s^2 + C_1 C_3 C_L L_L R_3 s^2 + C_1 C_3 C_L L_L R_3 r_o s^2 + C_1 C_3 C_L L_L R_3 s^2 + C_1 C_3 C_L L_L R_3 r_o s^2}$$

10.401 INVALID-ORDER-401  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_3 L_L R_L r_o s^4 + C_1 C_3 L_3 L_L R_L s^4}{C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_3 L_L R_L r_o s^4 + C_1 C_3 L_3 L_L R_L s^4}$$

**10.402 INVALID-ORDER-402**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1$$

**10.403 INVALID-ORDER-403**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L L_3 R_L s^4}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L L_3 R_L s^4}$$

10.404 INVALID-ORDER-404  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_3 R_3 R_L s (g_m r_o)}{C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 L_3 R_1 R_3 g_m r_o s^2 + C_1 L_3 R_1 R_3 s^2 + C_1 L_3 R_1 R_L g_m r_o s^2 + C_1 L_3 R_1 R_L s^2 + C_1 L_3 R_3 R_L s^2 + C_1 L_3 R_3 r_o s}$$

10.405 INVALID-ORDER-405  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_3 s (g_m r_o + 1) (C_1 R_1 s + 1)}{C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 L_3 R_3 s^2 + C_1 L_3 r_o s^2}$$

10.406 INVALID-ORDER-406  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 L_3 R_1 R_3 g_m r_o s^2 + C_1 L_3 R_1 R_3 s^2 + C_1 L_3 R_1 R_3 s + C_1 R_1 R_3}.$$

10.407 INVALID-ORDER-407  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3}{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3}$$

10.408 INVALID-ORDER-408  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_3 L_L R_1 R_3 s^4 + C_1 C_L L_3 L_L R_3 r_o s^4 + C_1 C_L L_3 L_L s^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_3 L_L R_1 R_3 s^4 + C_1 C_L L_3 L_L R_3 r_o s^4 + C_1 C_L L_3 L_L s^4}.$$

10.409 INVALID-ORDER-409  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_3 s^3 + C_1 C_3 L_3 L_L R_3 r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 s^3 + C_1 C_L L_3 L_L R_3 r_o s^3 + C_1 L_3 L_L R_1 g_m r_o s^2 + C_1 L_3 L_L R_1}$$

10.410 INVALID-ORDER-410  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 R_L s^4}$$

10.411 INVALID-ORDER-411  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 L_L R_1 R_3 R_L s^3 + C_1 C_L L_3 L_L R_3 R_L r_o s^3 + C_1 L_3 L_L R_1 R_3 R_L}.$$

10.412 INVALID-ORDER-412  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 I}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 I}$$

**10.413 INVALID-ORDER-413**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 L_L R_1}$$

**10.414 INVALID-ORDER-414**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 +}$$

**10.415 INVALID-ORDER-415**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3}{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3}$$

**10.416 INVALID-ORDER-416**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_3 R_L s^3}{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_3 R_L s^3}$$

**10.417 INVALID-ORDER-417**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_3 R$$

$$10.418 \quad \text{INVALID-ORDER-418} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}$$

$$10.419 \quad \text{INVALID-ORDER-419} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}$$

$$10.420 \quad \text{INVALID-ORDER-420} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}$$

$$10.421 \quad \text{INVALID-ORDER-421} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}$$

$$10.422 \quad \text{INVALID-ORDER-422} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5}$$

**10.423 INVALID-ORDER-423**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L s^5 + C_1 C_3 C_L L_3 s^5 + C_1 C_3 C_L L_3 s^5 + C_1 C_3 C_L s^5 + C_1 C_3 s^5 + C_1 s^5 + 1}$$

**10.424 INVALID-ORDER-424**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_1 s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 s^2 + C_1 C_3 R_L s^2 + C_1 C_3 s^2 + C_1 C_3}.$$

**10.425 INVALID-ORDER-425**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2}$$

$$\text{10.426 INVALID-ORDER-426 } Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_3 R_L s^3}{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_3 R_L s^3}$$

10.427 INVALID-ORDER-427  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L s^4 + C_1 C_3 C_L R_1 R_3 s^4 + C_1 C_3 C_L R_1 R_L s^4 + C_1 C_3 C_L R_3 R_L s^4 + C_1 C_3 C_L R_3 r_o s^4 + C_1 C_3 C_L R_L r_o s^4 + C_1 C_3 C_L s^4 + C_1 C_3 R_1 R_3 R_L s^4 + C_1 C_3 R_1 R_3 s^4 + C_1 C_3 R_1 R_L s^4 + C_1 C_3 R_3 R_L s^4 + C_1 C_3 R_3 r_o s^4 + C_1 C_3 R_L r_o s^4 + C_1 C_3 s^4 + C_1 R_1 R_3 R_L s^4 + C_1 R_1 R_3 s^4 + C_1 R_1 R_L s^4 + C_1 R_3 R_L s^4 + C_1 R_3 r_o s^4 + C_1 R_L r_o s^4 + C_1 s^4 + R_1 R_3 R_L s^4 + R_1 R_3 s^4 + R_1 R_L s^4 + R_3 R_L s^4 + R_3 r_o s^4 + R_L r_o s^4 + s^4}.$$



10.428 INVALID-ORDER-428  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_3 s^4}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_3 s^4}$$

**10.429 INVALID-ORDER-429**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_3}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L r_o s^4 + C_1 C_3 L_3 R_1 R_3}$$

10.430 INVALID-ORDER-430  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4}{C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4}$$

10.431 INVALID-ORDER-431  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L s^4}{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L s^4}$$

**10.432 INVALID-ORDER-432**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L s^5}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L s^5}$$

$$10.433 \quad \text{INVALID-ORDER-433} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5}{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5}$$

$$10.434 \quad \text{INVALID-ORDER-434} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L R_3 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + g_m r_o + 1}$$

$$10.435 \quad \text{INVALID-ORDER-435} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_3 R_L s + C_1 R_3 r_o s + C_1 R_L r_o s + C_L R_3 R_L g_m r_o s + C_L R_3 R_L s + R_3 R_L}$$

$$10.436 \quad \text{INVALID-ORDER-436} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + R_3}$$

$$10.437 \quad \text{INVALID-ORDER-437} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s + C_L R_3 s + R_3}$$

**10.438 INVALID-ORDER-438**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_L R_3 s^2 + C_1 L_L r_o s^2 + C_1 R_3 r_o s + C_L L_L R_3}$$

**10.439 INVALID-ORDER-439**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L L_L s + R_L + \frac{1}{C_L s})}{C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 r_o s + C_L L_L R_3}$$

**10.440 INVALID-ORDER-440**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_3 R_L s (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_1 L_L R_3 g_m r_o s^3 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L R_L g_m r_o s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_3 R_L g_m r_o s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_L R_3 R_L r_o s + C_L L_L R_3 R_L}$$

**10.441 INVALID-ORDER-441**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L L_L s + R_L + \frac{1}{C_L s})}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_3 R_L g_m r_o s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_L R_3 R_L r_o s + C_L L_L R_3 R_L}$$

**10.442 INVALID-ORDER-442**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_L (L_L s + \frac{1}{C_L s}) (C_1 L_1 s^2 + 1) (C_L L_L s + R_L + \frac{1}{C_L s})}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_3 R_L g_m r_o s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_L R_3 R_L r_o s + C_L L_L R_3 R_L}$$

**10.443 INVALID-ORDER-443**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s + g_m r_o + 1}$$

**10.444 INVALID-ORDER-444**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_1 L_1 s^2 + 1)}{s (C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L g_m r_o + C_L)}$$

**10.445 INVALID-ORDER-445**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s + C_3 R_L s}$$

**10.446 INVALID-ORDER-446**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{s (C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_L s + C_1 C_L r_o s + C_1 + C_3)}$$

**10.447 INVALID-ORDER-447**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{s (C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L L_L s^2 + C_1 C_L r_o s + C_1 + C_3)}$$

**10.448 INVALID-ORDER-448**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 L_L g_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_L r_o s^3 + C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L r_o s^3 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 L_L s^2 + C_1 r_o s + C_3 L_L g_m r_o s^2 + C_3 L_L s^2}$$

**10.449 INVALID-ORDER-449**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(g_mr_o + 1)(C_1L_1s^2 + 1)(C_1L_1R_Ls + R_L)}{s(C_1C_3C_LL_1L_Lg_mr_oss^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_Lg_mr_oss^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_R_oss^3 + C_1C_3C_LR_oss^2 + C_1C_3L_1g_mr_oss^2 + C_1C_3L_1s^2 + C_1C_3r_oss + C_1C_3R_oss)}$$

**10.450 INVALID-ORDER-450**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{L_LR_Ls(g_mr_o + 1)(C_1L_1R_Ls + R_L)}{C_1C_3L_1L_LR_Lg_mr_oss^4 + C_1C_3L_1L_LR_Ls^4 + C_1C_3L_LR_Lr_oss^3 + C_1C_LL_1L_LR_Lg_mr_oss^4 + C_1C_LL_1L_LR_Ls^4 + C_1C_LL_LR_Lr_oss^3 + C_1L_1L_Lg_mr_oss^3 + C_1L_1L_Ls^3 + C_1L_1R_Lg_mr_oss^2}$$

**10.451 INVALID-ORDER-451**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$

$$H(s) = \frac{L_LR_Ls(g_mr_o + 1)(C_1L_1R_Ls + R_L)}{C_1C_3C_LL_1L_LR_Lg_mr_oss^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_LR_Lr_oss^4 + C_1C_3L_1L_Lg_mr_oss^4 + C_1C_3L_1L_Ls^4 + C_1C_3L_1R_Lg_mr_oss^3 + C_1C_3L_1R_Ls^3 + C_1C_3L_R_oss^3 + C_1C_3R_Lr_oss^2 + C_1C_3R_Ls^2 + C_1C_LL_1L_Lg_mr_oss^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1R_Lg_mr_oss^3}$$

**10.452 INVALID-ORDER-452**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s}, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$

$$H(s) = \frac{R_LR_L(g_mr_o + 1)(C_1L_1s^2 + 1)}{C_1C_3C_LL_1L_LR_Lg_mr_oss^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_LR_Lr_oss^4 + C_1C_3L_1R_Lg_mr_oss^3 + C_1C_3L_1R_Ls^3 + C_1C_3R_Lr_oss^2 + C_1C_LL_1L_Lg_mr_oss^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1R_Lg_mr_oss^3}$$

**10.453 INVALID-ORDER-453**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{R_3}{C_3R_3s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3R_L(g_mr_o + 1)(C_1L_1s^2 + 1)}{C_1C_3L_1R_3R_Lg_mr_oss^3 + C_1C_3L_1R_3R_Ls^3 + C_1C_3R_3R_Lr_oss^2 + C_1L_1R_3g_mr_oss^2 + C_1L_1R_3s^2 + C_1L_1R_Lg_mr_oss^2 + C_1L_1R_Ls^2 + C_1R_3R_Ls + C_1R_3r_oss + C_1R_Lr_oss + C_3R_3R_Lg_mr_oss}$$

**10.454 INVALID-ORDER-454**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L R_3 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_3 s + C_1 r_o s + C_3 R_3 g_m r_o s + C_3 R_3 s + 1}$$

**10.455 INVALID-ORDER-455**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L R_3 R_L r_o s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + 1}$$

**10.456 INVALID-ORDER-456**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^2 + 1}$$

**10.457 INVALID-ORDER-457**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_3 r_o s^2 + 1}$$

**10.458 INVALID-ORDER-458**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_3 g_m r_o s^2 + 1}$$

**10.459 INVALID-ORDER-459**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + 1}$$

10.460 INVALID-ORDER-460  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_1 L_L R_3 g_m r_o s^3 + C_1 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 L_1 L_L R_3 R_L s^4 + C_1 L_1 L_L R_3 R_L r_o s^3}{C_1 C_3 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_1 L_L R_3 g_m r_o s^3 + C_1 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 L_1 L_L R_3 R_L s^4 + C_1 L_1 L_L R_3 R_L r_o s^3}$$

**10.461 INVALID-ORDER-461**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1}{\dots}$$

10.462 INVALID-ORDER-462  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^3 + C_1 C_L L_1 L_L R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 R_L s^2 + C_1 C_L L_1 L_L R_3 R_L r_o s + C_1 C_L L_1 L_L R_3 R_L s + C_1 C_L L_1 L_L R_3 R_L r_o}{C_1 C_3 C_L L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^3 + C_1 C_L L_1 L_L R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 R_L s^2 + C_1 C_L L_1 L_L R_3 R_L r_o s + C_1 C_L L_1 L_L R_3 R_L s + C_1 C_L L_1 L_L R_3 R_L r_o}$$

**10.463 INVALID-ORDER-463**  $Z(s) = \left( L_1 s + \frac{1}{C_{1s}}, \infty, R_3 + \frac{1}{C_{3s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_3 R_3 s + 1)}{C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_3 R_3}$$

**10.464 INVALID-ORDER-464**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 L_1 s^2 + 1)(C_3 R_3 s + 1)}{s(C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 R_3 s + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L r_o s + C_1 + C_3 C_L)}$$

**10.465 INVALID-ORDER-465**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s}$$

**10.466 INVALID-ORDER-466**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 L_1 s^2 + C_1 C_3 C_L R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 R_3 s^2)}{s(C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_3 R_L s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 R_3 s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 L_1 s^2)}$$

**10.467** **INVALID-ORDER-467**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 L_1 s^2}{s(C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s$$

**10.468 INVALID-ORDER-468**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L g_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_L R_3 s^3 + C_1 C_3 L_L r_o s}$$

**10.469 INVALID-ORDER-469**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L L_L s^3}{s(C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_L R_3 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L L_L s^3)}$$



10.470 INVALID-ORDER-470  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

**10.471 INVALID-ORDER-471**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_L R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_1$$

**10.472 INVALID-ORDER-472**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

**10.473 INVALID-ORDER-473**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_3 L_3 g_m r_o s + C_3 L_3 s + C_3 R_L + C_3 r_o}$$

**10.474 INVALID-ORDER-474**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 L_1 s^2 + 1)(C_3 L_3 s^2 + 1)}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L r_o s + C_1 + C_3 C_L)}$$

**10.475 INVALID-ORDER-475**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_1R_Lg_mr_os^3 + C_1C_3L_1R_Ls^3 + C_1C_3L_3R_Ls^3 + C_1C_3L_3r_os^3}{s(C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_Lg_mr_os^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3r_os^3 + C_1C_3C_LL_R_Lr_os^2 + C_1C_3L_1g_mr_os^2 + C_1C_3L_1s^2)}$$

**10.476 INVALID-ORDER-476**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(g_mr_o + 1)(C_1L_1s^2)}{s(C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_Lg_mr_os^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3r_os^3 + C_1C_3C_LL_R_Lr_os^2 + C_1C_3L_1g_mr_os^2 + C_1C_3L_1s^2)}$$

**10.477 INVALID-ORDER-477**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(g_mr_o + 1)(C_1L_1s^2)}{s(C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_3L_Ls^4 + C_1C_3C_LL_3r_os^3 + C_1C_3C_LL_R_Lr_os^3 + C_1C_3L_1g_mr_os^2 + C_1C_3L_1s^2)}$$

**10.478 INVALID-ORDER-478**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_Ls^6 + C_1C_3C_LL_3L_Lr_os^5 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_1L_Lg_mr_os^4 + C_1C_3L_1L_Ls^4 + C_1C_3L_3L_Ls^4 + C_1C_3L_3r_os^3}{s(C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_Lg_mr_os^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3L_Ls^4 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3r_os^3)}$$

**10.479 INVALID-ORDER-479**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_Lg_mr_os^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3L_Ls^4 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3r_os^3}{s(C_1C_3C_LL_1L_3g_mr_os^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_Lg_mr_os^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3L_Ls^4 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3r_os^3)}$$



**10.485 INVALID-ORDER-485**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{L_3R_Ls(g_mr_o+1)(C_1L_1s^2 + C_1C_3L_1L_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_Ls^4 + C_1C_3L_3R_Lr_os^3 + C_1C_LL_1L_3R_Lg_mr_os^4 + C_1C_LL_1L_3R_Ls^4 + C_1C_LL_3R_Lr_os^3 + C_1L_1L_3g_mr_os^3 + C_1L_1L_3s^3 + C_1L_1R_Lg_mr_os^2 + C_1L_1R_Ls^2 + C_1L_1R_Lr_os)}{C_1C_3L_1L_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_Ls^4 + C_1C_3L_3R_Lr_os^3 + C_1C_LL_1L_3R_Lg_mr_os^4 + C_1C_LL_1L_3R_Ls^4 + C_1C_LL_3R_Lr_os^3 + C_1L_1L_3g_mr_os^3 + C_1L_1L_3s^3 + C_1L_1R_Lg_mr_os^2 + C_1L_1R_Ls^2 + C_1L_1R_Lr_os}$$

**10.486 INVALID-ORDER-486**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_3R_Ls(g_mr_o+1)(C_1L_1s^2 + C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1R_Lg_mr_os^4 + C_1C_LL_1R_Ls^4 + C_1C_LL_1R_Lr_os)}{C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1R_Lg_mr_os^4 + C_1C_LL_1R_Ls^4 + C_1C_LL_1R_Lr_os}$$

**10.487 INVALID-ORDER-487**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_3L_Ls(g_mr_o+1)(C_1L_1s^2 + C_1C_3C_LL_1L_3L_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_Ls^6 + C_1C_3C_LL_3L_Lr_os^5 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1L_Lg_mr_os^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1L_Lr_os)}{C_1C_3C_LL_1L_3L_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_Ls^6 + C_1C_3C_LL_3L_Lr_os^5 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1L_Lg_mr_os^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1L_Lr_os}$$

**10.488 INVALID-ORDER-488**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_3L_Ls(g_mr_o+1)(C_1L_1s^2 + C_1C_3L_1L_3L_Lg_mr_os^4 + C_1C_3L_1L_3L_Ls^4 + C_1C_3L_3L_Lr_os^3 + C_1C_LL_1L_3L_Lg_mr_os^4 + C_1C_LL_1L_3L_Ls^4 + C_1C_LL_3L_Lr_os^3 + C_1L_1L_3g_mr_os^2 + C_1L_1L_3s^2 + C_1L_1L_Lg_mr_os^2 + C_1L_1L_Ls^2 + C_1L_1L_Lr_os)}{C_1C_3L_1L_3L_Lg_mr_os^4 + C_1C_3L_1L_3L_Ls^4 + C_1C_3L_3L_Lr_os^3 + C_1C_LL_1L_3L_Lg_mr_os^4 + C_1C_LL_1L_3L_Ls^4 + C_1C_LL_3L_Lr_os^3 + C_1L_1L_3g_mr_os^2 + C_1L_1L_3s^2 + C_1L_1L_Lg_mr_os^2 + C_1L_1L_Ls^2 + C_1L_1L_Lr_os}$$

**10.489 INVALID-ORDER-489**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_3R_Ls(g_mr_o+1)(C_1L_1s^2 + C_1C_3C_LL_1L_3L_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_Ls^6 + C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_3L_Lr_os^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1L_Lg_mr_os^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1L_Lr_os)}{C_1C_3C_LL_1L_3L_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_Ls^6 + C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_3L_Lr_os^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3r_os^3 + C_1C_LL_1L_3g_mr_os^4 + C_1C_LL_1L_3s^4 + C_1C_LL_1L_Lg_mr_os^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1L_Lr_os}$$

10.490 INVALID-ORDER-490  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^4 + C_1 C_L L_3 L_L R_L r_o s^3 + C_1 L_1 L_3 L_L g_m r_o s^3 + C_1 L_1 L_3 L_L R_L s^4}{C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^4 + C_1 C_L L_3 L_L R_L r_o s^3 + C_1 L_1 L_3 L_L g_m r_o s^3 + C_1 L_1 L_3 L_L R_L s^4}$$

**10.491 INVALID-ORDER-491**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 L_L R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_L s^3 + C_1 C_3 L_L R_L g_m r_o s^2 + C_1 C_3 L_L R_L s^2 + C_1 C_3 R_L g_m r_o s + C_1 C_3 R_L s}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 L_L R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_L s^3 + C_1 C_3 L_L R_L g_m r_o s^2 + C_1 C_3 L_L R_L s^2 + C_1 C_3 R_L g_m r_o s + C_1 C_3 R_L s}$$

