Filter Summary Report: TIA,full,parasitic,Z1,ZL

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Contents

10.60 INVALID-ORDER-60 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 6

10.61 INVALID-ORDER-61 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$ . . . 6

10.62 INVALID-ORDER-62 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$ . . . 6

10.63 INVALID-ORDER-63 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$ . . . 6

10.64 INVALID-ORDER-64 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$ . . . 6

10.65 INVALID-ORDER-65 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$ . . . 6

10.66 INVALID-ORDER-66 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ . . . 6

10.67 INVALID-ORDER-67 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$ . . . 6

10.68 INVALID-ORDER-68 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_{L^z}}}}\right)$ . . . 6

10.69 INVALID-ORDER-69 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ . . . 6

10.70 INVALID-ORDER-70 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 6

10.71 INVALID-ORDER-71 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$ . . . 7

10.72 INVALID-ORDER-72 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$ . . . 7

10.73 INVALID-ORDER-73 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$ . . . 7

10.74 INVALID-ORDER-74 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$ . . . 7

10.75 INVALID-ORDER-75 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$ . . . 7

10.76 INVALID-ORDER-76 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ . . . 7

10.77 INVALID-ORDER-77 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$ . . . 7

10.78 INVALID-ORDER-78 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_{L^z}}}}\right)$ . . . 7

10.79 INVALID-ORDER-79 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ . . . 7

10.80 INVALID-ORDER-80 $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 7

10.81 INVALID-ORDER-81 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$ . . . 7

10.82 INVALID-ORDER-82 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$ . . . 7

10.83 INVALID-ORDER-83 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$ . . . 7

10.84 INVALID-ORDER-84 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$ . . . 7

10.85 INVALID-ORDER-85 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$ . . . 7

10.86 INVALID-ORDER-86 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ . . . 7

10.87 INVALID-ORDER-87 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$ . . . 7

10.88 INVALID-ORDER-88 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_{L^z}}}}\right)$ . . . 7

10.89 INVALID-ORDER-89 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ . . . 8

10.90 INVALID-ORDER-90 $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1 + \frac{1}{L_{1^z}}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 8

10.91 INVALID-ORDER-91 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$ . . . 8

10.92 INVALID-ORDER-92 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$ . . . 8

10.93 INVALID-ORDER-93 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$ . . . 8

10.94 INVALID-ORDER-94 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$ . . . 8

10.95 INVALID-ORDER-95 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$ . . . 8

10.96 INVALID-ORDER-96 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ . . . 8

10.97 INVALID-ORDER-97 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$ . . . 8

10.98 INVALID-ORDER-98 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_{L^z}}}}\right)$ . . . 8

10.99 INVALID-ORDER-99 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ . . . 8

10.100 INVALID-ORDER-100 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 8

10.101 INVALID-ORDER-101 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$ . . . 8

10.102 INVALID-ORDER-102 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$ . . . 8

10.103 INVALID-ORDER-103 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$ . . . 8

10.104 INVALID-ORDER-104 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$ . . . 8

10.105 INVALID-ORDER-105 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$ . . . 8

10.106 INVALID-ORDER-106 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ . . . 8

10.107 INVALID-ORDER-107 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$ . . . 9

10.108 INVALID-ORDER-108 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_{L^z}}}}\right)$ . . . 9

10.109 INVALID-ORDER-109 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ . . . 9

10.110 INVALID-ORDER-110 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_{1^z}}\right)}{L_1 s + R_1 + \frac{1}{C_{1^z}}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_{L^z}}\right)}{L_L s + R_L + \frac{1}{C_{L^z}}}\right)$ . . . 9

1 Examined $H(z)$ for TIA full parasitic Z1 ZL: $\frac{Z_1 Z_L (C_{gd}s - g_m)(g_m r_o + 1)}{C_{gd}^2 C_{gs} Z_1 Z_L r_o^2 s^3 + C_{gd}^2 Z_1 Z_L g_m r_o^2 s^2 + C_{gd}^2 Z_1 Z_L r_o s^2 + C_{gd}^2 Z_L r_o s^2 - C_{gd} C_{gs} Z_1 Z_L g_m r_o^2 s^2 + C_{gd} C_{gs} Z_1 Z_L r_o s^2 + C_{gd} C_{gs} Z_1 r_o^2 s^2 - C_{gd} Z_1 Z_L g_m^2 r_o^2 s - C_{gd} Z_1 Z_L g_m r_o s + C_{gd} Z_1 g_m r_o s + C_{gd} Z_1 r_o s + 2C_{gd} Z_1 s - C_{gd} Z_L g_m r_o s + C_{gd} Z_L s + C_{gd} r_o s - C_{gs} Z_1 Z_L g_m r_o s + C_{gs} Z_1 g_m r_o s + C_{gs} Z_1 r_o s + C_{gs} Z_1 s - Z_1 g_m^2 r_o - Z_1 g_m - Z_L g_m - g_m r_o}$

$$H(z) = \frac{Z_1 Z_L \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_{gd}^2 C_{gs} Z_1 Z_L r_o^2 s^3 + C_{gd}^2 Z_1 Z_L g_m r_o^2 s^2 + C_{gd}^2 Z_1 Z_L r_o s^2 + C_{gd}^2 Z_L r_o s^2 - C_{gd} C_{gs} Z_1 Z_L g_m r_o^2 s^2 + C_{gd} C_{gs} Z_1 Z_L r_o s^2 + C_{gd} C_{gs} Z_1 r_o^2 s^2 - C_{gd} Z_1 Z_L g_m^2 r_o^2 s - C_{gd} Z_1 Z_L g_m r_o s + C_{gd} Z_1 g_m r_o s + C_{gd} Z_1 r_o s + 2C_{gd} Z_1 s - C_{gd} Z_L g_m r_o s + C_{gd} Z_L s + C_{gd} r_o s - C_{gs} Z_1 Z_L g_m r_o s + C_{gs} Z_1 g_m r_o s + C_{gs} Z_1 r_o s + C_{gs} Z_1 s - Z_1 g_m^2 r_o - Z_1 g_m - Z_L g_m - g_m r_o}$$

2 HP

3 BP

4 LP

5 BS

6 GE

7 AP

8 INVALID-NUMER

9 INVALID-WZ

10 INVALID-ORDER

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

$$H(s) = \frac{R_1 R_L \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_{gd}^2 C_{gs} R_1 R_L r_o^2 s^3 + C_{gd}^2 R_1 R_L g_m r_o^2 s^2 + C_{gd}^2 R_1 R_L r_o s^2 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} R_1 R_L g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 R_L r_o s^2 + C_{gd} C_{gs} R_1 r_o^2 s^2 - C_{gd} R_1 R_L g_m^2 r_o^2 s - C_{gd} R_1 R_L g_m r_o s + C_{gd} R_1 g_m r_o^2 s + 2C_{gd} R_1 g_m r_o s + C_{gd} R_1 r_o s + 2C_{gd} R_1 s - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} R_1 R_L g_m r_o s + C_{gs} R_1 g_m r_o s + C_{gs} R_1 r_o s + C_{gs} R_1 s - R_1 g_m^2 r_o - R_1 g_m - R_L g_m - g_m r_o}$$

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

$$H(s) = \frac{R_1 \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} R_1 r_o^2 s^3 + C_L C_{gd} R_1 g_m r_o^2 s^2 + 2C_L C_{gd} R_1 g_m r_o s^2 + C_L C_{gd} R_1 r_o s^2 + 2C_L C_{gd} R_1 s^2 + C_L C_{gd} r_o s^2 + C_L C_{gs} R_1 g_m r_o s^2 + C_L C_{gs} R_1 r_o s^2 + C_L C_{gs} R_1 s^2 - C_L R_1 g_m^2 r_o s - C_L R_1 g_m s - C_L g_m r_o s + C_{gd}^2 C_{gs} R_1 r_o^2 s^3 + C_{gd}^2 R_1 g_m r_o^2 s^2 + C_{gd}^2 R_1 r_o^2 s^2 + C_{gd}^2 r_o^2 s^2 - C_{gd} C_{gs} R_1 g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 r_o s^2 - C_{gd} R_1 g_m^2 r_o^2 s - C_{gd} R_1 g_m r_o s - C_{gd} g_m r_o s + C_{gd} s - C_{gs} R_1 g_m r_o s - g_m}$$

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

$$H(s) = \frac{R_1 R_L \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} R_1 R_L r_o^2 s^3 + C_L C_{gd} R_1 R_L g_m r_o^2 s^2 + 2C_L C_{gd} R_1 R_L g_m r_o s^2 + C_L C_{gd} R_1 R_L r_o s^2 + 2C_L C_{gd} R_1 R_L s^2 + C_L C_{gd} R_L r_o s^2 + C_L C_{gs} R_1 R_L g_m r_o s^2 + C_L C_{gs} R_1 R_L r_o s^2 + C_L C_{gs} R_1 R_L s^2 - C_L R_1 R_L g_m^2 r_o s - C_L R_1 R_L g_m s - C_L R_L g_m r_o s + C_{gd}^2 C_{gs} R_1 R_L r_o^2 s^3 + C_{gd}^2 R_1 R_L g_m r_o^2 s^2 + C_{gd}^2 R_1 R_L r_o s^2 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} R_1 R_L g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 R_L r_o s^2 + C_{gd} C_{gs} R_1 r_o^2 s^2 - C_{gd} R_1 R_L g_m^2 r_o^2 s - C_{gd} R_1 g_m r_o^2 s + 2C_{gd} R_1 g_m r_o s + C_{gd} R_1 r_o s + 2C_{gd} R_1 s - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} R_1 R_L g_m r_o s + C_{gs} R_1 g_m r_o s + C$$

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

$$H(s) = \frac{R_1 \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right) \left(C_L R_L s + 1\right)}{C_L C_{gd}^2 C_{gs} R_1 R_L r_o^2 s^3 + C_L C_{gd}^2 R_1 R_L g_m r_o^2 s^2 + C_L C_{gd}^2 R_1 R_L r_o s^2 + C_L C_{gd}^2 R_L r_o s^2 - C_L C_{gd} C_{gs} R_1 R_L g_m r_o^2 s^2 + C_L C_{gd} C_{gs} R_1 R_L r_o s^2 + C_L C_{gd} C_{gs} R_1 r_o^2 s^2 - C_L C_{gd} R_1 R_L g_m^2 r_o^2 s^2 - C_L C_{gd} R_1 R_L g_m r_o s^2 + C_L C_{gd} R_1 g_m r_o^2 s^2 + 2C_L C_{gd} R_1 g_m r_o s^2 + C_L C_{gd} R_1 r_o s^2 + 2C_L C_{gd} R_1 s^2 - C_L C_{gd} R_L g_m r_o s^2 + C_L C_{gd} R_L s^2 + C_L C_{gd} r_o s^2 - C_L C_{gs} R_1 R_L g_m r_o s^2 + C_L C_{gs} R_1 g_m r_o s^2 + C_L C_{gs} R_1 r_o s^2 + C_L C_{gs} R_1 s^2 - C_L R_1 g_m^2 r_o s^2 - C_L R_1 g_m s^2 - C_L R_L g_m s^2 - C_L g_m r_o s^2 + C_{gd}^2 C_{gs} R_1 r_o^2 s^3 + C_{gd}^2 R_1 g_m r_o^2 s^2 + C_{gd}^2 R_1 r_o^2 s^2 + C_{gd}^2 r_o^2 s^2 - C_{gd} C_{gs} R_1 g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 r_o s^2 - C_{gd} R_1 g_m^2 r_o^2 s - C_{gd} R_1 g_m r_o s - C_{gd} g_m r_o s + C_{gd} s - C_{gs} R_1 g_m r_o s - g_m$$

10.5 INVALID-ORDER-5 $Z(s) = \left(R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{R_1 \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right) \left(C_L L_L s^2 + 1\right)}{C_L C_{gd}^2 C_{gs} L_L R_1 r_o^2 s^5 + C_L C_{gd}^2 L_L R_1 g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_1 r_o s^4 + C_L C_{gd}^2 L_L r_o s^4 - C_L C_{gd} C_{gs} L_L R_1 g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_1 r_o s^4 + C_L C_{gd} C_{gs} R_1 r_o^2 s^4 - C_L C_{gd} L_L R_1 g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_1 g_m r_o s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 + C_L C_{gd} R_1 g_m r_o^2 s^2 + 2C_L C_{gd} R_1 g_m r_o s^2 + C_L C_{gd} R_1 r_o s^2 + 2C_L C_{gd} R_1 s^2 + C_L C_{gd} r_o s^2 - C_L C_{gs} L_L R_1 g_m r_o s^3 + C_L C_{gs} R_1 g_m r_o s^2 + C_L C_{gs} R_1 r_o s^2 + C_L C_{gs} R_1 s^2 - C_L L_L g_m s^2 - C_L R_1 g_m^2 r_o s - C_L R_1 g_m s - C_L g_m r_o s + C_{gd}^2 C_{gs} R_1 r_o^2 s^3 + C_{gd}^2 R_1 g_m r_o^2 s^2 + C_{gd}^2 R_1 r_o^2 s^2 + C_{gd}^2 r_o^2 s^2 - C_{gd} C_{gs} R_1 g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 r_o s^2 - C_{gd} R_1 g_m^2 r_o^2 s - C_{gd} R_1 g_m r_o s - C_{gd} g_m r_o s + C_{gd} s - C_{gs} R_1 g_m r_o s - g_m$$

10.6 INVALID-ORDER-6 $Z(s) = \left(R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_L R_1 s \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_L R_1 r_o^2 s^4 + C_L C_{gd} L_L R_1 g_m r_o^2 s^3 + 2C_L C_{gd} L_L R_1 g_m r_o s^3 + C_L C_{gd} L_L R_1 r_o s^3 + 2C_L C_{gd} L_L R_1 s^3 + C_L C_{gd} L_L r_o s^3 + C_L C_{gs} L_L R_1 g_m r_o s^3 + C_L C_{gs} L_L R_1 r_o s^3 + C_L C_{gs} L_L R_1 s^3 - C_L L_L R_1 g_m^2 r_o s^2 - C_L L_L R_1 g_m s^2 - C_L L_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_L R_1 r_o^2 s^4 + C_{gd}^2 L_L R_1 g_m r_o^2 s^3 + C_{gd}^2 L_L R_1 r_o s^3 + C_{gd}^2 L_L r_o s^3 - C_{gd} C_{gs} L_L R_1 g_m r_o^2 s^3 + C_{gd} C_{gs} L_L R_1 r_o s^3 + C_{gd} C_{gs} L_L R_1 r_o^2 s^3 - C_{gd} C_{gs} R_1 r_o^2 s^4 - C_{gd} L_L R_1 g_m^2 r_o^2 s^2 - C_{gd} L_L R_1 g_m r_o s^2 + C_{gd} L_L R_1 g_m r_o^2 s^2 + 2C_{gd} L_L R_1 g_m r_o s^2 + C_{gd} L_L R_1 r_o s^2 + 2C_{gd} L_L R_1 s^2 + C_{gd} L_L r_o s^2 - C_{gd} L_L g_m r_o s^2 + C_{gd} L_L s^2 + C_{gd} R_1 g_m r_o^2 s + 2C_{gd} R_1 g_m r_o s + C_{gd} R_1 r_o s + 2C_{gd} R_1 s + C_{gd} r_o s - C_{gs} L_L R_1 g_m r_o s^2 + C_{gs} R_1 g_m r_o s$$

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

$$H(s) = \frac{R_1 \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right) \left(C_L L_L s^2 + C_L R_L s + 1\right)}{C_L C_{gd}^2 C_{gs} L_L R_1 r_o^2 s^5 + C_L C_{gd}^2 C_{gs} R_1 R_L r_o^2 s^4 + C_L C_{gd}^2 L_L R_1 g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_1 r_o s^4 + C_L C_{gd}^2 L_L r_o s^4 + C_L C_{gd}^2 R_1 R_L g_m r_o^2 s^3 + C_L C_{gd}^2 R_1 R_L r_o s^3 + C_L C_{gd}^2 R_L r_o s^3 - C_L C_{gd} C_{gs} L_L R_1 g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_1 r_o s^4 - C_L C_{gd} C_{gs} R_1 R_L g_m r_o^2 s^3 + C_L C_{gd} C_{gs} R_1 R_L r_o s^3 + C_L C_{gd} C_{gs} R_1 r_o^2 s^3 - C_L C_{gd} L_L R_1 g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_1 g_m r_o s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 - C_L C_{gd} R_1 L_L g_m^2 r_o^2 s^2 - C_L C_{gd} R_1 L_L g_m r_o s^2 + C_L C_{gd} R_1 g_m r_o^2 s^2 + 2C_L C_{gd} R_1 g_m r_o s^2 + C_L C_{gd} R_1 r_o s^2 + 2C_L C_{gd} R_1 s^2 - C_L C_{gd} R_L g_m r_o s^2 + C_L C_{gd} R_L s^2 + C_L C_{gd} r_o s^2 - C_L C_{gs} R_1 L_L g_m r_o s^2 + C_L C_{gs} R_1 g_m r_o s^2 + C_L C_{gs} R_1 r_o s^2 + C_L C_{gs} R_1 s^2 - C_L R_1 L_L g_m^2 r_o s^2 - C_L R_1 L_L g_m s^2 - C_L R_1 g_m^2 r_o s - C_L R_1 g_m s - C_L R_L g_m s - C_L g_m r_o s + C_{gd}^2 C_{gs} R_1 r_o^2 s^3 + C_{gd}^2 R_1 g_m r_o^2 s^2 + C_{gd}^2 R_1 r_o^2 s^2 + C_{gd}^2 r_o^2 s^2 - C_{gd} C_{gs} R_1 g_m r_o^2 s^2 + C_{gd} C_{gs}$$

