

Filter Summary Report: TIA,simple,Z2,Z3,ZL

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Contents

1 Examined $H(z)$ for TIA simple Z2 Z3 ZL: $\frac{Z_3 Z_L (Z_2 g_m + 1)}{Z_2 Z_3 g_m + Z_2 Z_L g_m + Z_3 + Z_L}$

$$H(z) = \frac{Z_3 Z_L (Z_2 g_m + 1)}{Z_2 Z_3 g_m + Z_2 Z_L g_m + Z_3 + Z_L}$$

2 HP

3 BP

3.1 BP-1 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{1}{C_L R_3}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

3.2 BP-2 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_3 + R_L}{C_L R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.3 BP-3 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $R_L \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_L (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0

Wz: None

3.4 BP-4 $Z(s) = \left(\infty, R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 + C_L)$

wo: $\sqrt{\frac{1}{L_L (C_3 + C_L)}}$

bandwidth: $\frac{1}{R_3 (C_3 + C_L)}$

K-LP: 0

K-HP: 0

K-BP: R_3

Qz: 0

Wz: None

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

3.5 BP-5 $Z(s) = \left(\infty, R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$

wo: $\sqrt{\frac{1}{L_L (C_3 + C_L)}}$

bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$

K-LP: 0

K-HP: 0

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

Qz: 0

Wz: None

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

3.6 BP-6 $Z(s) = \left(\infty, R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_3}}$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{1}{C_3 R_L}$

K-LP: 0

K-HP: 0

K-BP: R_L

Qz: 0

Wz: None

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

3.7 BP-7 $Z(s) = \left(\infty, R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

Parameters:

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

Q: $R_L \sqrt{\frac{1}{L_3(C_3+C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3+C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

3.8 BP-8 $Z(s) = \left(\infty, R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $R_L \sqrt{\frac{L_3+L_L}{L_3 L_L (C_3+C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3+L_L}{L_3 L_L (C_3+C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3+C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

3.9 BP-9 $Z(s) = \left(\infty, R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_3 + R_L}{C_3 R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.10 BP-10 $Z(s) = \left(\infty, R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{1}{C_L s} \right)$

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

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_3(C_3+C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
 bandwidth: $\frac{1}{R_3(C_3+C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

3.11 BP-11 $Z(s) = \left(\infty, R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
 bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.12 BP-12 $Z(s) = \left(\infty, R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $R_3 \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_3 (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

3.13 BP-13 $Z(s) = \left(\infty, R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.14 BP-14 $Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$

bandwidth: $\frac{1}{C_L R_3}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.15 BP-15 $Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $\frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{R_3 + R_L}{C_L R_3 R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
Qz: 0
Wz: None

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

3.16 BP-16 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

3.17 BP-17 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

Parameters:

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

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

3.18 BP-18 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

3.19 BP-19 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_3}}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{1}{C_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

3.20 BP-20 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

Parameters:

Q: $R_L \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3 (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

3.21 BP-21 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$

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

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

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

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

bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.22 BP-22 $Z(s) = \left(\infty, \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{C_3R_3R_L\sqrt{\frac{1}{C_3L_3}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{R_3+R_L}{C_3R_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$H(s) = \frac{L_3R_3R_Ls}{C_3L_3R_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

3.23 BP-23 $Z(s) = \left(\infty, \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{1}{C_Ls} \right)$

Parameters:

Q: $R_3\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

$$H(s) = \frac{L_3R_3s}{C_3L_3R_3s^2 + C_LL_3R_3s^2 + L_3s + R_3}$$

3.24 BP-24 $Z(s) = \left(\infty, \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$H(s) = \frac{L_3R_3R_Ls}{C_3L_3R_3R_Ls^2 + C_LL_3R_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

3.25 BP-25 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $R_3 \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$

wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$

bandwidth: $\frac{1}{R_3 (C_3 + C_L)}$

K-LP: 0

K-HP: 0

K-BP: R_3

Qz: 0

Wz: None

3.26 BP-26 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$

wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$

bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$

K-LP: 0

K-HP: 0

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

Qz: 0

Wz: None

3.27 BP-27 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}}$

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

bandwidth: $\frac{1}{C_L R_3}$

K-LP: 0

K-HP: 0

K-BP: R_3

Qz: 0

Wz: None

3.28 BP-28 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$

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

bandwidth: $\frac{R_3+R_L}{C_L R_3 R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$\mathbf{3.29 \quad BP-29} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

Parameters:

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

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

$$\mathbf{3.30 \quad BP-30} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

Parameters:

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

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

$$\mathbf{3.31 \quad BP-31} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

Parameters:

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

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

3.32 BP-32 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_3}}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{1}{C_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

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

3.33 BP-33 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

Parameters:

Q: $R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

3.34 BP-34 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

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

3.35 BP-35 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$

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

bandwidth: $\frac{R_3+R_L}{C_3R_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.36 BP-36 $Z(s) = \left(\infty, \frac{R_2}{C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_3R_3s}{C_3L_3R_3s^2 + C_LL_3R_3s^2 + L_3s + R_3}$$

Parameters:

Q: $R_3\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.37 BP-37 $Z(s) = \left(\infty, \frac{R_2}{C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{L_3R_3R_Ls}{C_3L_3R_3R_Ls^2 + C_LL_3R_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.38 BP-38 $Z(s) = \left(\infty, \frac{R_2}{C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_3L_LR_3s}{C_3L_3L_LR_3s^2 + C_LL_3L_LR_3s^2 + L_3L_Ls + L_3R_3 + L_LR_3}$$

Parameters:

Q: $R_3\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.39 BP-39 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.40 BP-40 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{1}{C_L R_3}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

3.41 BP-41 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_3 + R_L}{C_L R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

3.42 BP-42 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $R_L \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_L (C_3 + C_L)}}$

bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.43 BP-43 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_LR_3s}{C_3L_LR_3s^2 + C_LL_LR_3s^2 + L_Ls + R_3}$$

Parameters:

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

3.44 BP-44 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_3R_Ls}{C_3L_LR_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{1}{L_L(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.45 BP-45 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_3R_Ls}{C_3L_3R_Ls^2 + L_3s + R_L}$$

Parameters:

Q: $C_3R_L\sqrt{\frac{1}{C_3L_3}}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{1}{C_3R_L}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.46 BP-46 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

Parameters:

Q: $R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

3.47 BP-47 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

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

3.48 BP-48 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_3 + R_L}{C_3 R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

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

3.49 BP-49 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{1}{C_L s} \right)$

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$

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

bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

$$\mathbf{3.50 \quad BP-50} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3 R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$\mathbf{3.51 \quad BP-51} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

Parameters:

Q: $R_3 \sqrt{\frac{L_3+L_L}{L_3 L_L(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{L_3+L_L}{L_3 L_L(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

$$\mathbf{3.52 \quad BP-52} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{L_3+L_L}{L_3 L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{L_3+L_L}{L_3 L_L(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3 R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.53 BP-53 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

Parameters:

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{1}{C_L R_3}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

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

3.54 BP-54 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

Q: $\frac{C_L R_3 R_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_3 + R_L}{C_L R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

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

3.55 BP-55 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

3.56 BP-56 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_L (C_3 + C_L)}}$

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

bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.57 BP-57 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_3R_Ls}{C_3L_LR_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{1}{L_L(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.58 BP-58 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_3R_Ls}{C_3L_3R_Ls^2 + L_3s + R_L}$$

Parameters:

Q: $C_3R_L\sqrt{\frac{1}{C_3L_3}}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{1}{C_3R_L}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.59 BP-59 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{L_3R_Ls}{C_3L_3R_Ls^2 + C_LL_3R_Ls^2 + L_3s + R_L}$$

Parameters:

Q: $R_L\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

$$\mathbf{3.60 \quad BP-60} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

Parameters:

$$\text{Q: } R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$$

$$\text{wo: } \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$$

$$\text{bandwidth: } \frac{1}{R_L (C_3 + C_L)}$$

$$\text{K-LP: } 0$$

$$\text{K-HP: } 0$$

$$\text{K-BP: } R_L$$

$$\text{Qz: } 0$$

$$\text{Wz: None}$$

$$\mathbf{3.61 \quad BP-61} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad R_L \right)$$

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

Parameters:

$$\text{Q: } \frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$$

$$\text{wo: } \sqrt{\frac{1}{C_3 L_3}}$$

$$\text{bandwidth: } \frac{R_3 + R_L}{C_3 R_3 R_L}$$

$$\text{K-LP: } 0$$

$$\text{K-HP: } 0$$

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

$$\text{Qz: } 0$$

$$\text{Wz: None}$$

$$\mathbf{3.62 \quad BP-62} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

Parameters:

$$\text{Q: } R_3 \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 + C_L)$$

$$\text{wo: } \sqrt{\frac{1}{L_3 (C_3 + C_L)}}$$

$$\text{bandwidth: } \frac{1}{R_3 (C_3 + C_L)}$$

$$\text{K-LP: } 0$$

$$\text{K-HP: } 0$$

$$\text{K-BP: } R_3$$

$$\text{Qz: } 0$$

$$\text{Wz: None}$$

$$\mathbf{3.63 \quad BP-63} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

Parameters:

$$\text{Q: } \frac{R_3 R_L \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$$

$$\text{wo: } \sqrt{\frac{1}{L_3 (C_3 + C_L)}}$$

bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.64 BP-64 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_3L_LR_3s}{C_3L_3L_LR_3s^2 + C_LL_3L_LR_3s^2 + L_3L_Ls + L_3R_3 + L_LR_3}$$

Parameters:

Q: $R_3\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.65 BP-65 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_3L_LR_3R_Ls}{C_3L_3L_LR_3R_Ls^2 + C_LL_3L_LR_3R_Ls^2 + L_3L_LR_3s + L_3L_LR_Ls + L_3R_3R_L + L_LR_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.66 BP-66 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_LR_3s}{C_LL_LR_3s^2 + L_Ls + R_3}$$

Parameters:

Q: $C_LR_3\sqrt{\frac{1}{C_LL_L}}$
wo: $\sqrt{\frac{1}{C_LL_L}}$
bandwidth: $\frac{1}{C_LR_3}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.67 BP-67 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

Parameters:

Q: $\frac{C_LR_3R_L\sqrt{\frac{1}{C_LL_L}}}{R_3+R_L}$
 wo: $\sqrt{\frac{1}{C_LL_L}}$
 bandwidth: $\frac{R_3+R_L}{C_LR_3R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3R_L}{R_3+R_L}$
 Qz: 0
 Wz: None

$$H(s) = \frac{L_LR_3R_Ls}{C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

3.68 BP-68 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

Parameters:

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

$$H(s) = \frac{L_LR_Ls}{C_3L_LR_Ls^2 + C_LL_LR_Ls^2 + L_Ls + R_L}$$

3.69 BP-69 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

Parameters:

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

$$H(s) = \frac{L_LR_3s}{C_3L_LR_3s^2 + C_LL_LR_3s^2 + L_Ls + R_3}$$

3.70 BP-70 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
 wo: $\sqrt{\frac{1}{L_L(C_3+C_L)}}$

$$H(s) = \frac{L_LR_3R_Ls}{C_3L_LR_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.71 BP-71 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_3R_Ls}{C_3L_3R_Ls^2 + L_3s + R_L}$$

Parameters:

Q: $C_3R_L\sqrt{\frac{1}{C_3L_3}}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{1}{C_3R_L}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.72 BP-72 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{L_3R_Ls}{C_3L_3R_Ls^2 + C_LR_3R_Ls^2 + L_3s + R_L}$$

Parameters:

Q: $R_L\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3 + C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.73 BP-73 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_3L_LR_Ls}{C_3L_3L_LR_Ls^2 + C_LL_3L_LR_Ls^2 + L_3L_Ls + L_3R_L + L_LR_L}$$

Parameters:

Q: $R_L\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3 + C_L)$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.74 BP-74 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_3 + R_L}{C_3 R_3 R_L}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

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

3.75 BP-75 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{1}{C_L s} \right)$

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3 (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_3 (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 Qz: 0
 Wz: None

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

3.76 BP-76 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{1}{L_3 (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{L_3 (C_3 + C_L)}}$
 bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 Qz: 0
 Wz: None

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

3.77 BP-77 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

Parameters:

Q: $R_3 \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$

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

bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.78 BP-78 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_3L_LR_3R_Ls}{C_3L_3L_LR_3R_Ls^2 + C_LL_3L_LR_3R_Ls^2 + L_3L_LR_3s + L_3L_LR_Ls + L_3R_3R_L + L_LR_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.79 BP-79 $Z(s) = \left(\infty, \frac{L_2s}{C_2L_2s^2+1} + R_2, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_LR_3s}{C_LL_LR_3s^2 + L_Ls + R_3}$$

Parameters:

Q: $C_LR_3\sqrt{\frac{1}{C_LL_L}}$
wo: $\sqrt{\frac{1}{C_LL_L}}$
bandwidth: $\frac{1}{C_LR_3}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.80 BP-80 $Z(s) = \left(\infty, \frac{L_2s}{C_2L_2s^2+1} + R_2, R_3, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_3R_Ls}{C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

Parameters:

Q: $\frac{C_LR_3R_L\sqrt{\frac{1}{C_LL_L}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_LL_L}}$
bandwidth: $\frac{R_3+R_L}{C_LR_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.81 BP-81 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

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

3.82 BP-82 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

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

3.83 BP-83 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

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

3.84 BP-84 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_3}}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{1}{C_3 R_L}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.85 BP-85 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

Parameters:

Q: $R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.86 BP-86 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
bandwidth: $\frac{1}{R_L(C_3 + C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

3.87 BP-87 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 + R_L}{C_3 R_3 R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
Qz: 0
Wz: None

3.88 BP-88 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{1}{C_L s} \right)$

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

Parameters:

Q: $R_3 \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_3(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 QZ: 0
 WZ: None

3.89 BP-89 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{1}{L_3(C_3 + C_L)}}$
 bandwidth: $\frac{R_3 + R_L}{R_3 R_L (C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: $\frac{R_3 R_L}{R_3 + R_L}$
 QZ: 0
 WZ: None

3.90 BP-90 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

Parameters:

Q: $R_3 \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$
 bandwidth: $\frac{1}{R_3(C_3 + C_L)}$
 K-LP: 0
 K-HP: 0
 K-BP: R_3
 QZ: 0
 WZ: None

3.91 BP-91 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

Q: $\frac{R_3 R_L \sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}} (C_3 + C_L)}{R_3 + R_L}$
 wo: $\sqrt{\frac{L_3 + L_L}{L_3 L_L (C_3 + C_L)}}$

bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

3.92 BP-92 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

Parameters:

Q: $C_LR_3\sqrt{\frac{1}{C_LL_L}}$
wo: $\sqrt{\frac{1}{C_LL_L}}$
bandwidth: $\frac{1}{C_LR_3}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

$$H(s) = \frac{L_LR_3s}{C_LL_LR_3s^2 + L_Ls + R_3}$$

3.93 BP-93 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

Parameters:

Q: $\frac{C_LR_3R_L\sqrt{\frac{1}{C_LL_L}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_LL_L}}$
bandwidth: $\frac{R_3+R_L}{C_LR_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$H(s) = \frac{L_LR_3R_Ls}{C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

3.94 BP-94 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

Parameters:

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

$$H(s) = \frac{L_LR_Ls}{C_3L_LR_Ls^2 + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$\mathbf{3.95 \quad BP-95} \quad Z(s) = \left(\infty, \frac{R_2(C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

Parameters:

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

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

$$\mathbf{3.96 \quad BP-96} \quad Z(s) = \left(\infty, \frac{R_2(C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

Parameters:

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

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

$$\mathbf{3.97 \quad BP-97} \quad Z(s) = \left(\infty, \frac{R_2(C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$$

Parameters:

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

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

$$\mathbf{3.98 \quad BP-98} \quad Z(s) = \left(\infty, \frac{R_2(C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

Parameters:

$$\text{Q: } R_L \sqrt{\frac{1}{L_3(C_3 + C_L)}} (C_3 + C_L)$$

$$H(s) = \frac{L_3 R_L s}{C_3 L_3 R_L s^2 + C_L L_3 R_L s^2 + L_3 s + R_L}$$

wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

$$\mathbf{3.99 \quad BP-99} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_3L_LR_Ls}{C_3L_3L_LR_Ls^2 + C_LL_3L_LR_Ls^2 + L_3L_Ls + L_3R_L + L_LR_L}$$

Parameters:

Q: $R_L\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$
bandwidth: $\frac{1}{R_L(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_L
Qz: 0
Wz: None

$$\mathbf{3.100 \quad BP-100} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_3R_3R_Ls}{C_3L_3R_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

Parameters:

Q: $\frac{C_3R_3R_L\sqrt{\frac{1}{C_3L_3}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{R_3+R_L}{C_3R_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_L}{R_3+R_L}$
Qz: 0
Wz: None

$$\mathbf{3.101 \quad BP-101} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s}{C_3L_3R_3s^2 + C_LL_3R_3s^2 + L_3s + R_3}$$

Parameters:

Q: $R_3\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)$
wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$
bandwidth: $\frac{1}{R_3(C_3+C_L)}$
K-LP: 0
K-HP: 0
K-BP: R_3
Qz: 0
Wz: None

3.102 BP-102 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{L_3R_3R_Ls}{C_3L_3R_3R_Ls^2 + C_LR_3R_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{1}{L_3(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$

wo: $\sqrt{\frac{1}{L_3(C_3+C_L)}}$

bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3R_L}{R_3+R_L}$

Qz: 0

Wz: None

3.103 BP-103 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_3L_LR_3s}{C_3L_3L_LR_3s^2 + C_LL_3L_LR_3s^2 + L_3L_Ls + L_3R_3 + L_LR_3}$$

Parameters:

Q: $R_3\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)$

wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$

bandwidth: $\frac{1}{R_3(C_3+C_L)}$

K-LP: 0

K-HP: 0

K-BP: R_3

Qz: 0

Wz: None

3.104 BP-104 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_3L_LR_3R_Ls}{C_3L_3L_LR_3R_Ls^2 + C_LL_3L_LR_3R_Ls^2 + L_3L_LR_3s + L_3L_LR_Ls + L_3R_3R_L + L_LR_3R_L}$$

Parameters:

Q: $\frac{R_3R_L\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}(C_3+C_L)}{R_3+R_L}$

wo: $\sqrt{\frac{L_3+L_L}{L_3L_L(C_3+C_L)}}$

bandwidth: $\frac{R_3+R_L}{R_3R_L(C_3+C_L)}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3R_L}{R_3+R_L}$

Qz: 0

Wz: None

4 LP

5 BS

5.1 BS-1 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_3}{L_L}$
 K-LP: R_3
 K-HP: R_3
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_L L_L}}$

5.2 BS-2 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

Parameters:

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

5.3 BS-3 $Z(s) = \left(\infty, R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_L}{L_3}$
 K-LP: R_L
 K-HP: R_L
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.4 BS-4 $Z(s) = \left(\infty, R_2, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

Parameters:

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

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

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

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

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

$$\mathbf{5.5 \quad BS-5} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

Parameters:

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

$$\mathbf{5.6 \quad BS-6} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

Parameters:

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

$$\mathbf{5.7 \quad BS-7} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

Parameters:

$$\begin{aligned}
\text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L} \\
\text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\
\text{bandwidth: } & \frac{R_L}{L_3} \\
\text{K-LP: } & R_L \\
\text{K-HP: } & R_L \\
\text{K-BP: } & 0
\end{aligned}$$

Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.8 BS-8 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)}{R_3 R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 R_L}{L_3 (R_3 + R_L)}$
K-LP: $\frac{R_3 R_L}{R_3 + R_L}$
K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.9 BS-9 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

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

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{R_3}{L_L}$
K-LP: R_3
K-HP: R_3
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_L L_L}}$

5.10 BS-10 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

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

Parameters:

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

5.11 BS-11 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_L}{L_3}$
 K-LP: R_L
 K-HP: R_L
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

5.12 BS-12 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)}{R_3 R_L}$
 wo: $\sqrt{\frac{1}{C_3 L_3}}$
 bandwidth: $\frac{R_3 R_L}{L_3 (R_3 + R_L)}$
 K-LP: $\frac{R_3 R_L}{R_3 + R_L}$
 K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

5.13 BS-13 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_3}{L_L}$
 K-LP: R_3
 K-HP: R_3
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_L L_L}}$

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

5.14 BS-14 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

Parameters:

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

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

$$\mathbf{5.15 \quad BS-15} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

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

Parameters:

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

$$\mathbf{5.16 \quad BS-16} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

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

Parameters:

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

$$\mathbf{5.17 \quad BS-17} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

Parameters:

$$\begin{aligned}
\text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3} \\
\text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\
\text{bandwidth: } & \frac{R_3}{L_L} \\
\text{K-LP: } & R_3 \\
\text{K-HP: } & R_3 \\
\text{K-BP: } & 0
\end{aligned}$$

Qz: None
Wz: $\sqrt{\frac{1}{C_L L_L}}$

5.18 BS-18 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

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

Parameters:

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

5.19 BS-19 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_L}{L_3}$
K-LP: R_L
K-HP: R_L
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.20 BS-20 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

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

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)}{R_3 R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 R_L}{L_3 (R_3 + R_L)}$
K-LP: $\frac{R_3 R_L}{R_3 + R_L}$
K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.21 BS-21 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{R_3}{L_L}$
K-LP: R_3
K-HP: R_3
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_L L_L}}$

5.22 BS-22 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

Parameters:

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

5.23 BS-23 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_L}{L_3}$
K-LP: R_L
K-HP: R_L
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

5.24 BS-24 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

Parameters:

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

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

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

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

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

$$\mathbf{5.25 \quad BS-25} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

Parameters:

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

$$\mathbf{5.26 \quad BS-26} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

Parameters:

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

$$\mathbf{5.27 \quad BS-27} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

Parameters:

$$\begin{aligned}
\text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L} \\
\text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\
\text{bandwidth: } & \frac{R_L}{L_3} \\
\text{K-LP: } & R_L \\
\text{K-HP: } & R_L \\
\text{K-BP: } & 0
\end{aligned}$$

Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

$$5.28 \quad \text{BS-28} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)}{R_3 R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 R_L}{L_3 (R_3 + R_L)}$
K-LP: $\frac{R_3 R_L}{R_3 + R_L}$
K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

$$5.29 \quad \text{BS-29} \quad Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{R_3}{L_L}$
K-LP: R_3
K-HP: R_3
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_L L_L}}$

$$5.30 \quad \text{BS-30} \quad Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