10.492 INVALID-ORDER-492  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^5 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L R_L r_o s^4 + C_1 C_L L_3 L_L g_m r_o s^3 + C_1 C_L L_3 L_L R_L s^3 + C_1 C_L L_3 L_L R_L r_o s^2 + C_1 C_L L_3 L_L R_L s^2 + C_1 C_L L_3 L_L R_L r_o s + C_1 C_L L_3 L_L R_L s + C_1 C_L L_3 L_L R_L r_o}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^5 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L R_L r_o s^4 + C_1 C_L L_3 L_L g_m r_o s^3 + C_1 C_L L_3 L_L R_L s^3 + C_1 C_L L_3 L_L R_L r_o s^2 + C_1 C_L L_3 L_L R_L s^2 + C_1 C_L L_3 L_L R_L r_o s + C_1 C_L L_3 L_L R_L s + C_1 C_L L_3 L_L R_L r_o}.$$

**10.493 INVALID-ORDER-493**  $Z(s) = \left( L_1 s + \frac{1}{C_{1s}}, \infty, L_3 s + R_3 + \frac{1}{C_{3s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2}$$

**10.494 INVALID-ORDER-494**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_1 L_1 s^2 + 1)(C_3 L_3 s^2 + 1)}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 s^2)}$$

**10.495 INVALID-ORDER-495**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 r_o s^3}{C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 r_o s^3}$$

**10.496 INVALID-ORDER-496**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1$$

**10.497 INVALID-ORDER-497**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_3 s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_3 s^3)}$$

**10.498 INVALID-ORDER-498**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^{2+1}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4}$$

**10.499 INVALID-ORDER-499**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3)}$$

$$10.500 \quad \text{INVALID-ORDER-500} \quad Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_LR_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_3R_Ls^5 + C_1C_3C_LL_3L_LR_Lr_os^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_LR_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_3R_Ls^5 + C_1C_3C_LL_1L_LR_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_3L_LR_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}$$

$$10.501 \quad \text{INVALID-ORDER-501} \quad Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_1L_LR_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_3L_LR_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_1L_LR_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_3L_LR_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}$$

$$10.502 \quad \text{INVALID-ORDER-502} \quad Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_1L_LR_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_3L_LR_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}{C_1C_3C_LL_1L_3L_LR_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_1L_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_1L_LR_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_Ls^5 + C_1C_3C_LL_3L_LR_Ls^5 + C_1C_3C_LL_3R_Lr_os^4 + C_1C_3L_1L_3L_LR_Lr_os^4 + C_1C_3L_1L_3L_LR_Ls^4 + C_1C_3L_1L_3L_LR_Ls^3 + C_1C_3L_1L_3L_LR_Ls^2 + C_1C_3L_1L_3L_LR_Ls + C_1C_3L_1L_3L_LR_L}$$

$$10.503 \quad \text{INVALID-ORDER-503} \quad Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3R_3R_Ls(g_mr_o + 1)(C_1L_1s^2 + 1)}{C_1C_3L_1L_3R_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_3R_Ls^4 + C_1C_3L_3R_3R_Lr_os^3 + C_1L_1L_3R_3g_mr_os^3 + C_1L_1L_3R_3s^3 + C_1L_1L_3R_Lg_mr_os^3 + C_1L_1L_3R_Ls^3 + C_1L_1R_3R_Lg_mr_os^2 + C_1L_1R_3R_Ls^2 + C_1L_1R_3R_Lr_os + C_1L_1R_3R_Ls + C_1L_1R_3R_L}{C_1C_3L_1L_3R_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_3R_Ls^4 + C_1C_3L_3R_3R_Lr_os^3 + C_1L_1L_3R_3g_mr_os^3 + C_1L_1L_3R_3s^3 + C_1L_1L_3R_Lg_mr_os^3 + C_1L_1L_3R_Ls^3 + C_1L_1R_3R_Lg_mr_os^2 + C_1L_1R_3R_Ls^2 + C_1L_1R_3R_Lr_os + C_1L_1R_3R_Ls + C_1L_1R_3R_L}$$

$$10.504 \quad \text{INVALID-ORDER-504} \quad Z(s) = \left( L_1s + \frac{1}{C_1s}, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(g_mr_o + 1)(C_1L_1s^2 + 1)}{C_1C_3L_1L_3R_3g_mr_os^4 + C_1C_3L_1L_3R_3s^4 + C_1C_3L_3R_3r_os^3 + C_1C_LL_1L_3R_3g_mr_os^4 + C_1C_LL_1L_3R_3s^4 + C_1C_LL_3R_3r_os^3 + C_1L_1L_3g_mr_os^3 + C_1L_1L_3s^3 + C_1L_1R_3g_mr_os^2 + C_1L_1R_3s^2 + C_1L_1R_3r_os + C_1L_1R_3s + C_1L_1R_3}{C_1C_3L_1L_3R_3g_mr_os^4 + C_1C_3L_1L_3R_3s^4 + C_1C_3L_3R_3r_os^3 + C_1C_LL_1L_3R_3g_mr_os^4 + C_1C_LL_1L_3R_3s^4 + C_1C_LL_3R_3r_os^3 + C_1L_1L_3g_mr_os^3 + C_1L_1L_3s^3 + C_1L_1R_3g_mr_os^2 + C_1L_1R_3s^2 + C_1L_1R_3r_os + C_1L_1R_3s + C_1L_1R_3}$$

$$\mathbf{10.505 \quad INVALID-ORDER-505} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_3}{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_3}$$

$$\mathbf{10.506 \quad INVALID-ORDER-506} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 R_3}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 R_3}$$

$$\mathbf{10.507 \quad INVALID-ORDER-507} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^5 + C_1 C_L L_1 L_3 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^5 + C_1 C_L L_1 L_3 L_L}$$

$$\mathbf{10.508 \quad INVALID-ORDER-508} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^4 + C_1 C_L L_3 L_L R_3 r_o s^3 + C_1 L_1 L_3 L_L g_m r_o s^3 + C_1 L_1 L_3 L_L}{C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^4 + C_1 C_L L_3 L_L R_3 r_o s^3 + C_1 L_1 L_3 L_L g_m r_o s^3 + C_1 L_1 L_3 L_L}$$

$$\mathbf{10.509 \quad INVALID-ORDER-509} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3}$$



$$10.510 \quad \text{INVALID-ORDER-510} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^4 + C_1 C_3 L_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L s^4 + C_1 C_L L_3 L_L R_3 R_L r_o s^3 + C_1 L_1 L_3 L_L R_3 R_L s^4}{C_1 C_3 L_1 L_3 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^4 + C_1 C_3 L_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L s^4 + C_1 C_L L_3 L_L R_3 R_L r_o s^3 + C_1 L_1 L_3 L_L R_3 R_L s^4}$$

$$10.511 \quad \text{INVALID-ORDER-511} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4}$$

$$10.512 \quad \text{INVALID-ORDER-512} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L s^4}$$

$$10.513 \quad \text{INVALID-ORDER-513} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_1 L_3 g_m r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 L_3 R_3 s^3}{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_1 L_3 g_m r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 L_3 R_3 s^3}$$

$$10.514 \quad \text{INVALID-ORDER-514} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_1 L_3 g_m r_o s^4 + C_1 C_L L_1 L_3 s^4}{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_1 L_3 g_m r_o s^4 + C_1 C_L L_1 L_3 s^4}$$

**10.515 INVALID-ORDER-515**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_3 R_3 s^4}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^6 + C_1 C_3 C_L L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_3 R_L s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^5 + C_1 C_3 L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 R_L s^5 + C_1 C_3 L_3 R_3 g_m r_o s^5 + C_1 C_3 L_3 R_3 s^5}$$

**10.516 INVALID-ORDER-516**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3}{\dots}$$

**10.517 INVALID-ORDER-517**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 s^4 + C_1 C_3 s^4 + C_1 L_1 L_3 R_3 r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 s^3 + C_1 s^3 + L_1 L_3 R_3 r_o s^2 + L_1 L_3 R_3 s^2 + L_1 L_3 s^2 + L_1 s^2 + s^2 + L_1 R_3 r_o s + L_1 R_3 s + L_1 s + R_3 r_o s + R_3 s + s + r_o s + r_o + 1}$$

**10.518 INVALID-ORDER-518**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 L_L R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L s^4 + C_1 C_3 L_3 L_L R_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 L_L R_3 g_m r_o s^4 + C_1 C_3 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L s^4 + C_1 C_3 L_3 L_L R_3 s^4}$$

**10.519 INVALID-ORDER-519**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L s^5 + C_1 C_3 C_L L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_L s^5 + C_1 C_3 C_L L_3 s^5 + C_1 C_3 C_L L_1 L_3 s^5 + C_1 C_3 C_L L_1 s^5 + C_1 C_3 C_L s^5 + C_1 C_3 s^5 + C_1 C s^5 + C_1 s^5 + C}.$$

10.520 INVALID-ORDER-520  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_1 L_3 L_L s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 L s^4 + C_1 C_3 L_1 s^4 + C_1 C_3 s^4 + C_1 C s^4 + C_1 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_1 L_3 L_L s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 L s^4 + C_1 C_3 L_1 s^4 + C_1 C_3 s^4 + C_1 C s^4 + C_1 s^4}$$

**10.521 INVALID-ORDER-521**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L$$

**10.522 INVALID-ORDER-522**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L$$

**10.523 INVALID-ORDER-523**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L$$

**10.524 INVALID-ORDER-524**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_3 R_3 s^3 + C_1 C_3 L_3 r_o s^3 +$$

10.525 INVALID-ORDER-525  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 s^4}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 s^4}.$$

**10.526 INVALID-ORDER-526**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 s^4 + C_1 C_3 C_L L_3 R_L s^4 + C_1 C_3 C_L L_3 s^4 + C_1 C_3 C_L R_3 R_L s^4 + C_1 C_3 C_L R_3 s^4 + C_1 C_3 C_L s^4 + C_1 C_3 R_3 R_L s^4 + C_1 C_3 R_3 s^4 + C_1 C_3 s^4 + C_1 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_L L_1 L_3 R_3 s^5 + C_1 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_L L_1 L_3 R_L s^5 + C_1 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 R_3 R_L s^4 + C_1 C_L L_1 R_3 s^4 + C_1 C_L L_1 s^4 + C_1 C_L L_3 R_3 R_L s^4 + C_1 C_L L_3 R_3 s^4 + C_1 C_L L_3 s^4 + C_1 C_L R_3 R_L s^4 + C_1 C_L R_3 s^4 + C_1 C_L s^4 + C_1 R_3 R_L s^4 + C_1 R_3 s^4 + C_1 s^4 + C_L L_1 L_3 R_3 g_m r_o s^5 + C_L L_1 L_3 R_3 s^5 + C_L L_1 L_3 R_L g_m r_o s^5 + C_L L_1 L_3 R_L s^5 + C_L L_1 R_3 R_L g_m r_o s^4 + C_L L_1 R_3 R_L s^4 + C_L L_1 R_3 s^4 + C_L L_1 s^4 + C_L L_3 R_3 R_L s^4 + C_L L_3 R_3 s^4 + C_L L_3 s^4 + C_L R_3 R_L s^4 + C_L R_3 s^4 + C_L s^4 + R_3 R_L s^4 + R_3 s^4 + s^4}{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 s^4 + C_1 C_3 C_L L_3 R_L s^4 + C_1 C_3 C_L L_3 s^4 + C_1 C_3 C_L R_3 R_L s^4 + C_1 C_3 C_L R_3 s^4 + C_1 C_3 C_L s^4 + C_1 C_3 R_3 R_L s^4 + C_1 C_3 R_3 s^4 + C_1 C_3 s^4 + C_1 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_L L_1 L_3 R_3 s^5 + C_1 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_L L_1 L_3 R_L s^5 + C_1 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 R_3 R_L s^4 + C_1 C_L L_1 R_3 s^4 + C_1 C_L L_1 s^4 + C_1 C_L L_3 R_3 R_L s^4 + C_1 C_L L_3 R_3 s^4 + C_1 C_L L_3 s^4 + C_1 C_L R_3 R_L s^4 + C_1 C_L R_3 s^4 + C_1 C_L s^4 + C_1 R_3 R_L s^4 + C_1 R_3 s^4 + C_1 s^4 + C_L L_1 L_3 R_3 g_m r_o s^5 + C_L L_1 L_3 R_3 s^5 + C_L L_1 L_3 R_L g_m r_o s^5 + C_L L_1 L_3 R_L s^5 + C_L L_1 R_3 R_L g_m r_o s^4 + C_L L_1 R_3 R_L s^4 + C_L L_1 R_3 s^4 + C_L L_1 s^4 + C_L L_3 R_3 R_L s^4 + C_L L_3 R_3 s^4 + C_L L_3 s^4 + C_L R_3 R_L s^4 + C_L R_3 s^4 + C_L s^4 + R_3 R_L s^4 + R_3 s^4 + s^4}.$$

10.527 INVALID-ORDER-527  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C}{...}$$

10.528 INVALID-ORDER-528  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L$$

**10.529 INVALID-ORDER-529**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 +$$

$$10.530 \quad \text{INVALID-ORDER-530} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_1 L_3 L_L R_L r_o s^3 + C_1 C_3 L_1 L_3 L_L R_L s^3 + C_1 C_3 L_1 L_3 L_L R_L r_o s^2 + C_1 C_3 L_1 L_3 L_L R_L s^2 + C_1 C_3 L_1 L_3 L_L R_L r_o s + C_1 C_3 L_1 L_3 L_L R_L s + C_1 C_3 L_1 L_3 L_L R_L r_o + C_1 C_3 L_1 L_3 L_L R_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s + C_1 C_3 C_L L_1 L_3 R_3 R_L s + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o + C_1 C_3 C_L L_1 L_3 R_3 R_L}$$

$$10.531 \quad \text{INVALID-ORDER-531} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 L_L R_3 R_L s^4 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 L_L R_3 R_L s^3 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^2 + C_1 C_3 C_L L_1 L_L R_3 R_L s^2 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s + C_1 C_3 C_L L_1 L_L R_3 R_L s + C_1 C_3 C_L L_1 L_L R_3 R_L r_o + C_1 C_3 C_L L_1 L_L R_3 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s + C_1 C_3 C_L L_1 L_3 R_3 R_L s + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o + C_1 C_3 C_L L_1 L_3 R_3 R_L}$$

$$10.532 \quad \text{INVALID-ORDER-532} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s + C_1 C_3 C_L L_1 L_3 R_3 R_L s + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o + C_1 C_3 C_L L_1 L_3 R_3 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^3 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^2 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s + C_1 C_3 C_L L_1 L_3 R_3 R_L s + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o + C_1 C_3 C_L L_1 L_3 R_3 R_L}$$

$$10.533 \quad \text{INVALID-ORDER-533} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1)}{C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_3 r_o s + L_1 g_m r_o s + L_1 s + R_3 + r_o}$$

$$10.534 \quad \text{INVALID-ORDER-534} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_L L_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_3 R_L s^2 + C_L R_3 R_L r_o s + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_L + r_o}$$

**10.535 INVALID-ORDER-535**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L R_3 R_L s + C_L R_3 r_o s + C_L R_3 s}$$

**10.536 INVALID-ORDER-536**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L L_L s}$$

**10.537 INVALID-ORDER-537**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_3 r_o s^2 + C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 s^3 + C_L L_L R_3 r_o s^2 + L_1 L_L g_m r_o s^2 + L_1 L_L s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s}$$

**10.538 INVALID-ORDER-538**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L L_L R_3 s^2 + C_L L_L r_o s^2 + C_L L_L s}$$

**10.539 INVALID-ORDER-539**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_3 R_L s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 L_1 L_L R_3 R_L s^3 + C_1 L_1 L_L R_3 r_o s^3 + C_1 L_1 L_L R_L r_o s^3 + C_1 L_1 R_3 R_L r_o s^2 + C_L L_1 L_L R_3 R_L g_m r_o s^3 + C_L L_1 L_L R_3 R_L s^3 + C_L L_L R_3 R_L r_o s^2 + L_1 L_L R_3 g_m r_o s^2 + L_1 L_L R_3 s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s}$$

**10.540 INVALID-ORDER-540**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 L_L R_3 R_L s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 R_L s^3 + C_L L_L R_3 R_L r_o s^2 + L_1 L_L R_3 g_m r_o s^2 + L_1 L_L R_3 s^2 + L_1 R_3 g_m r_o s + L_1 R_3 s}$$

10.541 INVALID-ORDER-541  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_L L_1 L_L R_3 g_m r_o s^3 + C_L L_1 L_L R_3 s^3 +$$

**10.542 INVALID-ORDER-542**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 R_L q_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_L r_o s + L_1 q_m r_o s + L_1 s + R_L + r_o}$$

**10.543 INVALID-ORDER-543**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1)}{C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

**10.544 INVALID-ORDER-544**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_L r_o s + C_L L_1 R_L g_m r_o s^2 + C_L L_1 R_L s^2 + C_L R_L r_o s + L_1 g_m r_o s + L_1 s + R_L}$$

**10.545 INVALID-ORDER-545**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_L s^3 + C_3 C_L R_L r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1}$$

**10.546 INVALID-ORDER-546**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s^2 + 1)}{C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_L r_o s^3 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 r_o s + C_L L_1}$$

**10.547 INVALID-ORDER-547**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_L r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L s^3 + C_1 L_1 r_o s^2 + C_3 L_1 L_L g_m r_o s^3 + C_3 L_1 L_L s^3 + C_3 L_L r_o s^2 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_L s^3 + C_L L_L r_o s^2 + L_1 g_m r_o s + L_1 s + L_L}$$

**10.548 INVALID-ORDER-548**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s^2 + C_L R_L)}{C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 R_L g_m r_o s^3}$$

**10.549 INVALID-ORDER-549**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_L r_o s^2 + C_3 L_1 L_L R_L g_m r_o s^3 + C_3 L_1 L_L R_L s^3 + C_3 L_L R_L r_o s^2 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L s^3}$$

**10.550 INVALID-ORDER-550**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_L s}{C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4}$$

**10.551 INVALID-ORDER-551**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{L_1 R_L s}{C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_L R_L g_m r_o s^4 + C_3 C_L L_1 L_L R_L s^4 + C_3 C_L L_1 L_L R_L s^4}$$



**10.552 INVALID-ORDER-552**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 R_3 R_L r_o s + L_1 R_3 g_m r_o s + L_1 R_3 s + L_1 R_L g_m r_o s + L_1 R_L s + R_3}$$

**10.553 INVALID-ORDER-553**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o + 1)}{C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 R_3 r_o s + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_3 r_o s + L_1 g_m r_o s + L_1 s + R_3 +}$$

**10.554 INVALID-ORDER-554**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_3 L_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_3 R_L s^2 + C_3 R_3 R_L r_o s + C_L L_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_3 R_L s^2}$$

**10.555 INVALID-ORDER-555**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g}{C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 R_3 R_L g m_r o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C}$$

**10.556 INVALID-ORDER-556**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_r + g_m)}{C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_L R_3 q_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L r_o s^4}$$

**10.557 INVALID-ORDER-557**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_3 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_3 r_o s^2 + C_3 L_1 L_L R_3 q_m r_o s^3 + C_3 L_1 L_L R_3 s^3 + C_3 L_L R_3 r_o s^2 + C_L L_1 L_L R_3 q_m r_o s^3 + C_L L_1 L_L}$$

**10.558 INVALID-ORDER-558**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_3 s^2 -$$

**10.559 INVALID-ORDER-559**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 L_1 L_L R_3 R_L s^3 + C_1 L_1 L_L R_3 r_o s^3 + C_1 L_1 L_L R_L r_o s^3 + C_1 L_1 R_3 R_L r_o s^2 + C_3 L_1 L_L R_3 R_L g_m r_o s^3 + C_3 L_1 L_L R_3 R_L s^3 + C_3 L_L}{\dots}$$