10.8 INVALID-ORDER-8 $Z(s) = \left(R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_{L s + \frac{1}{R_L} + \frac{1}{L_L s}}}\right)$

$$H(s) = \frac{L_L R_1 R_L s \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_L R_1 R_L r_o^2 s^4 + C_L C_{gd} L_L R_1 R_L g_m r_o^2 s^3 + 2C_L C_{gd} L_L R_1 R_L g_m r_o s^3 + C_L C_{gd} L_L R_1 R_L r_o s^3 + 2C_L C_{gd} L_L R_1 R_L s^3 + C_L C_{gd} L_L R_L r_o s^3 + C_L C_{gs} L_L R_1 R_L g_m r_o s^3 + C_L C_{gs} L_L R_1 R_L r_o s^3 + C_L C_{gs} L_L R_1 R_L s^3 - C_L L_L R_1 R_L g_m^2 r_o s^2 - C_L L_L R_1 R_L g_m s^2 - C_L L_L R_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_L R_1 R_L r_o^2 s^4 + C_{gd}^2 L_L R_1 R_L g_m r_o^2 s^3 + C_{gd}^2 L_L R_1 R_L r_o s^3 + C_{gd}^2 L_L R_L r_o s^3 - C_{gd} C_{gs} L_L R_1 R_L g_m r_o^2 s^3 + C_{gd} C_{gs} L_L R_1 R_L r_o s^3 + C_{gd} C_{gs} L_L R_1 r_o^2 s^3 + C_{gd} C_{gs} R_1 L_L r_o^2 s^4 - C_{gs} L_L R_1 R_L g_m^2 r_o^2 s^2 - C_{gd} L_L R_1 L_L g_m r_o^2 s^2 + C_{gd} L_L R_1 g_m r_o^2 s^2 + 2C_{gd} L_L R_1 g_m r_o s^2 + C_{gd} L_L R_1 r_o s^2 + 2C_{gd} L_L R_1 s^2 - C_{gd} L_L R_L g_m r_o s^2 + C_{gd} L_L R_L s^2 + C_{gd} L_L r_o s^2 - C_{gd} L_L g_m r_o s^2 + C_{gd} L_L s^2 - C_{gd} R_1 L_L g_m^2 r_o^2 s - C_{gd} R_1 L_L g_m r_o s - C_{gd} L_L g_m r_o s - C_{gd} R_1 g_m r_o^2 s + C_{gd} R_1 g_m r_o s + C_{gd} R_1 r_o s + C_{gd} R_1 s - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} R_1 L_L g_m r_o s^2 + C_{gs} R_1 g_m r_o s^2 + C_{gs} R_1 r_o s^2 + C_{gs} R_1 s^2 - C_{gs} L_L g_m r_o s^2 - C_{gs} R_1 L_L g_m^2 r_o s - C_{gs} R_1 L_L g_m s - C_{gs} L_L g_m r_o s - C_{gs} R_1 g_m r_o s - C_{gs} g_m r_o s + C_{gs} s - g_m$$

10.9 INVALID-ORDER-9 $Z(s) = \left(R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$

$$H(s) = \frac{R_1 \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right) \left(C_L L_L s^2 + C_L R_L s + 1\right)}{C_L C_{gd}^2 C_{gs} L_L R_1 r_o^2 s^5 + C_L C_{gd}^2 L_L R_1 g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_1 r_o s^4 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_L R_1 g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_1 r_o s^4 + C_L C_{gd} C_{gs} R_1 L_L r_o^2 s^4 - C_L C_{gd} L_L R_1 L_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_1 L_L g_m r_o s^3 + C_L C_{gd} L_L R_1 g_m r_o^2 s^3 + 2C_L C_{gd} L_L R_1 g_m r_o s^3 + C_L C_{gd} L_L R_1 r_o s^3 + 2C_L C_{gd} L_L R_1 s^3 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L R_L s^3 + C_L C_{gd} L_L r_o s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 - C_L C_{gs} L_L R_1 L_L g_m r_o s^3 + C_L C_{gs} L_L R_1 g_m r_o s^3 + C_L C_{gs} L_L R_1 r_o s^3 + C_L C_{gs} L_L R_1 s^3 - C_L L_L R_1 g_m^2 r_o s^2 - C_L L_L R_1 g_m s^2 - C_L L_L R_L g_m r_o s^2 - C_L L_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_L$$

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

$$H(s) = \frac{R_1 R_L \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right) \left(C_L L_L s^2 + 1\right)}{C_L C_{gd}^2 C_{gs} L_L R_1 R_L r_o^2 s^5 + C_L C_{gd}^2 L_L R_1 R_L g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_1 R_L r_o s^4 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_L R_1 R_L g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_1 R_L r_o s^4 + C_L C_{gd} C_{gs} L_L R_1 r_o^2 s^4 + C_L C_{gd} C_{gs} R_1 R_L r_o^2 s^3 - C_L C_{gd} L_L R_1 R_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_1 R_L g_m r_o s^3 + C_L C_{gd} L_L R_1 g_m r_o^2 s^3 + 2C_L C_{gd} L_L R_1 g_m r_o s^3 + C_L C_{gd} L_L R_1 r_o s^3 + 2C_L C_{gd} L_L R_1 s^3 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L R_L s^3 + C_L C_{gd} L_L r_o s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 - C_L C_{gs} L_L R_1 L_L g_m r_o s^3 + C_L C_{gs} L_L R_1 g_m r_o s^3 + C_L C_{gs} L_L R_1 r_o s^3 + C_L C_{gs} L_L R_1 s^3 - C_L L_L R_1 g_m^2 r_o s^2 - C_L L_L R_1 g_m s^2 - C_L L_L R_L g_m r_o s^2 - C_L L_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_L$$

10.11 INVALID-ORDER-11 $Z(s) = (L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L)$

$$H(s) = \frac{L_1 R_L s \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_{gd}^2 C_{gs} L_1 R_L r_o^2 s^4 + C_{gd}^2 L_1 R_L g_m r_o^2 s^3 + C_{gd}^2 L_1 R_L r_o s^3 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} L_1 R_L g_m r_o^2 s^3 + C_{gd} C_{gs} L_1 R_L r_o s^3 + C_{gd} C_{gs} L_1 r_o^2 s^3 - C_{gd} L_1 R_L g_m^2 r_o^2 s^2 - C_{gd} L_1 R_L g_m r_o s^2 + C_{gd} L_1 g_m r_o^2 s^2 + 2C_{gd} L_1 g_m r_o s^2 + C_{gd} L_1 r_o s^2 + 2C_{gd} L_1 s^2 - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} L_1 R_L g_m r_o s^2 + C_{gs} L_1 g_m r_o s^2 + C_{gs} L_1 r_o s^2 + C_{gs} L_1 s^2 - L_1 g_m^2 r_o s - L_1 g_m s - R_L g_m - g_m r_o}$$

10.12 INVALID-ORDER-12 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 s \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_1 r_o^2 s^4 + C_L C_{gd} L_1 g_m r_o^2 s^3 + 2C_L C_{gd} L_1 g_m r_o s^3 + C_L C_{gd} L_1 r_o s^3 + 2C_L C_{gd} L_1 s^3 + C_L C_{gd} r_o s^2 + C_L C_{gs} L_1 g_m r_o s^3 + C_L C_{gs} L_1 r_o s^3 + C_L C_{gs} L_1 s^3 - C_L L_1 g_m^2 r_o s^2 - C_L L_1 g_m s^2 - C_L g_m r_o s + C_{gd}^2 C_{gs} L_1 r_o^2 s^4 + C_{gd}^2 L_1 g_m r_o^2 s^3 + C_{gd}^2 L_1 r_o s^3 + C_{gd}^2 r_o s^2 - C_{gd} C_{gs} L_1 g_m r_o^2 s^3 + C_{gd} C_{gs} L_1 r_o s^3 + C_{gd} C_{gs} r_o^2 s^3 - C_{gd} L_1 g_m^2 r_o^2 s^2 - C_{gd} L_1 g_m r_o s^2 - C_{pd} g_m r_o s + C_{gd} s - C_{gs} L_1 g_m r_o s^2 - g_m$$

10.13 INVALID-ORDER-13 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{L_1 R_L s \left(C_{gd} s - g_m\right) \left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_1 R_L r_o^2 s^4 + C_L C_{gd} L_1 R_L g_m r_o^2 s^3 + 2C_L C_{gd} L_1 R_L g_m r_o s^3 + C_L C_{gd} L_1 R_L r_o s^3 + 2C_L C_{gd} L_1 R_L s^3 + C_L C_{gd} R_L r_o s^3 + C_L C_{gs} L_1 R_L g_m r_o s^3 + C_L C_{gs} L_1 R_L r_o s^3 + C_L C_{gs} L_1 R_L s^3 - C_L L_1 R_L g_m^2 r_o s^2 - C_L L_1 R_L g_m s^2 - C_L R_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_1 R_L r_o^2 s^4 + C_{gd}^2 L_1 R_L g_m r_o^2 s^3 + C_{gd}^2 L_1 R_L r_o s^3 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} L_1 R_L g_m r_o^2 s^3 + C_{gd} C_{gs} L_1 R_L r_o s^3 + C_{gd} C_{gs} L_1 r_o^2 s^3 - C_{gd} L_1 R_L g_m^2 r_o^2 s^2 - C_{gd} L_1 R_L g_m r_o s^2 + C_{gd} L_1 g_m r_o^2 s^2 + 2C_{gd} L_1 g_m r_o s^2 + C_{gd} L_1 r_o s^2 + 2C_{gd} L_1 s^2 - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} L_1 R_L g_m r_o s^2 + C_{gs} L_1 g_m r_o$$

10.14 INVALID-ORDER-14 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 s\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L R_L s + 1\right)}{C_L C_{gd}^2 C_{gs} L_1 R_L r_o^2 s^5 + C_L C_{gd}^2 L_1 R_L g_m r_o^2 s^4 + C_L C_{gd}^2 L_1 R_L r_o s^4 + C_L C_{gd}^2 R_L r_o s^3 - C_L C_{gd} C_{gs} L_1 R_L g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_1 R_L r_o s^4 + C_L C_{gd} C_{gs} L_1 r_o^2 s^4 - C_L C_{gd} L_1 R_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_1 R_L g_m r_o s^3 + C_L C_{gd} L_1 g_m r_o^2 s^3 + 2 C_L C_{gd} L_1 g_m r_o s^3 + C_L C_{gd} L_1 r_o s^3 + 2 C_L C_{gd} L_1 s^3 - C_L C_{gd} R_L g_m r_o s^2 + C_L C_{gd} R_L s^2 + C_L C_{gd} r_o s^2 - C_L C_{gs} L_1 R_L g_m r_o s^3 + C_L C_{gs} L_1 g_m r_o s^3 + C_L C_{gs} L_1 r_o s^3 + C_L C_{gs} L_1 s^3 - C_L L_1 g_m^2 r_o s^2 - C_L L_1 g_m s^2 - C_L R_L g_m s - C_L g_m r_o s + C_{gd}^2 C_{gs} L_1 r_o^2 s^4 + C_{gd}^2 L_1 g_m r_o^2 s^3 + C_{gd}^2 L_1 r_o s^3 + C_{gd}^2 r_o s^2 - C_{gd} C_{gs} L_1 g_m r_o^2 s^3 + C_{gd} C_{gs} L_1}$$

10.15 INVALID-ORDER-15 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 s\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L s^2 + 1\right)}{C_L C_{gd}^2 C_{gs} L_1 L_L r_o^2 s^6 + C_L C_{gd}^2 L_1 L_L g_m r_o^2 s^5 + C_L C_{gd}^2 L_1 L_L r_o s^5 + C_L C_{gd}^2 L_L r_o s^4 - C_L C_{gd} C_{gs} L_1 L_L g_m r_o^2 s^5 + C_L C_{gd} C_{gs} L_1 L_L r_o s^5 + C_L C_{gd} C_{gs} L_1 r_o^2 s^4 - C_L C_{gd} L_1 L_L g_m^2 r_o^2 s^4 - C_L C_{gd} L_1 L_L g_m r_o s^4 + C_L C_{gd} L_1 g_m r_o^2 s^3 + 2 C_L C_{gd} L_1 g_m r_o s^3 + C_L C_{gd} L_1 r_o s^3 + 2 C_L C_{gd} L_1 s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 + C_L C_{gd} r_o s^2 - C_L C_{gs} L_1 L_L g_m r_o s^4 + C_L C_{gs} L_1 g_m r_o s^3 + C_L C_{gs} L_1 r_o s^3 + C_L C_{gs} L_1 s^3 - C_L L_1 g_m^2 r_o s^2 - C_L L_1 g_m s^2 - C_L L_L g_m s^2 - C_L g_m r_o s + C_{gd}^2 C_{gs} L_1 r_o^2 s^4 + C_{gd}^2 L_1 g_m r_o^2 s^3 + C_{gd}^2 L_1 r_o s^3 + C_{gd}^2 r_o s^2 - C_{gd} C_{gs} L_1 g_m r_o^2 s^3 + C_{gd} C_{gs} L_1}$$

10.16 INVALID-ORDER-16 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_1 L_L s^2\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_1 L_L r_o^2 s^5 + C_L C_{gd} L_1 L_L g_m r_o^2 s^4 + 2 C_L C_{gd} L_1 L_L g_m r_o s^4 + C_L C_{gd} L_1 L_L r_o s^4 + 2 C_L C_{gd} L_1 L_L s^4 + C_L C_{gd} L_L r_o s^3 + C_L C_{gs} L_1 L_L g_m r_o s^4 + C_L C_{gs} L_1 L_L r_o s^4 + C_L C_{gs} L_1 L_L s^4 - C_L L_1 L_L g_m^2 r_o s^3 - C_L L_1 L_L g_m s^3 - C_L L_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_1 L_L r_o^2 s^5 + C_{gd}^2 L_1 L_L g_m r_o^2 s^4 + C_{gd}^2 L_1 L_L r_o s^4 + C_{gd}^2 L_L r_o s^3 - C_{gd} C_{gs} L_1 L_L g_m r_o^2 s^4 + C_{gd} C_{gs} L_1 L_L r_o s^4 + C_{gd} C_{gs} L_1 r_o^2 s^3 - C_{gd} L_1 L_L g_m^2 r_o^2 s^3 - C_{gd} L_1 L_L g_m r_o s^3 + C_{gd} L_1 g_m r_o^2 s^2 + 2 C_{gd} L_1 g_m r_o s^2 + C_{gd} L_1 r_o s^2 + 2 C_{gd} L_1 s^2 - C_{gd} L_L g_m r_o s^2 + C_{gd} L_L s^2 + C_{gd} r_o s - C_{gs} L_1 L_L g_m r_o s^3 + C_{gs} L_1 g_m r_o^2}$$