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

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

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

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

5.31 BS-31 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_3L_3s^2 + 1)}{C_3L_3s^2 + C_3R_Ls + 1}$$

Parameters:

Q: $\frac{L_3\sqrt{\frac{1}{C_3L_3}}}{R_L}$
 wo: $\sqrt{\frac{1}{C_3L_3}}$
 bandwidth: $\frac{R_L}{L_3}$
 K-LP: R_L
 K-HP: R_L
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_3L_3}}$

5.32 BS-32 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3R_L (C_3L_3s^2 + 1)}{C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3R_3R_Ls + R_3 + R_L}$$

Parameters:

Q: $\frac{L_3\sqrt{\frac{1}{C_3L_3}}(R_3+R_L)}{R_3R_L}$
 wo: $\sqrt{\frac{1}{C_3L_3}}$
 bandwidth: $\frac{R_3R_L}{L_3(R_3+R_L)}$
 K-LP: $\frac{R_3R_L}{R_3+R_L}$
 K-HP: $\frac{R_3R_L}{R_3+R_L}$
 K-BP: 0
 Qz: None
 Wz: $\sqrt{\frac{1}{C_3L_3}}$

6 GE

6.1 GE-1 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3 (C_LL_Ls^2 + C_LR_Ls + 1)}{C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

Parameters:

Q: $\frac{L_L\sqrt{\frac{1}{C_LL_L}}}{R_3+R_L}$
 wo: $\sqrt{\frac{1}{C_LL_L}}$
 bandwidth: $\frac{R_3+R_L}{L_L}$
 K-LP: R_3
 K-HP: R_3
 K-BP: $\frac{R_3R_L}{R_3+R_L}$
 Qz: $\frac{L_L\sqrt{\frac{1}{C_LL_L}}}{R_L}$
 Wz: $\sqrt{\frac{1}{C_LL_L}}$

6.2 GE-2 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

Parameters:

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

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

bandwidth: $\frac{1}{C_L (R_3 + R_L)}$

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

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

K-BP: R_3

Qz: $C_L R_L \sqrt{\frac{1}{C_L L_L}}$

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

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

6.3 GE-3 $Z(s) = \left(\infty, R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{R_3 + R_L}{L_3}$

K-LP: R_L

K-HP: R_L

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

Qz: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

6.4 GE-4 $Z(s) = \left(\infty, R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{1}{C_3 (R_3 + R_L)}$

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

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

K-BP: R_L

Qz: $C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

6.5 GE-5 $Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{WZ: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

6.6 GE-6 $Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

Parameters:

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

6.7 GE-7 $Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_3} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & R_L \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

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

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

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

6.8 GE-8 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

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

6.9 GE-9 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{Qz: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{Wz: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

6.10 GE-10 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

Parameters:

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

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

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

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

6.11 GE-11 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_3} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & R_L \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

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

6.12 GE-12 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

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

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

6.13 GE-13 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{WZ: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

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

6.14 GE-14 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

Parameters:

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

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

bandwidth: $\frac{1}{C_L (R_3 + R_L)}$

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

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

K-BP: R_3

Qz: $C_L R_L \sqrt{\frac{1}{C_L L_L}}$

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

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

6.15 GE-15 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{R_3 + R_L}{L_3}$

K-LP: R_L

K-HP: R_L

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

Qz: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

6.16 GE-16 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{1}{C_3 (R_3 + R_L)}$

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

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

K-BP: R_L

Qz: $C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

$$\mathbf{6.17 \quad GE-17} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{WZ: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

$$\mathbf{6.18 \quad GE-18} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

Parameters:

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

$$\mathbf{6.19 \quad GE-19} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_3} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & R_L \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

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

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

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

$$\mathbf{6.20 \quad GE-20} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

Parameters:

$$\text{Q: } C_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)$$

$$\text{wo: } \sqrt{\frac{1}{C_3 L_3}}$$

$$\text{bandwidth: } \frac{1}{C_3 (R_3 + R_L)}$$

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

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

$$\text{K-BP: } R_L$$

$$\text{Qz: } C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$$

$$\text{Wz: } \sqrt{\frac{1}{C_3 L_3}}$$

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

$$\mathbf{6.21 \quad GE-21} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

Parameters:

$$\text{Q: } \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$$

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

$$\text{bandwidth: } \frac{R_3 + R_L}{L_L}$$

$$\text{K-LP: } R_3$$

$$\text{K-HP: } R_3$$

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

$$\text{Qz: } \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L}$$

$$\text{Wz: } \sqrt{\frac{1}{C_L L_L}}$$

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

$$\mathbf{6.22 \quad GE-22} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

Parameters:

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

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

$$\text{bandwidth: } \frac{1}{C_L (R_3 + R_L)}$$

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

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

$$\text{K-BP: } R_3$$

$$\text{Qz: } C_L R_L \sqrt{\frac{1}{C_L L_L}}$$

$$\text{Wz: } \sqrt{\frac{1}{C_L L_L}}$$

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

6.23 GE-23 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_3} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & R_L \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\ \text{WZ: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

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

6.24 GE-24 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

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

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

6.25 GE-25 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{WZ: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

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

6.26 GE-26 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

Parameters:

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

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

bandwidth: $\frac{1}{C_L (R_3 + R_L)}$

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

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

K-BP: R_3

Qz: $C_L R_L \sqrt{\frac{1}{C_L L_L}}$

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

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

6.27 GE-27 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

Parameters:

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{R_3 + R_L}{L_3}$

K-LP: R_L

K-HP: R_L

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

Qz: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

6.28 GE-28 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3 \sqrt{\frac{1}{C_3 L_3}} (R_3 + R_L)$

wo: $\sqrt{\frac{1}{C_3 L_3}}$

bandwidth: $\frac{1}{C_3 (R_3 + R_L)}$

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

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

K-BP: R_L

Qz: $C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$

Wz: $\sqrt{\frac{1}{C_3 L_3}}$

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

$$\mathbf{6.29 \quad GE-29} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_L} \\ \text{K-LP: } & R_3 \\ \text{K-HP: } & R_3 \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{Qz: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ \text{Wz: } & \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

$$\mathbf{6.30 \quad GE-30} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, \frac{L_Ls}{C_L L_L s^2 + 1} + R_L \right)$$

Parameters:

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

$$\mathbf{6.31 \quad GE-31} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_3 L_3}} \\ \text{bandwidth: } & \frac{R_3 + R_L}{L_3} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & R_L \\ \text{K-BP: } & \frac{R_3 R_L}{R_3 + R_L} \\ \text{Qz: } & \frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3} \\ \text{Wz: } & \sqrt{\frac{1}{C_3 L_3}} \end{aligned}$$

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

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

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

6.32 GE-32 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, R_L \right)$

Parameters:

Q: $C_3\sqrt{\frac{1}{C_3L_3}}(R_3+R_L)$
 wo: $\sqrt{\frac{1}{C_3L_3}}$
 bandwidth: $\frac{1}{C_3(R_3+R_L)}$
 K-LP: $\frac{R_3R_L}{R_3+R_L}$
 K-HP: $\frac{R_3R_L}{R_3+R_L}$
 K-BP: R_L
 Qz: $C_3R_3\sqrt{\frac{1}{C_3L_3}}$
 Wz: $\sqrt{\frac{1}{C_3L_3}}$

7 AP

8 INVALID-NUMER

8.1 INVALID-NUMER-1 $Z(s) = \left(\infty, R_2, \frac{R_3}{C_3R_3s+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_LR_3+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$
 bandwidth: $\frac{C_3R_3+C_LR_3+C_LR_L}{C_3C_LR_3R_L}$
 K-LP: R_3
 K-HP: 0
 K-BP: $\frac{C_LR_3R_L}{C_3R_3+C_LR_3+C_LR_L}$
 Qz: 0
 Wz: None

8.2 INVALID-NUMER-2 $Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_3R_L+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$
 bandwidth: $\frac{C_3R_3+C_3R_L+C_LR_L}{C_3C_LR_3R_L}$
 K-LP: R_L
 K-HP: 0
 K-BP: $\frac{C_3R_3R_L}{C_3R_3+C_3R_L+C_LR_L}$
 Qz: 0
 Wz: None

$$H(s) = \frac{R_L\left(C_3L_3R_3s^2+L_3s+R_3\right)}{C_3L_3R_3s^2+C_3L_3R_Ls^2+L_3s+R_3+R_L}$$

$$H(s) = \frac{R_3\left(C_LR_Ls+1\right)}{C_3C_LR_3R_Ls^2+C_3R_3s+C_LR_3s+C_LR_Ls+1}$$

$$H(s) = \frac{R_L\left(C_3R_3s+1\right)}{C_3C_LR_3R_Ls^2+C_3R_3s+C_3R_Ls+C_LR_Ls+1}$$

8.3 INVALID-NUMER-3 $Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

Parameters:

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

8.4 INVALID-NUMER-4 $Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

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

8.5 INVALID-NUMER-5 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

Parameters:

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

8.6 INVALID-NUMER-6 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

Q: $\frac{C_3 C_L R_3 R_L \sqrt{\frac{1}{C_3 C_L R_3 R_L}}}{C_3 R_3 + C_3 R_L + C_L R_L}$
 wo: $\sqrt{\frac{1}{C_3 C_L R_3 R_L}}$

bandwidth: $\frac{C_3 R_3 + C_3 R_L + C_L R_L}{C_3 C_L R_3 R_L}$
K-LP: R_L
K-HP: 0
K-BP: $\frac{C_3 R_3 R_L}{C_3 R_3 + C_3 R_L + C_L R_L}$
Qz: 0
Wz: None

8.7 INVALID-NUMER-7 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

Parameters:

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

8.8 INVALID-NUMER-8 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

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

8.9 INVALID-NUMER-9 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

Parameters:

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

8.10 INVALID-NUMER-10 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{R_L (C_3R_3s + 1)}{C_3C_LR_3R_Ls^2 + C_3R_3s + C_3R_Ls + C_LR_Ls + 1}$$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_3R_L+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$
 bandwidth: $\frac{C_3R_3+C_3R_L+C_LR_L}{C_3C_LR_3R_L}$
 K-LP: R_L
 K-HP: 0
 K-BP: $\frac{C_3R_3R_L}{C_3R_3+C_3R_L+C_LR_L}$
 QZ: 0
 WZ: None

8.11 INVALID-NUMER-11 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3 (C_LR_Ls + 1)}{C_3C_LR_3R_Ls^2 + C_3R_3s + C_LR_3s + C_LR_Ls + 1}$$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_LR_3+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$
 bandwidth: $\frac{C_3R_3+C_LR_3+C_LR_L}{C_3C_LR_3R_L}$
 K-LP: R_3
 K-HP: 0
 K-BP: $\frac{C_LR_3R_L}{C_3R_3+C_LR_3+C_LR_L}$
 QZ: 0
 WZ: None

8.12 INVALID-NUMER-12 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{R_L (C_3R_3s + 1)}{C_3C_LR_3R_Ls^2 + C_3R_3s + C_3R_Ls + C_LR_Ls + 1}$$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_3R_L+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$
 bandwidth: $\frac{C_3R_3+C_3R_L+C_LR_L}{C_3C_LR_3R_L}$
 K-LP: R_L
 K-HP: 0
 K-BP: $\frac{C_3R_3R_L}{C_3R_3+C_3R_L+C_LR_L}$
 QZ: 0
 WZ: None