**10.560 INVALID-ORDER-560**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}{\dots}$$

10.561 INVALID-ORDER-561  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1$$

**10.562 INVALID-ORDER-562**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_3 R_L s + C_3 R_3 r_o s + C_3}$$

$$10.563 \quad \text{INVALID-ORDER-563} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.564 \quad \text{INVALID-ORDER-564} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1)}{C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_3 R_L s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.565 \quad \text{INVALID-ORDER-565} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L R_L s + 1)}{C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L R_3 r_o s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.566 \quad \text{INVALID-ORDER-566} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s + 1)}{C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L r_o s^3 + C_3 L_1 g_m r_o s^3 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.567 \quad \text{INVALID-ORDER-567} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L s^3 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_L R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L r_o s^3 + C_3 L_1 g_m r_o s^3 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.568 \quad \text{INVALID-ORDER-568} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_L L_L s + R_L C_L s + 1)}{C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L R_3 s^4 + C_3 C_L L_1 L_L r_o s^3 + C_3 L_1 g_m r_o s^3 + C_3 L_1 s^2 + C_3 R_3 s + C_3 r_o}$$

$$10.569 \quad \text{INVALID-ORDER-569} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}{C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}$$

$$10.570 \quad \text{INVALID-ORDER-570} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}$$

$$10.571 \quad \text{INVALID-ORDER-571} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1}$$

$$10.572 \quad \text{INVALID-ORDER-572} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 L_3 R_L s^2 + C_3 L_3 r_o s^2 + C_3 L_3 s^2 + C_3 r_o s^2 + C_3}$$

$$10.573 \quad \text{INVALID-ORDER-573} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + 1)}{C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_3 r_o s^3 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 L_3 s^2 + C_3 r_o s^2 + C_3}$$

**10.574 INVALID-ORDER-574**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (g_1 + g_2)}{C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_3 r_o s^4}$$

**10.575 INVALID-ORDER-575**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4)}{C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4}$$

**10.576 INVALID-ORDER-576**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_{C_L} C_{C_L} C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4)}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4}$$

**10.577 INVALID-ORDER-577**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_1 C_3 C_L L_1 L_3 L_L r_0 s^6 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 r_0 s^4 + C_1 C_3 L_1 L_L r_0 s^4 + C_1 C_L L_1 L_L r_0 s^4 + C_1 L_1 L_L s^3 + C_1 L_1 r_0 s^2 + C_3 C_L L_1 L_3 L_L q m r_0 s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 L_L r_0 s^4 + C_3 C_L L_1 L_3 L_L s^4 + C_3 C_L L_1 L_3 L_L r_0 s^3 + C_3 C_L L_1 L_3 L_L s^3 + C_3 C_L L_1 L_3 L_L r_0 s^2 + C_3 C_L L_1 L_3 L_L s^2 + C_3 C_L L_1 L_3 L_L r_0 s + C_3 C_L L_1 L_3 L_L s + C_3 C_L L_1 L_3 L_L r_0)}{C_1 C_3 C_L L_1 L_3 L_L r_0 s^6 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 r_0 s^4 + C_1 C_3 L_1 L_L r_0 s^4 + C_1 C_L L_1 L_L r_0 s^4 + C_1 L_1 L_L s^3 + C_1 L_1 r_0 s^2 + C_3 C_L L_1 L_3 L_L q m r_0 s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 L_L r_0 s^4 + C_3 C_L L_1 L_3 L_L s^4 + C_3 C_L L_1 L_3 L_L r_0 s^3 + C_3 C_L L_1 L_3 L_L s^3 + C_3 C_L L_1 L_3 L_L r_0 s^2 + C_3 C_L L_1 L_3 L_L s^2 + C_3 C_L L_1 L_3 L_L r_0 s + C_3 C_L L_1 L_3 L_L s + C_3 C_L L_1 L_3 L_L r_0}$$

**10.578 INVALID-ORDER-578**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 R_L s^2 + C_1 C_L L_1 r_o s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 R_L s + C_1 C_L L_1 r_o s + C_1 C_L L_1 L_L s + C_1 C_L L_1 R_L + C_1 C_L L_1 r_o + C_1 C_L L_1 L_L + C_1 C_L L_1 R_L}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 R_L s^2 + C_1 C_L L_1 r_o s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 R_L s + C_1 C_L L_1 r_o s + C_1 C_L L_1 L_L s + C_1 C_L L_1 R_L + C_1 C_L L_1 r_o + C_1 C_L L_1 L_L + C_1 C_L L_1 R_L}$$

10.579 INVALID-ORDER-579  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 F}{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 F}$$

**10.580 INVALID-ORDER-580**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L$$

$$10.581 \quad \text{INVALID-ORDER-581} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 +$$

**10.582 INVALID-ORDER-582**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 L_3 R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_L r_o s^2 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 R_L r_o s^2 + L_1 L_3 g_m r_o s^2 + L_1 L_3 s^2 + L_1 R_L g_m r_o s + L_1 R_L s + L_3}$$

**10.583 INVALID-ORDER-583**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 L_1 L_3 s^3 + C_1 L_1 r_o s^2 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_3 r_o s^2 + C_L L_1 L_3 g_m r_o s^3 + C_L L_1 L_3 s^3 + C_L L_3 r_o s^2 + L_1 g_m r_o s + L_1 s + L_3 s}$$

$$10.584 \quad \text{INVALID-ORDER-584} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 L_3 R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_L r_o s^2 + C_3 L_1 L_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_3 R_L r_o s^2 + C_L L_1 L_3 R_L g_m r_o s^3 + C_L L_1 L_3}$$

$$10.585 \quad \text{INVALID-ORDER-585} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_3}$$

$$10.586 \quad \text{INVALID-ORDER-586} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^5 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_3 s^3 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 L_L g_m r_o s^5 + C_3 C_L L_1 L_3 L_L s^5 + C_3 C_L L_1 L_3 L_L}$$

$$10.587 \quad \text{INVALID-ORDER-587} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_3 L_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 L_L r_o s^4 + C_1 C_L L_1 L_3 L_L r_o s^4 + C_1 L_1 L_3 L_L s^3 + C_1 L_1 L_3 r_o s^2 + C_1 L_1 L_L r_o s^2 + C_3 L_1 L_3 L_L g_m r_o s^3 + C_3 L_1 L_3 L_L s^3 + C_3 L_3 L_L r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^3 + C_L L_1 L_3 L_L}$$

$$10.588 \quad \text{INVALID-ORDER-588} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 L_L s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^5 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 L_3 r_o s^2 + C_3 L_1 L_3 L_L g_m r_o s^3 + C_3 L_1 L_3 L_L s^3 + C_3 L_3 L_L r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^3 + C_L L_1 L_3 L_L}$$

$$10.589 \quad \text{INVALID-ORDER-589} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_3 L_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^4 + C_1 L_1 L_3 L_L R_L s^3 + C_1 L_1 L_3 L_L r_o s^3 + C_1 L_1 L_3 R_L r_o s^2 + C_1 L_1 L_L R_L r_o s^2 + C_3 L_1 L_3 L_L R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_L s^3 + C_3 L_3 L_L R_L r_o s^2 + C_L L_1 L_3 L_L g_m r_o s^3 + C_L L_1 L_3 L_L}$$

$$10.590 \quad \text{INVALID-ORDER-590} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_3 L_L s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 R_L r_o s^3 + C_1 L_1 L_3 R_L r_o s^2 + C_1 L_1 L_3 R_L r_o s + C_1 L_1 L_3 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_3 L_L s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 R_L r_o s^3 + C_1 L_1 L_3 R_L r_o s^2 + C_1 L_1 L_3 R_L r_o s + C_1 L_1 L_3 R_L}$$

$$10.591 \quad \text{INVALID-ORDER-591} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 L_3 R_L r_o s^2 + C_1 L_1 L_3 R_L r_o s + C_1 L_1 L_3 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 L_3 R_L r_o s^2 + C_1 L_1 L_3 R_L r_o s + C_1 L_1 L_3 R_L}$$

$$10.592 \quad \text{INVALID-ORDER-592} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 L_3 g_m r_o s^3 + C_3 L_1 L_3 s^3 + C_3 L_1 R_3 g_m r_o s^2 + C_3 L_1 R_3 r_o s^2 + C_3 L_1 R_3 s^2 + C_3 L_1 R_3 r_o s + C_3 L_1 R_3}$$

$$10.593 \quad \text{INVALID-ORDER-593} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 C_L L_1 L_3 g_m r_o s^4 + C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_3 r_o s^2 + C_3 C_L L_1 R_3 r_o s + C_3 C_L L_1 R_3}$$

$$10.594 \quad \text{INVALID-ORDER-594} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L L_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 R_L r_o s^2 + C_1 L_1 R_L r_o s + C_1 L_1 R_L}{C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 R_L r_o s^2 + C_1 L_1 R_L r_o s + C_1 L_1 R_L}$$



**10.595 INVALID-ORDER-595**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 L_3 s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_1 s^2 + C_1 C_L L_1 s + C_1 C_L L_1}{C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 L_3 s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_1 s^2 + C_1 C_L L_1 s + C_1 C_L L_1}$$

**10.596 INVALID-ORDER-596**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 L_L r_o s^3 + C_1 C_L L_1 L_L R_3 s^3 + C_1 C_L L_1 L_L r_o s^2 + C_1 C_L L_1 L_L R_3 s^2 + C_1 C_L L_1 L_L r_o s + C_1 C_L L_1 L_L R_3 s + C_1 C_L L_1 L_L r_o + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 L_L r_o s^3 + C_1 C_L L_1 L_L R_3 s^3 + C_1 C_L L_1 L_L r_o s^2 + C_1 C_L L_1 L_L R_3 s^2 + C_1 C_L L_1 L_L r_o s + C_1 C_L L_1 L_L R_3 s + C_1 C_L L_1 L_L r_o + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L}$$

**10.597 INVALID-ORDER-597**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L s^3 + C_1 L_1 L_L r_o s^2 + C_1 L_1 L_L r_o^2 s + C_1 L_1 L_L r_o^3}{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^7 + C_1 C_3 C_L L_1 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^4 + C_1 C_3 C_L L_1 L_L R_3 r_o s^3 + C_1 C_3 C_L L_1 L_L R_3 r_o s^2 + C_1 C_3 C_L L_1 L_L R_3 r_o s + C_1 C_3 C_L L_1 L_L R_3 r_o}$$

**10.598 INVALID-ORDER-598**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 +$$

**10.599 INVALID-ORDER-599**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L}$$

**10.600 INVALID-ORDER-600**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4}.$$

10.601 INVALID-ORDER-601  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

[illegible]

10.602 INVALID-ORDER-602  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 L_3 R_3 R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_3 R_L s^3 + C_1 L_1 L_3 R_3 r_o s^3 + C_1 L_1 L_3 R_L r_o s^3 + C_1 L_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_3 R_L s^3 + C_3 L_3 R_3 R_L r_o s^2 + L_1 L_3 R_3 g_m r_o}$$

**10.603 INVALID-ORDER-603**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 L_3 R_3 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 r_o s^2 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_3 R_3 r_o s^2 + C_L L_1 L_3 R_3 g_m r_o s^3 + C_L L_1 L_3 R_3}$$

10.604 INVALID-ORDER-604  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_3 R_L s^3 + C_1 L_1 L_3 R_3 r_o s^3 + C_1 L_1 L_3 R_L r_o s^3 + C_1 L_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_3 R_L s^3 + C_3 L_3 R_3 R_L s^3}{C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_3 R_L s^3 + C_1 L_1 L_3 R_3 r_o s^3 + C_1 L_1 L_3 R_L r_o s^3 + C_1 L_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_3 R_L s^3 + C_3 L_3 R_3 R_L s^3}$$

10.605 INVALID-ORDER-605  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3}{C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3}$$

10.606 INVALID-ORDER-606  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 s^3}{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 s^3}$$

10.607 INVALID-ORDER-607  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 r_o s^4 + C_1 L_1 L_3 L_L R_3 s^3 + C_1 L_1 L_3 L_L r_o s^3 + C_1 L_1 L_3 R_3 r_o s^2 + C_1 L_1 L_L R_3 r_o s^2 + C_3 L_1 L_3 L_L R_3 g_m r_o s^3 + C_3 L_1 L_3 L_L R_3 s^3 + C_3 L_3 L_L}$$

10.608 INVALID-ORDER-608  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^5 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3$$

10.609 INVALID-ORDER-609  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 L_1 L_3 L_L R_3 R_L s^3 + C_1 L_1 L_3 L_L R_3 r_o s^3 + C_1 L_1 L_3 L_L R_L r_o s^3 + C_1 L_1 L_3 R_3 R_L r_o s^2 + C_1 L_1 L_L R_3 R_L r_o s^2 + C_3 L_1 L_3 L_L}$$

$$10.610 \quad \text{INVALID-ORDER-610} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L s^5 + C_1 C_L L_1 L_3 L_L R_3 r_o s^5 + C_1 C_L L_1 L_3 L_L R_L r_o s^5 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}$$

$$10.611 \quad \text{INVALID-ORDER-611} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L s^5 + C_1 C_L L_1 L_3 L_L R_3 r_o s^5 + C_1 C_L L_1 L_3 L_L R_L r_o s^5 + C_1 C_L L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}$$

$$10.612 \quad \text{INVALID-ORDER-612} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L}{C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 r_o s^3}$$

$$10.613 \quad \text{INVALID-ORDER-613} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s}{C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 r_o s^4}$$

$$10.614 \quad \text{INVALID-ORDER-614} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L}{C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 r_o s^4}$$

**10.615 INVALID-ORDER-615**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 s^2 + C_1 C_L L_1 R_3 r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L L_1 r_o s^2 + C_1 C_L L_1 s + C_1 C_L L_1 r_o + C_1 C_L L_1}{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 s^2 + C_1 C_L L_1 R_3 r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L L_1 r_o s^2 + C_1 C_L L_1 s + C_1 C_L L_1 r_o + C_1 C_L L_1}$$

**10.616 INVALID-ORDER-616**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^5 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L$$

**10.617 INVALID-ORDER-617**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_3 L_L s^4 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 L_L s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L r_o s^5 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_3 L_L s^4 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 L_L s^2}$$

**10.618 INVALID-ORDER-618**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^4}$$

10.619 INVALID-ORDER-619  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^5 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^5 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}$$

**10.620 INVALID-ORDER-620**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_3 L_L R_3 s^2 + C_1 C_3 L_3 L_L r_o s^2 + C_1 C_3 L_3 R_3 R_L s^2 + C_1 C_3 L_3 R_3 r_o s^2 + C_1 C_3 L_3 R_L r_o s^2 + C_1 C_3 L_3 s + C_1 C_3 R_3 R_L s + C_1 C_3 R_3 r_o s + C_1 C_3 R_L r_o s + C_1 C_3 s}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_3 L_L R_3 s^2 + C_1 C_3 L_3 L_L r_o s^2 + C_1 C_3 L_3 R_3 R_L s^2 + C_1 C_3 L_3 R_3 r_o s^2 + C_1 C_3 L_3 R_L r_o s^2 + C_1 C_3 L_3 s + C_1 C_3 R_3 R_L s + C_1 C_3 R_3 r_o s + C_1 C_3 R_L r_o s + C_1 C_3 s}.$$

10.621 INVALID-ORDER-621  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4}.$$

**10.622 INVALID-ORDER-622**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L}{C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_3 L_1 L_3 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_1 L_3 R_3 g_m s^3}$$

**10.623 INVALID-ORDER-623**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_3 s (g_m r_o)}{C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_3 C_L L_1 L_3 R_3 g_m r_o s^4 + C_3 C_L L_1 L_3 R_3 s^4 + C_3 C_L L_1 L_3 r_o s^4}$$

10.624 INVALID-ORDER-624  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_1 L_1 R_L s^2}{C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_3 C_L L_1 L_3 R_L r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^3 + C_1 C_3 C_L L_1 R_3 r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_1 s^3 + C_1 C_3 C_L L_3 R_3 R_L r_o s^3 + C_1 C_3 C_L L_3 R_3 r_o s^3 + C_1 C_3 C_L L_3 R_L r_o s^3 + C_1 C_3 C_L L_3 s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 C_L R_3 r_o s^3 + C_1 C_3 C_L R_L s^3 + C_1 C_3 C_L s^3 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 R_3 r_o s^3 + C_1 C_3 L_1 L_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 s^3 + C_1 C_3 R_3 R_L r_o s^3 + C_1 C_3 R_3 r_o s^3 + C_1 C_3 R_L s^3 + C_1 C_3 s^3 + C_1 C_L L_1 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_L s^3 + C_1 C_L L_1 L_3 s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_L s^3 + C_1 C_L L_3 s^3 + C_1 C_L R_3 R_L r_o s^3 + C_1 C_L R_3 r_o s^3 + C_1 C_L R_L s^3 + C_1 C_L s^3 + C_1 L_1 L_3 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 r_o s^3 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 R_3 R_L r_o s^3 + C_1 L_1 R_3 r_o s^3 + C_1 L_1 R_L s^3 + C_1 L_1 s^3 + C_1 L_3 R_3 R_L r_o s^3 + C_1 L_3 R_3 r_o s^3 + C_1 L_3 R_L s^3 + C_1 L_3 s^3 + C_1 R_3 R_L r_o s^3 + C_1 R_3 r_o s^3 + C_1 R_L s^3 + C_1 s^3}$$

**10.625 INVALID-ORDER-625**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 L_3 R_3 s^3 + C_1 C_L L_1 L_3 r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L R_3 s^3 + C_1 C_L r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 s^3 + C_1 L_1 r_o s^3 + C_1 L_3 R_3 s^3 + C_1 L_3 r_o s^3 + C_1 R_3 s^3 + C_1 r_o s^3 + C_3 C_L L_1 L_3 R_3 s^3 + C_3 C_L L_1 L_3 r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 r_o s^3 + C_3 C_L R_3 s^3 + C_3 C_L r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_1 L_3 r_o s^3 + C_3 L_1 R_3 s^3 + C_3 L_1 r_o s^3 + C_3 L_3 R_3 s^3 + C_3 L_3 r_o s^3 + C_3 R_3 s^3 + C_3 r_o s^3 + C_L L_1 L_3 R_3 s^3 + C_L L_1 L_3 r_o s^3 + C_L L_1 R_3 s^3 + C_L L_1 r_o s^3 + C_L L_3 R_3 s^3 + C_L L_3 r_o s^3 + C_L R_3 s^3 + C_L r_o s^3 + L_1 L_3 R_3 s^3 + L_1 L_3 r_o s^3 + L_1 R_3 s^3 + L_1 r_o s^3 + L_3 R_3 s^3 + L_3 r_o s^3 + R_3 s^3 + r_o s^3}{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 L_3 R_3 s^3 + C_1 C_L L_1 L_3 r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L R_3 s^3 + C_1 C_L r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_3 s^3 + C_1 L_1 r_o s^3 + C_1 L_3 R_3 s^3 + C_1 L_3 r_o s^3 + C_1 R_3 s^3 + C_1 r_o s^3 + C_3 C_L L_1 L_3 R_3 s^3 + C_3 C_L L_1 L_3 r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 r_o s^3 + C_3 C_L R_3 s^3 + C_3 C_L r_o s^3 + C_3 L_1 L_3 R_3 s^3 + C_3 L_1 L_3 r_o s^3 + C_3 L_1 R_3 s^3 + C_3 L_1 r_o s^3 + C_3 L_3 R_3 s^3 + C_3 L_3 r_o s^3 + C_3 R_3 s^3 + C_3 r_o s^3 + C_L L_1 L_3 R_3 s^3 + C_L L_1 L_3 r_o s^3 + C_L L_1 R_3 s^3 + C_L L_1 r_o s^3 + C_L L_3 R_3 s^3 + C_L L_3 r_o s^3 + C_L R_3 s^3 + C_L r_o s^3 + L_1 L_3 R_3 s^3 + L_1 L_3 r_o s^3 + L_1 R_3 s^3 + L_1 r_o s^3 + L_3 R_3 s^3 + L_3 r_o s^3 + R_3 s^3 + r_o s^3}.$$

10.626 INVALID-ORDER-626  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 s^4 + C_1 L_1 L_3 L_L R_3 s^4 + C_1 L_1 L_3 r_o s^4 + C_1 L_1 R_3 r_o s^3 + C_1 L_L R_3 s^4 + C_1 L_L r_o s^4 + C_1 R_3 r_o s^3 + C_1 r_o s^3}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 s^4 + C_1 L_1 L_3 L_L R_3 s^4 + C_1 L_1 L_3 r_o s^4 + C_1 L_1 R_3 r_o s^3 + C_1 L_L R_3 s^4 + C_1 L_L r_o s^4 + C_1 R_3 r_o s^3 + C_1 r_o s^3}$$