10.17 INVALID-ORDER-17 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 s\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L s^2 + C_L R_L s + 1\right)}{C_L C_{gd}^2 C_{gs} L_1 L_L r_o^2 s^6 + C_L C_{gd}^2 C_{gs} L_1 R_L r_o^2 s^5 + C_L C_{gd}^2 L_1 L_L g_m r_o^2 s^5 + C_L C_{gd}^2 L_1 L_L r_o s^5 + C_L C_{gd}^2 L_1 R_L g_m r_o^2 s^4 + C_L C_{gd}^2 L_1 R_L r_o s^4 + C_L C_{gd}^2 L_L r_o s^4 + C_L C_{gd}^2 R_L r_o s^3 - C_L C_{gd} C_{gs} L_1 L_L g_m r_o^2 s^5 + C_L C_{gd} C_{gs} L_1 L_L r_o s^5 - C_L C_{gd} C_{gs} L_1 R_L g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_1 R_L r_o s^4 + C_L C_{gd} C_{gs} L_1 r_o^2 s^4 - C_L C_{gd} L_1 L_L g_m^2 r_o^2 s^4 - C_L C_{gd} L_1 L_L g_m r_o s^4 - C_L C_{gd} L_1 R_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_1 R_L g_m r_o s^3 + C_L C_{gd} L_1 g_m r_o^2 s^3 + 2 C_L C_{gd} L_1 g_m r_o s^3 + C_L C_{gd} L_1 r_o s^3 + 2 C_L C_{gd} L_1 s^3 - C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L s^3 - C_L C_{gd} R_L g_m r_o s^2 + C_L C_{gd} R_L s^2 + C_L C_{gd} r_o s^2 - C_L}$$

10.18 INVALID-ORDER-18 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$

$$H(s) = \frac{L_1 L_L R_L s^2\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_L C_{gd} C_{gs} L_1 L_L R_L r_o^2 s^5 + C_L C_{gd} L_1 L_L R_L g_m r_o^2 s^4 + 2 C_L C_{gd} L_1 L_L R_L g_m r_o s^4 + C_L C_{gd} L_1 L_L R_L r_o s^4 + 2 C_L C_{gd} L_1 L_L R_L s^4 + C_L C_{gd} L_L R_L r_o s^3 + C_L C_{gs} L_1 L_L R_L g_m r_o s^4 + C_L C_{gs} L_1 L_L R_L r_o s^4 + C_L C_{gs} L_1 L_L R_L s^4 - C_L L_1 L_L R_L g_m^2 r_o s^3 - C_L L_1 L_L R_L g_m s^3 - C_L L_L R_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_1 L_L R_L r_o^2 s^5 + C_{gd}^2 L_1 L_L R_L g_m r_o^2 s^4 + C_{gd}^2 L_1 L_L R_L r_o s^4 + C_{gd}^2 L_L R_L r_o s^3 - C_{gd} C_{gs} L_1 L_L R_L g_m r_o^2 s^4 + C_{gd} C_{gs} L_1 L_L R_L r_o s^4 + C_{gd} C_{gs} L_1 L_L r_o^2 s^4 + C_{gd} C_{gs} L_1 R_L r_o^2 s^3 - C_{gd} L_1 L_L R_L g_m^2 r_o^2 s^3 - C_{gd} L_1 L_L R_L g_m r_o s^3 + C_{gd} L_1 L_L g_m r_o^2 s^3 + 2 C_{gd} L_1 L_L g_m r_o s^3 + C_{gd}}$$

10.19 INVALID-ORDER-19 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$

$$H(s) = \frac{L_1 s\left(C_{gd}s - g_m\right.}{C_L C_{gd}^2 C_{gs} L_1 L_L R_L r_o^2 s^6 + C_L C_{gd}^2 L_1 L_L R_L g_m r_o^2 s^5 + C_L C_{gd}^2 L_1 L_L R_L r_o s^5 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_1 L_L R_L g_m r_o^2 s^5 + C_L C_{gd} C_{gs} L_1 L_L R_L r_o s^5 + C_L C_{gd} C_{gs} L_1 L_L r_o^2 s^5 - C_L C_{gd} L_1 L_L R_L g_m^2 r_o^2 s^4 - C_L C_{gd} L_1 L_L R_L g_m r_o s^4 + C_L C_{gd} L_1 L_L g_m r_o^2 s^4 + 2 C_L C_{gd} L_1 L_L g_m r_o s^4 + C_L C_{gd} L_1 L_L r_o s^4 + 2 C_L C_{gd} L_1 L_L s^4 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L R_L s^3 + C_L C_{gd} L_L r_o s^3 - C_L C_{gs} L_1 L_L R_L g_m r_o s^4 + C_L C_{gs} L_1 L_L g_m r_o s^4 + C_L C_{gs} L_1 L_L r_o s^4 + C_L C_{gs} L_1 L_L s^4 - C_L L_1 L_L g_m^2 r_o s^3 - C_L L_1 L_L g_m s^3 - C_L L_L R_L g_m s^2 - C_L L_L g_m r_o s^2 + C_{gd}^2 C_{gs} L_1 L_L}$$

10.20 INVALID-ORDER-20 $Z(s) = \left(L_1 s,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$

$$H(s) = \frac{}{C_L C_{gd}^2 C_{gs} L_1 L_L R_L r_o^2 s^6 + C_L C_{gd}^2 L_1 L_L R_L g_m r_o^2 s^5 + C_L C_{gd}^2 L_1 L_L R_L r_o s^5 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_1 L_L R_L g_m r_o^2 s^5 + C_L C_{gd} C_{gs} L_1 L_L R_L r_o s^5 + C_L C_{gd} C_{gs} L_1 L_L r_o^2 s^5 + C_L C_{gd} C_{gs} L_1 R_L r_o^2 s^4 - C_L C_{gd} L_1 L_L R_L g_m^2 r_o^2 s^4 - C_L C_{gd} L_1 L_L R_L g_m r_o s^4 + C_L C_{gd} L_1 L_L g_m r_o^2 s^4 + 2 C_L C_{gd} L_1 L_L g_m r_o s^4 + C_L C_{gd} L_1 L_L r_o s^4 + 2 C_L C_{gd} L_1 L_L s^4 + C_L C_{gd} L_1 R_L g_m r_o^2 s^3 + 2 C_L C_{gd} L_1 R_L g_m r_o s^3 + C_L C_{gd} L_1 R_L r_o s^3 + 2 C_L C_{gd} L_1 R_L s^3 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L R_L s^3 + C_L C_{gd} L_L r_o s^3 + C_L C_{gd} R_L r_o s^2 - C_L C_{gs} L_1 L_L R_L g_m r_o s^4 + C_L C_{gs} L_1 L_L g_m}$$

10.21 INVALID-ORDER-21 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_{gd}^2 R_L r_o s^3 - C_1 C_{gd} R_L g_m r_o s^2 + C_1 C_{gd} R_L s^2 + C_1 C_{gd} r_o s^2 - C_1 R_L g_m s - C_1 g_m r_o s + C_{gd}^2 C_{gs} R_L r_o^2 s^3 + C_{gd}^2 R_L g_m r_o^2 s^2 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} R_L g_m r_o^2 s^2 + C_{gd} C_{gs} R_L r_o s^2 + C_{gd} C_{gs} r_o^2 s^2 - C_{gd} R_L g_m^2 r_o^2 s - C_{gd} R_L g_m r_o s + C_{gd} g_m r_o^2 s + 2 C_{gd} g_m r_o s + C_{gd} r_o s + 2 C_{gd} s - C_{gs} R_L g_m r_o s + C_{gs} g_m r_o s + C_{gs} r_o s + C_{gs} s - g_m^2 r_o - g_m}$$

10.22 INVALID-ORDER-22 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{s\left(C_1 C_L C_{gd} r_o s^2 - C_1 C_L g_m r_o s + C_1 C_{gd}^2 r_o s^2 - C_1 C_{gd} g_m r_o s + C_1 C_{gd} s - C_1 g_m + C_L C_{gd} C_{gs} r_o^2 s^2 + C_L C_{gd} g_m r_o^2 s + 2 C_L C_{gd} g_m r_o s + C_L C_{gd} r_o s + 2 C_L C_{gd} s + C_L C_{gs} g_m r_o s + C_L C_{gs} r_o s + C_L C_{gs} s - C_L g_m^2 r_o - C_L g_m + C_{gd}^2 C_{gs} r_o^2 s^2 + C_{gd}^2 g_m r_o^2 s + C_{gd}^2 r_o s - C_{gd} C_{gs} g_m r_o^2 s + C_{gd} C_{gs} r_o s - C_{gd} g_m^2 r_o^2 - C_{gd} g_m r_o - C_{gs} g_m r_o\right)}$$

10.23 INVALID-ORDER-23 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_L C_{gd} R_L r_o s^3 - C_1 C_L R_L g_m r_o s^2 + C_1 C_{gd}^2 R_L r_o s^3 - C_1 C_{gd} R_L g_m r_o s^2 + C_1 C_{gd} R_L s^2 + C_1 C_{gd} r_o s^2 - C_1 R_L g_m s - C_1 g_m r_o s + C_L C_{gd} C_{gs} R_L r_o^2 s^3 + C_L C_{gd} R_L g_m r_o^2 s^2 + 2 C_L C_{gd} R_L g_m r_o s^2 + C_L C_{gd} R_L r_o s^2 + 2 C_L C_{gd} R_L s^2 + C_L C_{gs} R_L g_m r_o s^2 + C_L C_{gs} R_L r_o s^2 + C_L C_{gs} R_L s^2 - C_L R_L g_m^2 r_o s - C_L R_L g_m s + C_{gd}^2 C_{gs} R_L r_o^2 s^3 + C_{gd}^2 R_L g_m r_o^2 s^2 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} R_L g_m r_o^2 s^2 + C_{gd} C_{gs} R_L r_o s^2 + C_{gd} C_{gs} r_o^2 s^2 - C_{gd} R_L g_m^2 r_o^2 s - C_{gd} R_L g_m r_o s + C_{gd} g_m r_o^2 s + 2 C_{gd} g_m r_o s + C_{gd} r_o s + 2 C_{gd} s - C_{gs} R_L g_m r_o s + C_{gs} g_m r_o s + C_{gs} r_o s + C_{gs} s - g_m^2 r_o -}$$

10.24 INVALID-ORDER-24 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L R_L s + 1\right)}{s\left(C_1 C_L C_{gd}^2 R_L r_o s^3 - C_1 C_L C_{gd} R_L g_m r_o s^2 + C_1 C_L C_{gd} R_L s^2 + C_1 C_L C_{gd} r_o s^2 - C_1 C_L R_L g_m s - C_1 C_L g_m r_o s + C_1 C_{gd}^2 r_o s^2 - C_1 C_{gd} g_m r_o s + C_1 C_{gd} s - C_1 g_m + C_L C_{gd}^2 C_{gs} R_L r_o^2 s^3 + C_L C_{gd}^2 R_L g_m r_o^2 s^2 + C_L C_{gd}^2 R_L r_o s^2 - C_L C_{gd} C_{gs} R_L g_m r_o^2 s^2 + C_L C_{gd} C_{gs} R_L r_o s^2 + C_L C_{gd} C_{gs} r_o^2 s^2 - C_L C_{gd} R_L g_m^2 r_o^2 s - C_L C_{gd} R_L g_m r_o s + C_L C_{gd} g_m r_o^2 s + 2 C_L C_{gd} g_m r_o s + C_L C_{gd} r_o s + 2 C_L C_{gd} s - C_L C_{gs} R_L g_m r_o s + C_L C_{gs} g_m r_o s + C_L C_{gs} r_o s + C_L C_{gs} s - C_L g_m^2 r_o - C_L g_m + C_{gd}^2 C_{gs} r_o^2 s^2 + C_{gd}^2 g_m r_o^2 s + C_{gd}^2 r_o s - C_{gd} C_{gs} g_m r_o^2 s + C_{gd} C_{gs} r_o s - C_{gd} g_m^2 r_o^2 - C_{gd}\right.}$$

10.25 INVALID-ORDER-25 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L s^2 + 1\right)}{s\left(C_1 C_L C_{gd}^2 L_L r_o s^4 - C_1 C_L C_{gd} L_L g_m r_o s^3 + C_1 C_L C_{gd} L_L s^3 + C_1 C_L C_{gd} r_o s^2 - C_1 C_L L_L g_m s^2 - C_1 C_L g_m r_o s + C_1 C_{gd}^2 r_o s^2 - C_1 C_{gd} g_m r_o s + C_1 C_{gd} s - C_1 g_m + C_L C_{gd}^2 C_{gs} L_L r_o^2 s^4 + C_L C_{gd}^2 L_L g_m r_o^2 s^3 + C_L C_{gd}^2 L_L r_o s^3 - C_L C_{gd} C_{gs} L_L g_m r_o^2 s^3 + C_L C_{gd} C_{gs} L_L r_o s^3 + C_L C_{gd} C_{gs} r_o^2 s^2 - C_L C_{gd} L_L g_m^2 r_o^2 s^2 - C_L C_{gd} L_L g_m r_o s^2 + C_L C_{gd} g_m r_o^2 s + 2 C_L C_{gd} g_m r_o s + C_L C_{gd} r_o s + 2 C_L C_{gd} s - C_L C_{gs} L_L g_m r_o s^2 + C_L C_{gs} g_m r_o s + C_L C_{gs} r_o s + C_L C_{gs} s - C_L g_m^2 r_o - C_L g_m + C_{gd}^2 C_{gs} r_o^2 s^2 + C_{gd}^2 g_m r_o^2 s + C_{gd}^2 r_o s - C_{gd} C_{gs} g_m r_o^2 s + C_{gd} C_{gs} r_o s - C_{gd} g_m^2 r_o^2 -\right.}$$

10.26 INVALID-ORDER-26 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_L s\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_L C_{gd} L_L r_o s^4 - C_1 C_L L_L g_m r_o s^3 + C_1 C_{gd}^2 L_L r_o s^4 - C_1 C_{gd} L_L g_m r_o s^3 + C_1 C_{gd} L_L s^3 + C_1 C_{gd} r_o s^2 - C_1 L_L g_m s^2 - C_1 g_m r_o s + C_L C_{gd} C_{gs} L_L r_o^2 s^4 + C_L C_{gd} L_L g_m r_o^2 s^3 + 2 C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L r_o s^3 + 2 C_L C_{gd} L_L s^3 + C_L C_{gs} L_L g_m r_o s^3 + C_L C_{gs} L_L r_o s^3 + C_L C_{gs} L_L s^3 - C_L L_L g_m^2 r_o s^2 - C_L L_L g_m s^2 + C_{gd}^2 C_{gs} L_L r_o^2 s^4 + C_{gd}^2 L_L g_m r_o^2 s^3 + C_{gd}^2 L_L r_o s^3 - C_{gd} C_{gs} L_L g_m r_o^2 s^3 + C_{gd} C_{gs} L_L r_o s^3 + C_{gd} C_{gs} r_o^2 s^2 - C_{gd} L_L g_m^2 r_o^2 s^2 - C_{gd} L_L g_m r_o s^2 + C_{gd} g_m r_o^2 s + 2 C_{gd} g_m r_o s + C_{gd} r_o s + 2 C_{gd} s - C_{gs} L_L g_m r_o s^2 + C_{gs} g_m r_o s + C_{gs} r_o s + C_{gs} s - g_m^2 r_o}$$

10.27 INVALID-ORDER-27 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L s^2 + C_L R_L s + 1\right)}{s\left(C_1 C_L C_{gd}^2 L_L r_o s^4 + C_1 C_L C_{gd}^2 R_L r_o s^3 - C_1 C_L C_{gd} L_L g_m r_o s^3 + C_1 C_L C_{gd} L_L s^3 - C_1 C_L C_{gd} R_L g_m r_o s^2 + C_1 C_L C_{gd} R_L s^2 + C_1 C_L C_{gd} r_o s^2 - C_1 C_L L_L g_m s^2 - C_1 C_L R_L g_m s - C_1 C_L g_m r_o s + C_1 C_{gd}^2 r_o s^2 - C_1 C_{gd} g_m r_o s + C_1 C_{gd} s - C_1 g_m + C_L C_{gd}^2 C_{gs} L_L r_o^2 s^4 + C_L C_{gd}^2 C_{gs} R_L r_o^2 s^3 + C_L C_{gd}^2 L_L g_m r_o^2 s^3 + C_L C_{gd}^2 L_L r_o s^3 + C_L C_{gd}^2 R_L g_m r_o^2 s^2 + C_L C_{gd}^2 R_L r_o s^2 - C_L C_{gd} C_{gs} L_L g_m r_o^2 s^3 + C_L C_{gd} C_{gs} L_L r_o s^3 - C_L C_{gd} C_{gs} R_L g_m r_o^2 s^2 + C_L C_{gd} C_{gs} R_L r_o s^2 + C_L C_{gd} C_{gs} r_o^2 s^2 - C_L C_{gd} L_L g_m^2 r_o^2 s^2 - C_L C_{gd} L_L g_m r_o s^2 - C_L C_{gd} R_L g_m^2 r_o^2 s - C_L C_{gd} R_L g_m r_o s +\right.}$$