8.13 INVALID-NUMER-13 $Z(s) = \left(\infty, \frac{L_2s}{C_2L_2s^2+1} + R_2, \frac{R_3}{C_3R_3s+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3 (C_LR_Ls + 1)}{C_3C_LR_3R_Ls^2 + C_3R_3s + C_LR_3s + C_LR_Ls + 1}$$

Parameters:

Q: $\frac{C_3C_LR_3R_L\sqrt{\frac{1}{C_3C_LR_3R_L}}}{C_3R_3+C_LR_3+C_LR_L}$
 wo: $\sqrt{\frac{1}{C_3C_LR_3R_L}}$

bandwidth: $\frac{C_3 R_3 + C_L R_3 + C_L R_L}{C_3 C_L R_3 R_L}$
K-LP: R_3
K-HP: 0
K-BP: $\frac{C_L R_3 R_L}{C_3 R_3 + C_L R_3 + C_L R_L}$
Qz: 0
Wz: None

8.14 INVALID-NUMER-14 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

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

8.15 INVALID-NUMER-15 $Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

Parameters:

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

8.16 INVALID-NUMER-16 $Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

Parameters:

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

9 INVALID-WZ

10 INVALID-ORDER

10.1 INVALID-ORDER-1 $Z(s) = (\infty, R_2, R_3, \infty, \infty, R_L)$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

10.2 INVALID-ORDER-2 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{1}{C_L s} \right)$

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

10.3 INVALID-ORDER-3 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_3 R_L}{C_L R_3 R_L s + R_3 + R_L}$$

10.4 INVALID-ORDER-4 $Z(s) = \left(\infty, R_2, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

10.5 INVALID-ORDER-5 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

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

10.6 INVALID-ORDER-6 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

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

10.7 INVALID-ORDER-7 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

10.8 INVALID-ORDER-8 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

10.9 INVALID-ORDER-9 $Z(s) = \left(\infty, R_2, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

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

$$10.10 \quad \text{INVALID-ORDER-10} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.11 \quad \text{INVALID-ORDER-11} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.12 \quad \text{INVALID-ORDER-12} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.13 \quad \text{INVALID-ORDER-13} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.14 \quad \text{INVALID-ORDER-14} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + R_3 + R_L}$$

$$10.15 \quad \text{INVALID-ORDER-15} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.16 \quad \text{INVALID-ORDER-16} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + C_L R_3 R_L s + R_3 + R_L}$$

$$10.17 \quad \text{INVALID-ORDER-17} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.18 \quad \text{INVALID-ORDER-18} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.19 \quad \text{INVALID-ORDER-19} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.20 \quad \text{INVALID-ORDER-20} \quad Z(s) = \left(\infty, R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.21 \quad \text{INVALID-ORDER-21} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.22 \quad \text{INVALID-ORDER-22} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.23 \quad \text{INVALID-ORDER-23} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.24 \quad \text{INVALID-ORDER-24} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.25 \quad \text{INVALID-ORDER-25} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.26 \quad \text{INVALID-ORDER-26} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.27 \quad \text{INVALID-ORDER-27} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.28 \quad \text{INVALID-ORDER-28} \quad Z(s) = \left(\infty, R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.29 \quad \text{INVALID-ORDER-29} \quad Z(s) = \left(\infty, \quad R_2, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.30 \quad \text{INVALID-ORDER-30} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.31 \quad \text{INVALID-ORDER-31} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.32 \quad \text{INVALID-ORDER-32} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.33 \quad \text{INVALID-ORDER-33} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.34 \quad \text{INVALID-ORDER-34} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.35 \quad \text{INVALID-ORDER-35} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.36 \quad \text{INVALID-ORDER-36} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.37 \quad \text{INVALID-ORDER-37} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.38 \quad \text{INVALID-ORDER-38} \quad Z(s) = \left(\infty, R_2, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2+1)(C_LL_Ls^2+1)}{C_3C_LL_3L_Ls^4+C_3C_LL_3R_Ls^3+C_3C_LL_LR_Ls^3+C_3L_3s^2+C_3R_Ls+C_LL_Ls^2+C_LR_Ls+1}$$

$$10.39 \quad \text{INVALID-ORDER-39} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s}{C_3L_3s^2+C_LL_3s^2+1}$$

$$10.40 \quad \text{INVALID-ORDER-40} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LR_Ls+1)}{C_3C_LL_3R_Ls^3+C_3L_3s^2+C_LL_3s^2+C_LR_Ls+1}$$

$$10.41 \quad \text{INVALID-ORDER-41} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2+1)}{C_3C_LL_3L_Ls^4+C_3L_3s^2+C_LL_3s^2+C_LL_Ls^2+1}$$

$$10.42 \quad \text{INVALID-ORDER-42} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_3L_Ls}{C_3L_3L_Ls^2+C_LL_3L_Ls^2+L_3+L_L}$$

$$10.43 \quad \text{INVALID-ORDER-43} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2+C_LR_Ls+1)}{C_3C_LL_3L_Ls^4+C_3C_LL_3R_Ls^3+C_3L_3s^2+C_LL_3s^2+C_LL_Ls^2+C_LR_Ls+1}$$

$$10.44 \quad \text{INVALID-ORDER-44} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{L_3s(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_3L_LR_Ls^4+C_3L_3L_Ls^3+C_3L_3R_Ls^2+C_LL_3L_Ls^3+C_LL_LR_Ls^2+L_3s+L_Ls+R_L}$$

$$10.45 \quad \text{INVALID-ORDER-45} \quad Z(s) = \left(\infty, R_2, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_3R_Ls(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_Ls^4+C_3L_3R_Ls^2+C_LL_3L_Ls^3+C_LL_3R_Ls^2+C_LL_LR_Ls^2+L_3s+R_L}$$

$$10.46 \quad \text{INVALID-ORDER-46} \quad Z(s) = \left(\infty, R_2, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3s^2+C_3R_3s+1}{s(C_3C_LL_3s^2+C_3C_LR_3s+C_3+C_L)}$$

$$10.47 \quad \text{INVALID-ORDER-47} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.48 \quad \text{INVALID-ORDER-48} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.49 \quad \text{INVALID-ORDER-49} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.50 \quad \text{INVALID-ORDER-50} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.51 \quad \text{INVALID-ORDER-51} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.52 \quad \text{INVALID-ORDER-52} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.53 \quad \text{INVALID-ORDER-53} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.54 \quad \text{INVALID-ORDER-54} \quad Z(s) = \left(\infty, \quad R_2, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.55 \quad \text{INVALID-ORDER-55} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.56 \quad \text{INVALID-ORDER-56} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.57 \quad \text{INVALID-ORDER-57} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.58 \quad \text{INVALID-ORDER-58} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.59 \quad \text{INVALID-ORDER-59} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.60 \quad \text{INVALID-ORDER-60} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.61 \quad \text{INVALID-ORDER-61} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.62 \quad \text{INVALID-ORDER-62} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.63 \quad \text{INVALID-ORDER-63} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.64 \quad \text{INVALID-ORDER-64} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.65 \quad \text{INVALID-ORDER-65} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.66 \quad \text{INVALID-ORDER-66} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.67 \quad \text{INVALID-ORDER-67} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.68 \quad \text{INVALID-ORDER-68} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.69 \quad \text{INVALID-ORDER-69} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.70 \quad \text{INVALID-ORDER-70} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.71 \quad \text{INVALID-ORDER-71} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.72 \quad \text{INVALID-ORDER-72} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.73 \quad \text{INVALID-ORDER-73} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.74 \quad \text{INVALID-ORDER-74} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3 (C_3L_3s^2 + 1) (C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_3s^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

$$10.75 \quad \text{INVALID-ORDER-75} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_3R_Ls (C_3L_3s^2 + 1)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3L_LR_Ls^3 + C_3L_3R_3R_Ls^2 + C_3L_LR_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

$$10.76 \quad \text{INVALID-ORDER-76} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{R_3 (C_3L_3s^2 + 1) (C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3C_LL_LR_3R_Ls^3 + C_3L_3L_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3L_LR_3s^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + L_Ls + R_3 + R_L}$$

$$10.77 \quad \text{INVALID-ORDER-77} \quad Z(s) = \left(\infty, \quad R_2, \quad \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L (C_3L_3s^2 + 1) (C_LL_Ls^2 + 1)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3C_LL_3R_3R_Ls^3 + C_3C_LL_LR_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + C_LR_3R_Ls + R_3 + R_L}$$

$$10.78 \quad \text{INVALID-ORDER-78} \quad Z(s) = \left(\infty, \quad \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3R_L}{R_3 + R_L}$$

$$10.79 \quad \text{INVALID-ORDER-79} \quad Z(s) = \left(\infty, \quad \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3}{C_LR_3s + 1}$$

$$10.80 \quad \text{INVALID-ORDER-80} \quad Z(s) = \left(\infty, \quad \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L}{C_LR_3R_Ls + R_3 + R_L}$$

$$10.81 \quad \text{INVALID-ORDER-81} \quad Z(s) = \left(\infty, \quad \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3 (C_LR_Ls + 1)}{C_LR_3s + C_LR_Ls + 1}$$

$$10.82 \quad \text{INVALID-ORDER-82} \quad Z(s) = \left(\infty, \quad \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L}{C_3R_Ls + 1}$$

$$10.83 \quad \text{INVALID-ORDER-83} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.84 \quad \text{INVALID-ORDER-84} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.85 \quad \text{INVALID-ORDER-85} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.86 \quad \text{INVALID-ORDER-86} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.87 \quad \text{INVALID-ORDER-87} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.88 \quad \text{INVALID-ORDER-88} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.89 \quad \text{INVALID-ORDER-89} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.90 \quad \text{INVALID-ORDER-90} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.91 \quad \text{INVALID-ORDER-91} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + R_3 + R_L}$$

$$10.92 \quad \text{INVALID-ORDER-92} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.93 \quad \text{INVALID-ORDER-93} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + C_L R_3 R_L s + R_3 + R_L}$$

$$10.94 \quad \text{INVALID-ORDER-94} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.95 \quad \text{INVALID-ORDER-95} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.96 \quad \text{INVALID-ORDER-96} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.97 \quad \text{INVALID-ORDER-97} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.98 \quad \text{INVALID-ORDER-98} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.99 \quad \text{INVALID-ORDER-99} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.100 \quad \text{INVALID-ORDER-100} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.101 \quad \text{INVALID-ORDER-101} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.102 \quad \text{INVALID-ORDER-102} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.103 \quad \text{INVALID-ORDER-103} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.104 \quad \text{INVALID-ORDER-104} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.105 \quad \text{INVALID-ORDER-105} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.106 \quad \text{INVALID-ORDER-106} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.107 \quad \text{INVALID-ORDER-107} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.108 \quad \text{INVALID-ORDER-108} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.109 \quad \text{INVALID-ORDER-109} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.110 \quad \text{INVALID-ORDER-110} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.111 \quad \text{INVALID-ORDER-111} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.112 \quad \text{INVALID-ORDER-112} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.113 \quad \text{INVALID-ORDER-113} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.114 \quad \text{INVALID-ORDER-114} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.115 \quad \text{INVALID-ORDER-115} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.116 \quad \text{INVALID-ORDER-116} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.117 \quad \text{INVALID-ORDER-117} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.118 \quad \text{INVALID-ORDER-118} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.119 \quad \text{INVALID-ORDER-119} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L s}{C_3 L_3 L_L s^2 + C_L L_3 L_L s^2 + L_3 + L_L}$$