**10.627 INVALID-ORDER-627**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_3 s^3}{C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_3 L_L r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^4 + C_1 C_3 C_L L_1 L_L R_3 r_o s^4 + C_1 C_3 C_L L_1 L_L R_3 s^4 + C_1 C_3 C_L L_1 L_L r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 r_o s^3 + C_1 C_3 C_L L_1 s^3 + C_1 C_3 C_L L_R r_o s^3 + C_1 C_3 C_L L_R s^3 + C_1 C_3 C_L L s^3 + C_1 C_3 C_L R r_o s^2 + C_1 C_3 C_L R s^2 + C_1 C_3 C_L r_o s^2 + C_1 C_3 C_L s^2 + C_1 C_3 C_R r_o s^2 + C_1 C_3 C_R s^2 + C_1 C_3 C r_o s^2 + C_1 C_3 C s^2 + C_1 C_3 R r_o s + C_1 C_3 R s + C_1 C_3 r_o s + C_1 C_3 s + C_1 C_R r_o + C_1 C_R + C_1 C r_o + C_1 C + C_1 R r_o + C_1 R + C_1 r_o + C_1 + R r_o + R + r_o + 1}.$$

10.628 INVALID-ORDER-628  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1$$

10.629 INVALID-ORDER-629  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4}$$

**10.630 INVALID-ORDER-630**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 +$$

10.631 INVALID-ORDER-631  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^3 + C_1 C_3 L_1 L_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 s^2 + C_1 C_3 L_1 s + C_1 C_3 s}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_L s^3 + C_1 C_3 L_1 L_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 s^2 + C_1 C_3 L_1 s + C_1 C_3 s}.$$

**10.632 INVALID-ORDER-632**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_3 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_3 s + C_1 r_o s + C_L R_3 g_m r_o s}$$

**10.633 INVALID-ORDER-633**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 L_1 R_L r_o)}{(s^2 + s(R_1 + R_2 + R_3) + R_1 R_2 + R_1 R_3 + R_2 R_3)}$$

**10.634 INVALID-ORDER-634**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3(g_m r_o + 1)(C_L R_L s + 1)(C_1 L_1}{C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_3 R_L s^2 + C_1 C_L R_3 R_L}$$



**10.635 INVALID-ORDER-635**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3(g_m r_o + 1)(C_L L s^2 + 1)(C_L L R_3 g_m r_o s^3 + C_L L R_3 g_m r_o s^2 + C_L L R_3 g_m r_o s + C_L L R_3)}{C_1 C_L L_1 L_L q_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_3 q_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_L R_1 q_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 s^3 + C_1 C_L L_L R_3 q_m r_o s^2 + C_1 C_L L_L R_3 q_m r_o s + C_1 C_L L_L R_3}$$

**10.636 INVALID-ORDER-636**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_3 s (g_m r_o + 1) (C_1 L_1 s + C_2)}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_3 r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 s^2 + C_2 L_L R_3 g_m r_o s^2 + C_2 L_L R_3 s^2 + C_2 L_L s^2 + C_2 L_1 R_3 g_m r_o s + C_2 L_1 R_3 s + C_2 L_1 s + C_3}$$

**10.637 INVALID-ORDER-637**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_3 s^3 + C_1 C$$

10.638 INVALID-ORDER-638  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_3 R_L s^3 + C_1 C_L L_L R_3 R_L r_o s^3 + C_1 L_1 L_L R_3 g_m r_o s^3 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L R_L g_m}{\dots}$$

**10.639 INVALID-ORDER-639**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L s^3}$$

$$10.640 \quad \text{INVALID-ORDER-640} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3}{C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 + C_1 C_L L_L R_1 R_3 s^3}$$

$$10.641 \quad \text{INVALID-ORDER-641} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_3 R_L g_m r_o s}$$

$$10.642 \quad \text{INVALID-ORDER-642} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{s (C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 r_o s + C_1 C_L L_1 g_m r_o s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 g_m r_o s + C_1 C_L R_1 s + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L)}$$

$$10.643 \quad \text{INVALID-ORDER-643} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L}$$

$$10.644 \quad \text{INVALID-ORDER-644} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1) (C_L R_L s + 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{s (C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_L r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L r_o s + C_1 + C_3 g_m r_o + C_3 + C_L)}$$

**10.645 INVALID-ORDER-645**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_L L_L s^2 + 1)(C_L L_L s + 1)}{s(C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3)}$$

**10.646 INVALID-ORDER-646**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^{2+1}} \right)$

$$H(s) = \frac{L_L s (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + C_1 R_1 C_2)}{C_1 C_3 L_1 L_L g_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_L R_1 s^3 + C_1 C_3 L_L r_o s^3 + C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 s^2 + C_1 C_L R_1 C_2 s + C_1 C_L R_1 C_2 C_3}$$

**10.647 INVALID-ORDER-647**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_1 R_L g_m r_o s}{s(C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_L R_1 g_m r_o s^3 + C_1 C_3 C_L L_L R_1 s^3 + C_1 C_3 C_L L_L r_o s^3 + C_1 C_3 C_L R_1 R_L g_m r_o s)}$$

10.648 INVALID-ORDER-648  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_L R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_L s^4 + C_1 C_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_L s^3 + C_1 C_3 L_L R_L r_o s^3 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_1 R_L g_m r_o s^3}$$

**10.649 INVALID-ORDER-649**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_1 L_L g_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_1 R_L g_m r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4}{C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_1 L_L g_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_1 R_L g_m r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4 + C_1 C_3 L_1 R_L r_o s^4 + C_1 C_3 L_1 R_L s^4}$$

**10.650 INVALID-ORDER-650**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_L R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_L s^4 + C_1 C_3 C_L L_L R_L r_o s^4 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_1 R_L g_m}{\dots}$$

**10.651 INVALID-ORDER-651**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3 R_L (g_m r_o + 1) (C_1 L_1 s^2 + C_1 L_1 R_3 s + C_1 L_1 R_3 R_L)}{C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 L_1 R_L R_3 s + C_1 L_1 R_L R_3 R_L}$$

**10.652 INVALID-ORDER-652**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3(g_m r_o + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L R_1 R_3 g_m r_o s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_3 r_o s^2}$$

**10.653 INVALID-ORDER-653**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 C_L s^2}{C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^2 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_3 R_L r_o s^2 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^2 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_3 R_L r_o s^2 + C_1 C_L s^2}$$

**10.654 INVALID-ORDER-654**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_1 R_3 g_m r_o}{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_1 R_3 g_m r_o}$$

**10.655 INVALID-ORDER-655**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_L L_L R_3 s^5 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 R_1 R_3 g_m r_o}$$

**10.656 INVALID-ORDER-656**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 s^3 + C_1 C_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_L R_1 R_3 g_m r_o s^3 +$$

**10.657 INVALID-ORDER-657**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_3 s^4}{C_1 C_3 C_L L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^4 + C_1 C_3 C_L L_L R_3 r_o s^4 + C_1 C_3 C_L L_L R_3 s^4}$$

**10.658 INVALID-ORDER-658**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^3 + C_1 C_L L_1 L_L R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 R_L s^2 + C_1 C_L L_1 L_L R_3 R_L r_o s + C_1 C_L L_1 L_L R_3 R_L s + C_1 C_L L_1 L_L R_3 R_L r_o + C_1 C_L L_1 L_L R_3 R_L}{C_1 C_3 L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4 + C_1 C_3 L_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_3 R_L s^3 + C_1 C_L L_1 L_L R_3 R_L r_o s^2 + C_1 C_L L_1 L_L R_3 R_L s^2 + C_1 C_L L_1 L_L R_3 R_L r_o s + C_1 C_L L_1 L_L R_3 R_L s + C_1 C_L L_1 L_L R_3 R_L r_o + C_1 C_L L_1 L_L R_3 R_L}$$

**10.659 INVALID-ORDER-659**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_3 R_L s^4}$$

$$10.660 \quad \text{INVALID-ORDER-660} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_3 R_L r_o s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3}$$

$$10.661 \quad \text{INVALID-ORDER-661} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 R_3 s + 1) (C_1 L_1 s^2)}{C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 s^2}$$

$$10.662 \quad \text{INVALID-ORDER-662} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(g_m r_o + 1) (C_3 R_3 s + 1) (C_1 L_1 s^2)}{s (C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_3 r_o s^2 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 R_3 s)}$$

$$10.663 \quad \text{INVALID-ORDER-663} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 R_L g_m r_o s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 s^2}{C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 C_L R_1 R_3 R_L s^3 + C_1 C_3 C_L R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 R_L g_m r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 R_L g_m r_o s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 s^2}$$

$$10.664 \quad \text{INVALID-ORDER-664} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_3 g_m r_o s^2 + C_1 C_3 C_L R_3 s^2 + C_1 C_3 C_L R_3 s^2 + C_1 C_3 L_1 R_3 g_m r_o s^2 + C_1 C_3 L_1 R_3 s^2 + C_1 C_3 L_1 R_L g_m r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 g_m r_o s^2 + C_1 C_3 R_3 s^2 + C_1 C_3 R_3 s^2}{C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L R_1 R_3 g_m r_o s^2 + C_1 C_3 C_L R_1 R_3 s^2 + C_1 C_3 C_L R_1 R_L g_m r_o s^2 + C_1 C_3 C_L R_1 R_L s^2 + C_1 C_3 C_L R_3 g_m r_o s^2 + C_1 C_3 C_L R_3 s^2 + C_1 C_3 C_L R_3 s^2 + C_1 C_3 L_1 R_3 g_m r_o s^2 + C_1 C_3 L_1 R_3 s^2 + C_1 C_3 L_1 R_L g_m r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 R_1 R_3 g_m r_o s^2 + C_1 C_3 R_1 R_3 s^2 + C_1 C_3 R_1 R_L g_m r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_3 g_m r_o s^2 + C_1 C_3 R_3 s^2 + C_1 C_3 R_3 s^2}$$

**10.665 INVALID-ORDER-665**  $Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{1}{s(C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_3g_mr_os^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_R_1g_mr_os^3 + C_1C_3C_LL_R_1s^3 + C_1C_3C_LL_R_3s^3 + C_1C_3C_LLr_os^3 + C_1C_3C_LLs^3)}$$

**10.666 INVALID-ORDER-666**  $Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{1}{C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_R_1R_3g_mr_os^4 + C_1C_3C_LL_R_1R_3s^4 + C_1C_3C_LL_R_3r_os^4 + C_1C_3L_1L_Lg_mr_os^4 + C_1C_3L_1L_Ls^4 + C_1C_3L_1R_3g_mr_os^4}$$

**10.667 INVALID-ORDER-667**  $Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{1}{s(C_1C_3C_LL_1L_Lg_mr_os^4 + C_1C_3C_LL_1L_Ls^4 + C_1C_3C_LL_1R_3g_mr_os^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_R_1g_mr_os^3 + C_1C_3C_LL_R_1s^3 + C_1C_3C_LL_R_3g_mr_os^3 + C_1C_3C_LL_R_3s^3)}$$

**10.668 INVALID-ORDER-668**  $Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{1}{C_1C_3C_LL_1L_LR_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_LR_3R_Ls^5 + C_1C_3C_LL_R_1R_3R_Lg_mr_os^4 + C_1C_3C_LL_R_1R_3R_Ls^4 + C_1C_3C_LL_R_3R_Lr_os^4 + C_1C_3L_1L_LR_3g_mr_os^4 + C_1C_3L_1L_LR_3s^4}$$

**10.669 INVALID-ORDER-669**  $Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{1}{C_1C_3C_LL_1L_LR_3g_mr_os^5 + C_1C_3C_LL_1L_LR_3s^5 + C_1C_3C_LL_R_1L_Lg_mr_os^5 + C_1C_3C_LL_R_1L_Ls^5 + C_1C_3C_LL_R_1R_3g_mr_os^4 + C_1C_3C_LL_R_1R_3s^4 + C_1C_3C_LL_R_1R_Lg_mr_os^4}$$

**10.670 INVALID-ORDER-670**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^4}$$

**10.671 INVALID-ORDER-671**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_3 L_3 s^2 + 1) (C_1 L_1 s + 1)}{C_1 C_3 L_1 L_3 q_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_L q_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_3 R_1 q_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_L s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_3 R_1 R_L q_m r_o s^2 + C_1 C_3 R_1 L_3 q_m r_o s^2 + C_1 C_3 R_1 L_3 s^2 + C_1 C_3 R_1 s^2 + C_1 C_3 s^2 + 1}$$

**10.672 INVALID-ORDER-672**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1)(C_3 L_3 s^2 + 1)(C_1 L_1 s + 1)}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 L_1 g_m r_o s^2 + C_1 C_3 L_1 s^2 + C_1 C_3 L_3 s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + 1)}$$

**10.673 INVALID-ORDER-673**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L q_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_L q_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 q_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_L q_m r_o}{\dots}$$

**10.674 INVALID-ORDER-674**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 R_L s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_3 s^3 + C_1 C_3 C_L R_1 g_m r_o s^2 + C_1 C_3 C_L R_1 s^2 + C_1 C_3 C_L R_L g_m r_o s^2 + C_1 C_3 C_L R_L s^2 + C_1 C_3 C_L r_o s^2 + C_1 C_3 C_L s^2 + C_1 C_3 R_1 g_m r_o s + C_1 C_3 R_1 s + C_1 C_3 R_L g_m r_o s + C_1 C_3 R_L s + C_1 C_3 r_o s + C_1 C_3 s + C_1 R_1 g_m r_o + C_1 R_1 + C_1 R_L g_m r_o + C_1 R_L + C_1 r_o + C_1}{s^4 + s^3 + s^2 + s + 1}$$



**10.675 INVALID-ORDER-675**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_3 s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3 + C_1 C_3 C_L L_3 R_1 s^3 + C_1 C_3 C_L L_3 r_o s^3 + C_1 C_3 C_L L_3 s^3)}$$

**10.676 INVALID-ORDER-676**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^{2+1}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L q_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_3 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 q_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 L_L q_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_1 L_L R_1 q_m r_o s^3 + C_1 C_3 L_1 L_L R_1 s^3 + C_1 C_3 L_1 L_L r_o s^3 + C_1 C_3 L_1 L_L s^3 + C_1 C_3 L_1 L_L R_1 s^2 + C_1 C_3 L_1 L_L R_1 q_m r_o s^2 + C_1 C_3 L_1 L_L R_1 r_o s^2 + C_1 C_3 L_1 L_L s^2 + C_1 C_3 L_1 L_L R_1 s + C_1 C_3 L_1 L_L R_1 q_m r_o s + C_1 C_3 L_1 L_L R_1 r_o s + C_1 C_3 L_1 L_L s + C_1 C_3 L_1 L_L R_1 + C_1 C_3 L_1 L_L q_m r_o + C_1 C_3 L_1 L_L r_o + C_1 C_3 L_1 L_L}{C_1 C_3 C_L L_1 L_3 L_L q_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_3 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 q_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 L_L q_m r_o s^4 + C_1 C_3 L_1 L_L s^4 + C_1 C_3 L_1 L_L R_1 q_m r_o s^3 + C_1 C_3 L_1 L_L R_1 s^3 + C_1 C_3 L_1 L_L r_o s^3 + C_1 C_3 L_1 L_L s^3 + C_1 C_3 L_1 L_L R_1 s^2 + C_1 C_3 L_1 L_L R_1 q_m r_o s^2 + C_1 C_3 L_1 L_L R_1 r_o s^2 + C_1 C_3 L_1 L_L s^2 + C_1 C_3 L_1 L_L R_1 s + C_1 C_3 L_1 L_L R_1 q_m r_o s + C_1 C_3 L_1 L_L R_1 r_o s + C_1 C_3 L_1 L_L s + C_1 C_3 L_1 L_L R_1 + C_1 C_3 L_1 L_L q_m r_o + C_1 C_3 L_1 L_L r_o + C_1 C_3 L_1 L_L}$$

**10.677 INVALID-ORDER-677**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3)}$$

**10.678 INVALID-ORDER-678**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L}$$

**10.679 INVALID-ORDER-679**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_L s^5 + C_1$$

$$10.680 \quad \text{INVALID-ORDER-680} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5}$$

$$10.681 \quad \text{INVALID-ORDER-681} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_3 R_L s (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + C_1)}{C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 L_1 L_3 g_m r_o s^3 + C_1 L_1 L_3 s^3 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 L_3 R_1 g_m r_o s^2 + C_1 L_3 R_1 s^2 + C_1 R_L g_m r_o s^2 + C_1 R_L s^2}$$

$$10.682 \quad \text{INVALID-ORDER-682} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_3 s (g_m r_o + 1) (C_1 L_1 s^2 + C_1 R_1 s + C_1)}{C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_1 g_m r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 r_o s^3 + C_1 C_L L_1 L_3 g_m r_o s^4 + C_1 C_L L_1 L_3 s^4 + C_1 C_L L_3 R_1 g_m r_o s^3 + C_1 C_L L_3 R_1 s^3 + C_1 C_L R_1 g_m r_o s^3 + C_1 C_L R_1 s^3}$$

$$10.683 \quad \text{INVALID-ORDER-683} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_3 R_1 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 s^3 + C_1 R_L g_m r_o s^3 + C_1 R_L s^3}{C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_3 R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_L s^4 + C_1 C_L L_3 R_1 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 s^3 + C_1 R_L g_m r_o s^3 + C_1 R_L s^3}$$

$$10.684 \quad \text{INVALID-ORDER-684} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 R_L g_m r_o s^4 + C_1 R_L s^4}{C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 R_L g_m r_o s^4 + C_1 R_L s^4}$$

**10.685 INVALID-ORDER-685**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_3 L_L R_{1g_m} r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_3 R_{1g_m} r_o s}$$

**10.686 INVALID-ORDER-686**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L s^4 + C_1 C_3 L_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 s^3 + C_1 C_3 L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L s^4 + C_1 C_L L_3 L_L R_1 g_m r_o s^3 + C_1 C_L L_3 L_L R_1 s^3 + C_1 C_L L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L s^3 + C_1 C_L L_1 L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L s^2 + C_1 C_L L_1 L_3 L_L r_o s^2 + C_1 C_L L_1 L_3 L_L s + C_1 C_L L_1 L_3 L_L r_o + C_1 C_L L_1 L_3 L_L}{C_1 C_3 L_1 L_3 L_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L s^4 + C_1 C_3 L_3 L_L R_1 g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 s^3 + C_1 C_3 L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L s^4 + C_1 C_L L_3 L_L R_1 g_m r_o s^3 + C_1 C_L L_3 L_L R_1 s^3 + C_1 C_L L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L s^3 + C_1 C_L L_1 L_3 L_L r_o s^3 + C_1 C_L L_1 L_3 L_L s^2 + C_1 C_L L_1 L_3 L_L r_o s^2 + C_1 C_L L_1 L_3 L_L s + C_1 C_L L_1 L_3 L_L r_o + C_1 C_L L_1 L_3 L_L}$$

**10.687 INVALID-ORDER-687**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_{1g m} r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 L_L s^5}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_{1g m} r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 L_L s^5}$$

10.688 INVALID-ORDER-688  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_L s^4 + C_1 C_3 L_3 L_L R_1 R_L g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_L s^3 + C_1 C_3 L_3 L_L R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_L s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_L s^3 + C_1 C_L L_1 L_3 L_L R_L r_o s^2 + C_1 C_L L_1 L_3 L_L R_L s^2 + C_1 C_L L_1 L_3 L_L R_L r_o s + C_1 C_L L_1 L_3 L_L R_L s + C_1 C_L L_1 L_3 L_L R_L r_o + C_1 C_L L_1 L_3 L_L R_L}$$