10.28 INVALID-ORDER-28 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$

$$H(s) = \frac{L_L R_L s\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_L C_{gd} L_L R_L r_o s^4 - C_1 C_L L_L R_L g_m r_o s^3 + C_1 C_{gd}^2 L_L R_L r_o s^4 - C_1 C_{gd} L_L R_L g_m r_o s^3 + C_1 C_{gd} L_L R_L s^3 + C_1 C_{gd} L_L r_o s^3 + C_1 C_{gd} R_L r_o s^2 - C_1 L_L R_L g_m s^2 - C_1 L_L g_m r_o s^2 - C_1 R_L g_m r_o s + C_L C_{gd} C_{gs} L_L R_L r_o^2 s^4 + C_L C_{gd} L_L R_L g_m r_o^2 s^3 + 2 C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L R_L r_o s^3 + 2 C_L C_{gd} L_L R_L s^3 + C_L C_{gs} L_L R_L g_m r_o s^3 + C_L C_{gs} L_L R_L r_o s^3 + C_L C_{gs} L_L R_L s^3 - C_L L_L R_L g_m^2 r_o s^2 - C_L L_L R_L g_m s^2 + C_{gd}^2 C_{gs} L_L R_L r_o^2 s^4 + C_{gd}^2 L_L R_L g_m r_o^2 s^3 + C_{gd}^2 L_L R_L r_o s^3 - C_{gd} C_{gs} L_L R_L g_m r_o^2 s^3 + C_{gd} C_{gs} L_L R_L r_o s^3 + C_{gd} C_{gs} L_L r_o^2 s^3 + C_{gd} C_{gs} R_L r_o^2 s^2 - C_{gd}}$$

10.29 INVALID-ORDER-29 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L R_L s^2 + L_L s + R_L\right)}{C_1 C_L C_{gd}^2 L_L R_L r_o s^5 - C_1 C_L C_{gd} L_L R_L g_m r_o s^4 + C_1 C_L C_{gd} L_L R_L s^4 + C_1 C_L C_{gd} L_L r_o s^4 - C_1 C_L L_L R_L g_m s^3 - C_1 C_L L_L g_m r_o s^3 + C_1 C_{gd}^2 L_L r_o s^4 + C_1 C_{gd}^2 R_L r_o s^3 - C_1 C_{gd} L_L g_m r_o s^3 + C_1 C_{gd} L_L s^3 - C_1 C_{gd} R_L g_m r_o s^2 + C_1 C_{gd} R_L s^2 + C_1 C_{gd} r_o s^2 - C_1 L_L g_m s^2 - C_1 R_L g_m s - C_1 g_m r_o s + C_L C_{gd}^2 C_{gs} L_L R_L r_o^2 s^5 + C_L C_{gd}^2 L_L R_L g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_L R_L g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_L r_o s^4 + C_L C_{gd} C_{gs} L_L r_o^2 s^4 - C_L C_{gd} L_L R_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L g_m r_o^2 s^3 + 2 C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L r_o s^3 + 2 C_L C_{gd} L_L s}$$

10.30 INVALID-ORDER-30 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)\left(C_L L_L s^2 + 1\right)}{C_1 C_L C_{gd}^2 L_L R_L r_o s^5 - C_1 C_L C_{gd} L_L R_L g_m r_o s^4 + C_1 C_L C_{gd} L_L R_L s^4 + C_1 C_L C_{gd} L_L r_o s^4 + C_1 C_L C_{gd} R_L r_o s^3 - C_1 C_L L_L R_L g_m s^3 - C_1 C_L L_L g_m r_o s^3 - C_1 C_L R_L g_m r_o s^2 + C_1 C_{gd}^2 R_L r_o s^3 - C_1 C_{gd} R_L g_m r_o s^2 + C_1 C_{gd} R_L s^2 + C_1 C_{gd} r_o s^2 - C_1 R_L g_m s - C_1 g_m r_o s + C_L C_{gd}^2 C_{gs} L_L R_L r_o^2 s^5 + C_L C_{gd}^2 L_L R_L g_m r_o^2 s^4 + C_L C_{gd}^2 L_L R_L r_o s^4 - C_L C_{gd} C_{gs} L_L R_L g_m r_o^2 s^4 + C_L C_{gd} C_{gs} L_L R_L r_o s^4 + C_L C_{gd} C_{gs} L_L r_o^2 s^4 + C_L C_{gd} C_{gs} R_L r_o^2 s^3 - C_L C_{gd} L_L R_L g_m^2 r_o^2 s^3 - C_L C_{gd} L_L R_L g_m r_o s^3 + C_L C_{gd} L_L g_m r_o^2 s^3 + 2 C_L C_{gd} L_L g_m r_o s^3 + C_L C_{gd} L_L r_o s^3 + 2 C_L C_{gd} L_L s^3 +}$$

10.31 INVALID-ORDER-31 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_1 R_L\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_{gd}^2 R_1 R_L r_o s^3 - C_1 C_{gd} R_1 R_L g_m r_o s^2 + C_1 C_{gd} R_1 R_L s^2 + C_1 C_{gd} R_1 r_o s^2 - C_1 R_1 R_L g_m s - C_1 R_1 g_m r_o s + C_{gd}^2 C_{gs} R_1 R_L r_o^2 s^3 + C_{gd}^2 R_1 R_L g_m r_o^2 s^2 + C_{gd}^2 R_1 R_L r_o s^2 + C_{gd}^2 R_L r_o s^2 - C_{gd} C_{gs} R_1 R_L g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 R_L r_o s^2 + C_{gd} C_{gs} R_1 r_o^2 s^2 - C_{gd} R_1 R_L g_m^2 r_o^2 s - C_{gd} R_1 R_L g_m r_o s + C_{gd} R_1 g_m r_o^2 s + 2 C_{gd} R_1 g_m r_o s + C_{gd} R_1 r_o s + 2 C_{gd} R_1 s - C_{gd} R_L g_m r_o s + C_{gd} R_L s + C_{gd} r_o s - C_{gs} R_1 R_L g_m r_o s + C_{gs} R_1 g_m r_o s + C_{gs} R_1 r_o s + C_{gs} R_1 s - R_1 g_m^2 r_o - R_1 g_m - R_L g_m - g_m r_o}$$

10.32 INVALID-ORDER-32 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{R_1\left(C_{gd}s - g_m\right)\left(g_m r_o + 1\right)}{C_1 C_L C_{gd} R_1 r_o s^3 - C_1 C_L R_1 g_m r_o s^2 + C_1 C_{gd}^2 R_1 r_o s^3 - C_1 C_{gd} R_1 g_m r_o s^2 + C_1 C_{gd} R_1 s^2 - C_1 R_1 g_m s + C_L C_{gd} C_{gs} R_1 r_o^2 s^3 + C_L C_{gd} R_1 g_m r_o^2 s^2 + 2 C_L C_{gd} R_1 g_m r_o s^2 + C_L C_{gd} R_1 r_o s^2 + 2 C_L C_{gd} R_1 s^2 + C_L C_{gd} r_o s^2 + C_L C_{gs} R_1 g_m r_o s^2 + C_L C_{gs} R_1 r_o s^2 + C_L C_{gs} R_1 s^2 - C_L R_1 g_m^2 r_o s - C_L R_1 g_m s - C_L g_m r_o s + C_{gd}^2 C_{gs} R_1 r_o^2 s^3 + C_{gd}^2 R_1 g_m r_o^2 s^2 + C_{gd}^2 R_1 r_o s^2 + C_{gd}^2 r_o s^2 - C_{gd} C_{gs} R_1 g_m r_o^2 s^2 + C_{gd} C_{gs} R_1 r_o s^2 - C_{gd} R_1 g_m^2 r_o^2 s - C_{gd} R_1 g_m r_o s - C_{gd} g_m r_o s + C_{gd} s - C_{gs} R_1 g_m r_o s - g_m}$$

10.33 INVALID-ORDER-33 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_1R_L\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)}{C_1C_LC_{gd}R_1R_Lr_os^3 - C_1C_LR_1R_Lg_mr_os^2 + C_1C_{gd}^2R_1R_Lr_os^3 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1R_Ls^2 + C_1C_{gd}R_1r_os^2 - C_1R_1R_Lg_ms - C_1R_1g_mr_os + C_LC_{gd}C_{gs}R_1R_Lr_o^2s^3 + C_LC_{gd}R_1R_Lg_mr_o^2s^2 + 2C_LC_{gd}R_1R_Lg_mr_os^2 + C_LC_{gd}R_1R_Lr_os^2 + 2C_LC_{gd}R_1R_Ls^2 + C_LC_{gd}R_Lr_os^2 + C_LC_{gs}R_1R_Lg_mr_os^2 + C_LC_{gs}R_1R_Lr_os^2 + C_LC_{gs}R_1R_Ls^2 - C_LR_1R_Lg_m^2r_os - C_LR_1R_Lg_ms - C_LR_Lg_mr_os + C_{gd}^2C_{gs}R_1R_Lr_o^2s^3 + C_{gd}^2R_1R_Lg_mr_o^2s^2 + C_{gd}^2R_1R_Lr_os^2 + C_{gd}^2R_Lr_os^2 - C_{gd}C_{gs}R_1R_Lg_mr_o^2s^2 + C_{gd}C_{gs}R_1R_Lr_os^2 + C_{gd}C_{gs}R_1r_o^2s^2 - C_{gd}R_1R_Lg_m^2r_o^2s \cdots}$$

10.34 INVALID-ORDER-34 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)\left(C_LR_Ls+1\right)}{C_1C_LC_{gd}^2R_1R_Lr_os^4 - C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Ls^3 + C_1C_LC_{gd}R_1r_os^3 - C_1C_LR_1R_Lg_ms^2 - C_1C_LR_1g_mr_os^2 + C_1C_{gd}^2R_1r_os^3 - C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1s^2 - C_1R_1g_ms + C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_LC_{gd}^2R_1R_Lr_os^3 + C_LC_{gd}^2R_Lr_os^3 - C_LC_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_LC_{gd}C_{gs}R_1R_Lr_os^3 + C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_LC_{gd}R_1R_Lg_m^2r_o^2s^2 - C_LC_{gd}R_1R_Lg_mr_os^2 + C_LC_{gd}R_1g_mr_o^2s^2 + 2C_LC_{gd}R_1g_mr_os^2 + C_LC_{gd}R_1r_os^2 + 2C_LC_{gd}R_1s^2 - C_LC_{gd}R_Lg_mr_os^2 + C_LC_{gd}R_Ls^2 + C_LC_{gd}r_os^2 - C_LC_{gs}R_1R_Lg_mr_os^2 + C \cdots}$$

10.35 INVALID-ORDER-35 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)\left(C_LL_Ls^2+1\right)}{C_1C_LC_{gd}^2L_LR_1r_os^5 - C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1s^4 + C_1C_LC_{gd}R_1r_os^3 - C_1C_LL_LR_1g_ms^3 - C_1C_LR_1g_mr_os^2 + C_1C_{gd}^2R_1r_os^3 - C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1s^2 - C_1R_1g_ms + C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_LC_{gd}^2L_LR_1r_os^4 + C_LC_{gd}^2L_Lr_os^4 - C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_LC_{gd}C_{gs}L_LR_1r_os^4 + C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_LC_{gd}L_LR_1g_m^2r_o^2s^3 - C_LC_{gd}L_LR_1g_mr_os^3 - C_LC_{gd}L_Lg_mr_os^3 + C_LC_{gd}L_Ls^3 + C_LC_{gd}R_1g_mr_o^2s^2 + 2C_LC_{gd}R_1g_mr_os^2 + C_LC_{gd}R_1r_os^2 + 2C_LC_{gd}R_1s^2 + C_LC_{gd}r_os^2 - C_LC_{gs}L_LR_1g_mr_os^3 + C_LC \cdots}$$

10.36 INVALID-ORDER-36 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_LR_1s\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)}{C_1C_LC_{gd}L_LR_1r_os^4 - C_1C_LL_LR_1g_mr_os^3 + C_1C_{gd}^2L_LR_1r_os^4 - C_1C_{gd}L_LR_1g_mr_os^3 + C_1C_{gd}L_LR_1s^3 + C_1C_{gd}R_1r_os^2 - C_1L_LR_1g_ms^2 - C_1R_1g_mr_os + C_LC_{gd}C_{gs}L_LR_1r_o^2s^4 + C_LC_{gd}L_LR_1g_mr_o^2s^3 + 2C_LC_{gd}L_LR_1g_mr_os^3 + C_LC_{gd}L_LR_1r_os^3 + 2C_LC_{gd}L_LR_1s^3 + C_LC_{gd}L_Lr_os^3 + C_LC_{gs}L_LR_1g_mr_os^3 + C_LC_{gs}L_LR_1r_os^3 + C_LC_{gs}L_LR_1s^3 - C_LL_LR_1g_m^2r_os^2 - C_LL_LR_1g_ms^2 - C_LL_Lg_mr_os^2 + C_{gd}^2C_{gs}L_LR_1r_o^2s^4 + C_{gd}^2L_LR_1g_mr_o^2s^3 + C_{gd}^2L_LR_1r_os^3 + C_{gd}^2L_Lr_os^3 - C_{gd}C_{gs}L_LR_1g_mr_o^2s^3 + C_{gd}C_{gs}L_LR_1r_os^3 + C_{gd}C_{gs}R_1r_o^2s^2 - C_{gd}L_LR_1g_m^2r_o^2s^3 \cdots}$$

10.37 INVALID-ORDER-37 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}^2L_LR_1r_os^5 + C_1C_LC_{gd}^2R_1R_Lr_os^4 - C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1s^4 - C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Ls^3 + C_1C_LC_{gd}R_1r_os^3 - C_1C_LL_LR_1g_ms^3 - C_1C_LR_1R_Lg_ms^2 - C_1C_LR_1g_mr_os^2 + C_1C_{gd}^2R_1r_os^3 - C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1s^2 - C_1R_1g_ms + C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_LC_{gd}^2L_LR_1r_os^4 + C_LC_{gd}^2L_Lr_os^4 + C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_LC_{gd}^2R_1R_Lr_os^3 + C_LC_{gd}^2R_Lr_os^3 - C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_LC_{gd}C_{gs}L_LR_1r_os^4 - C_LC_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_LC_{gd}C_{gs}R_1R \cdots}$$

10.38 INVALID-ORDER-38 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}L_LR_1R_Lr_os^4 - C_1C_LL_LR_1R_Lg_mr_os^3 + C_1C_{gd}^2L_LR_1R_Lr_os^4 - C_1C_{gd}L_LR_1R_Lg_mr_os^3 + C_1C_{gd}L_LR_1R_Ls^3 + C_1C_{gd}L_LR_1r_os^3 + C_1C_{gd}R_1R_Lr_os^2 - C_1L_LR_1R_Lg_ms^2 - C_1L_LR_1g_mr_os^2 - C_1R_1R_Lg_mr_os + C_LC_{gd}C_{gs}L_LR_1R_Lr_o^2s^4 + C_LC_{gd}L_LR_1R_Lg_mr_o^2s^3 + 2C_LC_{gd}L_LR_1R_Lg_mr_os^3 + C_LC_{gd}L_LR_1R_Lr_os^3 + 2C_LC_{gd}L_LR_1R_Ls^3 + C_LC_{gd}L_LR_Lr_os^3 + C_LC_{gs}L_LR_1R_Lg_mr_os^3 + C_LC_{gs}L_LR_1R_Lr_os^3 + C_LC_{gs}L_LR_1R_Ls^3 - C_LL_LR_1R_Lg_m^2r_os^2 - C_LL_LR_1R_Lg_ms^2 - C_LL_LR_Lg_mr_os^2 + C_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^4 + C_{gd}^2L_LR_1R_Lg_mr_o^2s^3 + \cdots}$$

10.39 INVALID-ORDER-39 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 - C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1R_Ls^4 + C_1C_LC_{gd}L_LR_1r_os^4 - C_1C_LL_LR_1R_Lg_ms^3 - C_1C_LL_LR_1g_mr_os^3 + C_1C_{gd}^2L_LR_1r_os^4 + C_1C_{gd}^2R_1R_Lr_os^3 - C_1C_{gd}L_LR_1g_mr_os^3 + C_1C_{gd}L_LR_1s^3 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1R_Ls^2 + C_1C_{gd}R_1r_os^2 - C_1L_LR_1g_ms^2 - C_1R_1R_Lg_ms - C_1R_1g_mr_os + C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^5 + C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_LR_1R_Lr_os^4 + C_LC_{gd}^2L_LR_Lr_os^4 - C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^4 + C_LC_{gd}C_{gs}L_LR_1R_Lr_os^4 + C_LC_{gd}C_{gs}L_LR_1r_o^2s^4 - C_LC_{gd}L_LR_1R_Lg_m^2r_o^2s^3 - C_LC_{gd}L \cdots}$$