$$10.120 \quad \text{INVALID-ORDER-120} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.121 \quad \text{INVALID-ORDER-121} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.122 \quad \text{INVALID-ORDER-122} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.123 \quad \text{INVALID-ORDER-123} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.124 \quad \text{INVALID-ORDER-124} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.125 \quad \text{INVALID-ORDER-125} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.126 \quad \text{INVALID-ORDER-126} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.127 \quad \text{INVALID-ORDER-127} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.128 \quad \text{INVALID-ORDER-128} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.129 \quad \text{INVALID-ORDER-129} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.130 \quad \text{INVALID-ORDER-130} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.131 \quad \text{INVALID-ORDER-131} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.132 \quad \text{INVALID-ORDER-132} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.133 \quad \text{INVALID-ORDER-133} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.134 \quad \text{INVALID-ORDER-134} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.135 \quad \text{INVALID-ORDER-135} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.136 \quad \text{INVALID-ORDER-136} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.137 \quad \text{INVALID-ORDER-137} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.138 \quad \text{INVALID-ORDER-138} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.139 \quad \text{INVALID-ORDER-139} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.140 \quad \text{INVALID-ORDER-140} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.141 \quad \text{INVALID-ORDER-141} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.142 \quad \text{INVALID-ORDER-142} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.143 \quad \text{INVALID-ORDER-143} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.144 \quad \text{INVALID-ORDER-144} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.145 \quad \text{INVALID-ORDER-145} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.146 \quad \text{INVALID-ORDER-146} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.147 \quad \text{INVALID-ORDER-147} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.148 \quad \text{INVALID-ORDER-148} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.149 \quad \text{INVALID-ORDER-149} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.150 \quad \text{INVALID-ORDER-150} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.151 \quad \text{INVALID-ORDER-151} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.152 \quad \text{INVALID-ORDER-152} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.153 \quad \text{INVALID-ORDER-153} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.154 \quad \text{INVALID-ORDER-154} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.155 \quad \text{INVALID-ORDER-155} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

$$10.156 \quad \text{INVALID-ORDER-156} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.157 \quad \text{INVALID-ORDER-157} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_L R_3 R_L s + R_3 + R_L}$$

$$10.158 \quad \text{INVALID-ORDER-158} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.159 \quad \text{INVALID-ORDER-159} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.160 \quad \text{INVALID-ORDER-160} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.161 \quad \text{INVALID-ORDER-161} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.162 \quad \text{INVALID-ORDER-162} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.163 \quad \text{INVALID-ORDER-163} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.164 \quad \text{INVALID-ORDER-164} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.165 \quad \text{INVALID-ORDER-165} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.166 \quad \text{INVALID-ORDER-166} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.167 \quad \text{INVALID-ORDER-167} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.168 \quad \text{INVALID-ORDER-168} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + R_3 + R_L}$$

$$10.169 \quad \text{INVALID-ORDER-169} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.170 \quad \text{INVALID-ORDER-170} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + C_L R_3 R_L s + R_3 + R_L}$$

$$10.171 \quad \text{INVALID-ORDER-171} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.172 \quad \text{INVALID-ORDER-172} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.173 \quad \text{INVALID-ORDER-173} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.174 \quad \text{INVALID-ORDER-174} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.175 \quad \text{INVALID-ORDER-175} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.176 \quad \text{INVALID-ORDER-176} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.177 \quad \text{INVALID-ORDER-177} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.178 \quad \text{INVALID-ORDER-178} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.179 \quad \text{INVALID-ORDER-179} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.180 \quad \text{INVALID-ORDER-180} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.181 \quad \text{INVALID-ORDER-181} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.182 \quad \text{INVALID-ORDER-182} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.183 \quad \text{INVALID-ORDER-183} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.184 \quad \text{INVALID-ORDER-184} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.185 \quad \text{INVALID-ORDER-185} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.186 \quad \text{INVALID-ORDER-186} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.187 \quad \text{INVALID-ORDER-187} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.188 \quad \text{INVALID-ORDER-188} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.189 \quad \text{INVALID-ORDER-189} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.190 \quad \text{INVALID-ORDER-190} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.191 \quad \text{INVALID-ORDER-191} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.192 \quad \text{INVALID-ORDER-192} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.193 \quad \text{INVALID-ORDER-193} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.194 \quad \text{INVALID-ORDER-194} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.195 \quad \text{INVALID-ORDER-195} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.196 \quad \text{INVALID-ORDER-196} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L s}{C_3 L_3 L_L s^2 + C_L L_3 L_L s^2 + L_3 + L_L}$$

$$10.197 \quad \text{INVALID-ORDER-197} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.198 \quad \text{INVALID-ORDER-198} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.199 \quad \text{INVALID-ORDER-199} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.200 \quad \text{INVALID-ORDER-200} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.201 \quad \text{INVALID-ORDER-201} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.202 \quad \text{INVALID-ORDER-202} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.203 \quad \text{INVALID-ORDER-203} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.204 \quad \text{INVALID-ORDER-204} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.205 \quad \text{INVALID-ORDER-205} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.206 \quad \text{INVALID-ORDER-206} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.207 \quad \text{INVALID-ORDER-207} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.208 \quad \text{INVALID-ORDER-208} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.209 \quad \text{INVALID-ORDER-209} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.210 \quad \text{INVALID-ORDER-210} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

10.211 INVALID-ORDER-211 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

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

10.212 INVALID-ORDER-212 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

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

10.213 INVALID-ORDER-213 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$

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

10.214 INVALID-ORDER-214 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$

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

10.215 INVALID-ORDER-215 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

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

10.216 INVALID-ORDER-216 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

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

10.217 INVALID-ORDER-217 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

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

10.218 INVALID-ORDER-218 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

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

10.219 INVALID-ORDER-219 $Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

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

$$10.220 \quad \text{INVALID-ORDER-220} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.221 \quad \text{INVALID-ORDER-221} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.222 \quad \text{INVALID-ORDER-222} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.223 \quad \text{INVALID-ORDER-223} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.224 \quad \text{INVALID-ORDER-224} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.225 \quad \text{INVALID-ORDER-225} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.226 \quad \text{INVALID-ORDER-226} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.227 \quad \text{INVALID-ORDER-227} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.228 \quad \text{INVALID-ORDER-228} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.229 \quad \text{INVALID-ORDER-229} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.230 \quad \text{INVALID-ORDER-230} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.231 \quad \text{INVALID-ORDER-231} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.232 \quad \text{INVALID-ORDER-232} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

$$10.233 \quad \text{INVALID-ORDER-233} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.234 \quad \text{INVALID-ORDER-234} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_L R_3 R_L s + R_3 + R_L}$$

$$10.235 \quad \text{INVALID-ORDER-235} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.236 \quad \text{INVALID-ORDER-236} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.237 \quad \text{INVALID-ORDER-237} \quad Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.238 \quad \text{INVALID-ORDER-238} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.239 \quad \text{INVALID-ORDER-239} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.240 \quad \text{INVALID-ORDER-240} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.241 \quad \text{INVALID-ORDER-241} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.242 \quad \text{INVALID-ORDER-242} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.243 \quad \text{INVALID-ORDER-243} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.244 \quad \text{INVALID-ORDER-244} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.245 \quad \text{INVALID-ORDER-245} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + R_3 + R_L}$$

$$10.246 \quad \text{INVALID-ORDER-246} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.247 \quad \text{INVALID-ORDER-247} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + C_L R_3 R_L s + R_3 + R_L}$$

$$10.248 \quad \text{INVALID-ORDER-248} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.249 \quad \text{INVALID-ORDER-249} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.250 \quad \text{INVALID-ORDER-250} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.251 \quad \text{INVALID-ORDER-251} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3}{C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.252 \quad \text{INVALID-ORDER-252} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

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

$$10.253 \quad \text{INVALID-ORDER-253} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.254 \quad \text{INVALID-ORDER-254} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.255 \quad \text{INVALID-ORDER-255} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.256 \quad \text{INVALID-ORDER-256} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.257 \quad \text{INVALID-ORDER-257} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.258 \quad \text{INVALID-ORDER-258} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.259 \quad \text{INVALID-ORDER-259} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.260 \quad \text{INVALID-ORDER-260} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.261 \quad \text{INVALID-ORDER-261} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.262 \quad \text{INVALID-ORDER-262} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.263 \quad \text{INVALID-ORDER-263} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.264 \quad \text{INVALID-ORDER-264} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.265 \quad \text{INVALID-ORDER-265} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.266 \quad \text{INVALID-ORDER-266} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.267 \quad \text{INVALID-ORDER-267} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.268 \quad \text{INVALID-ORDER-268} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.269 \quad \text{INVALID-ORDER-269} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.270 \quad \text{INVALID-ORDER-270} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.271 \quad \text{INVALID-ORDER-271} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.272 \quad \text{INVALID-ORDER-272} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.273 \quad \text{INVALID-ORDER-273} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L s}{C_3 L_3 L_L s^2 + C_L L_3 L_L s^2 + L_3 + L_L}$$

$$10.274 \quad \text{INVALID-ORDER-274} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.275 \quad \text{INVALID-ORDER-275} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.276 \quad \text{INVALID-ORDER-276} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.277 \quad \text{INVALID-ORDER-277} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.278 \quad \text{INVALID-ORDER-278} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.279 \quad \text{INVALID-ORDER-279} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.280 \quad \text{INVALID-ORDER-280} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.281 \quad \text{INVALID-ORDER-281} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.282 \quad \text{INVALID-ORDER-282} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.283 \quad \text{INVALID-ORDER-283} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.284 \quad \text{INVALID-ORDER-284} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.285 \quad \text{INVALID-ORDER-285} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad L_3 s + R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.286 \quad \text{INVALID-ORDER-286} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.287 \quad \text{INVALID-ORDER-287} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.288 \quad \text{INVALID-ORDER-288} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.289 \quad \text{INVALID-ORDER-289} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.290 \quad \text{INVALID-ORDER-290} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.291 \quad \text{INVALID-ORDER-291} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.292 \quad \text{INVALID-ORDER-292} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.293 \quad \text{INVALID-ORDER-293} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.294 \quad \text{INVALID-ORDER-294} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.295 \quad \text{INVALID-ORDER-295} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.296 \quad \text{INVALID-ORDER-296} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.297 \quad \text{INVALID-ORDER-297} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.298 \quad \text{INVALID-ORDER-298} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.299 \quad \text{INVALID-ORDER-299} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.300 \quad \text{INVALID-ORDER-300} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.301 \quad \text{INVALID-ORDER-301} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.302 \quad \text{INVALID-ORDER-302} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.303 \quad \text{INVALID-ORDER-303} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.304 \quad \text{INVALID-ORDER-304} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.305 \quad \text{INVALID-ORDER-305} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.306 \quad \text{INVALID-ORDER-306} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.307 \quad \text{INVALID-ORDER-307} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.308 \quad \text{INVALID-ORDER-308} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.309 \quad \text{INVALID-ORDER-309} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

$$10.310 \quad \text{INVALID-ORDER-310} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.311 \quad INVALID-ORDER-311} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L}{C_LR_3R_Ls + R_3 + R_L}$$

$$\mathbf{10.312 \quad INVALID-ORDER-312} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LR_Ls + 1)}{C_LR_3s + C_LR_Ls + 1}$$

$$\mathbf{10.313 \quad INVALID-ORDER-313} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L}{C_3R_Ls + 1}$$

$$\mathbf{10.314 \quad INVALID-ORDER-314} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