**10.689 INVALID-ORDER-689**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L}$$

$$10.690 \quad \text{INVALID-ORDER-690} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_Lg_mr_oss^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_3L_LR_1R_Lg_mr_oss^5 + C_1C_3C_LL_3L_LR_1R_Ls^5 + C_1C_3C_LL_3L_LR_Lr_oss^5 + C_1C_3L_1L_3R_Lg_mr_oss^4 + C_1C_3L_1L_3R_Ls^4}{C_1C_3C_LL_1L_3L_LR_Lg_mr_oss^6 + C_1C_3C_LL_1L_3L_LR_Ls^6 + C_1C_3C_LL_3L_LR_1R_Lg_mr_oss^5 + C_1C_3C_LL_3L_LR_1R_Ls^5 + C_1C_3C_LL_3L_LR_Lr_oss^5 + C_1C_3L_1L_3R_Lg_mr_oss^4 + C_1C_3L_1L_3R_Ls^4}$$

$$10.691 \quad \text{INVALID-ORDER-691} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1C_3L_1L_3g_mr_oss^4 + C_1C_3L_1L_3s^4 + C_1C_3L_1R_3g_mr_oss^3 + C_1C_3L_1R_3s^3 + C_1C_3L_1R_Lg_mr_oss^3 + C_1C_3L_1R_Ls^3 + C_1C_3L_3R_1g_mr_oss^3 + C_1C_3L_3R_1s^3 + C_1C_3L_3R_Ls^3 + C_1C_3L_3R_Ls^3}{C_1C_3L_1L_3g_mr_oss^4 + C_1C_3L_1L_3s^4 + C_1C_3L_1R_3g_mr_oss^3 + C_1C_3L_1R_3s^3 + C_1C_3L_1R_Lg_mr_oss^3 + C_1C_3L_1R_Ls^3 + C_1C_3L_3R_1g_mr_oss^3 + C_1C_3L_3R_1s^3 + C_1C_3L_3R_Ls^3 + C_1C_3L_3R_Ls^3}$$

$$10.692 \quad \text{INVALID-ORDER-692} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3g_mr_oss^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_3g_mr_oss^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_3R_1g_mr_oss^3 + C_1C_3C_LL_3R_1s^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3}{s(C_1C_3C_LL_1L_3g_mr_oss^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_3g_mr_oss^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_3R_1g_mr_oss^3 + C_1C_3C_LL_3R_1s^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3 + C_1C_3C_LL_3R_oss^3)}$$

$$10.693 \quad \text{INVALID-ORDER-693} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_Lg_mr_oss^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_1R_3R_Lg_mr_oss^4 + C_1C_3C_LL_1R_3R_Ls^4 + C_1C_3C_LL_3R_1R_Lg_mr_oss^4 + C_1C_3C_LL_3R_1R_Ls^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4}{C_1C_3C_LL_1L_3R_Lg_mr_oss^5 + C_1C_3C_LL_1L_3R_Ls^5 + C_1C_3C_LL_1R_3R_Lg_mr_oss^4 + C_1C_3C_LL_1R_3R_Ls^4 + C_1C_3C_LL_3R_1R_Lg_mr_oss^4 + C_1C_3C_LL_3R_1R_Ls^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4 + C_1C_3C_LL_3R_Lr_oss^4}$$

$$10.694 \quad \text{INVALID-ORDER-694} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3g_mr_oss^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_3g_mr_oss^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_1R_Lg_mr_oss^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3R_1g_mr_oss^3 + C_1C_3C_LL_3R_1s^3 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3R_Ls^3}{s(C_1C_3C_LL_1L_3g_mr_oss^4 + C_1C_3C_LL_1L_3s^4 + C_1C_3C_LL_1R_3g_mr_oss^3 + C_1C_3C_LL_1R_3s^3 + C_1C_3C_LL_1R_Lg_mr_oss^3 + C_1C_3C_LL_1R_Ls^3 + C_1C_3C_LL_3R_1g_mr_oss^3 + C_1C_3C_LL_3R_1s^3 + C_1C_3C_LL_3R_Ls^3 + C_1C_3C_LL_3R_Ls^3)}$$

**10.695 INVALID-ORDER-695**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_3 L_L s^4 + C_1 C_3 C_L L_3 R_1 g_m r_o s^3)}$$

**10.696 INVALID-ORDER-696**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L r_o s^5 + C_1 C_3 C_L L_3 L_L s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5}{\dots}$$

**10.697 INVALID-ORDER-697**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3}{s(C_1 C_3 C_L L_1 L_3 g_m r_o s^4 + C_1 C_3 C_L L_1 L_3 s^4 + C_1 C_3 C_L L_1 L_L g_m r_o s^4 + C_1 C_3 C_L L_1 L_L s^4 + C_1 C_3 C_L L_1 R_3 g_m r_o s^3 + C_1 C_3 C_L L_1 R_3 s^3 + C_1 C_3 C_L L_1 R_L g_m r_o s^3 + C_1 C_3 C_L L_1 R_L s^3)}$$

10.698 INVALID-ORDER-698  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L s^5}{\dots}$$

**10.699 INVALID-ORDER-699**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5}$$

$$\mathbf{10.700 \quad INVALID-ORDER-700} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5}{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_L s^5}$$

$$\mathbf{10.701 \quad INVALID-ORDER-701} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 R_L g_m r_o s^3 + C_1 L_1 L_3 R_L s^3}{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_3 s^3 + C_1 L_1 L_3 R_L g_m r_o s^3 + C_1 L_1 L_3 R_L s^3}$$

$$\mathbf{10.702 \quad INVALID-ORDER-702} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 s^4 + C_1 C_L L_3 R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_3 s^3}{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C_1 C_3 L_3 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 s^4 + C_1 C_L L_3 R_1 R_3 g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 s^3 + C_1 C_L L_3 R_3 r_o s^3 + C_1 C_L L_3 R_3 s^3}$$

$$\mathbf{10.703 \quad INVALID-ORDER-703} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 R_L s^3}{C_1 C_3 L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 R_L s^3 + C_1 C_3 L_3 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 R_L s^3}$$

$$\mathbf{10.704 \quad INVALID-ORDER-704} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 R_L s^3}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_L L_1 L_3 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_3 R_L s^4 + C_1 C_L L_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_3 R_1 R_3 R_L s^3 + C_1 C_L L_3 R_3 R_L r_o s^3 + C_1 C_L L_3 R_3 R_L s^3}$$

**10.705 INVALID-ORDER-705**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4}$$

**10.706 INVALID-ORDER-706**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 s^4 + C_1 C_3 L_3 L_L R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_3 s^3 + C_1 C_3 L_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 s^4 + C_1 C_L}$$

**10.707 INVALID-ORDER-707**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L$$

10.708 INVALID-ORDER-708  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_3 R_L q_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^4 + C_1 C_3 L_3 L_L R_1 R_3 R_L q_m r_o s^3 + C_1 C_3 L_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L q_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L s^3 + C_1 C_L L_1 L_3 L_L R_3 R_L s^2 + C_1 C_L L_1 L_3 L_L R_3 R_L s + C_1 C_L L_1 L_3 L_L R_3 R_L}.$$

10.709 INVALID-ORDER-709  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}$$

$$10.710 \quad \text{INVALID-ORDER-710} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_3R_Lg_mr_os^6 + C_1C_3C_LL_1L_3L_LR_3R_Ls^6 + C_1C_3C_LL_3L_LR_1R_3R_Lg_mr_os^5 + C_1C_3C_LL_3L_LR_1R_3R_Ls^5 + C_1C_3C_LL_3L_LR_3R_Lr_os^5 + C_1C_3L_1L_3R_3R_Lg_mr_os^4}{C_1C_3C_LL_1L_3R_3g_mr_os^4 + C_1C_3L_1L_3R_3s^4 + C_1C_3L_1L_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_Ls^4 + C_1C_3L_3R_1R_3g_mr_os^3 + C_1C_3L_3R_1R_3s^3 + C_1C_3L_3R_1R_Lg_mr_os^3 + C_1C_3L_3R_1R_Ls^3 + C_1C_3L_3R_1R_Lg_mr_os^3}$$

$$10.711 \quad \text{INVALID-ORDER-711} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1C_3L_1L_3R_3g_mr_os^4 + C_1C_3L_1L_3R_3s^4 + C_1C_3L_1L_3R_Lg_mr_os^4 + C_1C_3L_1L_3R_Ls^4 + C_1C_3L_3R_1R_3g_mr_os^3 + C_1C_3L_3R_1R_3s^3 + C_1C_3L_3R_1R_Lg_mr_os^3 + C_1C_3L_3R_1R_Ls^3 + C_1C_3L_3R_1R_Lg_mr_os^3}{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}$$

$$10.712 \quad \text{INVALID-ORDER-712} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}$$

$$10.713 \quad \text{INVALID-ORDER-713} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_3R_Lg_mr_os^5 + C_1C_3C_LL_1L_3R_3R_Ls^5 + C_1C_3C_LL_3R_1R_3R_Lg_mr_os^4 + C_1C_3C_LL_3R_1R_3R_Ls^4 + C_1C_3C_LL_3R_3R_Lr_os^4 + C_1C_3L_1L_3R_3g_mr_os^4 + C_1C_3L_1L_3R_3s^4 + C_1C_3L_3R_1R_Lg_mr_os^3 + C_1C_3L_3R_1R_Ls^3 + C_1C_3L_3R_1R_Lg_mr_os^3}{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}$$

$$10.714 \quad \text{INVALID-ORDER-714} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad \infty, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}{C_1C_3C_LL_1L_3R_3g_mr_os^5 + C_1C_3C_LL_1L_3R_3s^5 + C_1C_3C_LL_3R_1R_3g_mr_os^4 + C_1C_3C_LL_3R_1R_3s^4 + C_1C_3C_LL_3R_3r_os^4 + C_1C_3L_1L_3g_mr_os^4 + C_1C_3L_1L_3s^4 + C_1C_3L_3R_1g_mr_os^3 + C_1C_3L_3R_1R_Lg_mr_os^3}$$



**10.715 INVALID-ORDER-715**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 s^5}{\dots}$$

**10.716 INVALID-ORDER-716**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5}$$

**10.717 INVALID-ORDER-717**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 +$$

10.718 INVALID-ORDER-718  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}$$

**10.719 INVALID-ORDER-719**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L$$

**10.720 INVALID-ORDER-720**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L$$

**10.721 INVALID-ORDER-721**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C}{C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_3 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_3 R_1 R_3 s^3 + C}$$

**10.722 INVALID-ORDER-722**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3}{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 s^4 + C_1 C_3 C_L L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_3 g_m r_o s^3}$$

**10.723 INVALID-ORDER-723**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_3 s^4}$$

**10.724 INVALID-ORDER-724**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_3 g_m r_o s^4 +$$

**10.725 INVALID-ORDER-725**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_3 L_L R_1 g_m r_o s^5 +$$

**10.726 INVALID-ORDER-726**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_3 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L s^5}$$

**10.727 INVALID-ORDER-727**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 g_m r_o s^5 +$$

**10.728 INVALID-ORDER-728**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_3 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 g_m r_o s^5}$$

**10.729 INVALID-ORDER-729**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L$$

**10.730 INVALID-ORDER-730**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L$$

**10.731 INVALID-ORDER-731**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 R_3 s (g_m r_o + 1)}{C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 R_1 R_3 g_m r_o s^2 + C_L L_1 R_1 R_3 s^2 + C_L L_1 R_3 r_o s^2 + C_L R_1 R_3 r_o s + L_1 R_1 g_m r_o s + L_1 R_1 s + L_1 R_3 s + L_1 r_o s + R_1 R_3 + R_1}$$

**10.732 INVALID-ORDER-732**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_1 s}}}, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_L L_1 R_1 R_3 R_L g_m r_o s^2 + C_L L_1 R_1 R_3 R_L s^2 + C_L L_1 R_3 R_L r_o s^2 + C_L R_1 R_3 R_L r_o s + L_1 R_1 R_3 g_m}$$

**10.733 INVALID-ORDER-733**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 R_3 s (g_m r_o + 1) (C_L R_L}{C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 R_1 R_3 g_m r_o s^2 + C_L L_1 R_1 R_3 s^2 + C_L L_1 R_1 R_L g_m r_o s^2 + C_L L_1 R_1 R_L s^2 +}$$

**10.734 INVALID-ORDER-734**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 R_3 s (g_m r_o + 1) (C_L L_L s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 L_L R_1 g_m r_o s^3 + C_L L_1 L_L R_1 s^3 + C_L L_1 L_L R_3 s^3 + C_L L_1 L_L r_o s^3 + C_L L_1 L_L s^4)}{C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 L_L R_1 g_m r_o s^3 + C_L L_1 L_L R_1 s^3 + C_L L_1 L_L R_3 s^3 + C_L L_1 L_L r_o s^3 + C_L L_1 L_L s^4}$$

$$\mathbf{10.735 \quad INVALID-ORDER-735} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 r_o s^3 + C_1 L_1 R_1 R_3 r_o s^2 + C_L L_1 L_L R_1 R_3 g_m r_o s^3 + C_L L_1 L_L R_1 R_3 s^3 + C_L L_1 L_L R_3 r_o s^3 + C_L L_L R_1 R_3 r_o s^2 + L_1 L_L R_1 g_m r_o s^3}$$

$$\mathbf{10.736 \quad INVALID-ORDER-736} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 L_L R_1 g_m r_o s^3 + C_L L_1 L_L R_1 R_3 s^3}$$

$$\mathbf{10.737 \quad INVALID-ORDER-737} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_1 R_3 R_L r_o s^4 + C_1 L_1 L_L R_1 R_3 R_L s^3 + C_1 L_1 L_L R_1 R_3 r_o s^3 + C_1 L_1 L_L R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L r_o s^2 + C_L L_1 L_L R_1 R_3 R_L g_m r_o s^3 + C_L L_1 L_L R_1 R_3 R_L s^3 + C_L L_1 L_L R_1 R_3 s^3}$$

$$\mathbf{10.738 \quad INVALID-ORDER-738} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_L L_1 L_L R_1 R_3 s^3}$$

$$\mathbf{10.739 \quad INVALID-ORDER-739} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_3 s^2 (g_m r_o + 1)}{C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_L L_1 L_L R_1 R_3 g_m r_o s^3}$$

$$\mathbf{10.740 \quad INVALID-ORDER-740} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 R_1 R_L g_m r_o s^2 + C_3 L_1 R_1 R_L s^2 + C_3 L_1 R_L r_o s^2 + C_3 R_1 R_L r_o s + L_1 R_1 g_m r_o s + L_1 R_1 s + L_1 R_L s + L_1 r_o s + R_1 R_L + 1}$$

$$\mathbf{10.741 \quad INVALID-ORDER-741} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 L_1 R_1 g_m r_o s^2 + C_3 L_1 R_1 s^2 + C_3 L_1 r_o s^2 + C_3 R_1 r_o s + C_L L_1 R_1 g_m r_o s^2 + C_L L_1 R_1 s^2 + C_L L_1 r_o s^2 + C_L R_1 r_o s + L_1 s + R_1}$$

$$\mathbf{10.742 \quad INVALID-ORDER-742} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 R_1 R_L g_m r_o s^2 + C_3 L_1 R_1 R_L s^2 + C_3 L_1 R_L r_o s^2 + C_3 R_1 R_L r_o s + C_L L_1 R_1 R_L g_m r_o s^2 + C_L L_1 R_1 s^2 + C_L L_1 r_o s^2 + C_L R_1 r_o s + L_1 s + R_1}$$

$$\mathbf{10.743 \quad INVALID-ORDER-743} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_L R_L s)}{C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 R_1 R_L g_m r_o s^3 + C_3 C_L L_1 R_1 R_L s^3 + C_3 C_L L_1 R_L r_o s^3 + C_3 C_L R_1 R_L r_o s^2}$$

$$\mathbf{10.744 \quad INVALID-ORDER-744} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_L L_L s^2)}{C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_L R_1 g_m r_o s^4 + C_3 C_L L_1 L_L R_1 s^4 + C_3 C_L L_1 L_L r_o s^4 + C_3 C_L L_L R_1 r_o s^3 + 1}$$

$$\mathbf{10.745 \quad INVALID-ORDER-745} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 L_L R_1 g_m r_o s^3 + C_3 L_1 L_L R_1 s^3 + C_3 L_1 L_L r_o s^3 + C_3 L_L R_1 r_o s^2 + C_L L_1 L_L R_1 g_m r_o s^3 + C_L L_1 L_L}$$

$$\mathbf{10.746 \quad INVALID-ORDER-746} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_L R_1 g_m r_o s^4 + C_3 C_L L_1 L_L}$$

$$\mathbf{10.747 \quad INVALID-ORDER-747} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1 L_L R_1 r_o s^3 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_L R_1 R_L g_m r_o s^3 + C_3 L_1 L_L R_1 R_L s^3 + C_3 L_1 L_L R_L r_o s^3 + C_3 L_L R_1 r_o s^2 + C_L L_1 L_L R_1 g_m r_o s^3 + C_L L_1 L_L}$$

$$\mathbf{10.748 \quad INVALID-ORDER-748} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_L R_1 g_m r_o s^4 + C_3 C_L L_1 L_L}$$

$$\mathbf{10.749 \quad INVALID-ORDER-749} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_3 C_L L_1 L_L}$$

$$\mathbf{10.750 \quad INVALID-ORDER-750} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 R_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_1 R_3 R_L s^2 + C_3 L_1 R_3 R_L r_o s^2 + C_3 R_1 R_3 R_L r_o s + L_1 R_1 R_3 g_m r_o}$$

$$\mathbf{10.751 \quad INVALID-ORDER-751} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 R_3 s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 R_1 R_3 g_m r_o s^2 + C_3 L_1 R_1 R_3 s^2 + C_3 L_1 R_3 r_o s^2 + C_3 R_1 R_3 r_o s + C_L L_1 R_1 R_3 g_m r_o s^2 + C_L L_1 R_1 R_3}$$

$$\mathbf{10.752 \quad INVALID-ORDER-752} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 L_1 R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 R_1 R_3 R_L g_m r_o s^2 + C_3 L_1 R_1 R_3 R_L s^2 + C_3 L_1 R_3 R_L r_o s^2 + C_3 R_1 R_3 R_L r_o s}$$

$$\mathbf{10.753 \quad INVALID-ORDER-753} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_1 R_3 R_L s^2 + C_3 C_L L_1 R_3 R_L r_o s^2 + C_3 R_1 R_3 R_L r_o s}$$

$$\mathbf{10.754 \quad INVALID-ORDER-754} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 R_3 R_L s (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_3 C_L L_1 L_L R_1 R_3 s^3 + C_3 C_L L_1 R_1 R_3 R_L r_o s^2 + C_3 C_L L_1 R_3 R_L r_o s + C_3 R_1 R_3 R_L r_o s}$$





$$\mathbf{10.760 \quad INVALID-ORDER-760} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 R_1 R_3 g_m r_o s^2 + C_3 L_1 R_1 R_3 s^2 + C_3 L_1 R_1 R_L g_m r_o s^2 + C_3 L_1 R_1 R_L s^2 + C_3 L_1 R_1 r_o s^2 + C_3 L_1 R_1 s^2 + C_3 L_1 s^2 + C_3 s^2}$$

$$\mathbf{10.761 \quad INVALID-ORDER-761} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 R_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_1 R_3 s^3 + C_3 C_L L_1 R_3 r_o s^3 + C_3 C_L R_1 R_3 r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 s^2 + C_3 C_L s^2 + C_3 s^2}$$

$$\mathbf{10.762 \quad INVALID-ORDER-762} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_3 C_L L_1 R_1 R_3 R_L s^3 + C_3 C_L L_1 R_3 R_L r_o s^3 + C_3 C_L R_1 R_3 R_L r_o s^2 + C_3 C_L R_1 R_3 R_L s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 s^2 + C_3 C_L s^2 + C_3 s^2}$$

$$\mathbf{10.763 \quad INVALID-ORDER-763} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 R_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_1 R_3 s^3 + C_3 C_L L_1 R_3 r_o s^3 + C_3 C_L R_1 R_3 r_o s^2 + C_3 C_L R_1 R_3 s^2 + C_3 C_L R_1 s^2 + C_3 C_L s^2 + C_3 s^2}$$

$$\mathbf{10.764 \quad INVALID-ORDER-764} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_3 R_3 s + 1)}{C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_L g_m r_o s^4 + C_3 C_L L_1 L_L R_1 s^4 + C_3 C_L L_1 L_L r_o s^4 + C_3 C_L L_1 R_3 g_m r_o s^3 + C_3 C_L L_1 R_3 s^3 + C_3 C_L L_1 R_3 r_o s^3 + C_3 C_L R_1 R_3 g_m r_o s^3 + C_3 C_L R_1 R_3 s^3 + C_3 C_L R_1 R_3 r_o s^3 + C_3 C_L R_1 s^2 + C_3 C_L s^2 + C_3 s^2}$$



$$10.770 \quad \text{INVALID-ORDER-770} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L)}{C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 L_3 R_1 g_m r_o s^3 + C_3 L_1 L_3 R_1 s^3 + C_3 L_1 L_3 R_L s^3 + C_3 L_1 L_3 r_o s^3 + C_3 L_1 R_1 R_L s^3 + C_3 L_1 R_1 r_o s^3 + C_3 L_1 R_L s^3 + C_3 L_1 r_o s^3 + C_3 R_1 R_L s^3 + C_3 R_1 r_o s^3 + C_3 R_L s^3 + C_3 r_o s^3}$$