10.40 INVALID-ORDER-40 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 - C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1R_Ls^4 + C_1C_LC_{gd}L_LR_1r_os^4 + C_1C_LC_{gd}R_1R_Lr_os^3 - C_1C_LL_LR_1R_Lg_ms^3 - C_1C_LL_LR_1g_mr_os^3 - C_1C_LR_1R_Lg_mr_os^2 + C_1C_{gd}^2R_1R_Lr_os^3 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1R_Ls^2 + C_1C_{gd}R_1r_os^2 - C_1R_1R_Lg_ms - C_1R_1g_mr_os + C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^5 + C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_LR_1R_Lr_os^4 + C_LC_{gd}^2L_LR_Lr_os^4 - C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^4 + C_LC_{gd}C_{gs}L_LR_1R_Lr_os^4 + C_LC_{gd}C_{gs}L_LR_1r_o^2s^4 + C_LC_{gd}C_{gs}R_1R_Lr_o^2s^3 - C_LC_{gd}L_LR_1R_Lg_m^2r_o^2s^3 - C_LC_{gd}L_LR_1R \cdots}$$

10.41 INVALID-ORDER-41 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)\left(C_1R_1s+1\right)}{C_1C_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_{gd}^2R_1R_Lr_os^3 + C_1C_{gd}^2R_Lr_os^3 - C_1C_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_{gd}C_{gs}R_1r_o^2s^3 - C_1C_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1g_mr_o^2s^2 + 2C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1r_os^2 + 2C_1C_{gd}R_1s^2 - C_1C_{gd}R_Lg_mr_os^2 + C_1C_{gd}R_Ls^2 + C_1C_{gd}r_os^2 - C_1C_{gs}R_1R_Lg_mr_os^2 + C_1C_{gs}R_1g_mr_os^2 + C_1C_{gs}R_1r_os^2 + C_1C_{gs}R_1s^2 - C_1R_1g_m^2r_os - C_1R_1g_ms - C_1R_Lg_ms - C_1g_mr_os + C_{gd}^2C_{gs}R_Lr_o^2s^3 + C_{gd}^2R_Lg_mr_o^2s^2 + C_{gd}^2R_Lr_os^2 - C_{gd}C_{gs}R_Lg_mr_o^2s^2 + C_{gd}C_{gs}R_Lr_os^2 + C_{gd}C_{gs}r \cdots}$$

10.42 INVALID-ORDER-42 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)\left(C_1R_1s+1\right)}{s\left(C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 + C_1C_LC_{gd}R_1g_mr_o^2s^2 + 2C_1C_LC_{gd}R_1g_mr_os^2 + C_1C_LC_{gd}R_1r_os^2 + 2C_1C_LC_{gd}R_1s^2 + C_1C_LC_{gd}r_os^2 + C_1C_LC_{gs}R_1g_mr_os^2 + C_1C_LC_{gs}R_1r_os^2 + C_1C_LC_{gs}R_1s^2 - C_1C_LR_1g_m^2r_os - C_1C_LR_1g_ms - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}R_1r_o^2s^3 + C_1C_{gd}^2R_1g_mr_o^2s^2 + C_1C_{gd}^2R_1r_os^2 + C_1C_{gd}^2r_os^2 - C_1C_{gd}C_{gs}R_1g_mr_o^2s^2 + C_1C_{gd}C_{gs}R_1r_os^2 - C_1C_{gd}R_1g_m^2r_o^2s - C_1C_{gd}R_1g_mr_os - C_1C_{gd}g_mr_os + C_1C_{gd}s - C_1C_{gs}R_1g_mr_os - C_1g_m + C_LC_{gd}C_{gs}r_o^2s^2 + C_LC_{gd}g_mr_o^2s + 2C_LC_{gd}g_mr_os + C_LC_{gd}r_os + 2C_LC_{gd}s + C_LC_{gs}g_mr_os + C_LC_{gs}r_o \cdots}$$

10.43 INVALID-ORDER-43 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}R_1R_Lg_mr_o^2s^3 + 2C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Lr_os^3 + 2C_1C_LC_{gd}R_1R_Ls^3 + C_1C_LC_{gd}R_Lr_os^3 + C_1C_LC_{gs}R_1R_Lg_mr_os^3 + C_1C_LC_{gs}R_1R_Lr_os^3 + C_1C_LC_{gs}R_1R_Ls^3 - C_1C_LR_1R_Lg_m^2r_os^2 - C_1C_LR_1R_Lg_ms^2 - C_1C_LR_Lg_mr_os^2 + C_1C_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_{gd}^2R_1R_Lr_os^3 + C_1C_{gd}^2R_Lr_os^3 - C_1C_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_{gd}C_{gs}R_1r_o^2s^3 - C_1C_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1g_mr_o^2s^2 + 2C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1r_os^2 + 2C_1C_{gd}R \cdots}$$

10.44 INVALID-ORDER-44 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\left(C_{gd} \cdots\right.}{s\left(C_1C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}^2R_1R_Lr_os^3 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_1C_LC_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_LC_{gd}R_1R_Lg_mr_os^2 + C_1C_LC_{gd}R_1g_mr_o^2s^2 + 2C_1C_LC_{gd}R_1g_mr_os^2 + C_1C_LC_{gd}R_1r_os^2 + 2C_1C_LC_{gd}R_1s^2 - C_1C_LC_{gd}R_Lg_mr_os^2 + C_1C_LC_{gd}R_Ls^2 + C_1C_LC_{gd}r_os^2 - C_1C_LC_{gs}R_1R_Lg_mr_os^2 + C_1C_LC_{gs}R_1g_mr_os^2 + C_1C_LC_{gs}R_1r_os^2 + C_1C_LC_{gs}R_1s^2 - C_1C_LR_1g_m^2r_os - C_1C_LR_1g_ms - C_1C_LR_Lg_ms - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}R_1r_o^2s^3 \cdots}$$

10.45 INVALID-ORDER-45 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\left(C_{gd} \cdots\right.}{s\left(C_1C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}^2L_LR_1r_os^4 + C_1C_LC_{gd}^2L_Lr_os^4 - C_1C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_LR_1r_os^4 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_1C_LC_{gd}L_LR_1g_m^2r_o^2s^3 - C_1C_LC_{gd}L_LR_1g_mr_os^3 - C_1C_LC_{gd}L_Lg_mr_os^3 + C_1C_LC_{gd}L_Ls^3 + C_1C_LC_{gd}R_1g_mr_o^2s^2 + 2C_1C_LC_{gd}R_1g_mr_os^2 + C_1C_LC_{gd}R_1r_os^2 + 2C_1C_LC_{gd}R_1s^2 + C_1C_LC_{gd}r_os^2 - C_1C_LC_{gs}L_LR_1g_mr_os^3 + C_1C_LC_{gs}R_1g_mr_os^2 + C_1C_LC_{gs}R_1r_os^2 + C_1C_LC_{gs}R_1s^2 - C_1C_LL_Lg_ms^2 - C_1C_LR_1g_m^2r_os - C_1C_LR_1g_ms - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}R_1r_o^2s^3 + \cdots}$$

10.46 INVALID-ORDER-46 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}L_LR_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1r_os^4 + 2C_1C_LC_{gd}L_LR_1s^4 + C_1C_LC_{gd}L_Lr_os^4 + C_1C_LC_{gs}L_LR_1g_mr_os^4 + C_1C_LC_{gs}L_LR_1r_os^4 + C_1C_LC_{gs}L_LR_1s^4 - C_1C_LL_LR_1g_m^2r_os^3 - C_1C_LL_LR_1g_ms^3 - C_1C_LL_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_1C_{gd}^2L_LR_1g_mr_o^2s^4 + C_1C_{gd}^2L_LR_1r_os^4 + C_1C_{gd}^2L_Lr_os^4 - C_1C_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_1C_{gd}C_{gs}L_LR_1r_os^4 + C_1C_{gd}C_{gs}R_1r_o^2s^3 - C_1C_{gd}L_LR_1g_m^2r_o^2s^3 - C_1C_{gd}L_LR_1g_mr_os^3 - C_1C_{gd}L_Lg_mr_os^3 + C_1C_{gd}L_Ls^3 + C_1C_{gd}R_1g_mr_o^2s^2 + 2C_1C_{gd}R_1g_mr_os \cdots}$$

10.47 INVALID-ORDER-47 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\cdots}{s\left(C_1C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}^2L_LR_1r_os^4 + C_1C_LC_{gd}^2L_Lr_os^4 + C_1C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}^2R_1R_Lr_os^3 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_LR_1r_os^4 - C_1C_LC_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_1C_LC_{gd}L_LR_1g_m^2r_o^2s^3 - C_1C_LC_{gd}L_LR_1g_mr_os^3 - C_1C_LC_{gd}L_Lg_mr_os^3 + C_1C_LC_{gd}L_Ls^3 - C_1C_LC_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_LC_{gd}R_1R_Lg_mr_os^2 + C_1C_LC_{gd}R_1g_mr_o^2s^2 + 2C_1C_LC_{gd}R_1g_mr_os^2 + C_1C_LC_{gd}R_1r_os^2 + 2C \cdots}$$

10.48 INVALID-ORDER-48 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_o^2s^5 + C_1C_LC_{gd}L_LR_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1R_Lr_os^4 + 2C_1C_LC_{gd}L_LR_1R_Ls^4 + C_1C_LC_{gd}L_LR_Lr_os^4 + C_1C_LC_{gs}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_LR_1R_Lr_os^4 + C_1C_LC_{gs}L_LR_1R_Ls^4 - C_1C_LL_LR_1R_Lg_m^2r_os^3 - C_1C_LL_LR_1R_Lg_ms^3 - C_1C_LL_LR_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^5 + C_1C_{gd}^2L_LR_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_LR_1R_Lr_os^4 + C_1C_{gd}^2L_LR_Lr_os^4 - C_1C_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_LR_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_LR_1r_o^2s^4 + C_1C_{gd}C_{gs}R_1R_Lr_o^2s^3 - C_1C_{gd}L_LR_1R_Lg_m^2r_o^2s^3 - C_1C_g \cdots}$$

10.49 INVALID-ORDER-49 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 - C_1C_LC_{gd}L_LR_1R_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1r_os^4 + 2C_1C_LC_{gd}L_LR_1s^4 - C_1C_LC_{gd}L_LR_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_Ls^4 + C_1C_LC_{gd}L_Lr_os^4 - C_1C_LC_{gs}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_LR_1g_mr_os^4 + C_1C_LC_{gs}L_LR_1r_os^4 + C_1C_LC_{gs}L_LR_1s^4 - C_1C_LL_LR_1g_m^2r_os^3 - C \cdots}$$

10.50 INVALID-ORDER-50 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right)$

$$H(s) = \frac{\cdots}{C_1C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}C_{gs}R_1R_Lr_o^2s^4 - C_1C_LC_{gd}L_LR_1R_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1r_os^4 + 2C_1C_LC_{gd}L_LR_1s^4 - C_1C_LC_{gd}L_LR_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_Ls^4 + C_1C_LC_{gd}L_Lr_os^4 + C_1C_LC_{gd}R_1R_Lg_mr_o^2s^3 + 2C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Lr_os^3 + 2C_1C_LC_{gd}R_1R_Ls^3 \cdots}$$

10.51 INVALID-ORDER-51 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_mr_o+1\right)\left(C_1L_1s^2+1\right)}{C_1C_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_Lr_os^4 + C_1C_{gd}^2R_Lr_os^3 - C_1C_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1r_o^2s^4 - C_1C_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1g_mr_o^2s^3 + 2C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1r_os^3 + 2C_1C_{gd}L_1s^3 - C_1C_{gd}R_Lg_mr_os^2 + C_1C_{gd}R_Ls^2 + C_1C_{gd}r_os^2 - C_1C_{gs}L_1R_Lg_mr_os^3 + C_1C_{gs}L_1g_mr_os^3 + C_1C_{gs}L_1r_os^3 + C_1C_{gs}L_1s^3 - C_1L_1g_m^2r_os^2 - C_1L_1g_ms^2 - C_1R_Lg_ms - C_1g_mr_os + C_{gd}^2C_{gs}R_Lr_o^2s^3 + C_{gd}^2R_Lg_mr_o^2s^2 + C_{gd}^2R_Lr_os^2 - C_{gd}C_{gs}R_Lg_mr_o^2s^2 + C_{gd}C_{gs}R_Lr_os^2 + C_{gd}C_{gs}r_o^2 \cdots}$$

10.52 INVALID-ORDER-52 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{(C_{gd}s - g_m)(g_mr_o + 1)(C_1L_1s^2 + 1)}{s\left(C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 + C_1C_LC_{gd}r_os^2 + C_1C_LC_{gs}L_1g_mr_os^3 + C_1C_LC_{gs}L_1r_os^3 + C_1C_LC_{gs}L_1s^3 - C_1C_LL_1g_m^2r_os^2 - C_1C_LL_1g_ms^2 - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}L_1r_o^2s^4 + C_1C_{gd}^2L_1g_mr_o^2s^3 + C_1C_{gd}^2L_1r_os^3 + C_1C_{gd}^2r_os^2 - C_1C_{gd}C_{gs}L_1g_mr_o^2s^3 + C_1C_{gd}C_{gs}L_1r_os^3 - C_1C_{gd}L_1g_m^2r_o^2s^2 - C_1C_{gd}L_1g_mr_os^2 - C_1C_{gd}g_mr_os + C_1C_{gd}s - C_1C_{gs}L_1g_mr_os^2 - C_1g_m + C_LC_{gd}C_{gs}r_o^2s^2 + C_LC_{gd}g_mr_o^2s + 2C_LC_{gd}g_mr_os + C_LC_{gd}r_os + 2C_LC_{gd}s + C_LC_{gs}g_mr_os + C_LC_{gs}\right.}$$

10.53 INVALID-ORDER-53 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}L_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Lr_os^4 + 2C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}R_Lr_os^3 + C_1C_LC_{gs}L_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_1R_Lr_os^4 + C_1C_LC_{gs}L_1R_Ls^4 - C_1C_LL_1R_Lg_m^2r_os^3 - C_1C_LL_1R_Lg_ms^3 - C_1C_LR_Lg_mr_os^2 + C_1C_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_Lr_os^4 + C_1C_{gd}^2R_Lr_os^3 - C_1C_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1r_o^2s^4 - C_1C_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1g_mr_o^2s^3 + 2C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1r_os^3 + 2C_1C_{gd}L_1s^3 -}$$

10.54 INVALID-ORDER-54 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{(C_{gd}}{s\left(C_1C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}^2L_1R_Lr_os^4 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_LC_{gd}L_1R_Lg_mr_os^3 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 - C_1C_LC_{gd}R_Lg_mr_os^2 + C_1C_LC_{gd}R_Ls^2 + C_1C_LC_{gd}r_os^2 - C_1C_LC_{gs}L_1R_Lg_mr_os^3 + C_1C_LC_{gs}L_1g_mr_os^3 + C_1C_LC_{gs}L_1r_os^3 + C_1C_LC_{gs}L_1s^3 - C_1C_LL_1g_m^2r_os^2 - C_1C_LL_1g_ms^2 - C_1C_LR_Lg_ms - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}L_1r_o^2s^4 +\right.}$$

10.55 INVALID-ORDER-55 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{(C_{gd}}{s\left(C_1C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lr_os^5 + C_1C_LC_{gd}^2L_Lr_os^4 - C_1C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1L_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}L_1L_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1L_Lg_mr_os^4 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 - C_1C_LC_{gd}L_Lg_mr_os^3 + C_1C_LC_{gd}L_Ls^3 + C_1C_LC_{gd}r_os^2 - C_1C_LC_{gs}L_1L_Lg_mr_os^4 + C_1C_LC_{gs}L_1g_mr_os^3 + C_1C_LC_{gs}L_1r_os^3 + C_1C_LC_{gs}L_1s^3 - C_1C_LL_1g_m^2r_os^2 - C_1C_LL_1g_ms^2 - C_1C_LL_Lg_ms^2 - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}L_1r_o^2s^4 +\right.}$$

10.56 INVALID-ORDER-56 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + 2C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_Lr_os^4 + C_1C_LC_{gs}L_1L_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_Lr_os^5 + C_1C_LC_{gs}L_1L_Ls^5 - C_1C_LL_1L_Lg_m^2r_os^4 - C_1C_LL_1L_Lg_ms^4 - C_1C_LL_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_{gd}^2L_1L_Lg_mr_o^2s^5 + C_1C_{gd}^2L_1L_Lr_os^5 + C_1C_{gd}^2L_Lr_os^4 - C_1C_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_1C_{gd}C_{gs}L_1L_Lr_os^5 + C_1C_{gd}C_{gs}L_1r_o^2s^4 - C_1C_{gd}L_1L_Lg_m^2r_o^2s^4 - C_1C_{gd}L_1L_Lg_mr_os^4 + C_1C_{gd}L_1g_mr_o^2s^3 + 2C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1r_os^3 + 2C_1C_{gd}L_1s^3 -}$$