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

$$\mathbf{10.315 \quad INVALID-ORDER-315} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L}{C_3R_Ls + C_LR_Ls + 1}$$

$$\mathbf{10.316 \quad INVALID-ORDER-316} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LR_Ls + 1}{s(C_3C_LR_Ls + C_3 + C_L)}$$

$$\mathbf{10.317 \quad INVALID-ORDER-317} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2 + 1}{s(C_3C_LL_Ls^2 + C_3 + C_L)}$$

$$\mathbf{10.318 \quad INVALID-ORDER-318} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls}{C_3L_Ls^2 + C_LL_Ls^2 + 1}$$

$$\mathbf{10.319 \quad INVALID-ORDER-319} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2 + C_LR_Ls + 1}{s(C_3C_LL_Ls^2 + C_3C_LR_Ls + C_3 + C_L)}$$

$$\mathbf{10.320 \quad INVALID-ORDER-320} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{C_LL_LR_Ls^2 + L_Ls + R_L}{C_3C_LL_LR_Ls^3 + C_3L_Ls^2 + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.321 \quad \text{INVALID-ORDER-321} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2+1)}{C_3C_LL_LR_Ls^3+C_3R_Ls+C_LL_Ls^2+C_LR_Ls+1}$$

$$10.322 \quad \text{INVALID-ORDER-322} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls+R_3+R_L}$$

$$10.323 \quad \text{INVALID-ORDER-323} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3}{C_3R_3s+C_LR_3s+1}$$

$$10.324 \quad \text{INVALID-ORDER-324} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls+C_LR_3R_Ls+R_3+R_L}$$

$$10.325 \quad \text{INVALID-ORDER-325} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2+1)}{C_3C_LL_LR_3s^3+C_3R_3s+C_LL_Ls^2+C_LR_3s+1}$$

$$10.326 \quad \text{INVALID-ORDER-326} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2+C_LR_Ls+1)}{C_3C_LL_LR_3s^3+C_3C_LR_3R_Ls^2+C_3R_3s+C_LL_Ls^2+C_LR_3s+C_LR_Ls+1}$$

$$10.327 \quad \text{INVALID-ORDER-327} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{R_3(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_LR_3R_Ls^3+C_3L_LR_3s^2+C_3R_3R_Ls+C_LL_LR_3s^2+C_LL_LR_Ls^2+L_Ls+R_3+R_L}$$

$$10.328 \quad \text{INVALID-ORDER-328} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L(C_LL_Ls^2+1)}{C_3C_LL_LR_3R_Ls^3+C_3R_3R_Ls+C_LL_LR_3s^2+C_LL_LR_Ls^2+C_LR_3R_Ls+R_3+R_L}$$

$$10.329 \quad \text{INVALID-ORDER-329} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L(C_3R_3s+1)}{C_3R_3s+C_3R_Ls+1}$$

$$10.330 \quad \text{INVALID-ORDER-330} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.331 \quad \text{INVALID-ORDER-331} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.332 \quad \text{INVALID-ORDER-332} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.333 \quad \text{INVALID-ORDER-333} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.334 \quad \text{INVALID-ORDER-334} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.335 \quad \text{INVALID-ORDER-335} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.336 \quad \text{INVALID-ORDER-336} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.337 \quad \text{INVALID-ORDER-337} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad R_3 + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.338 \quad \text{INVALID-ORDER-338} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.339 \quad \text{INVALID-ORDER-339} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.340 \quad \text{INVALID-ORDER-340} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.341 \quad \text{INVALID-ORDER-341} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.342 \quad \text{INVALID-ORDER-342} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.343 \quad \text{INVALID-ORDER-343} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.344 \quad \text{INVALID-ORDER-344} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.345 \quad \text{INVALID-ORDER-345} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.346 \quad \text{INVALID-ORDER-346} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad L_3 s + \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.347 \quad \text{INVALID-ORDER-347} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.348 \quad \text{INVALID-ORDER-348} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LR_Ls+1)}{C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_Ls+1}$$

$$10.349 \quad \text{INVALID-ORDER-349} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2+1)}{C_3C_LL_3L_Ls^4 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2+1}$$

$$10.350 \quad \text{INVALID-ORDER-350} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_3L_Ls}{C_3L_3L_Ls^2 + C_LL_3L_Ls^2 + L_3 + L_L}$$

$$10.351 \quad \text{INVALID-ORDER-351} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2 + C_LR_Ls+1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_Ls+1}$$

$$10.352 \quad \text{INVALID-ORDER-352} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{L_3s(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_Ls^4 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_LR_Ls^2 + L_3s + L_Ls + R_L}$$

$$10.353 \quad \text{INVALID-ORDER-353} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_3R_Ls(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_Ls^4 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_3R_Ls^2 + C_LL_LR_Ls^2 + L_3s + R_L}$$

$$10.354 \quad \text{INVALID-ORDER-354} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3s^2 + C_3R_3s+1}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.355 \quad \text{INVALID-ORDER-355} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2 + C_3R_3s+1)}{C_3C_LL_3R_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LR_Ls+1}$$

$$10.356 \quad \text{INVALID-ORDER-356} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LR_Ls+1)(C_3L_3s^2 + C_3R_3s+1)}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.357 \quad \text{INVALID-ORDER-357} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.358 \quad \text{INVALID-ORDER-358} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$$

$$H(s) = \frac{L_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_LL_Ls^2 + 1}$$

$$10.359 \quad \text{INVALID-ORDER-359} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.360 \quad \text{INVALID-ORDER-360} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_LR_Ls}{C_LL_LR_Ls^2 + L_Ls + R_L} \right)$$

$$H(s) = \frac{L_LR_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_LR_Ls^4 + C_3C_LL_LR_3R_Ls^3 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_3L_LR_3s^2 + C_3L_LR_Ls^2 + C_3R_3R_Ls + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$10.361 \quad \text{INVALID-ORDER-361} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.362 \quad \text{INVALID-ORDER-362} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2 + 1)}{C_LL_Ls^2 + C_LR_Ls + 1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.363 \quad \text{INVALID-ORDER-363} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2 + L_3s + R_3}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LR_Ls + 1)}{C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_LL_3R_3s^2 + C_LL_3R_Ls^2 + C_LR_3R_Ls + L_3s + R_3}$$

$$10.364 \quad \text{INVALID-ORDER-364} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2 + L_3s + R_3}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LL_Ls^2 + 1)}{C_3C_LL_3L_LR_3s^4 + C_3L_3R_3s^2 + C_LL_3L_Ls^3 + C_LL_3R_3s^2 + C_LL_LR_3s^2 + L_3s + R_3}$$

$$10.365 \quad \text{INVALID-ORDER-365} \quad Z(s) = \left(\infty, \quad L_2s + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2 + L_3s + R_3}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_LL_3L_Ls^3 + C_LL_3R_3s^2 + C_LL_3R_Ls^2 + C_LR_3R_Ls + L_3s + R_3}$$

10.366 INVALID-ORDER-366 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2 + L_3s + R_3}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$

$$H(s) = \frac{L_3R_3s (C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_3s^3 + C_LL_3L_LR_Ls^3 + C_LL_LR_3R_Ls^2 + L_3L_Ls^2 + L_3R_3s + L_3R_Ls + L_LR_3s + R_3R_L}$$

10.367 INVALID-ORDER-367 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3R_3s}{C_3L_3R_3s^2 + L_3s + R_3}, \infty, \infty, \frac{R_L(C_LL_Ls^2 + 1)}{C_LL_Ls^2 + C_LR_Ls + 1} \right)$

$$H(s) = \frac{L_3R_3R_Ls (C_LL_Ls^2 + 1)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_3s^3 + C_LL_3L_LR_Ls^3 + C_LL_3R_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L}$$

10.368 INVALID-ORDER-368 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_3L_3R_3s^2 + L_3s + R_3}{C_3C_LL_3R_3s^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_3s + 1}$$

10.369 INVALID-ORDER-369 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_LR_Ls + 1} \right)$

$$H(s) = \frac{R_L (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_LL_3R_Ls^2 + C_LR_3R_Ls + L_3s + R_3 + R_L}$$

10.370 INVALID-ORDER-370 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LR_Ls + 1) (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_3s + C_LR_Ls + 1}$$

10.371 INVALID-ORDER-371 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + 1) (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_Ls^4 + C_3C_LL_3R_3s^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_3s + 1}$$

10.372 INVALID-ORDER-372 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$

$$H(s) = \frac{L_Ls (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3s^4 + C_3L_3L_LR_3s^3 + C_3L_3R_3s^2 + C_LL_3L_LR_3s^3 + C_LL_LR_3s^2 + L_3s + L_Ls + R_3}$$

10.373 INVALID-ORDER-373 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + C_LR_Ls + 1) (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_Ls^4 + C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

10.374 INVALID-ORDER-374 $Z(s) = \left(\infty, L_2s + \frac{1}{C_2s}, \frac{L_3s}{C_3L_3s^2 + 1} + R_3, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2 + L_Ls + R_L} \right)$

$$H(s) = \frac{L_LR_Ls (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3L_LR_Ls^3 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_Ls^3 + C_LL_LR_3R_Ls^2 + L_3L_Ls^2 + L_3R_Ls + L_LR_3s + L_LR_Ls + R_3R_L}$$

$$10.375 \quad \text{INVALID-ORDER-375} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.376 \quad \text{INVALID-ORDER-376} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.377 \quad \text{INVALID-ORDER-377} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.378 \quad \text{INVALID-ORDER-378} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.379 \quad \text{INVALID-ORDER-379} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.380 \quad \text{INVALID-ORDER-380} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.381 \quad \text{INVALID-ORDER-381} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.382 \quad \text{INVALID-ORDER-382} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.383 \quad \text{INVALID-ORDER-383} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.384 \quad \text{INVALID-ORDER-384} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.385 \quad \text{INVALID-ORDER-385} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \frac{R_3(C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.386 \quad \text{INVALID-ORDER-386} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

$$10.387 \quad \text{INVALID-ORDER-387} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.388 \quad \text{INVALID-ORDER-388} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_L R_3 R_L s + R_3 + R_L}$$

$$10.389 \quad \text{INVALID-ORDER-389} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.390 \quad \text{INVALID-ORDER-390} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L \right)$$

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

$$10.391 \quad \text{INVALID-ORDER-391} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.392 \quad \text{INVALID-ORDER-392} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.393 \quad \text{INVALID-ORDER-393} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{1}{C_3 s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.394 \quad \text{INVALID-ORDER-394} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2 + 1}{s(C_3C_LL_Ls^2 + C_3 + C_L)}$$

$$10.395 \quad \text{INVALID-ORDER-395} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls}{C_3L_Ls^2 + C_LL_Ls^2 + 1}$$

$$10.396 \quad \text{INVALID-ORDER-396} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2 + C_LR_Ls + 1}{s(C_3C_LL_Ls^2 + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.397 \quad \text{INVALID-ORDER-397} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{C_LL_LR_Ls^2 + L_Ls + R_L}{C_3C_LL_LR_Ls^3 + C_3L_Ls^2 + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.398 \quad \text{INVALID-ORDER-398} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2 + 1)}{C_3C_LL_LR_Ls^3 + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.399 \quad \text{INVALID-ORDER-399} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls + R_3 + R_L}$$

$$10.400 \quad \text{INVALID-ORDER-400} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3}{C_3R_3s + C_LR_3s + 1}$$

$$10.401 \quad \text{INVALID-ORDER-401} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls + C_LR_3R_Ls + R_3 + R_L}$$

$$10.402 \quad \text{INVALID-ORDER-402} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2 + 1)}{C_3C_LL_LR_3s^3 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + 1}$$

$$10.403 \quad \text{INVALID-ORDER-403} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{R_3}{C_3R_3s+1}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_LR_3s^3 + C_3C_LR_3R_Ls^2 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