$$10.771 \quad \text{INVALID-ORDER-771} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L)}{C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_3 R_1 g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 s^4 + C_3 C_L L_1 L_3 r_o s^4 + C_3 C_L L_3 R_1 r_o s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_L s^3 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_L s^3 + C_3 C_L r_o s^3 + C_3 R_1 R_L s^3 + C_3 R_1 r_o s^3 + C_3 R_L s^3 + C_3 r_o s^3}$$

$$10.772 \quad \text{INVALID-ORDER-772} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L)}{C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 R_L s^4 + C_3 C_L L_1 L_3 R_1 r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_3 r_o s^4 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_1 r_o s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_L s^3 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_L s^3 + C_3 C_L r_o s^3 + C_3 R_1 R_L s^3 + C_3 R_1 r_o s^3 + C_3 R_L s^3 + C_3 r_o s^3}$$

$$10.773 \quad \text{INVALID-ORDER-773} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L)}{C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 R_L s^4 + C_3 C_L L_1 L_3 R_1 r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_3 r_o s^4 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_1 r_o s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_L s^3 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_L s^3 + C_3 C_L r_o s^3 + C_3 R_1 R_L s^3 + C_3 R_1 r_o s^3 + C_3 R_L s^3 + C_3 r_o s^3}$$

$$10.774 \quad \text{INVALID-ORDER-774} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (g_m r_o + 1) (C_3 L_3 s^2 + C_3 L_3 R_1 s + C_3 L_3 R_L)}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 R_L s^4 + C_3 C_L L_1 L_3 R_1 r_o s^4 + C_3 C_L L_1 L_3 R_L s^4 + C_3 C_L L_1 L_3 r_o s^4 + C_3 C_L L_3 R_1 R_L s^3 + C_3 C_L L_3 R_1 r_o s^3 + C_3 C_L L_3 R_L s^3 + C_3 C_L L_3 r_o s^3 + C_3 C_L R_1 R_L s^3 + C_3 C_L R_1 r_o s^3 + C_3 C_L R_L s^3 + C_3 C_L r_o s^3 + C_3 R_1 R_L s^3 + C_3 R_1 r_o s^3 + C_3 R_L s^3 + C_3 r_o s^3}$$

$$\mathbf{10.775 \quad INVALID-ORDER-775} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^5 + C_3}$$

$$\mathbf{10.776 \quad INVALID-ORDER-776} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 L_L R_1}$$

$$\mathbf{10.777 \quad INVALID-ORDER-777} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_L R_1 R_L s^3 + C_1}$$

$$\mathbf{10.778 \quad INVALID-ORDER-778} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_L R_1 r_o s^4 + C_1 C_3}$$

$$\mathbf{10.779 \quad INVALID-ORDER-779} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1}$$

$$\mathbf{10.780 \quad INVALID-ORDER-780} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 L_3 R_1 R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_1 r_o s^3 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_L g_m r_o s^3 + C_3 L_1 L_3 R_1 R_L s^3 + C_3 L_1 L_3 R_L r_o s^3 + C_3 L_3 R_1 R_L r_o s^2 + L_1 L_3 R_1 g_m r_o s^3}$$

$$\mathbf{10.781 \quad INVALID-ORDER-781} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 R_1 s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 L_3 R_1 g_m r_o s^3 + C_3 L_1 L_3 R_1 s^3 + C_3 L_1 L_3 r_o s^3 + C_3 L_3 R_1 r_o s^2 + C_L L_1 L_3 R_1 g_m r_o s^3 + C_L L_1 L_3 R_1 s^3}$$

$$\mathbf{10.782 \quad INVALID-ORDER-782} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 L_3 R_1 R_L s^2 (g_m r_o + 1)}{C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_1 r_o s^3 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_L g_m r_o s^3 + C_3 L_1 L_3 R_1 R_L s^3 + C_3 L_1 L_3 R_L r_o s^3 + C_3 L_3 R_1 R_L r_o s^2}$$

$$\mathbf{10.783 \quad INVALID-ORDER-783} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 R_1 R_L s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 R_L s^4}$$

$$\mathbf{10.784 \quad INVALID-ORDER-784} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 L_3 R_1 R_L s^2 (g_m r_o + 1)}{C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^5 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^5 + C_3 C_L L_1 L_3 L_L R_1 s^5}$$

$$10.785 \quad \text{INVALID-ORDER-785} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^4 + C_1 L_1 L_3 L_L R_1 s^3 + C_1 L_1 L_3 R_1 r_o s^2 + C_1 L_1 L_L R_1 r_o s^2 + C_3 L_1 L_3 L_L R_1 g_m r_o s^3 + C_3 L_1 L_3 L_L R_1 s^3 + C_3 L_1 L_3 L_L r_o s^3 + C_3 L_3 L_L R_1 s^3}{C_1 C_3 L_1 L_3 L_L R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^4 + C_1 L_1 L_3 L_L R_1 s^3 + C_1 L_1 L_3 R_1 r_o s^2 + C_1 L_1 L_L R_1 r_o s^2 + C_3 L_1 L_3 L_L R_1 g_m r_o s^3 + C_3 L_1 L_3 L_L R_1 s^3 + C_3 L_1 L_3 L_L r_o s^3 + C_3 L_3 L_L R_1 s^3}$$

$$10.786 \quad \text{INVALID-ORDER-786} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^5 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^5 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 s^4}$$

$$10.787 \quad \text{INVALID-ORDER-787} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 R_L s^3 + C_1 L_1 L_3 L_L R_1 r_o s^3 + C_1 L_1 L_3 R_1 R_L r_o s^2 + C_1 L_1 L_L R_1 R_L r_o s^2 + C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_1 s^3}{C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 R_L s^3 + C_1 L_1 L_3 L_L R_1 r_o s^3 + C_1 L_1 L_3 R_1 R_L r_o s^2 + C_1 L_1 L_L R_1 R_L r_o s^2 + C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^3 + C_3 L_1 L_3 L_L R_1 s^3}$$

$$10.788 \quad \text{INVALID-ORDER-788} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 s^4 + C_1 L_1 L_3 R_1 R_L r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 s^4 + C_1 L_1 L_3 R_1 R_L r_o s^4}$$

$$10.789 \quad \text{INVALID-ORDER-789} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_1 r_o s^3}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_1 r_o s^3}$$

$$\mathbf{10.790 \quad INVALID-ORDER-790} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 L_3 R_1 g_m r_o s^3 + C_3 L_1 L_3 R_1 s^3}{C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_3 L_1 L_3 R_1 g_m r_o s^3 + C_3 L_1 L_3 R_1 s^3}$$

$$\mathbf{10.791 \quad INVALID-ORDER-791} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_3 R_1 g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 s^4}{C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_3 C_L L_1 L_3 R_1 g_m r_o s^4 + C_3 C_L L_1 L_3 R_1 s^4}$$

$$\mathbf{10.792 \quad INVALID-ORDER-792} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L s^3}{C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L s^3}$$

$$\mathbf{10.793 \quad INVALID-ORDER-793} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3}{C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3}$$

$$\mathbf{10.794 \quad INVALID-ORDER-794} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 r_o s^3}$$



**10.795 INVALID-ORDER-795**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 s^3 + C_1 C_L L_1 L_L R_1 R_3 r_o s^2 + C_1 C_L L_1 L_L R_1 R_3 r_o^2 s + C_1 C_L L_1 L_L R_1 R_3 r_o^3}$$

**10.796 INVALID-ORDER-796**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3}{\dots}$$

10.797 INVALID-ORDER-797  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^4}{\dots}$$

10.798 INVALID-ORDER-798  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 R_1 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 R_1 s^5}$$

**10.799 INVALID-ORDER-799**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L r_o s^5}$$

10.800 INVALID-ORDER-800  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_3 R_L s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^3 + C_1 L_1 L_3 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 R_L q_m r_o s^3 + C_3 L_1 L_3 R_1 R_3 R_L s^3 + C_3 L_1 L_3 R_3 R_L}{\dots}$$

10.801 INVALID-ORDER-801  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 r_o s^3 + C_1 L_1 R_1 R_3 r_o s^2 + C_3 L_1 L_3 R_1 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_1 R_3 s^3 + C_3 L_1 L_3 R_3 r_o s^3 + C_3 L_3 R_1 R_3 r_o s^3}{C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 r_o s^3 + C_1 L_1 R_1 R_3 r_o s^2 + C_3 L_1 L_3 R_1 R_3 g_m r_o s^3 + C_3 L_1 L_3 R_1 R_3 s^3 + C_3 L_1 L_3 R_3 r_o s^3 + C_3 L_3 R_1 R_3 r_o s^3}$$

10.802 INVALID-ORDER-802  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_3 R_L s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^3 + C_1 L_1 L_3 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 R_L r_o s + C_3 L_1 L_3 R_1 R_3 R_L}{C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_3 R_L s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^3 + C_1 L_1 L_3 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^3 + C_3 L_1 L_3 R_1 R_3 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 R_L r_o s + C_3 L_1 L_3 R_1 R_3 R_L}$$

10.803 INVALID-ORDER-803  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1}{\dots}$$

10.804 INVALID-ORDER-804  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^2 + C_1 L_1 L_3 L_L R_1 R_3 s^2 + C_1 L_1 L_3 L_L R_1 r_o s^2 + C_1 L_1 L_3 L_L R_1 R_3 s + C_1 L_1 L_3 L_L R_1 r_o s + C_1 L_1 L_3 L_L R_1 R_3 + C_1 L_1 L_3 L_L R_1 r_o}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^2 + C_1 L_1 L_3 L_L R_1 R_3 s^2 + C_1 L_1 L_3 L_L R_1 r_o s^2 + C_1 L_1 L_3 L_L R_1 R_3 s + C_1 L_1 L_3 L_L R_1 r_o s + C_1 L_1 L_3 L_L R_1 R_3 + C_1 L_1 L_3 L_L R_1 r_o}.$$

10.805 INVALID-ORDER-805  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 s^3 + C_1 L_1 L_3 L_L R_1 r_o s^3 + C_1 L_1 L_3 R_1 R_3 r_o s^2 + C_1 L_1 L_L R_1 R_3 r_o s^2 + C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^3 + C_3 L_1 L_3}$$

10.806 INVALID-ORDER-806  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_1 R_3 L_L s^3 + C_1 C_L L_1 L_3 R_1 R_3 L_L r_o s^2 + C_1 C_L L_1 L_3 R_1 R_3 L_L s^2 + C_1 C_L L_1 L_3 R_1 R_3 L_L r_o s + C_1 C_L L_1 L_3 R_1 R_3 L_L s}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^3 + C_1 C_L L_1 L_3 R_1 R_3 L_L s^3 + C_1 C_L L_1 L_3 R_1 R_3 L_L r_o s^2 + C_1 C_L L_1 L_3 R_1 R_3 L_L s^2 + C_1 C_L L_1 L_3 R_1 R_3 L_L r_o s + C_1 C_L L_1 L_3 R_1 R_3 L_L s}$$

10.807 INVALID-ORDER-807  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 R_L s^3 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^3 + C_1 L_1 L_3 L_L R_1 R_L r_o s^3 + C_1 L_1 L_3 R_1 R_3 R_L r_o s^2 + C_1 L_1 L_L R_1 R_3 R_L}$$

10.808 INVALID-ORDER-808  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^5}{...}$$

10.809 INVALID-ORDER-809  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_L L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_L L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_L L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_L L_1 L_3 R_1 s^6 + C_1 C_L L_1 L_3 s^7 + C_1 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L s^5 + C_1 C_L L_1 R_1 R_3 s^6 + C_1 C_L L_1 R_1 s^7 + C_1 C_L L_1 s^8 + C_1 C_L R_1 R_3 R_L r_o s^4 + C_1 C_L R_1 R_3 R_L s^5 + C_1 C_L R_1 R_3 s^6 + C_1 C_L R_1 s^7 + C_1 C_L s^8 + C_1 C R_1 R_3 R_L r_o s^4 + C_1 C R_1 R_3 R_L s^5 + C_1 C R_1 R_3 s^6 + C_1 C R_1 s^7 + C_1 C s^8 + C R_1 R_3 R_L r_o s^4 + C R_1 R_3 R_L s^5 + C R_1 R_3 s^6 + C R_1 s^7 + C s^8}.$$

**10.810 INVALID-ORDER-810**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_1 r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_3}{\dots}$$

10.811 INVALID-ORDER-811  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 R_1}{C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 R_1}$$

**10.812 INVALID-ORDER-812**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 L_3 R_1 R_L s^3 + C_1}{\dots}$$

**10.813 INVALID-ORDER-813**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 s^3 + C_1 C_L L_1 L_3 R_1 r_o s^3 + C_1 C_L L_1 L_3 s^2 + C_1 C_L L_1 s + C_1}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 R_1 s^3 + C_1 C_L L_1 L_3 R_1 r_o s^3 + C_1 C_L L_1 L_3 s^2 + C_1 C_L L_1 s + C_1}$$

10.814 INVALID-ORDER-814  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^5 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^5 + C_1 C_L L_1 L_3 R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^4}$$

**10.815 INVALID-ORDER-815**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 r_o s^5 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_3 L_L R_1 R_3 r_o s^4}$$

10.816 INVALID-ORDER-816  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o}{\dots}$$

10.817 INVALID-ORDER-817  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L R_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L R_o r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L R_o s^5 + C_1 C_L L_1 L_3 L_L R_1 R_L R_o r_o s^4}$$

10.818 INVALID-ORDER-818  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3 + C_1 C_3 L_1 L_3 R_1 s^3}$$

**10.819 INVALID-ORDER-819**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C$$

**10.820 INVALID-ORDER-820**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 g_m r_o s^3}{C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + C_3 L_1 L_3 R_1 R_3 g_m r_o s^3}$$

**10.821 INVALID-ORDER-821**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 r_o s^3 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 r_o s^2 + C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^4 + C_3 C$$

**10.822 INVALID-ORDER-822**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^2 + C_1}.$$

**10.823 INVALID-ORDER-823**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 R_1 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L s^5 + C_1 C_3 C_L L_1 R_1 r_o s^5 + C_1 C_3 C_L L_1 R_1 s^5 + C_1 C_3 C_L L_1 R_1 r_o s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 r_o s^3 + C_1 C_3 C_L L_1 R_1 s^3 + C_1 C_3 C_L L_1 R_1 r_o s^2 + C_1 C_3 C_L L_1 R_1 s^2 + C_1 C_3 C_L L_1 R_1 r_o s + C_1 C_3 C_L L_1 R_1 s + C_1 C_3 C_L L_1 R_1 r_o + C_1 C_3 C_L L_1 R_1}$$

**10.824 INVALID-ORDER-824**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 r_o s^4 + C_1 C_3 L_1 R_1 R_3 r_o s^3 + C}$$

10.825 INVALID-ORDER-825  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 R_3 r_o s^3 + C_1 L_1 L_L R_1 R_3 r_o s^2 + C_1 L_1 L_L R_1 R_3 r_o s + C_1 L_1 L_L R_1 R_3 r_o}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 R_3 r_o s^3 + C_1 L_1 L_L R_1 R_3 r_o s^2 + C_1 L_1 L_L R_1 R_3 r_o s + C_1 L_1 L_L R_1 R_3 r_o}$$

**10.826 INVALID-ORDER-826**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 L_L R_1 s^3 + C_1 C_3 C_L L_1 L_L R_1 r_o s^3 + C_1 C_3 C_L L_1 L_L s^2 + C_1 C_3 C_L L_1 s + C_1 C_3 C_L}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_3 C_L L_1 L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 L_L R_1 s^3 + C_1 C_3 C_L L_1 L_L R_1 r_o s^3 + C_1 C_3 C_L L_1 L_L s^2 + C_1 C_3 C_L L_1 s + C_1 C_3 C_L}$$

**10.827 INVALID-ORDER-827**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L r_o s^4 + C_1 C_L}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L r_o s^4 + C_1 C_L}$$

**10.828 INVALID-ORDER-828**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 r_o s^5 + C_1 C$$

**10.829 INVALID-ORDER-829**  $Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4}$$

**10.830 INVALID-ORDER-830**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 r_o s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$

**10.831 INVALID-ORDER-831**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$

**10.832 INVALID-ORDER-832**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$

**10.833 INVALID-ORDER-833**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$

**10.834 INVALID-ORDER-834**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$

**10.835 INVALID-ORDER-835**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_L L_1 R_3 g_m r_o s^2 + C_L L_1 R_3 s^2 + C_L R_1 R_3 g_m r_o s + C_L R_1 R_3 s}$$



10.836 INVALID-ORDER-836  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 L_1 L_L R_1 R_3 g_m r_o s^3 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 R_L g_m r_o s^3 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1}{\dots}$$

**10.837 INVALID-ORDER-837**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L}$$

10.838 INVALID-ORDER-838  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L s^4}{C_1 C_L L_1 L_L R_1 R_3 R_L r_o s^6 + C_1 C_L L_1 L_L R_1 R_3 R_L s^6 + C_1 C_L L_1 L_L R_1 R_L R_3 r_o s^6 + C_1 C_L L_1 L_L R_1 R_L R_3 s^6 + C_1 C_L L_1 L_L R_1 R_L r_o s^6 + C_1 C_L L_1 L_L R_1 R_L s^6 + C_1 C_L L_1 L_L R_3 R_L r_o s^6 + C_1 C_L L_1 L_L R_3 R_L s^6 + C_1 C_L L_1 L_L R_L R_3 r_o s^6 + C_1 C_L L_1 L_L R_L R_3 s^6 + C_1 C_L L_1 L_L R_L r_o s^6 + C_1 C_L L_1 L_L R_L s^6}$$

**10.839 INVALID-ORDER-839**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_3 L_1 R_L g_m r_o s^2 + C_3 L_1 R_L s^2 + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s + C_3 R_1}$$

**10.840 INVALID-ORDER-840**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(g_m r_o + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 s^2 + C_3 L_1 g_m r_o s^2 + C_3 L_1 s^2 + C_3 R_1 g_m r_o s + C_3 R_1 s + C_3 r_o s}$$

**10.841 INVALID-ORDER-841**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L(s)}{C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_L s^2 + C_1 L_1 R_L}.$$

**10.842 INVALID-ORDER-842**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 R_L}.$$

**10.843 INVALID-ORDER-843**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s}{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s}$$

**10.844 INVALID-ORDER-844**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L}{C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1}$$

**10.845 INVALID-ORDER-845**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3}{C_1 C_3 C_L L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3}$$

10.846 INVALID-ORDER-846  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1 L_L R_1 R_L r_o s^2 + C_1 L_1 L_L R_1 R_L s^2 + C_1 L_1 L_L R_1 R_L r_o s + C_1 L_1 L_L R_1 R_L}{C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1 L_L R_1 R_L r_o s^2 + C_1 L_1 L_L R_1 R_L s^2 + C_1 L_1 L_L R_1 R_L r_o s + C_1 L_1 L_L R_1 R_L}$$

**10.847 INVALID-ORDER-847**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3}{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3}$$

10.848 INVALID-ORDER-848  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L s^4}{C_1 C_3 C_L L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L s^4}$$