10.57 INVALID-ORDER-57 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{s\left(C_1C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}^2L_1R_Lr_os^4 + C_1C_LC_{gd}^2L_Lr_os^4 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1L_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}L_1L_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1L_Lg_mr_os^4 - C_1C_LC_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_LC_{gd}L_1R_Lg_mr_os^3 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 - C_1C_LC_{gd}L_Lg_mr_os^3 +\right.}$$

10.58 INVALID-ORDER-58 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_o^2s^6 + C_1C_LC_{gd}L_1L_LR_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Lr_os^5 + 2C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_LR_Lr_os^4 + C_1C_LC_{gs}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_LR_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_Ls^5 - C_1C_LL_1L_LR_Lg_m^2r_os^4 - C_1C_LL_1L_LR_Lg_ms^4 - C_1C_LL_LR_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^6 + C_1C_{gd}^2L_1L_LR_Lg_mr_o^2s^5 + C_1C_{gd}^2L_1L_LR_Lr_os^5 + C_1C_{gd}^2L_LR_Lr_os^4 - C_1C_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^5 + C_1C_{gd}C_{gs}L_1L_LR_Lr_os^5 + C_1C_{gd}C_{gs}L_1L_Lr_o^2s^5 + C_1C_{gd}C_{gs}L_1R_Lr_o^2s^4 - C_1C_{gd}L_1L_LR_Lg_m^2r_o^2s^4 -}$$

10.59 INVALID-ORDER-59 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 - C_1C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + 2C_1C_LC_{gd}L_1L_Ls^5 - C_1C_LC_{gd}L_LR_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_Ls^4 + C_1C_LC_{gd}L_Lr_os^4 - C_1C_LC_{gs}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_Lr_os^5 + C_1C_LC_{gs}L_1L_Ls^5 - C_1C_LL_1L_Lg_m^2r_os^4 -}$$

10.60 INVALID-ORDER-60 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1R_Lr_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + 2C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Lr_os^4 + 2C_1C_LC_{gd}L_1R_Ls^4 - C_1C_LC_{gd}L_LR_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_Ls^4 + C_1C_LC_{gd}L_Lr_os^4 +}$$

10.61 INVALID-ORDER-61 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1R_Ls\,(C_{gd}s - g_m)(g_mr_o + 1)}{C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1L_1R_Lg_ms^2 - C_1L_1g_mr_os^2 + C_{gd}^2C_{gs}L_1R_Lr_o^2s^4 + C_{gd}^2L_1R_Lg_mr_o^2s^3 + C_{gd}^2L_1R_Lr_os^3 + C_{gd}^2R_Lr_os^2 - C_{gd}C_{gs}L_1R_Lg_mr_o^2s^3 + C_{gd}C_{gs}L_1R_Lr_os^3 + C_{gd}C_{gs}L_1r_o^2s^3 - C_{gd}L_1R_Lg_m^2r_o^2s^2 - C_{gd}L_1R_Lg_mr_os^2 + C_{gd}L_1g_mr_o^2s^2 + 2C_{gd}L_1g_mr_os^2 + C_{gd}L_1r_os^2 + 2C_{gd}L_1s^2 - C_{gd}R_Lg_mr_os + C_{gd}R_Ls + C_{gd}r_os - C_{gs}L_1R_Lg_mr_os^2 + C_{gs}L_1g_mr_os^2 + C_{gs}L_1r_os^2 + C_{gs}L_1s^2 - L_1g_m^2r_os - L_1g_ms - R_Lg_m - g_mr_o}$$

10.62 INVALID-ORDER-62 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1s\,(C_{gd}s - g_m)(g_mr_o + 1)}{C_1C_LC_{gd}L_1r_os^4 - C_1C_LL_1g_mr_os^3 + C_1C_{gd}^2L_1r_os^4 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - C_1L_1g_ms^2 + C_LC_{gd}C_{gs}L_1r_o^2s^4 + C_LC_{gd}L_1g_mr_o^2s^3 + 2C_LC_{gd}L_1g_mr_os^3 + C_LC_{gd}L_1r_os^3 + 2C_LC_{gd}L_1s^3 + C_LC_{gd}r_os^2 + C_LC_{gs}L_1g_mr_os^3 + C_LC_{gs}L_1r_os^3 + C_LC_{gs}L_1s^3 - C_LL_1g_m^2r_os^2 - C_LL_1g_ms^2 - C_Lg_mr_os + C_{gd}^2C_{gs}L_1r_o^2s^4 + C_{gd}^2L_1g_mr_o^2s^3 + C_{gd}^2L_1r_os^3 + C_{gd}^2r_os^2 - C_{gd}C_{gs}L_1g_mr_o^2s^3 + C_{gd}C_{gs}L_1r_os^3 - C_{gd}L_1g_m^2r_o^2s^2 - C_{gd}L_1g_mr_os^2 - C_{gd}g_mr_os + C_{gd}s - C_{gs}L_1g_mr_os^2 - g_m}$$

10.63 INVALID-ORDER-63 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{L_1R_Ls\,(C_{gd}s - g_m)(g_mr_o + 1)}{C_1C_LC_{gd}L_1R_Lr_os^4 - C_1C_LL_1R_Lg_mr_os^3 + C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1L_1R_Lg_ms^2 - C_1L_1g_mr_os^2 + C_LC_{gd}C_{gs}L_1R_Lr_o^2s^4 + C_LC_{gd}L_1R_Lg_mr_o^2s^3 + 2C_LC_{gd}L_1R_Lg_mr_os^3 + C_LC_{gd}L_1R_Lr_os^3 + 2C_LC_{gd}L_1R_Ls^3 + C_LC_{gd}R_Lr_os^2 + C_LC_{gs}L_1R_Lg_mr_os^3 + C_LC_{gs}L_1R_Lr_os^3 + C_LC_{gs}L_1R_Ls^3 - C_LL_1R_Lg_m^2r_os^2 - C_LL_1R_Lg_ms^2 - C_LR_Lg_mr_os + C_{gd}^2C_{gs}L_1R_Lr_o^2s^4 + C_{gd}^2L_1R_Lg_mr_o^2s^3 + C_{gd}^2L_1R_Lr_os^3 + C_{gd}^2R_Lr_os^2 - C_{gd}C_{gs}L_1R_Lg_mr_o^2s^3 + C_{gd}C_{gs}L_1R_Lr_os^3 + C_{gd}C_{gs}L_1r_o^2s^3 - C_{gd}L_1R_Lg_m^2r_o^2s}$$

10.64 INVALID-ORDER-64 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1s\,(C_{gd}s - g_m)(g_mr_o + 1)(C_LR_Ls + 1)}{C_1C_LC_{gd}^2L_1R_Lr_os^5 - C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LL_1R_Lg_ms^3 - C_1C_LL_1g_mr_os^3 + C_1C_{gd}^2L_1r_os^4 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - C_1L_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_1R_Lr_os^4 + C_LC_{gd}^2R_Lr_os^3 - C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_LC_{gd}C_{gs}L_1R_Lr_os^4 + C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_LC_{gd}L_1R_Lg_m^2r_o^2s^3 - C_LC_{gd}L_1R_Lg_mr_os^3 + C_LC_{gd}L_1g_mr_o^2s^3 + 2C_LC_{gd}L_1g_mr_os^3 + C_LC_{gd}L_1r_os^3 + 2C_LC_{gd}L_1s^3 - C_LC_{gd}R_Lg_mr_os^2 + C_LC_{gd}R_Ls^2 + C_LC_{gd}r_os^2 - C_LC_{gs}L_1R_Lg_mr_os^3 +}$$

10.65 INVALID-ORDER-65 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1s\,(C_{gd}s - g_m)(g_mr_o + 1)(C_LL_Ls^2 + 1)}{C_1C_LC_{gd}^2L_1L_Lr_os^6 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LL_1L_Lg_ms^4 - C_1C_LL_1g_mr_os^3 + C_1C_{gd}^2L_1r_os^4 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - C_1L_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_Lr_os^5 + C_LC_{gd}^2L_Lr_os^4 - C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_Lr_os^5 + C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_LC_{gd}L_1L_Lg_m^2r_o^2s^4 - C_LC_{gd}L_1L_Lg_mr_os^4 + C_LC_{gd}L_1g_mr_o^2s^3 + 2C_LC_{gd}L_1g_mr_os^3 + C_LC_{gd}L_1r_os^3 + 2C_LC_{gd}L_1s^3 - C_LC_{gd}L_Lg_mr_os^3 + C_LC_{gd}L_Ls^3 + C_LC_{gd}r_os^2 - C_LC_{gs}L_1L_Lg_mr_os^4 +}$$

10.66 INVALID-ORDER-66 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_1L_Ls^2\,(C_{gd}s - g_m)(g_mr_o + 1)}{C_1C_LC_{gd}L_1L_Lr_os^5 - C_1C_LL_1L_Lg_mr_os^4 + C_1C_{gd}^2L_1L_Lr_os^5 - C_1C_{gd}L_1L_Lg_mr_os^4 + C_1C_{gd}L_1L_Ls^4 + C_1C_{gd}L_1r_os^3 - C_1L_1L_Lg_ms^3 - C_1L_1g_mr_os^2 + C_LC_{gd}C_{gs}L_1L_Lr_o^2s^5 + C_LC_{gd}L_1L_Lg_mr_o^2s^4 + 2C_LC_{gd}L_1L_Lg_mr_os^4 + C_LC_{gd}L_1L_Lr_os^4 + 2C_LC_{gd}L_1L_Ls^4 + C_LC_{gd}L_Lr_os^3 + C_LC_{gs}L_1L_Lg_mr_os^4 + C_LC_{gs}L_1L_Lr_os^4 + C_LC_{gs}L_1L_Ls^4 - C_LL_1L_Lg_m^2r_os^3 - C_LL_1L_Lg_ms^3 - C_LL_Lg_mr_os^2 + C_{gd}^2C_{gs}L_1L_Lr_o^2s^5 + C_{gd}^2L_1L_Lg_mr_o^2s^4 + C_{gd}^2L_1L_Lr_os^4 + C_{gd}^2L_Lr_os^3 - C_{gd}C_{gs}L_1L_Lg_mr_o^2s^4 + C_{gd}C_{gs}L_1L_Lr_os^4 + C_{gd}C_{gs}L_1r_o^2s^3 - C_{gd}L_1L_Lg_m^2r_o^2s^3 -}$$

10.67 INVALID-ORDER-67 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_Lr_os^6 + C_1C_LC_{gd}^2L_1R_Lr_os^5 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 - C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LL_1L_Lg_ms^4 - C_1C_LL_1R_Lg_ms^3 - C_1C_LL_1g_mr_os^3 + C_1C_{gd}^2L_1r_os^4 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - C_1L_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_Lr_os^5 + C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_1R_Lr_os^4 + C_LC_{gd}^2L_Lr_os^4 + C_LC_{gd}^2R_Lr_os^3 - C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_Lr_os^5 - C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 +}$$

10.68 INVALID-ORDER-68 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}L_1L_LR_Lr_os^5 - C_1C_LL_1L_LR_Lg_mr_os^4 + C_1C_{gd}^2L_1L_LR_Lr_os^5 - C_1C_{gd}L_1L_LR_Lg_mr_os^4 + C_1C_{gd}L_1L_LR_Ls^4 + C_1C_{gd}L_1L_Lr_os^4 + C_1C_{gd}L_1R_Lr_os^3 - C_1L_1L_LR_Lg_ms^3 - C_1L_1L_Lg_mr_os^3 - C_1L_1R_Lg_mr_os^2 + C_LC_{gd}C_{gs}L_1L_LR_Lr_o^2s^5 + C_LC_{gd}L_1L_LR_Lg_mr_o^2s^4 + 2C_LC_{gd}L_1L_LR_Lg_mr_os^4 + C_LC_{gd}L_1L_LR_Lr_os^4 + 2C_LC_{gd}L_1L_LR_Ls^4 + C_LC_{gd}L_LR_Lr_os^3 + C_LC_{gs}L_1L_LR_Lg_mr_os^4 + C_LC_{gs}L_1L_LR_Lr_os^4 + C_LC_{gs}L_1L_LR_Ls^4 - C_LL_1L_LR_Lg_m^2r_os^3 - C_LL_1L_LR_Lg_ms^3 - C_LL_LR_Lg_mr_os^2 + C_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^5 + C_{gd}^2L_1L_LR_Lg_mr_o^2s^4 +}$$

10.69 INVALID-ORDER-69 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 - C_1C_LL_1L_LR_Lg_ms^4 - C_1C_LL_1L_Lg_mr_os^4 + C_1C_{gd}^2L_1L_Lr_os^5 + C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}L_1L_Lg_mr_os^4 + C_1C_{gd}L_1L_Ls^4 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1L_1L_Lg_ms^3 - C_1L_1R_Lg_ms^2 - C_1L_1g_mr_os^2 + C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^6 + C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_Lr_os^5 + C_LC_{gd}^2L_LR_Lr_os^4 - C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_LR_Lr_os^5 + C_LC_{gd}C_{gs}L_1L_Lr_o^2s^5 - C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^4 -}$$

10.70 INVALID-ORDER-70 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + C_1C_LC_{gd}L_1R_Lr_os^4 - C_1C_LL_1L_LR_Lg_ms^4 - C_1C_LL_1L_Lg_mr_os^4 - C_1C_LL_1R_Lg_mr_os^3 + C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1L_1R_Lg_ms^2 - C_1L_1g_mr_os^2 + C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^6 + C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_Lr_os^5 + C_LC_{gd}^2L_LR_Lr_os^4 - C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_LR_Lr_os^5 + C_LC_{gd}C_{gs}L_1L_Lr_o^2s^5 + C_LC_{gd}C_{gs}L_1R_Lr_o^2s^4 - C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^4 -}$$

10.71 INVALID-ORDER-71 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_L\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)\left(C_1L_1s^2 + C_1R_1s +\right.}{C_1C_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_Lr_os^4 + C_1C_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_{gd}^2R_1R_Lr_os^3 + C_1C_{gd}^2R_Lr_os^3 - C_1C_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1r_o^2s^4 - C_1C_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_{gd}C_{gs}R_1r_o^2s^3 - C_1C_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1g_mr_o^2s^3 + 2C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1r_os^3 + 2C_1C_{gd}L_1s^3 - C_1C_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1g_mr_o^2s^2 + 2C_1C_{gd}R_1g_mr_os^2 + C_1C_{gd}R_1r_os^2 + 2C_1C_{gd}R_1s^2 - C_1C_{gd}R_Lg_mr_os^2}$$

10.72 INVALID-ORDER-72 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)\left(C_1L_1s^2 + C_1R_1s + 1\right.}{s\left(C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 + C_1C_LC_{gd}R_1g_mr_o^2s^2 + 2C_1C_LC_{gd}R_1g_mr_os^2 + C_1C_LC_{gd}R_1r_os^2 + 2C_1C_LC_{gd}R_1s^2 + C_1C_LC_{gd}r_os^2 + C_1C_LC_{gs}L_1g_mr_os^3 + C_1C_LC_{gs}L_1r_os^3 + C_1C_LC_{gs}L_1s^3 + C_1C_LC_{gs}R_1g_mr_os^2 + C_1C_LC_{gs}R_1r_os^2 + C_1C_LC_{gs}R_1s^2 - C_1C_LL_1g_m^2r_os^2 - C_1C_LL_1g_ms^2 - C_1C_LR_1g_m^2r_os - C_1C_LR_1g_ms - C_1C_Lg_mr_os + C_1C_{gd}^2C_{gs}L_1r_o^2s^4 + C_1C_{gd}^2C_{gs}R_1r_o^2s^3 + C_1C_{gd}^2L_1g_mr_o^2s^3 + C_1C_{gd}^2L_1r_os^3 + C_1C_{gd}^2R_1g_mr_o^2s^2 + C_1C_{gd}^2\right.}$$

10.73 INVALID-ORDER-73 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}L_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Lr_os^4 + 2C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}R_1R_Lg_mr_o^2s^3 + 2C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Lr_os^3 + 2C_1C_LC_{gd}R_1R_Ls^3 + C_1C_LC_{gd}R_Lr_os^3 + C_1C_LC_{gs}L_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_1R_Lr_os^4 + C_1C_LC_{gs}L_1R_Ls^4 + C_1C_LC_{gs}R_1R_Lg_mr_os^3 + C_1C_LC_{gs}R_1R_Lr_os^3 + C_1C_LC_{gs}R_1R_Ls^3 - C_1C_LL_1R_Lg_m^2r_os^3 - C_1C_LL_1R_Lg_ms^3 - C_1C_LR_1R_Lg_m^2r_os^2 - C_1C_LR_1R_Lg_ms^2 - C_1C_LR_Lg_mr_os^2 + C_1C_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_{gd}^2}$$