10.404 INVALID-ORDER-404 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{R_3 (C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_LR_3R_Ls^3 + C_3L_LR_3s^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + L_Ls + R_3 + R_L}$$

10.405 INVALID-ORDER-405 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

$$H(s) = \frac{R_3R_L (C_LL_Ls^2 + 1)}{C_3C_LL_LR_3R_Ls^3 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + C_LR_3R_Ls + R_3 + R_L}$$

10.406 INVALID-ORDER-406 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_3R_3s + 1)}{C_3R_3s + C_3R_Ls + 1}$$

10.407 INVALID-ORDER-407 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_3R_3s + 1}{s (C_3C_LR_3s + C_3 + C_L)}$$

10.408 INVALID-ORDER-408 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3R_3s + 1) (C_LR_Ls + 1)}{s (C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

10.409 INVALID-ORDER-409 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3R_3s + 1) (C_LL_Ls^2 + 1)}{s (C_3C_LL_Ls^2 + C_3C_LR_3s + C_3 + C_L)}$$

10.410 INVALID-ORDER-410 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_Ls (C_3R_3s + 1)}{C_3C_LL_LR_3s^3 + C_3L_Ls^2 + C_3R_3s + C_LL_Ls^2 + 1}$$

10.411 INVALID-ORDER-411 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3R_3s + 1) (C_LL_Ls^2 + C_LR_Ls + 1)}{s (C_3C_LL_Ls^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

10.412 INVALID-ORDER-412 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_Ls (C_3R_3s + 1)}{C_3C_LL_LR_3R_Ls^3 + C_3L_LR_3s^2 + C_3L_LR_Ls^2 + C_3R_3R_Ls + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$10.413 \quad \text{INVALID-ORDER-413} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{(C_3R_3s + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3L_Ls^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.414 \quad \text{INVALID-ORDER-414} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3R_3s + 1)(C_LL_Ls^2 + 1)}{C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3C_LR_3R_Ls^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.415 \quad \text{INVALID-ORDER-415} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3s^2 + 1}{s(C_3C_LL_3s^2 + C_3 + C_L)}$$

$$10.416 \quad \text{INVALID-ORDER-416} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2 + 1)}{C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_3R_Ls + C_LR_Ls + 1}$$

$$10.417 \quad \text{INVALID-ORDER-417} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + 1)(C_LR_Ls + 1)}{s(C_3C_LL_3s^2 + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.418 \quad \text{INVALID-ORDER-418} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + 1)(C_LL_Ls^2 + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3 + C_L)}$$

$$10.419 \quad \text{INVALID-ORDER-419} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls(C_3L_3s^2 + 1)}{C_3C_LL_3L_Ls^4 + C_3L_3s^2 + C_3L_Ls^2 + C_LL_Ls^2 + 1}$$

$$10.420 \quad \text{INVALID-ORDER-420} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.421 \quad \text{INVALID-ORDER-421} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_Ls(C_3L_3s^2 + 1)}{C_3C_LL_3L_LR_Ls^4 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_3L_LR_Ls^2 + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$10.422 \quad \text{INVALID-ORDER-422} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{(C_3L_3s^2 + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_Ls^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.423 \quad \text{INVALID-ORDER-423} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2 + 1)(C_LL_Ls^2 + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_Ls^3 + C_3L_3s^2 + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.424 \quad \text{INVALID-ORDER-424} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s}{C_3L_3s^2 + C_LL_3s^2 + 1}$$

$$10.425 \quad \text{INVALID-ORDER-425} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LR_Ls + 1)}{C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_Ls + 1}$$

$$10.426 \quad \text{INVALID-ORDER-426} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2 + 1)}{C_3C_LL_3L_Ls^4 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + 1}$$

$$10.427 \quad \text{INVALID-ORDER-427} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_3L_Ls}{C_3L_3L_Ls^2 + C_LL_3L_Ls^2 + L_3 + L_L}$$

$$10.428 \quad \text{INVALID-ORDER-428} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3s(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.429 \quad \text{INVALID-ORDER-429} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{L_3s(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_Ls^4 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_LR_Ls^2 + L_3s + L_Ls + R_L}$$

$$10.430 \quad \text{INVALID-ORDER-430} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_3R_Ls(C_LL_Ls^2 + 1)}{C_3C_LL_3L_LR_Ls^4 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_3R_Ls^2 + C_LL_LR_Ls^2 + L_3s + R_L}$$

$$10.431 \quad \text{INVALID-ORDER-431} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3s^2 + C_3R_3s + 1}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.432 \quad \text{INVALID-ORDER-432} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3R_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LR_Ls + 1}$$

$$10.433 \quad \text{INVALID-ORDER-433} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LR_Ls + 1)(C_3L_3s^2 + C_3R_3s + 1)}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.434 \quad \text{INVALID-ORDER-434} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.435 \quad \text{INVALID-ORDER-435} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_LL_Ls^2 + 1}$$

$$10.436 \quad \text{INVALID-ORDER-436} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.437 \quad \text{INVALID-ORDER-437} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_LR_Ls^4 + C_3C_LL_LR_3R_Ls^3 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_3L_LR_3s^2 + C_3L_LR_Ls^2 + C_3R_3R_Ls + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$10.438 \quad \text{INVALID-ORDER-438} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.439 \quad \text{INVALID-ORDER-439} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad L_3s + R_3 + \frac{1}{C_3s}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.440 \quad \text{INVALID-ORDER-440} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LR_Ls+1)}{C_3C_LL_3R_3R_Ls^3+C_3L_3R_3s^2+C_LL_3R_3s^2+C_LL_3R_Ls^2+C_LR_3R_Ls+L_3s+R_3}$$

$$10.441 \quad \text{INVALID-ORDER-441} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_3s^4+C_3L_3R_3s^2+C_LL_3L_Ls^3+C_LL_3R_3s^2+C_LL_LR_3s^2+L_3s+R_3}$$

$$10.442 \quad \text{INVALID-ORDER-442} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_3R_3s(C_LL_Ls^2+C_LR_Ls+1)}{C_3C_LL_3L_LR_3s^4+C_3C_LL_3R_3R_Ls^3+C_3L_3R_3s^2+C_LL_3L_Ls^3+C_LL_3R_3s^2+C_LL_LR_3s^2+C_LR_3R_Ls+L_3s+R_3}$$

$$10.443 \quad \text{INVALID-ORDER-443} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{L_3R_3s(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_3L_LR_3R_Ls^4+C_3L_3L_LR_3s^3+C_3L_3R_3R_Ls^2+C_LL_3L_LR_3s^3+C_LL_3L_LR_Ls^3+C_LL_LR_3R_Ls^2+L_3L_Ls^2+L_3R_3s+L_3R_Ls+L_LR_3s+R_3R_L}$$

$$10.444 \quad \text{INVALID-ORDER-444} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \quad \infty, \quad \infty, \quad \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_3R_3R_Ls(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_3R_Ls^4+C_3L_3R_3R_Ls^2+C_LL_3L_LR_3s^3+C_LL_3L_LR_Ls^3+C_LL_3R_3R_Ls^2+C_LL_LR_3R_Ls^2+L_3R_3s+L_3R_Ls+R_3R_L}$$

$$10.445 \quad \text{INVALID-ORDER-445} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3C_LL_3R_3s^3+C_3L_3s^2+C_LL_3s^2+C_LR_3s+1}$$

$$10.446 \quad \text{INVALID-ORDER-446} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3R_3s^2+L_3s+R_3)}{C_3C_LL_3R_3R_Ls^3+C_3L_3R_3s^2+C_3L_3R_Ls^2+C_LL_3R_Ls^2+C_LR_3R_Ls+L_3s+R_3+R_L}$$

$$10.447 \quad \text{INVALID-ORDER-447} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LR_Ls+1)(C_3L_3R_3s^2+L_3s+R_3)}{C_3C_LL_3R_3s^3+C_3C_LL_3R_Ls^3+C_3L_3s^2+C_LL_3s^2+C_LR_3s+C_LR_Ls+1}$$

$$10.448 \quad \text{INVALID-ORDER-448} \quad Z(s) = \left(\infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \frac{L_3s}{C_3L_3s^2+1} + R_3, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2+1)(C_3L_3R_3s^2+L_3s+R_3)}{C_3C_LL_3L_Ls^4+C_3C_LL_3R_3s^3+C_3L_3s^2+C_LL_3s^2+C_LL_Ls^2+C_LR_3s+1}$$

$$10.449 \quad \text{INVALID-ORDER-449} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.450 \quad \text{INVALID-ORDER-450} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.451 \quad \text{INVALID-ORDER-451} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.452 \quad \text{INVALID-ORDER-452} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.453 \quad \text{INVALID-ORDER-453} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.454 \quad \text{INVALID-ORDER-454} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.455 \quad \text{INVALID-ORDER-455} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.456 \quad \text{INVALID-ORDER-456} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.457 \quad \text{INVALID-ORDER-457} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.458 \quad \text{INVALID-ORDER-458} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.459 \quad \text{INVALID-ORDER-459} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.460 \quad \text{INVALID-ORDER-460} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.461 \quad \text{INVALID-ORDER-461} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.462 \quad \text{INVALID-ORDER-462} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \quad \infty, \quad \infty, \quad \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.463 \quad \text{INVALID-ORDER-463} \quad Z(s) = \left(\infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad R_3, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_3 R_L}{R_3 + R_L}$$

$$10.464 \quad \text{INVALID-ORDER-464} \quad Z(s) = \left(\infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad R_3, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.465 \quad \text{INVALID-ORDER-465} \quad Z(s) = \left(\infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad R_3, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_L R_3 R_L s + R_3 + R_L}$$

$$10.466 \quad \text{INVALID-ORDER-466} \quad Z(s) = \left(\infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad R_3, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.467 \quad \text{INVALID-ORDER-467} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.468 \quad \text{INVALID-ORDER-468} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.469 \quad \text{INVALID-ORDER-469} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.470 \quad \text{INVALID-ORDER-470} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.471 \quad \text{INVALID-ORDER-471} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.472 \quad \text{INVALID-ORDER-472} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.473 \quad \text{INVALID-ORDER-473} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.474 \quad \text{INVALID-ORDER-474} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.475 \quad \text{INVALID-ORDER-475} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.476 \quad \text{INVALID-ORDER-476} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + R_3 + R_L}$$

$$10.477 \quad \text{INVALID-ORDER-477} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.478 \quad \text{INVALID-ORDER-478} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_3 R_L}{C_3 R_3 R_L s + C_L R_3 R_L s + R_3 + R_L}$$

$$10.479 \quad \text{INVALID-ORDER-479} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.480 \quad \text{INVALID-ORDER-480} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.481 \quad \text{INVALID-ORDER-481} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.482 \quad \text{INVALID-ORDER-482} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.483 \quad \text{INVALID-ORDER-483} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$$