**10.849 INVALID-ORDER-849**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_3 R_L s^2 + C_1 L_1 R_3 r_o s}$$

**10.850 INVALID-ORDER-850**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_3 (g_m r_o s^2 + R_3)}{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_3}$$

$$10.851 \quad \text{INVALID-ORDER-851} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3}{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3}$$

$$10.852 \quad \text{INVALID-ORDER-852} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3}{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3}$$

$$10.853 \quad \text{INVALID-ORDER-853} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1}$$

$$10.854 \quad \text{INVALID-ORDER-854} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1}{C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1}$$

$$10.855 \quad \text{INVALID-ORDER-855} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1}$$

$$\mathbf{10.856 \quad INVALID-ORDER-856} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 L_1 L_L R_1 R_3 R_L s^4}{C_1 C_3 L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 L_1 L_L R_1 R_3 R_L s^4}$$

$$\mathbf{10.857 \quad INVALID-ORDER-857} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 L s^4}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 L s^4}$$

$$\mathbf{10.858 \quad INVALID-ORDER-858} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 R_L s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 R_L s^3}$$

$$\mathbf{10.859 \quad INVALID-ORDER-859} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_1 g_m r_o s^2 + C_1 R_1 s^2 + C_1 R_3 g_m r_o s^2 + C_1 R_3 s^2 + C_1 R_L g_m r_o s^2 + C_1 R_L s^2}{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_1 g_m r_o s^2 + C_1 R_1 s^2 + C_1 R_3 g_m r_o s^2 + C_1 R_3 s^2 + C_1 R_L g_m r_o s^2 + C_1 R_L s^2}$$

$$\mathbf{10.860 \quad INVALID-ORDER-860} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \quad \infty, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_1 g_m r_o s^2 + C_1 R_1 s^2 + C_1 R_3 g_m r_o s^2 + C_1 R_3 s^2 + C_1 R_L g_m r_o s^2 + C_1 R_L s^2}{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_3 s^3 + C_1 C_L L_1 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_3 g_m r_o s^2 + C_1 L_1 R_3 s^2 + C_1 L_1 R_L g_m r_o s^2 + C_1 L_1 R_L s^2 + C_1 R_1 g_m r_o s^2 + C_1 R_1 s^2 + C_1 R_3 g_m r_o s^2 + C_1 R_3 s^2 + C_1 R_L g_m r_o s^2 + C_1 R_L s^2}$$

**10.861 INVALID-ORDER-861**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3}{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3}$$

**10.862 INVALID-ORDER-862**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 R$$

**10.863 INVALID-ORDER-863**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}$$

**10.864 INVALID-ORDER-864**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_L R_1 q_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_1 R_3}{C_1 C_3 C_L L_1 L_L R_1 R_3 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 L_1 L_L R_1 q_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 R_1 R_3}$$

**10.865 INVALID-ORDER-865**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 q_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L q_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4}{C_1 C_3 C_L L_1 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 q_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L q_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_1 R_L r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4}$$

10.866 INVALID-ORDER-866  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4}$$

**10.867 INVALID-ORDER-867**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L}$$

10.868 INVALID-ORDER-868  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L}{\dots}$$

**10.869 INVALID-ORDER-869**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 q_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_L q_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_1 q_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_1 r_o s^2}{C_1 C_3 L_1 L_3 R_1 q_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_L q_m r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 L_1 R_1 q_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_1 r_o s^2}$$

**10.870 INVALID-ORDER-870**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3}$$

**10.871 INVALID-ORDER-871**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 R_L g_m s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 R_L s^2 + C_1 C_3 r_o s^2 + C_1 C_3 s^2 + C_1 C_3 g_m s + C_1 C_3}{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 R_L g_m s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 R_L s^2 + C_1 C_3 r_o s^2 + C_1 C_3 s^2 + C_1 C_3 g_m s + C_1 C_3}$$

**10.872 INVALID-ORDER-872**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4}{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4}$$

**10.873 INVALID-ORDER-873**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 L_3}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 L_1 L_3}$$

**10.874 INVALID-ORDER-874**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 g_r}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 L_1 L_3 L_L s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 g_r}$$

**10.875 INVALID-ORDER-875**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5}$$





$$10.881 \quad \text{INVALID-ORDER-881} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}{C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}$$

$$10.882 \quad \text{INVALID-ORDER-882} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}$$

$$10.883 \quad \text{INVALID-ORDER-883} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^5 + C_1 C_L L_1 L_3 R_1 s^5 + C_1 C_L L_1 L_3 R_L r_o s^5 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 L_L s^5 + C_1 C_L L_1 L_3 R_1 s^5 + C_1 C_L L_1 L_3 R_L r_o s^5 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}$$

$$10.884 \quad \text{INVALID-ORDER-884} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 s^4 + C_1 C_3 L_1 L_3 L_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^4 + C_1 C_L L_1 L_3 L_L r_o s^4 + C_1 L_1 L_3 L_L s^3 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}{C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 s^4 + C_1 C_3 L_1 L_3 L_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^4 + C_1 C_L L_1 L_3 L_L r_o s^4 + C_1 L_1 L_3 L_L s^3 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}$$

$$10.885 \quad \text{INVALID-ORDER-885} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^3 + C_1 C_L L_1 L_3 R_1 s^3 + C_1 C_L L_1 L_3 R_L r_o s^3 + C_1 L_1 L_3 R_1 g_m r_o s^2 + C_1 L_1 L_3 R_1 s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^3 + C_1 C_L L_1 L_3 R_1 s^3 + C_1 C_L L_1 L_3 R_L r_o s^3 + C_1 L_1 L_3 R_1 g_m r_o s^2 + C_1 L_1 L_3 R_1 s^2}$$

$$10.886 \quad \text{INVALID-ORDER-886} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 R_L s^4}{C_1 C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^4 + C_1 C_L L_1 L_3 L_L R_L r_o s^4 + C_1 L_1 L_3 L_L R_1 R_L s^4}$$

$$10.887 \quad \text{INVALID-ORDER-887} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 L_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L s^5}$$

$$10.888 \quad \text{INVALID-ORDER-888} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^4}$$

$$10.889 \quad \text{INVALID-ORDER-889} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3}{C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_1 R_L r_o s^3}$$

$$10.890 \quad \text{INVALID-ORDER-890} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3}{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3}$$



10.896 INVALID-ORDER-896  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5}$$

**10.897 INVALID-ORDER-897**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L}{\dots}$$

10.898 INVALID-ORDER-898  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 s^5 + C_1 C_3 C_L L_1 R_1 s^5 + C_1 C_3 C_L L_1 s^5 + C_1 C_3 C_L R_1 s^5 + C_1 C_3 C_L s^5 + C_1 C_3 R_1 s^5 + C_1 C_3 s^5 + C_1 C_L s^5 + C_1 R_1 s^5 + C_1 s^5 + C_3 C_L s^5 + C_3 R_1 s^5 + C_3 s^5 + C_L s^5 + R_1 s^5 + s^5}$$

10.899 INVALID-ORDER-899  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3 + \frac{1}{L_3 s}}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 R_L g_m r_o s^3 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_3 R_L g_m r_o s^3 + C_1 L_1 L_3 R_3 R_L s^3}{C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 R_3 g_m r_o s^3 + C_1 L_1 L_3 R_1 R_3 s^3 + C_1 L_1 L_3 R_1 R_L g_m r_o s^3 + C_1 L_1 L_3 R_1 R_L s^3 + C_1 L_1 L_3 R_3 R_L g_m r_o s^3 + C_1 L_1 L_3 R_3 R_L s^3}$$

**10.900 INVALID-ORDER-900**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 R_3 s^4 + C_1 C_L L_1 L_3 R_3 r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3}$$



$$\mathbf{10.906 \quad INVALID-ORDER-906} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L r_o s^4}{C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_3 L_L R_3 R_L r_o s^4}$$

$$\mathbf{10.907 \quad INVALID-ORDER-907} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^5}$$

$$\mathbf{10.908 \quad INVALID-ORDER-908} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L r_o s^4}$$

$$\mathbf{10.909 \quad INVALID-ORDER-909} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^4}{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 L_1 L_3 R_1 g_m r_o s^4}$$

$$\mathbf{10.910 \quad INVALID-ORDER-910} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^4}{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_L L_1 L_3 R_1 g_m r_o s^4}$$





$$\mathbf{10.916 \quad INVALID-ORDER-916} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

$$\mathbf{10.917 \quad INVALID-ORDER-917} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

$$\mathbf{10.918 \quad INVALID-ORDER-918} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

$$\mathbf{10.919 \quad INVALID-ORDER-919} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^4}{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^4}$$

$$\mathbf{10.920 \quad INVALID-ORDER-920} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^4}{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^4}$$





**10.931 INVALID-ORDER-931**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L s^2 + C_1 C_L R_1 R_3 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_3 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + 1}$$

**10.932 INVALID-ORDER-932**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L L_L R_1 R_3 s^3 + C_1 C_L L_L R_1 R_3 s^3}{\dots}$$

**10.933 INVALID-ORDER-933**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_1 R_3}{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_L R_1 R_3 r_o s^3 + C_1 L_1 L_L R_1 g_m r_o s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_3 s^3 + C_1 L_1 L_L r_o s^3 + C_1 L_1 R_1 R_3}$$

10.934 INVALID-ORDER-934  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^2 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_1 R_L g_m r_o s + C_1 C_L L_1 R_1 R_L s + C_1 C_L L_1 R_1 R_L g_m r_o + C_1 C_L L_1 R_1 R_L}{C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_3 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^2 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_1 R_L g_m r_o s + C_1 C_L L_1 R_1 R_L s + C_1 C_L L_1 R_1 R_L g_m r_o + C_1 C_L L_1 R_1 R_L}$$

**10.935 INVALID-ORDER-935**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^4 + C_1 C_L L_L R_1 R_3 R_L r_o s^3 + C_1 L_1 L_L R_1 R_3 g_m r_o s^3 + C_1 L_1 L_L R_1 R_3 s^3 + C_1 L_1 L_L R_1 R_L g_m r_o s^3 +$$

$$\mathbf{10.936 \quad INVALID-ORDER-936} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L s^4}{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L s^4}$$

$$\mathbf{10.937 \quad INVALID-ORDER-937} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L s^4}{C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L s^4}$$

$$\mathbf{10.938 \quad INVALID-ORDER-938} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s}$$

$$\mathbf{10.939 \quad INVALID-ORDER-939} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L R_1 r_o s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_3 R_1 g_m r_o s + C_3 R_1 s}$$

$$\mathbf{10.940 \quad INVALID-ORDER-940} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (g_m r_o + 1) (C_1 L_1 s^2 + 1)}{C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 R_1 R_L r_o s^2 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 C_L R_1 R_L r_o s^2 + C_1 L_1 R_1 g_m r_o s + C_1 L_1 R_1 s + C_3 R_1 R_L g_m r_o s + C_3 R_1 R_L s}$$

10.941 INVALID-ORDER-941  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_1 R_1 g_m}{C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L R_1 R_L r_o s^3 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_1 R_1 g_m}$$

10.942 INVALID-ORDER-942  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 r_o s^2 + C_1 C_L L_1 L_L s^4}$$

**10.943 INVALID-ORDER-943**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (g}{C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_L R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_1 L_L s^3 +$$

10.944 INVALID-ORDER-944  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L s^4}{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L s^4 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 r_o s^4 + C_1 C_3 C_L R_1 R_L s^4}$$

10.945 INVALID-ORDER-945  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_L}{C_1 C_3 L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_L R_L r_o s^4 + C_1 C_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_L}$$

$$\mathbf{10.946 \quad INVALID-ORDER-946} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 L_L R_L r_o s^3 + C_1 C_3 L_1 L_L R_L s^3 + C_1 C_3 L_1 L_L R_L r_o s^2 + C_1 C_3 L_1 L_L R_L s^2 + C_1 C_3 L_1 L_L R_L r_o s + C_1 C_3 L_1 L_L R_L}{C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L r_o s^4 + C_1 C_3 L_1 L_L R_L r_o s^3 + C_1 C_3 L_1 L_L R_L s^3 + C_1 C_3 L_1 L_L R_L r_o s^2 + C_1 C_3 L_1 L_L R_L s^2 + C_1 C_3 L_1 L_L R_L r_o s + C_1 C_3 L_1 L_L R_L}$$

$$\mathbf{10.947 \quad INVALID-ORDER-947} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 L_1 R_L r_o s + C_1 C_3 L_1 R_L}{C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^2 + C_1 C_3 L_1 R_L s^2 + C_1 C_3 L_1 R_L r_o s + C_1 C_3 L_1 R_L}$$

$$\mathbf{10.948 \quad INVALID-ORDER-948} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 R_L r_o s + C_1 L_1 R_1 R_L}{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 L_1 R_1 R_3 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_L g_m r_o s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 R_L r_o s + C_1 L_1 R_1 R_L}$$

$$\mathbf{10.949 \quad INVALID-ORDER-949} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L R_1 R_3 r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_3 r_o s + C_1 L_1 R_1 R_3}{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_L L_1 R_1 R_3 g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_3 r_o s^3 + C_1 C_L R_1 R_3 r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 R_3 s^2 + C_1 L_1 R_1 R_3 r_o s + C_1 L_1 R_1 R_3}$$

$$\mathbf{10.950 \quad INVALID-ORDER-950} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 L_1 R_1 R_3 R_L g_m r_o s^2 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 R_L r_o s + C_1 L_1 R_1 R_3 R_L}{C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L r_o s^2 + C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_3 R_L r_o s^3 + C_1 C_L R_1 R_3 R_L r_o s^2 + C_1 L_1 R_1 R_3 R_L g_m r_o s^2 + C_1 L_1 R_1 R_3 R_L s^2 + C_1 L_1 R_1 R_3 R_L r_o s + C_1 L_1 R_1 R_3 R_L}$$

$$\mathbf{10.951 \quad INVALID-ORDER-951} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^3}$$

$$\mathbf{10.952 \quad INVALID-ORDER-952} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 R_1 R_3 s^3}$$

$$\mathbf{10.953 \quad INVALID-ORDER-953} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_L R_3 r_o s^4 + C_1 C_L L_L R_1 R_3 s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^3}$$

$$\mathbf{10.954 \quad INVALID-ORDER-954} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^3}$$

$$\mathbf{10.955 \quad INVALID-ORDER-955} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_L R_3 R_L r_o s^4 + C_1 C_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + C_1 C_L L_1 L_L R_3 R_L r_o s^3}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_L R_1 R_3 s^3}$$



**10.956 INVALID-ORDER-956**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

10.957 INVALID-ORDER-957  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 R_L r_o s^2 + C_1 C_3 L_1 R_1 R_3 R_L s^2 + C_1 C_3 L_1 R_1 R_3 R_L r_o s + C_1 C_3 L_1 R_1 R_3 R_L}{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 R_L s^3 + C_1 C_3 L_1 R_1 R_3 R_L r_o s^2 + C_1 C_3 L_1 R_1 R_3 R_L s^2 + C_1 C_3 L_1 R_1 R_3 R_L r_o s + C_1 C_3 L_1 R_1 R_3 R_L}$$

10.958 INVALID-ORDER-958  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 r_o^2 s^2 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_3 r_o s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 R_1 R_3 R_L s^2 + C_1 C_3 R_1 R_3 r_o s^2 + C_1 C_3 R_1 R_L s^2 + C_1 C_3 R_1 r_o s^2 + C_1 C_3 R_3 R_L s^2 + C_1 C_3 R_3 r_o s^2 + C_1 C_3 R_L r_o s^2 + C_1 C_3 r_o^2 s^2}$$

**10.959 INVALID-ORDER-959**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 R_3 s^2}{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L R_1 R_3 r_o s^3 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 R_3 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 R_1 R_3 s^2}$$

10.960 INVALID-ORDER-960  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_3 R_L g_m r_o s^3 + C_1 C_3 L_1 R_3 R_L s^3 + C_1 C_3 L_1 R_L R_1 g_m r_o s^3 + C_1 C_3 L_1 R_L R_1 s^3 + C_1 C_3 L_1 R_L R_3 g_m r_o s^3 + C_1 C_3 L_1 R_L R_3 s^3 + C_1 C_3 L_1 R_L s^3 + C_1 C_3 L_1 s^3 + C_1 C_3 R_1 R_3 R_L g_m r_o s^3 + C_1 C_3 R_1 R_3 R_L s^3 + C_1 C_3 R_1 R_L R_3 g_m r_o s^3 + C_1 C_3 R_1 R_L R_3 s^3 + C_1 C_3 R_1 s^3 + C_1 C_3 R_3 R_L R_1 g_m r_o s^3 + C_1 C_3 R_3 R_L R_1 s^3 + C_1 C_3 R_3 R_L s^3 + C_1 C_3 R_L R_1 R_3 g_m r_o s^3 + C_1 C_3 R_L R_1 R_3 s^3 + C_1 C_3 R_L s^3 + C_1 C_3 s^3 + C_1 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_L L_1 R_3 R_L r_o s^4 + C_1 C_L L_1 R_3 R_L s^4 + C_1 C_L L_1 R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 R_1 R_3 R_L s^3 + C_1 C_L L_1 R_1 R_3 s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_3 R_L g_m r_o s^3 + C_1 C_L L_1 R_3 R_L s^3 + C_1 C_L L_1 R_L R_1 g_m r_o s^3 + C_1 C_L L_1 R_L R_1 s^3 + C_1 C_L L_1 R_L R_3 g_m r_o s^3 + C_1 C_L L_1 R_L R_3 s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_3 R_L g_m r_o s^3 + C_1 C_L R_1 R_3 R_L s^3 + C_1 C_L R_1 R_L R_3 g_m r_o s^3 + C_1 C_L R_1 R_L R_3 s^3 + C_1 C_L R_1 s^3 + C_1 C_L R_3 R_L R_1 g_m r_o s^3 + C_1 C_L R_3 R_L R_1 s^3 + C_1 C_L R_3 R_L s^3 + C_1 C_L R_L R_1 R_3 g_m r_o s^3 + C_1 C_L R_L R_1 R_3 s^3 + C_1 C_L R_L s^3 + C_1 C_L s^3 + C_1 C s^3 + C_1 L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 L_1 R_1 R_3 R_L s^4 + C_1 L_1 R_3 R_L r_o s^4 + C_1 L_1 R_3 R_L s^4 + C_1 L_1 R_1 R_3 R_L r_o s^3 + C_1 L_1 R_1 R_3 R_L s^3 + C_1 L_1 R_1 R_3 s^3 + C_1 L_1 R_1 R_L g_m r_o s^3 + C_1 L_1 R_1 R_L s^3 + C_1 L_1 R_3 R_L g_m r_o s^3 + C_1 L_1 R_3 R_L s^3 + C_1 L_1 R_L R_1 g_m r_o s^3 + C_1 L_1 R_L R_1 s^3 + C_1 L_1 R_L R_3 g_m r_o s^3 + C_1 L_1 R_L R_3 s^3 + C_1 L_1 R_L s^3 + C_1 L_1 s^3 + C_1 R_1 R_3 R_L g_m r_o s^3 + C_1 R_1 R_3 R_L s^3 + C_1 R_1 R_L R_3 g_m r_o s^3 + C_1 R_1 R_L R_3 s^3 + C_1 R_1 s^3 + C_1 R_3 R_L R_1 g_m r_o s^3 + C_1 R_3 R_L R_1 s^3 + C_1 R_3 R_L s^3 + C_1 R_L R_1 R_3 g_m r_o s^3 + C_1 R_L R_1 R_3 s^3 + C_1 R_L s^3 + C_1 s^3 + C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_L L_1 R_1 R_3 R_L s^4 + C_L L_1 R_3 R_L r_o s^4 + C_L L_1 R_3 R_L s^4 + C_L L_1 R_1 R_3 R_L r_o s^3 + C_L L_1 R_1 R_3 R_L s^3 + C_L L_1 R_1 R_3 s^3 + C_L L_1 R_1 R_L g_m r_o s^3 + C_L L_1 R_1 R_L s^3 + C_L L_1 R_3 R_L g_m r_o s^3 + C_L L_1 R_3 R_L s^3 + C_L L_1 R_L R_1 g_m r_o s^3 + C_L L_1 R_L R_1 s^3 + C_L L_1 R_L R_3 g_m r_o s^3 + C_L L_1 R_L R_3 s^3 + C_L L_1 R_L s^3 + C_L L_1 s^3 + C_L R_1 R_3 R_L g_m r_o s^3 + C_L R_1 R_3 R_L s^3 + C_L R_1 R_L R_3 g_m r_o s^3 + C_L R_1 R_L R_3 s^3 + C_L R_1 s^3 + C_L R_3 R_L R_1 g_m r_o s^3 + C_L R_3 R_L R_1 s^3 + C_L R_3 R_L s^3 + C_L R_L R_1 R_3 g_m r_o s^3 + C_L R_L R_1 R_3 s^3 + C_L R_L s^3 + C_L s^3 + C s^3$$

10.961 INVALID-ORDER-961  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L L_1 R_L s^4}{C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_1 R_L r_o s^4 + C_1 C_3 C_L L_1 R_L s^4}$$