10.74 INVALID-ORDER-74 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{s\left(C_1C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}^2L_1R_Lr_os^4 + C_1C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}^2R_1R_Lr_os^3 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}C_{gs}R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}C_{gs}R_1R_Lr_os^3 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_1C_LC_{gd}L_1R_Lg_m^2r_o^2s^3 - C_1C_LC_{gd}L_1R_Lg_mr_os^3 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 - C_1C_LC_{gd}R_1R_Lg_m^2r_o^2s^2 - C_1C_LC_{gd}R_1R_Lg_mr_os^2 + C_1C_LC_{gd}R_1g_mr_o^2s^2 +\right.}$$

10.75 INVALID-ORDER-75 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{s\left(C_1C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lr_os^5 + C_1C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}^2L_LR_1r_os^4 + C_1C_LC_{gd}^2L_Lr_os^4 - C_1C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1L_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_LR_1r_os^4 + C_1C_LC_{gd}C_{gs}R_1r_o^2s^3 - C_1C_LC_{gd}L_1L_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1L_Lg_mr_os^4 + C_1C_LC_{gd}L_1g_mr_o^2s^3 + 2C_1C_LC_{gd}L_1g_mr_os^3 + C_1C_LC_{gd}L_1r_os^3 + 2C_1C_LC_{gd}L_1s^3 - C_1C_LC_{gd}L_LR_1g_m^2r_o^2s^3 - C_1C_LC_{gd}L_LR_1g_mr_os^3 - C_1C_LC_{gd}L_Lg_mr_os^3 +\right.}$$

10.76 INVALID-ORDER-76 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + 2C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_LR_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1r_os^4 + 2C_1C_LC_{gd}L_LR_1s^4 + C_1C_LC_{gd}L_Lr_os^4 + C_1C_LC_{gs}L_1L_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_Lr_os^5 + C_1C_LC_{gs}L_1L_Ls^5 + C_1C_LC_{gs}L_LR_1g_mr_os^4 + C_1C_LC_{gs}L_LR_1r_os^4 + C_1C_LC_{gs}L_LR_1s^4 - C_1C_LL_1L_Lg_m^2r_os^4 - C_1C_LL_1L_Lg_ms^4 - C_1C_LL_LR_1g_m^2r_os^3 - C_1C_LL_LR_1g_ms^3 - C_1C_LL_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_{gd}^2C_{gs}L_L}$$

10.77 INVALID-ORDER-77 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{s\left(C_1C_LC_{gd}^2C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}^2C_{gs}L_1R_Lr_o^2s^5 + C_1C_LC_{gd}^2C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}^2C_{gs}R_1R_Lr_o^2s^4 + C_1C_LC_{gd}^2L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1L_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}^2L_1R_Lr_os^4 + C_1C_LC_{gd}^2L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}^2L_LR_1r_os^4 + C_1C_LC_{gd}^2L_Lr_os^4 + C_1C_LC_{gd}^2R_1R_Lg_mr_o^2s^3 + C_1C_LC_{gd}^2R_1R_Lr_os^3 + C_1C_LC_{gd}^2R_Lr_os^3 - C_1C_LC_{gd}C_{gs}L_1L_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1L_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1R_Lg_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_1R_Lr_os^4 + C_1C_LC_{gd}C_{gs}L_1r_o^2s^4 - C_1C_LC_{gd}C_{gs}L_LR_1g_mr_o^2s^4 + C_1C_LC_{gd}C_{gs}L_LR_1r_os^4 -\right.}$$

10.78 INVALID-ORDER-78 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_o^2s^5 + C_1C_LC_{gd}L_1L_LR_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Lr_os^5 + 2C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_LR_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1R_Lr_os^4 + 2C_1C_LC_{gd}L_LR_1R_Ls^4 + C_1C_LC_{gd}L_LR_Lr_os^4 + C_1C_LC_{gs}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_LR_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_Ls^5 + C_1C_LC_{gs}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_LR_1R_Lr_os^4 + C_1C_LC_{gs}L_LR_1R_Ls^4 - C_1C_LL_1L_LR_Lg_m^2r_os^4 - C_1C_LL_1L_LR_Lg_ms^4 - C_1C_LL_LR_1R_Lg_m^2r_os^3 -}$$

10.79 INVALID-ORDER-79 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^7 + C_1C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 - C_1C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + 2C_1C_LC_{gd}L_1L_Ls^5 - C_1C_LC_{gd}L_LR_1R}$$

10.80 INVALID-ORDER-80 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_Lr_o^2s^7 + C_1C_LC_{gd}^2C_{gs}L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 + C_1C_LC_{gd}^2L_LR_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_Lr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1R_Lr_o^2s^5 - C_1C_LC_{gd}C_{gs}L_LR_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_LR_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_LR_1r_o^2s^5 + C_1C_LC_{gd}C_{gs}R_1R_Lr_o^2s^4 - C_1C_LC_{gd}L_1L_LR_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}}$$

10.81 INVALID-ORDER-81 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1R_1R_Ls\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)}{C_1C_{gd}^2L_1R_1R_Lr_os^4 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1R_Ls^3 + C_1C_{gd}L_1R_1r_os^3 - C_1L_1R_1R_Lg_ms^2 - C_1L_1R_1g_mr_os^2 + C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^4 + C_{gd}^2L_1R_1R_Lg_mr_o^2s^3 + C_{gd}^2L_1R_1R_Lr_os^3 + C_{gd}^2L_1R_Lr_os^3 + C_{gd}^2R_1R_Lr_os^2 - C_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^3 + C_{gd}C_{gs}L_1R_1R_Lr_os^3 + C_{gd}C_{gs}L_1R_1r_o^2s^3 - C_{gd}L_1R_1R_Lg_m^2r_o^2s^2 - C_{gd}L_1R_1R_Lg_mr_os^2 + C_{gd}L_1R_1g_mr_o^2s^2 + 2C_{gd}L_1R_1g_mr_os^2 + C_{gd}L_1R_1r_os^2 + 2C_{gd}L_1R_1s^2 - C_{gd}L_1R_Lg_mr_os^2 + C_{gd}L_1R_Ls^2 + C_{gd}L_1r_os^2 - C_{gd}R_1R_Lg_mr_os + C_{gd}R_1R_Ls + C_{gd}R_1r_os - C_{gs}L_1R_1R_Lg_mr_os^2 + C_{gs}L_1R_1g}$$

10.82 INVALID-ORDER-82 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1R_1s\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)}{C_1C_LC_{gd}L_1R_1r_os^4 - C_1C_LL_1R_1g_mr_os^3 + C_1C_{gd}^2L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1s^3 - C_1L_1R_1g_ms^2 + C_LC_{gd}C_{gs}L_1R_1r_o^2s^4 + C_LC_{gd}L_1R_1g_mr_o^2s^3 + 2C_LC_{gd}L_1R_1g_mr_os^3 + C_LC_{gd}L_1R_1r_os^3 + 2C_LC_{gd}L_1R_1s^3 + C_LC_{gd}L_1r_os^3 + C_LC_{gd}R_1r_os^2 + C_LC_{gs}L_1R_1g_mr_os^3 + C_LC_{gs}L_1R_1r_os^3 + C_LC_{gs}L_1R_1s^3 - C_LL_1R_1g_m^2r_os^2 - C_LL_1R_1g_ms^2 - C_LL_1g_mr_os^2 - C_LR_1g_mr_os + C_{gd}^2C_{gs}L_1R_1r_o^2s^4 + C_{gd}^2L_1R_1g_mr_o^2s^3 + C_{gd}^2L_1R_1r_os^3 + C_{gd}^2L_1r_os^3 + C_{gd}^2R_1r_os^2 - C_{gd}C_{gs}L_1R_1g_mr_o^2s^3 + C_{gd}C_{gs}L_1R_1r_os^3 - C_{gd}L_1R_1g_m^2r_o^2s^2 - C_{gd}L_1R}$$

10.83 INVALID-ORDER-83 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{L_1R_1R_Ls\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)}{C_1C_LC_{gd}L_1R_1R_Lr_os^4 - C_1C_LL_1R_1R_Lg_mr_os^3 + C_1C_{gd}^2L_1R_1R_Lr_os^4 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1R_Ls^3 + C_1C_{gd}L_1R_1r_os^3 - C_1L_1R_1R_Lg_ms^2 - C_1L_1R_1g_mr_os^2 + C_LC_{gd}C_{gs}L_1R_1R_Lr_o^2s^4 + C_LC_{gd}L_1R_1R_Lg_mr_o^2s^3 + 2C_LC_{gd}L_1R_1R_Lg_mr_os^3 + C_LC_{gd}L_1R_1R_Lr_os^3 + 2C_LC_{gd}L_1R_1R_Ls^3 + C_LC_{gd}L_1R_Lr_os^3 + C_LC_{gd}R_1R_Lr_os^2 + C_LC_{gs}L_1R_1R_Lg_mr_os^3 + C_LC_{gs}L_1R_1R_Lr_os^3 + C_LC_{gs}L_1R_1R_Ls^3 - C_LL_1R_1R_Lg_m^2r_os^2 - C_LL_1R_1R_Lg_ms^2 - C_LL_1R_Lg_mr_os^2 - C_LR_1R_Lg_mr_os + C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^4 + C_{gd}^2L_1R_1R_Lg_mr_o^2s^3 + C_{gd}^2L_1}$$

10.84 INVALID-ORDER-84 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1R_1s\left(C_g\right.}{C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 - C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1R_Ls^4 + C_1C_LC_{gd}L_1R_1r_os^4 - C_1C_LL_1R_1R_Lg_ms^3 - C_1C_LL_1R_1g_mr_os^3 + C_1C_{gd}^2L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1s^3 - C_1L_1R_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_1R_1R_Lr_os^4 + C_LC_{gd}^2L_1R_Lr_os^4 + C_LC_{gd}^2R_1R_Lr_os^3 - C_LC_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^4 + C_LC_{gd}C_{gs}L_1R_1R_Lr_os^4 + C_LC_{gd}C_{gs}L_1R_1r_o^2s^4 - C_LC_{gd}L_1R_1R_Lg_m^2r_o^2s^3 - C_LC_{gd}L_1R_1R_Lg_mr_os^3 + C_LC_{gd}L_1R_1g_mr_o^2s^3 + 2C_LC_{gd}L_1R_1g_mr_os^3 + C_LC_{gd}L_1R_1r_os^3 + 2C_LC_{gd}L}$$

10.85 INVALID-ORDER-85 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1R_1s\left(C_{gd}s\right.}{C_1C_LC_{gd}^2L_1L_LR_1r_os^6 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1s^5 + C_1C_LC_{gd}L_1R_1r_os^4 - C_1C_LL_1L_LR_1g_ms^4 - C_1C_LL_1R_1g_mr_os^3 + C_1C_{gd}^2L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1s^3 - C_1L_1R_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^6 + C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_1r_os^5 + C_LC_{gd}^2L_1L_Lr_os^5 + C_LC_{gd}^2L_LR_1r_os^4 - C_LC_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_LR_1r_os^5 + C_LC_{gd}C_{gs}L_1R_1r_o^2s^4 - C_LC_{gd}L_1L_LR_1g_m^2r_o^2s^4 - C_LC_{gd}L_1L_LR_1g_mr_os^4 - C_LC_{gd}L_1L_Lg_mr_os^4 + C_LC_{gd}L_1L_Ls^4 + C_LC_{gd}L_1R_1g_mr_o^2s^3 + 2C_LC_{gd}L_1R_1g}$$

10.86 INVALID-ORDER-86 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_1L_LR_1s^2\left(C_{gd}s - g_m\right)\left(g_mr_o + 1\right)}{C_1C_LC_{gd}L_1L_LR_1r_os^5 - C_1C_LL_1L_LR_1g_mr_os^4 + C_1C_{gd}^2L_1L_LR_1r_os^5 - C_1C_{gd}L_1L_LR_1g_mr_os^4 + C_1C_{gd}L_1L_LR_1s^4 + C_1C_{gd}L_1R_1r_os^3 - C_1L_1L_LR_1g_ms^3 - C_1L_1R_1g_mr_os^2 + C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^5 + C_LC_{gd}L_1L_LR_1g_mr_o^2s^4 + 2C_LC_{gd}L_1L_LR_1g_mr_os^4 + C_LC_{gd}L_1L_LR_1r_os^4 + 2C_LC_{gd}L_1L_LR_1s^4 + C_LC_{gd}L_1L_Lr_os^4 + C_LC_{gd}L_LR_1r_os^3 + C_LC_{gs}L_1L_LR_1g_mr_os^4 + C_LC_{gs}L_1L_LR_1r_os^4 + C_LC_{gs}L_1L_LR_1s^4 - C_LL_1L_LR_1g_m^2r_os^3 - C_LL_1L_LR_1g_ms^3 - C_LL_1L_Lg_mr_os^3 - C_LL_LR_1g_mr_os^2 + C_{gd}^2C_{gs}L_1L_LR_1r_o^2s^5 + C_{gd}^2L_1L_LR_1g_mr_o^2s^4 + C_{gd}^2L_1L_L}$$

10.87 INVALID-ORDER-87 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_LR_1r_os^6 + C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1s^5 - C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1R_Ls^4 + C_1C_LC_{gd}L_1R_1r_os^4 - C_1C_LL_1L_LR_1g_ms^4 - C_1C_LL_1R_1R_Lg_ms^3 - C_1C_LL_1R_1g_mr_os^3 + C_1C_{gd}^2L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1s^3 - C_1L_1R_1g_ms^2 + C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^6 + C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_1r_os^5 + C_LC_{gd}^2L_1L_Lr_os^5 + C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_LC_{gd}^2L_1R_1R_Lr_os^4 + C_LC_{gd}^2L_1R_Lr_os^4 + C_LC_{gd}^2L_LR_1r_os^4 + C_LC_{gd}^2R_1R_L}$$

10.88 INVALID-ORDER-88 $Z(s) = \left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}L_1L_LR_1R_Lr_os^5 - C_1C_LL_1L_LR_1R_Lg_mr_os^4 + C_1C_{gd}^2L_1L_LR_1R_Lr_os^5 - C_1C_{gd}L_1L_LR_1R_Lg_mr_os^4 + C_1C_{gd}L_1L_LR_1R_Ls^4 + C_1C_{gd}L_1L_LR_1r_os^4 + C_1C_{gd}L_1R_1R_Lr_os^3 - C_1L_1L_LR_1R_Lg_ms^3 - C_1L_1L_LR_1g_mr_os^3 - C_1L_1R_1R_Lg_mr_os^2 + C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_o^2s^5 + C_LC_{gd}L_1L_LR_1R_Lg_mr_o^2s^4 + 2C_LC_{gd}L_1L_LR_1R_Lg_mr_os^4 + C_LC_{gd}L_1L_LR_1R_Lr_os^4 + 2C_LC_{gd}L_1L_LR_1R_Ls^4 + C_LC_{gd}L_1L_LR_Lr_os^4 + C_LC_{gd}L_LR_1R_Lr_os^3 + C_LC_{gs}L_1L_LR_1R_Lg_mr_os^4 + C_LC_{gs}L_1L_LR_1R_Lr_os^4 + C_LC_{gs}L_1L_LR_1R_Ls^4 - C_LL_1L_LR_1R_Lg_m^2r_os^3 - C_LL_1L}$$

10.89 INVALID-ORDER-89 $Z(s) = \left(\frac{1}{C_1 s+\frac{1}{R_1}+\frac{1}{L_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}+R_L\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1R_Ls^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 - C_1C_LL_1L_LR_1R_Lg_ms^4 - C_1C_LL_1L_LR_1g_mr_os^4 + C_1C_{gd}^2L_1L_LR_1r_os^5 + C_1C_{gd}^2L_1R_1R_Lr_os^4 - C_1C_{gd}L_1L_LR_1g_mr_os^4 + C_1C_{gd}L_1L_LR_1s^4 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1R_Ls^3 + C_1C_{gd}L_1R_1r_os^3 - C_1L_1L_LR_1g_ms^3 - C_1L_1R_1R_Lg_ms^2 - C_1L_1R_1g_mr_os^2 + C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_1R_Lr_os^5 + C_LC_{gd}^2L_1L_LR_Lr_os^5 + C_LC_{gd}^2L_LR_1R_Lr_os^4 - C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^5 + \cdots}$$