**10.962 INVALID-ORDER-962**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L}{\dots}$$

**10.963 INVALID-ORDER-963**  $Z(s) = \left( \frac{R_1(L_1s + \frac{1}{C_1s})}{L_1s + R_1 + \frac{1}{C_1s}}, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 s^5 + C_1 C_3 C_L L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^3 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^3 + C_1 C_3 L_1 L_L R_1 R_3 s^2 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^2 + C_1 C_3 L_1 L_L R_1 R_3 s + C_1 C_3 L_1 L_L R_1 R_3 r_o s + C_1 C_3 L_1 L_L R_1 R_3}{C_1 C_3 C_L L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 s^5 + C_1 C_3 C_L L_L R_3 r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 s^4 + C_1 C_3 L_1 L_L R_3 s^4 + C_1 C_3 L_1 L_L R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^3 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^3 + C_1 C_3 L_1 L_L R_1 R_3 s^2 + C_1 C_3 L_1 L_L R_1 R_3 r_o s^2 + C_1 C_3 L_1 L_L R_1 R_3 s + C_1 C_3 L_1 L_L R_1 R_3 r_o s + C_1 C_3 L_1 L_L R_1 R_3}$$

10.964 INVALID-ORDER-964  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4}{C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_L s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4 + C_1 C_3 C_L L_1 R_1 s^4}$$

**10.965 INVALID-ORDER-965**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5 + C_1 C_3 C_L L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_L R_1 R_3 s^4 + C_1 C_3 L_1}{\dots}$$

10.966 INVALID-ORDER-966  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}$$

10.967 INVALID-ORDER-967  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}{C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}$$

10.968 INVALID-ORDER-968  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_L g_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1 R_L r_o s^3 + C_1 C_3 L_3 R_1 R_L s^3 + C_1 C_3 L_3 R_1 r_o}{\dots}$$

10.969 INVALID-ORDER-969  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 L_1 L_3 s^4 + C_1 C_3 L_1 R_1 g_m r_o s^3 + C_1 C_3 L_1 R_1 s^3 + C_1 C_3 L_1 r_o s^3 + C_1 C_3 L_3 R_1 s^3}$$

10.970 INVALID-ORDER-970  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_{mr} r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_{mr} r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 R_L s^3 + C_1 C_3 L_1 L_3 R_L r_o s^2 + C_1 C_3 L_1 L_3 R_L s^2 + C_1 C_3 L_1 L_3 R_L r_o s + C_1 C_3 L_1 L_3 R_L}{C_1 C_3 C_L L_1 L_3 R_1 R_L g_{mr} r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_{mr} r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 R_L s^3 + C_1 C_3 L_1 L_3 R_L r_o s^2 + C_1 C_3 L_1 L_3 R_L s^2 + C_1 C_3 L_1 L_3 R_L r_o s + C_1 C_3 L_1 L_3 R_L}$$



10.976 INVALID-ORDER-976  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + C_1 C_3 C_L L_1 L_L}$$

10.977 INVALID-ORDER-977  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 q_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L q_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 L_L s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 q_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L q_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 L_L s^5}$$

10.978 INVALID-ORDER-978  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 L_1 L_3 R_1 g_m r_o s^3 + C_1 L_1 L_3 R_1 s^3 + C_1 L_1 L_3 R_L s^3 + C_1 L_1 L_3 r_o s^3 + C_1 L_1 R_1 R_L g_m}$$

**10.979 INVALID-ORDER-979**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_3 R_1 s (g_m r_o)}{C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_L L_1 L_3 R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 s^4 + C_1 C_L L_1 L_3 r_o s^4 + C_1 C_L L_3 R_1 r_o s^3 + C_1 L_1 L_3 s^3 + C_1}$$

10.980 INVALID-ORDER-980  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_L r_o s^3 + C_1 C_L L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 R_1 R_L s^4 + C_1 C_L L_1 L_3 R_L r_o s^4 + C_1 C_L L_3 R_1}$$

10.981 INVALID-ORDER-981  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_{mr_o} s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_{mr_o} s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_1 r_o s^2 + C_1 C_3 L_3 R_1 s^2 + C_1 C_3 L_3 R_1 r_o s + C_1 C_3 L_3 R_1}{C_1 C_3 C_L L_1 L_3 R_1 R_L g_{mr_o} s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_{mr_o} s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_3 R_1 s^4 + C_1 C_3 L_3 R_1 r_o s^3 + C_1 C_3 L_3 R_1 s^3 + C_1 C_3 L_3 R_1 r_o s^2 + C_1 C_3 L_3 R_1 s^2 + C_1 C_3 L_3 R_1 r_o s + C_1 C_3 L_3 R_1}$$

10.982 INVALID-ORDER-982  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 r_o s^5 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_3 R_1}{\dots}$$

**10.983 INVALID-ORDER-983**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 s^4 + C_1 C_3 L_1 L_3 L_L r_o s^4 + C_1 C_3 L_3 L_L R_1 r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^4 + C_1 C_L L_1 L_3 L_L r_o s^4 + C_1 C_L L_3 L_L R_1 s^3}{C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 s^4 + C_1 C_3 L_1 L_3 L_L r_o s^4 + C_1 C_3 L_3 L_L R_1 r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 s^4 + C_1 C_L L_1 L_3 L_L r_o s^4 + C_1 C_L L_3 L_L R_1 s^3}$$

10.984 INVALID-ORDER-984  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m s^4 + C_1 C_3 C_L L_3 L_L R_1 R_L s^4 + C_1 C_3 C_L L_3 L_L r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m s^3 + C_1 C_3 C_L L_3 R_1 R_L s^3 + C_1 C_3 C_L L_3 R_L r_o s^3 + C_1 C_3 C_L L_3 R_L g_m r_o s^2 + C_1 C_3 C_L L_3 R_L s^2 + C_1 C_3 C_L L_3 R_L r_o s^2 + C_1 C_3 C_L L_3 R_L g_m r_o s + C_1 C_3 C_L L_3 R_L s + C_1 C_3 C_L L_3 R_L r_o + C_1 C_3 C_L L_3 R_L g_m r_o}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m s^4 + C_1 C_3 C_L L_3 L_L R_1 R_L s^4 + C_1 C_3 C_L L_3 L_L r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m s^3 + C_1 C_3 C_L L_3 R_1 R_L s^3 + C_1 C_3 C_L L_3 R_L r_o s^3 + C_1 C_3 C_L L_3 R_L g_m r_o s^2 + C_1 C_3 C_L L_3 R_L s^2 + C_1 C_3 C_L L_3 R_L r_o s^2 + C_1 C_3 C_L L_3 R_L g_m r_o s + C_1 C_3 C_L L_3 R_L s + C_1 C_3 C_L L_3 R_L r_o + C_1 C_3 C_L L_3 R_L g_m r_o}.$$

10.985 INVALID-ORDER-985  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L s^4 + C_1 C_L L_1 L_3 L_L R_1 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 R_L s^3 + C_1 C_L L_1 L_3 L_L R_1 R_L s^2 + C_1 C_L L_1 L_3 L_L R_1 R_L s + C_1 C_L L_1 L_3 L_L R_1 R_L}$$

10.986 INVALID-ORDER-986  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_L R_1 R_L s^5 + C_1 C_3 L_1 L_L R_1 s^5 + C_1 C_3 L_1 L_L R_L s^5 + C_1 C_3 L_1 L_L s^5 + C_1 C_3 L_1 L s^5 + C_1 C_3 L_1 s^5 + C_1 C_3 s^5 + C_1 C s^5 + C_1 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 L_L R_L s^5 + C_1 C_3 L_1 L_L R_1 R_L s^5 + C_1 C_3 L_1 L_L R_1 s^5 + C_1 C_3 L_1 L_L R_L s^5 + C_1 C_3 L_1 L_L s^5 + C_1 C_3 L_1 L s^5 + C_1 C_3 L_1 s^5 + C_1 C_3 s^5 + C_1 C s^5 + C_1 s^5}$$

10.987 INVALID-ORDER-987  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_1 R_L r_o s^4}$$

10.988 INVALID-ORDER-988  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 q_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_L s^4 + C_1 C_3 L_1 L_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 q_m r_o s^3 + C_1 C_3 L_1 R_1 R_3 s^3 + C_1 C_3 L_1 R_1 R_L q_m r_o s^3 + C_1 C_3 L_1 R_1 R_L s^3 + C_1 C_3 L_1$$

**10.989 INVALID-ORDER-989**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_3 r_o s^4 + C_1 C_3 C_L L_3 R_1 r_o s^4 + C_1 C_3 C_L R_1 I$$

**10.990 INVALID-ORDER-990**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L L_3 R_L s^4 + C_1 C_3 C_L L_3 s^4}{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + C_1 C_3 C_L L_1 R_3 R_L r_o s^4 + C_1 C_3 C_L L_1 R_3 R_L s^4 + C_1 C_3 C_L L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 C_L L_3 R_1 R_L s^4 + C_1 C_3 C_L L_3 R_L r_o s^4 + C_1 C_3 C_L L_3 R_L s^4 + C_1 C_3 C_L L_3 s^4}.$$

**10.991 INVALID-ORDER-991**  $Z(s) = \left( \frac{R_1(L_1s + \frac{1}{C_1s})}{L_1s + R_1 + \frac{1}{C_1s}}, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^4 + C_1 C_3 C_L L_1 R_1 R_3 s^4 + C_1 C_3 C_L L_1 R_L R_L g_m r_o s^4 + C_1 C_3$$

**10.992 INVALID-ORDER-992**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 q_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 s^5}$$

**10.993 INVALID-ORDER-993**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_3 s^5 + C_1 C_3 C_L L_1 L_L R_3 R_3 r_o s^5 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_3 s^5}$$

**10.994 INVALID-ORDER-994**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_1 C_3 C_L L_1 L_3 R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 s^5 + C_1 C_3 C_L L_1 L_L R_L s^5 + C_1 C_3 C_L L_1 L_L r_o s^5}$$

**10.995 INVALID-ORDER-995**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_L r_o s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L r_o s^5}$$





10.1001 INVALID-ORDER-1001  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3$$

10.1002 INVALID-ORDER-1002  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^3 + C_1 C_3 L_1 L_3 R_3 s^3 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^2 + C_1 C_3 L_1 R_1 R_3 s^2 + C_1 C_3 L_1 R_3 r_o s + C_1 C_3 L_1 R_3 s + C_1 C_3 R_1 R_3 g_m r_o + C_1 C_3 R_1 R_3 + C_1 C_3 R_3 r_o + C_1 C_3 R_3}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^3 + C_1 C_3 L_1 L_3 R_3 s^3 + C_1 C_3 L_1 R_1 R_3 g_m r_o s^2 + C_1 C_3 L_1 R_1 R_3 s^2 + C_1 C_3 L_1 R_3 r_o s + C_1 C_3 L_1 R_3 s + C_1 C_3 R_1 R_3 g_m r_o + C_1 C_3 R_1 R_3 + C_1 C_3 R_3 r_o + C_1 C_3 R_3}$$

10.1003 INVALID-ORDER-1003  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{1}{C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^4 + C_1 C_3 L_1 L_3 L_L R_3 r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 s^4 + C_1 C_L L_1 L_3 L_L R_3 r_o s^3 + C_1 C_L L_1 L_3 L_L R_3 s^3 + C_1 C_L L_1 L_3 L_L R_3 r_o s^2 + C_1 C_L L_1 L_3 L_L R_3 s^2 + C_1 C_L L_1 L_3 L_L R_3 r_o s + C_1 C_L L_1 L_3 L_L R_3}$$

10.1004 INVALID-ORDER-1004  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 +$$

10.1005 INVALID-ORDER-1005  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^4}{C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_3 R_L r_o s^4 + C_1 C_3 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^4 + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L s^4}$$

$$\mathbf{10.1006 \quad INVALID-ORDER-1006} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}$$

$$\mathbf{10.1007 \quad INVALID-ORDER-1007} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}$$

$$\mathbf{10.1008 \quad INVALID-ORDER-1008} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_3 R_1 R_3 s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}$$

$$\mathbf{10.1009 \quad INVALID-ORDER-1009} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}$$

$$\mathbf{10.1010 \quad INVALID-ORDER-1010} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4}$$

$$\mathbf{10.1011 \quad INVALID-ORDER-1011} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}$$

$$\mathbf{10.1012 \quad INVALID-ORDER-1012} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}$$

$$\mathbf{10.1013 \quad INVALID-ORDER-1013} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3 L_L R_3 s^5}$$

$$\mathbf{10.1014 \quad INVALID-ORDER-1014} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5}$$

$$\mathbf{10.1015 \quad INVALID-ORDER-1015} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 s^5 + C_1 C_3 L_1 L_3 L_L R_3 R_L g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_3 R_L s^5}$$

$$\mathbf{10.1016 \quad INVALID-ORDER-1016} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

$$\mathbf{10.1017 \quad INVALID-ORDER-1017} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

$$\mathbf{10.1018 \quad INVALID-ORDER-1018} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}{C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_1 R_L g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_L s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_L r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}$$

$$\mathbf{10.1019 \quad INVALID-ORDER-1019} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3}{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 r_o s^4 + C_1 C_3 L_1 L_3 R_1 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 s^4 + C_1 C_3 L_1 L_3 R_3 s^4 + C_1 C_3 L_1 L_3}$$

$$\mathbf{10.1020 \quad INVALID-ORDER-1020} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \quad \infty, \quad \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L r_o s^5 + C_1 C_3 C_L L_3 R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 g_m r_o s^4 + C_1 C_3 L_1 L_3 R_1 R_3 s^4 + C_1 C_3 L_1 L_3 R_3 R_L s^4 + C_1 C_3 L_1 L_3 R_3 r_o s^4 + C_1 C_3 L_1 R_1 R_3 s^4}$$

**10.1021 INVALID-ORDER-1021**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 R_3 r_o s^5 + C_1 C_3 C_L L_1 L_3 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_L r_o s^5 + C_1 C_3 C_L L_1 L_3 R_L s^5 + C_1 C_3 C_L L_1 L_3 s^5 + C_1 C_3 C_L L_1 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 R_1 R_3 s^5 + C_1 C_3 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 R_1 R_L s^5 + C_1 C_3 C_L L_1 R_3 R_L g_m r_o s^5 + C_1 C_3 C_L L_1 R_3 R_L s^5 + C_1 C_3 C_L L_1 R_3 r_o s^5 + C_1 C_3 C_L L_1 R_3 s^5 + C_1 C_3 C_L L_1 R_L r_o s^5 + C_1 C_3 C_L L_1 R_L s^5 + C_1 C_3 C_L L_1 s^5 + C_1 C_3 C_L R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L R_1 R_3 s^5 + C_1 C_3 C_L R_1 R_L g_m r_o s^5 + C_1 C_3 C_L R_1 R_L s^5 + C_1 C_3 C_L R_3 R_L g_m r_o s^5 + C_1 C_3 C_L R_3 R_L s^5 + C_1 C_3 C_L R_3 r_o s^5 + C_1 C_3 C_L R_3 s^5 + C_1 C_3 C_L R_L r_o s^5 + C_1 C_3 C_L R_L s^5 + C_1 C_3 C_L s^5 + C_1 C_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 R_1 R_3 s^5 + C_1 C_3 R_1 R_L g_m r_o s^5 + C_1 C_3 R_1 R_L s^5 + C_1 C_3 R_3 R_L g_m r_o s^5 + C_1 C_3 R_3 R_L s^5 + C_1 C_3 R_3 r_o s^5 + C_1 C_3 R_3 s^5 + C_1 C_3 R_L r_o s^5 + C_1 C_3 R_L s^5 + C_1 C_3 s^5 + C_1 R_1 R_3 g_m r_o s^5 + C_1 R_1 R_3 s^5 + C_1 R_1 R_L g_m r_o s^5 + C_1 R_1 R_L s^5 + C_1 R_3 R_L g_m r_o s^5 + C_1 R_3 R_L s^5 + C_1 R_3 r_o s^5 + C_1 R_3 s^5 + C_1 R_L r_o s^5 + C_1 R_L s^5 + C_1 s^5 + C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_3 C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_3 C_L L_1 L_3 R_1 R_L s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_3 C_L L_1 L_3 R_3 R_L s^5 + C_3 C_L L_1 L_3 R_3 r_o s^5 + C_3 C_L L_1 L_3 R_3 s^5 + C_3 C_L L_1 L_3 R_L r_o s^5 + C_3 C_L L_1 L_3 R_L s^5 + C_3 C_L L_1 L_3 s^5 + C_3 C_L L_1 R_1 R_3 g_m r_o s^5 + C_3 C_L L_1 R_1 R_3 s^5 + C_3 C_L L_1 R_1 R_L g_m r_o s^5 + C_3 C_L L_1 R_1 R_L s^5 + C_3 C_L L_1 R_3 R_L g_m r_o s^5 + C_3 C_L L_1 R_3 R_L s^5 + C_3 C_L L_1 R_3 r_o s^5 + C_3 C_L L_1 R_3 s^5 + C_3 C_L L_1 R_L r_o s^5 + C_3 C_L L_1 R_L s^5 + C_3 C_L L_1 s^5 + C_3 C_L R_1 R_3 g_m r_o s^5 + C_3 C_L R_1 R_3 s^5 + C_3 C_L R_1 R_L g_m r_o s^5 + C_3 C_L R_1 R_L s^5 + C_3 C_L R_3 R_L g_m r_o s^5 + C_3 C_L R_3 R_L s^5 + C_3 C_L R_3 r_o s^5 + C_3 C_L R_3 s^5 + C_3 C_L R_L r_o s^5 + C_3 C_L R_L s^5 + C_3 C_L s^5 + C_3 R_1 R_3 g_m r_o s^5 + C_3 R_1 R_3 s^5 + C_3 R_1 R_L g_m r_o s^5 + C_3 R_1 R_L s^5 + C_3 R_3 R_L g_m r_o s^5 + C_3 R_3 R_L s^5 + C_3 R_3 r_o s^5 + C_3 R_3 s^5 + C_3 R_L r_o s^5 + C_3 R_L s^5 + C_3 s^5 + C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_L L_1 L_3 R_1 R_3 s^5 + C_L L_1 L_3 R_1 R_L g_m r_o s^5 + C_L L_1 L_3 R_1 R_L s^5 + C_L L_1 L_3 R_3 R_L g_m r_o s^5 + C_L L_1 L_3 R_3 R_L s^5 + C_L L_1 L_3 R_3 r_o s^5 + C_L L_1 L_3 R_3 s^5 + C_L L_1 L_3 R_L r_o s^5 + C_L L_1 L_3 R_L s^5 + C_L L_1 L_3 s^5 + C_L L_1 R_1 R_3 g_m r_o s^5 + C_L L_1 R_1 R_3 s^5 + C_L L_1 R_1 R_L g_m r_o s^5 + C_L L_1 R_1 R_L s^5 + C_L L_1 R_3 R_L g_m r_o s^5 + C_L L_1 R_3 R_L s^5 + C_L L_1 R_3 r_o s^5 + C_L L_1 R_3 s^5 + C_L L_1 R_L r_o s^5 + C_L L_1 R_L s^5 + C_L L_1 s^5 + C_L R_1 R_3 g_m r_o s^5 + C_L R_1 R_3 s^5 + C_L R_1 R_L g_m r_o s^5 + C_L R_1 R_L s^5 + C_L R_3 R_L g_m r_o s^5 + C_L R_3 R_L s^5 + C_L R_3 r_o s^5 + C_L R_3 s^5 + C_L R_L r_o s^5 + C_L R_L s^5 + C_L s^5 + R_1 R_3 g_m r_o s^5 + R_1 R_3 s^5 + R_1 R_L g_m r_o s^5 + R_1 R_L s^5 + R_3 R_L g_m r_o s^5 + R_3 R_L s^5 + R_3 r_o s^5 + R_3 s^5 + R_L r_o s^5 + R_L s^5 + s^5}$$

**10.1022 INVALID-ORDER-1022**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5}{\dots}$$

**10.1023 INVALID-ORDER-1023**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 s^5 + C_1 C_3 L_1 L_3$$

10.1024 INVALID-ORDER-1024  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L r_o s^6 + C_1 C_3 C_L L_1 L_3 R_1 R_3 g_m r_o s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5}{\dots}$$

10.1025 INVALID-ORDER-1025  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^2 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^2 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L r_o s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 R_L r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m r_o s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^5 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^4 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^3 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^3 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s^2 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s^2 + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o s + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L s + C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L r_o}$$

**10.1026 INVALID-ORDER-1026**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$

**10.1027 INVALID-ORDER-1027**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m r_o s^6 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + C_1 C_3 C_L L_1 L_3 L_L R_3 r_o s^6}$$