10.90 INVALID-ORDER-90 $Z(s) = \left(\frac{1}{C_1 s+\frac{1}{R_1}+\frac{1}{L_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s+\frac{1}{C_L s}\right)}{L_L s+R_L+\frac{1}{C_L s}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1R_Ls^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + C_1C_LC_{gd}L_1R_1R_Lr_os^4 - C_1C_LL_1L_LR_1R_Lg_ms^4 - C_1C_LL_1L_LR_1g_mr_os^4 - C_1C_LL_1R_1R_Lg_mr_os^3 + C_1C_{gd}^2L_1R_1R_Lr_os^4 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1R_Ls^3 + C_1C_{gd}L_1R_1r_os^3 - C_1L_1R_1R_Lg_ms^2 - C_1L_1R_1g_mr_os^2 + C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^5 + C_LC_{gd}^2L_1L_LR_1R_Lr_os^5 + C_LC_{gd}^2L_1L_LR_Lr_os^5 + C_LC_{gd}^2L_LR_1R_Lr_os^4 - C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^5 + C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_os^5 + \cdots}$$

10.91 INVALID-ORDER-91 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{}{C_1C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_1R_Lr_os^4 + C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 - C_1C_{gd}L_1R_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1g_mr_o^2s^3 + 2C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1r_os^3 + 2C_1C_{gd}L_1R_1s^3 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1C_{gs}L_1R_1R_Lg_mr_os^3 + C_1C_{gs}L_1R_1g_mr_os^3 + C_1C_{gs}L_1R_1r_os^3 + C_1C_{gs}L_1R_1s^3 - C_1L_1R_1g_m^2r_os^2 - C_1L_1R_1g_ms^2 - C_1L_1R_Lg_ms^2 - C_1L_1g_mr_os^2 + C_{gd}^2C_{gs}L_1R_Lr_o^2s^4 + \cdots}$$

10.92 INVALID-ORDER-92 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 + C_1C_LC_{gd}L_1r_os^4 + C_1C_LC_{gs}L_1R_1g_mr_os^4 + C_1C_LC_{gs}L_1R_1r_os^4 + C_1C_LC_{gs}L_1R_1s^4 - C_1C_LL_1R_1g_m^2r_os^3 - C_1C_LL_1R_1g_ms^3 - C_1C_LL_1g_mr_os^3 + C_1C_{gd}^2C_{gs}L_1R_1r_o^2s^5 + C_1C_{gd}^2L_1R_1g_mr_o^2s^4 + C_1C_{gd}^2L_1R_1r_os^4 + C_1C_{gd}^2L_1r_os^4 - C_1C_{gd}C_{gs}L_1R_1g_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_m^2r_o^2s^3 - C_1C_{gd}L_1R_1g_mr_os^3 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - C_1C_{gs}L_1R_1g_mr_os^3 - C_1L_1g_ms^2 + C_LC_{gd}C_{gs}L_1r_o^2s^4 + \cdots}$$

10.93 INVALID-ORDER-93 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_LC_{gd}L_1R_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1R_Lr_os^4 + 2C_1C_LC_{gd}L_1R_1R_Ls^4 + C_1C_LC_{gd}L_1R_Lr_os^4 + C_1C_LC_{gs}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_1R_1R_Lr_os^4 + C_1C_LC_{gs}L_1R_1R_Ls^4 - C_1C_LL_1R_1R_Lg_m^2r_os^3 - C_1C_LL_1R_1R_Lg_ms^3 - C_1C_LL_1R_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_1R_Lr_os^4 + C_1C_{gd}^2L_1R_Lr_os^4 - C_1C_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 - C_1C_{gd}L_1R_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + \cdots}$$

10.94 INVALID-ORDER-94 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ R_L+\frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1R_1R_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 - C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LC_{gs}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_1R_1g_mr_os^4 + C_1C_LC_{gs}L_1R_1r_os^4 + C_1C_LC_{gs}L_1R_1s^4 - C_1C_LL_1R_1g_m^2r_os^3 - \cdots}$$

10.95 INVALID-ORDER-95 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s+\frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1r_os^6 + C_1C_LC_{gd}^2L_1L_Lr_os^6 - C_1C_LC_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_os^6 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LC_{gs}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gs}L_1R_1g_mr_os^4 + C_1C_LC_{gs}L_1R_1r_os^4 + C_1C_LC_{gs}L_1R_1s^4 - C_1C_LL_1L_Lg_ms^4 - \cdots}$$

10.96 INVALID-ORDER-96 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gs}L_1L_LR_1r_os^5 + C_1C_LC_{gs}L_1L_LR_1s^5 - C_1C_LL_1L_LR_1g_m^2r_os^4 - C_1C_LL_1L_LR_1g_ms^4 - C_1C_LL_1L_Lg_mr_os^4 + C_1C_{gd}^2C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_{gd}^2L_1L_LR_1g_mr_o^2s^5 + C_1C_{gd}^2L_1L_LR_1r_os^5 + C_1C_{gd}^2L_1L_Lr_os^5 - C_1C_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^5 + C_1C_{gd}C_{gs}L_1L_LR_1r_os^5 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 - C_1C_{gd}L_1L_LR_1g_m^2r_o^2s^4 - C_1C_{gd}L_1L_LR_1g_mr_os^4 - \cdots}$$

10.97 INVALID-ORDER-97 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s+R_L+\frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^7 + C_1C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1r_os^6 + C_1C_LC_{gd}^2L_1L_Lr_os^6 + C_1C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_os^6 - C_1C_LC_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 - C_1C_LC_{gd}L_1R_1R_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + \cdots}$$

10.98 INVALID-ORDER-98 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s+\frac{1}{R_L}+\frac{1}{L_L s}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1R_Lr_os^5 + 2C_1C_LC_{gd}L_1L_LR_1R_Ls^5 + C_1C_LC_{gd}L_1L_LR_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_LR_1R_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_1R_Ls^5 - C_1C_LL_1L_LR_1R_Lg_m^2r_os^4 - C_1C_LL_1L_LR_1R_Lg_ms^4 - C_1C_LL_1L_LR_Lg_mr_os^4 + C_1C_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_1C_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^5 + C_1C_{gd}^2L_1L_LR_1R_Lr_os^5 + C_1C_{gd}^2L_1L_LR_Lr_os^5 - C_1C_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^5 + C_1C_{gd}C_{gs}L_1L_LR_1R_Lr_os^5 + C_1C_{gd}C_{gs}L_1L_LR_1r_o^2s^5 + \cdots}$$

10.99 INVALID-ORDER-99 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}+R_L\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 - C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 - C_1C_LC_{gd}L_1L_LR_1R_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 - C_1C_LC_{gs}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_LR_1g_mr_os^5 + \cdots}$$

10.100 INVALID-ORDER-100 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1}+R_1,\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s+\frac{1}{C_L s}\right)}{L_L s+R_L+\frac{1}{C_L s}}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 - C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + C_1C_LC_{gd}L_1R_1R_Lg_mr_o^2s^4 + \cdots}$$

10.101 INVALID-ORDER-101 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_1R_L\left(C_{gd}s-g_m\right)\left(g_mr_o+1\right)\left(C_1L_1s^2+1\right)}{C_1C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_1R_Lr_os^4 + C_1C_{gd}^2L_1R_Lr_os^4 + C_1C_{gd}^2R_1R_Lr_os^3 - C_1C_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 - C_1C_{gd}L_1R_1R_Lg_m^2r_o^2s^3 - C_1C_{gd}L_1R_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_1g_mr_o^2s^3 + 2C_1C_{gd}L_1R_1g_mr_os^3 + C_1C_{gd}L_1R_1r_os^3 + 2C_1C_{gd}L_1R_1s^3 - C_1C_{gd}L_1R_Lg_mr_os^3 + C_1C_{gd}L_1R_Ls^3 + C_1C_{gd}L_1r_os^3 - C_1C_{gd}R_1R_Lg_mr_os^2 + C_1C_{gd}R_1R_Ls^2 + C_1C_{gd}R_1r_os^2 - C_1C_{gs}L_1R_1R_Lg_mr_os^3 + C_1C_{gs}L_1R_1g_mr_os^3 + C_1C_{gs}L_1R_1r_os^3 + C_1C_{gs}L_1R_1s^3 - C_1L_1R_1g_m^2r_os^2 - \cdots}$$

10.102 INVALID-ORDER-102 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{R_1\left(C_{gd}s-g_m\right)\left(g_mr_o+1\right)\left(C_1L_1s^2+1\right)}{C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 + C_1C_LC_{gd}L_1r_os^4 + C_1C_LC_{gd}R_1r_os^3 + C_1C_LC_{gs}L_1R_1g_mr_os^4 + C_1C_LC_{gs}L_1R_1r_os^4 + C_1C_LC_{gs}L_1R_1s^4 - C_1C_LL_1R_1g_m^2r_os^3 - C_1C_LL_1R_1g_ms^3 - C_1C_LL_1g_mr_os^3 - C_1C_LR_1g_mr_os^2 + C_1C_{gd}^2C_{gs}L_1R_1r_o^2s^5 + C_1C_{gd}^2L_1R_1g_mr_o^2s^4 + C_1C_{gd}^2L_1R_1r_os^4 + C_1C_{gd}^2L_1r_os^4 + C_1C_{gd}^2R_1r_os^3 - C_1C_{gd}C_{gs}L_1R_1g_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1r_os^4 - C_1C_{gd}L_1R_1g_m^2r_o^2s^3 - C_1C_{gd}L_1R_1g_mr_os^3 - C_1C_{gd}L_1g_mr_os^3 + C_1C_{gd}L_1s^3 - \cdots}$$

10.103 INVALID-ORDER-103 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_LC_{gd}L_1R_1R_Lg_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1R_Lr_os^4 + 2C_1C_LC_{gd}L_1R_1R_Ls^4 + C_1C_LC_{gd}L_1R_Lr_os^4 + C_1C_LC_{gd}R_1R_Lr_os^3 + C_1C_LC_{gs}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gs}L_1R_1R_Lr_os^4 + C_1C_LC_{gs}L_1R_1R_Ls^4 - C_1C_LL_1R_1R_Lg_m^2r_os^3 - C_1C_LL_1R_1R_Lg_ms^3 - C_1C_LL_1R_Lg_mr_os^3 - C_1C_LR_1R_Lg_mr_os^2 + C_1C_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^5 + C_1C_{gd}^2L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}^2L_1R_1R_Lr_os^4 + C_1C_{gd}^2L_1R_Lr_os^4 + C_1C_{gd}^2R_1R_Lr_os^3 - C_1C_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^4 + C_1C_{gd}C_{gs}L_1R_1R_Lr_os^4 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 \cdots}$$

10.104 INVALID-ORDER-104 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L+\frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lr_os^5 + C_1C_LC_{gd}^2R_1R_Lr_os^4 - C_1C_LC_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1R_1R_Lg_m^2r_o^2s^4 - C_1C_LC_{gd}L_1R_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 - C_1C_LC_{gd}L_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_1R_Ls^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LC_{gd}R_1R_Lg_mr_os^3 + C_1C_LC_{gd}R_1R_Ls^3 + C_1C_LC_{gd}R_1r_os^3 - C_1C_LC_{gs}L_1R_1R_Lg_mr_os^4 + \cdots}$$

10.105 INVALID-ORDER-105 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s+\frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1r_os^6 + C_1C_LC_{gd}^2L_1L_Lr_os^6 + C_1C_LC_{gd}^2L_LR_1r_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_os^6 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 + C_1C_LC_{gd}L_1R_1g_mr_o^2s^4 + 2C_1C_LC_{gd}L_1R_1g_mr_os^4 + C_1C_LC_{gd}L_1R_1r_os^4 + 2C_1C_LC_{gd}L_1R_1s^4 + C_1C_LC_{gd}L_1r_os^4 - C_1C_LC_{gd}L_LR_1g_mr_os^4 + C_1C_LC_{gd}L_LR_1s^4 + C_1C_LC_{gd}R_1r_os^3 - C_1C_LC_{gs}L_1L_LR_1g_mr_os^5 + \cdots}$$

10.106 INVALID-ORDER-106 $Z(s) = \left(\frac{R_1\left(L_1 s+\frac{1}{C_1 s}\right)}{L_1 s+R_1+\frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + C_1C_LC_{gd}L_LR_1r_os^4 + C_1C_LC_{gs}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gs}L_1L_LR_1r_os^5 + C_1C_LC_{gs}L_1L_LR_1s^5 - C_1C_LL_1L_LR_1g_m^2r_os^4 - C_1C_LL_1L_LR_1g_ms^4 - C_1C_LL_1L_Lg_mr_os^4 - C_1C_LL_LR_1g_mr_os^3 + C_1C_{gd}^2C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_{gd}^2L_1L_LR_1g_mr_o^2s^5 + C_1C_{gd}^2L_1L_LR_1r_os^5 + C_1C_{gd}^2L_1L_Lr_os^5 + C_1C_{gd}^2L_LR_1r_os^4 - C_1C_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^5 + C_1C_{gd}C_{gs}L_1L_LR_1r_os^5 + C_1C_{gd}C_{gs}L_1R_1r_o^2s^4 - \cdots}$$

10.107 INVALID-ORDER-107 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1r_o^2s^7 + C_1C_LC_{gd}^2C_{gs}L_1R_1R_Lr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1r_os^6 + C_1C_LC_{gd}^2L_1L_Lr_os^6 + C_1C_LC_{gd}^2L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}^2L_1R_1R_Lr_os^5 + C_1C_LC_{gd}^2L_1R_Lr_os^5 + C_1C_LC_{gd}^2L_LR_1r_os^5 + C_1C_LC_{gd}^2R_1R_Lr_os^4 - C_1C_LC_{gd}C_{gs}L_1L_LR_1g_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_os^6 - C_1C_LC_{gd}C_{gs}L_1R_1R_Lg_mr_o^2s^5 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_os^5 + C_1C_LC_{gd}C_{gs}L_1R_1r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 - C_1C_LC_{gd}L_1L_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_Ls^5 - C_1C_LC_{gd}L_1R_1R_Lg_m^2r_o^2s^4 - C_1}$$

10.108 INVALID-ORDER-108 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{}{C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1R_Lr_os^5 + 2C_1C_LC_{gd}L_1L_LR_1R_Ls^5 + C_1C_LC_{gd}L_1L_LR_Lr_os^5 + C_1C_LC_{gd}L_LR_1R_Lr_os^4 + C_1C_LC_{gs}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gs}L_1L_LR_1R_Lr_os^5 + C_1C_LC_{gs}L_1L_LR_1R_Ls^5 - C_1C_LL_1L_LR_1R_Lg_m^2r_os^4 - C_1C_LL_1L_LR_1R_Lg_ms^4 - C_1C_LL_1L_LR_Lg_mr_os^4 - C_1C_LL_LR_1R_Lg_mr_os^3 + C_1C_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^6 + C_1C_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^5 + C_1C_{gd}^2L_1L_LR_1R_Lr_os^5 + C_1C_{gd}^2L_1L_LR_Lr_os^5 + C_1C_{gd}^2L_LR_1R_Lr_os^4 - C_1C_{gd}C_{gs}L_1L_LR}$$

10.109 INVALID-ORDER-109 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 - C_1C_LC_{gd}L_1L_LR_1R_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 - C_1C_LC_{gd}L_LR_1R_Lg_mr_os^4 + C_1C_LC_{gd}L_LR_1R_Ls^4 + C}$$

10.110 INVALID-ORDER-110 $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}},\ \infty,\ \infty,\ \infty,\ \infty,\ \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{}{C_1C_LC_{gd}^2C_{gs}L_1L_LR_1R_Lr_o^2s^7 + C_1C_LC_{gd}^2L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}^2L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}^2L_1L_LR_Lr_os^6 + C_1C_LC_{gd}^2L_LR_1R_Lr_os^5 - C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lg_mr_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1R_Lr_os^6 + C_1C_LC_{gd}C_{gs}L_1L_LR_1r_o^2s^6 + C_1C_LC_{gd}C_{gs}L_1R_1R_Lr_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_m^2r_o^2s^5 - C_1C_LC_{gd}L_1L_LR_1R_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1g_mr_o^2s^5 + 2C_1C_LC_{gd}L_1L_LR_1g_mr_os^5 + C_1C_LC_{gd}L_1L_LR_1r_os^5 + 2C_1C_LC_{gd}L_1L_LR_1s^5 - C_1C_LC_{gd}L_1L_LR_Lg_mr_os^5 + C_1C_LC_{gd}L_1L_LR_Ls^5 + C_1C_LC_{gd}L_1L_Lr_os^5 + C_1C_LC_{gd}L_1R_1R_Lg_mr_o^2s}$$