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

$$10.484 \quad \text{INVALID-ORDER-484} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.485 \quad \text{INVALID-ORDER-485} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.486 \quad \text{INVALID-ORDER-486} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.487 \quad \text{INVALID-ORDER-487} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.488 \quad \text{INVALID-ORDER-488} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.489 \quad \text{INVALID-ORDER-489} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.490 \quad \text{INVALID-ORDER-490} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.491 \quad \text{INVALID-ORDER-491} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.492 \quad \text{INVALID-ORDER-492} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.493 \quad \text{INVALID-ORDER-493} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.494 \quad \text{INVALID-ORDER-494} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.495 \quad \text{INVALID-ORDER-495} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.496 \quad \text{INVALID-ORDER-496} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.497 \quad \text{INVALID-ORDER-497} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.498 \quad \text{INVALID-ORDER-498} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.499 \quad \text{INVALID-ORDER-499} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.500 \quad \text{INVALID-ORDER-500} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.501 \quad \text{INVALID-ORDER-501} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.502 \quad \text{INVALID-ORDER-502} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.503 \quad \text{INVALID-ORDER-503} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.504 \quad \text{INVALID-ORDER-504} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_3 L_L s}{C_3 L_3 L_L s^2 + C_L L_3 L_L s^2 + L_3 + L_L}$$

$$10.505 \quad \text{INVALID-ORDER-505} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.506 \quad \text{INVALID-ORDER-506} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.507 \quad \text{INVALID-ORDER-507} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.508 \quad \text{INVALID-ORDER-508} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.509 \quad \text{INVALID-ORDER-509} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.510 \quad \text{INVALID-ORDER-510} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.511 \quad \text{INVALID-ORDER-511} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.512 \quad \text{INVALID-ORDER-512} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.513 \quad \text{INVALID-ORDER-513} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.514 \quad \text{INVALID-ORDER-514} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.515 \quad \text{INVALID-ORDER-515} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.516 \quad \text{INVALID-ORDER-516} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.517 \quad \text{INVALID-ORDER-517} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.518 \quad \text{INVALID-ORDER-518} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.519 \quad \text{INVALID-ORDER-519} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.520 \quad \text{INVALID-ORDER-520} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.521 \quad \text{INVALID-ORDER-521} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.522 \quad \text{INVALID-ORDER-522} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.523 \quad \text{INVALID-ORDER-523} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.524 \quad \text{INVALID-ORDER-524} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.525 \quad \text{INVALID-ORDER-525} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.526 \quad \text{INVALID-ORDER-526} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.527 \quad \text{INVALID-ORDER-527} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.528 \quad \text{INVALID-ORDER-528} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.529 \quad \text{INVALID-ORDER-529} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.530 \quad \text{INVALID-ORDER-530} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

$$10.531 \quad \text{INVALID-ORDER-531} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.532 \quad \text{INVALID-ORDER-532} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.533 \quad \text{INVALID-ORDER-533} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.534 \quad \text{INVALID-ORDER-534} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.535 \quad \text{INVALID-ORDER-535} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.536 \quad \text{INVALID-ORDER-536} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.537 \quad \text{INVALID-ORDER-537} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

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

$$10.538 \quad \text{INVALID-ORDER-538} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.539 \quad \text{INVALID-ORDER-539} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

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

10.540 INVALID-ORDER-540 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_3R_L}{R_3 + R_L}$$

10.541 INVALID-ORDER-541 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3}{C_LR_3s + 1}$$

10.542 INVALID-ORDER-542 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{R_3R_L}{C_LR_3R_Ls + R_3 + R_L}$$

10.543 INVALID-ORDER-543 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3(C_LR_Ls + 1)}{C_LR_3s + C_LR_Ls + 1}$$

10.544 INVALID-ORDER-544 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L}{C_3R_Ls + 1}$$

10.545 INVALID-ORDER-545 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$

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

10.546 INVALID-ORDER-546 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{R_L}{C_3R_Ls + C_LR_Ls + 1}$$

10.547 INVALID-ORDER-547 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_LR_Ls + 1}{s(C_3C_LR_Ls + C_3 + C_L)}$$

10.548 INVALID-ORDER-548 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_LL_Ls^2 + 1}{s(C_3C_LL_Ls^2 + C_3 + C_L)}$$

$$10.549 \quad \text{INVALID-ORDER-549} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls}{C_3L_Ls^2 + C_LL_Ls^2 + 1}$$

$$10.550 \quad \text{INVALID-ORDER-550} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2 + C_LR_Ls + 1}{s(C_3C_LL_Ls^2 + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.551 \quad \text{INVALID-ORDER-551} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{C_LL_LR_Ls^2 + L_Ls + R_L}{C_3C_LL_LR_Ls^3 + C_3L_Ls^2 + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.552 \quad \text{INVALID-ORDER-552} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{1}{C_3s}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2 + 1)}{C_3C_LL_LR_Ls^3 + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$10.553 \quad \text{INVALID-ORDER-553} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls + R_3 + R_L}$$

$$10.554 \quad \text{INVALID-ORDER-554} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3}{C_3R_3s + C_LR_3s + 1}$$

$$10.555 \quad \text{INVALID-ORDER-555} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L}{C_3R_3R_Ls + C_LR_3R_Ls + R_3 + R_L}$$

$$10.556 \quad \text{INVALID-ORDER-556} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2 + 1)}{C_3C_LL_LR_3s^3 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + 1}$$

$$10.557 \quad \text{INVALID-ORDER-557} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_LR_3s^3 + C_3C_LR_3R_Ls^2 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

$$10.558 \quad \text{INVALID-ORDER-558} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{R_3(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_LR_3R_Ls^3 + C_3L_LR_3s^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + L_Ls + R_3 + R_L}$$

$$10.559 \quad \text{INVALID-ORDER-559} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L(C_LL_Ls^2 + 1)}{C_3C_LL_LR_3R_Ls^3 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + C_LR_3R_Ls + R_3 + R_L}$$

$$10.560 \quad \text{INVALID-ORDER-560} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L(C_3R_3s + 1)}{C_3R_3s + C_3R_Ls + 1}$$

$$10.561 \quad \text{INVALID-ORDER-561} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3R_3s + 1}{s(C_3C_LR_3s + C_3 + C_L)}$$

$$10.562 \quad \text{INVALID-ORDER-562} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3R_3s + 1)(C_LR_Ls + 1)}{s(C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.563 \quad \text{INVALID-ORDER-563} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3R_3s + 1)(C_LL_Ls^2 + 1)}{s(C_3C_LL_Ls^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.564 \quad \text{INVALID-ORDER-564} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls(C_3R_3s + 1)}{C_3C_LL_LR_3s^3 + C_3L_Ls^2 + C_3R_3s + C_LL_Ls^2 + 1}$$

$$10.565 \quad \text{INVALID-ORDER-565} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3R_3s + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{s(C_3C_LL_Ls^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.566 \quad \text{INVALID-ORDER-566} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_Ls(C_3R_3s + 1)}{C_3C_LL_LR_3R_Ls^3 + C_3L_LR_3s^2 + C_3L_LR_Ls^2 + C_3R_3R_Ls + C_LL_LR_Ls^2 + L_Ls + R_L}$$

10.567 INVALID-ORDER-567 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{(C_3R_3s+1)(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_LR_3s^3+C_3C_LL_LR_Ls^3+C_3L_Ls^2+C_3R_3s+C_3R_Ls+C_LL_Ls^2+1}$$

10.568 INVALID-ORDER-568 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

$$H(s) = \frac{R_L(C_3R_3s+1)(C_LL_Ls^2+1)}{C_3C_LL_LR_3s^3+C_3C_LL_LR_Ls^3+C_3C_LR_3R_Ls^2+C_3R_3s+C_3R_Ls+C_LL_Ls^2+C_LR_Ls+1}$$

10.569 INVALID-ORDER-569 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_3L_3s^2+1}{s(C_3C_LL_3s^2+C_3+C_L)}$$

10.570 INVALID-ORDER-570 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$

$$H(s) = \frac{R_L(C_3L_3s^2+1)}{C_3C_LL_3R_Ls^3+C_3L_3s^2+C_3R_Ls+C_LR_Ls+1}$$

10.571 INVALID-ORDER-571 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3L_3s^2+1)(C_LR_Ls+1)}{s(C_3C_LL_3s^2+C_3C_LR_Ls+C_3+C_L)}$$

10.572 INVALID-ORDER-572 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3L_3s^2+1)(C_LL_Ls^2+1)}{s(C_3C_LL_3s^2+C_3C_LL_Ls^2+C_3+C_L)}$$

10.573 INVALID-ORDER-573 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_Ls(C_3L_3s^2+1)}{C_3C_LL_3L_Ls^4+C_3L_3s^2+C_3L_Ls^2+C_LL_Ls^2+1}$$

10.574 INVALID-ORDER-574 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_3L_3s^2+1)(C_LL_Ls^2+C_LR_Ls+1)}{s(C_3C_LL_3s^2+C_3C_LL_Ls^2+C_3C_LR_Ls+C_3+C_L)}$$

10.575 INVALID-ORDER-575 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_Ls(C_3L_3s^2+1)}{C_3C_LL_3L_LR_Ls^4+C_3L_3L_Ls^3+C_3L_3R_Ls^2+C_3L_LR_Ls^2+C_LL_LR_Ls^2+L_Ls+R_L}$$

$$\begin{aligned}
10.576 \quad \text{INVALID-ORDER-576} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right) \\
H(s) &= \frac{(C_3L_3s^2+1)(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_3L_Ls^4+C_3C_LL_LR_Ls^3+C_3L_3s^2+C_3L_Ls^2+C_3R_Ls+C_LL_Ls^2+1} \\
10.577 \quad \text{INVALID-ORDER-577} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right) \\
H(s) &= \frac{R_L(C_3L_3s^2+1)(C_LL_Ls^2+1)}{C_3C_LL_3L_Ls^4+C_3C_LL_3R_Ls^3+C_3C_LL_LR_Ls^3+C_3L_3s^2+C_3R_Ls+C_LL_Ls^2+C_LR_Ls+1} \\
10.578 \quad \text{INVALID-ORDER-578} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3s}{C_3L_3s^2+C_LL_3s^2+1} \\
10.579 \quad \text{INVALID-ORDER-579} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3s(C_LR_Ls+1)}{C_3C_LL_3R_Ls^3+C_3L_3s^2+C_LL_Ls^2+C_LR_Ls+1} \\
10.580 \quad \text{INVALID-ORDER-580} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3s(C_LL_Ls^2+1)}{C_3C_LL_3L_Ls^4+C_3L_3s^2+C_LL_Ls^2+C_LL_Ls^2+1} \\
10.581 \quad \text{INVALID-ORDER-581} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right) \\
H(s) &= \frac{L_3L_Ls}{C_3L_3L_Ls^2+C_LL_Ls^2+L_3+L_L} \\
10.582 \quad \text{INVALID-ORDER-582} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3s(C_LL_Ls^2+C_LR_Ls+1)}{C_3C_LL_3L_Ls^4+C_3C_LL_3R_Ls^3+C_3L_3s^2+C_LL_Ls^2+C_LL_Ls^2+C_LR_Ls+1} \\
10.583 \quad \text{INVALID-ORDER-583} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right) \\
H(s) &= \frac{L_3s(C_LL_LR_Ls^2+L_Ls+R_L)}{C_3C_LL_3L_LR_Ls^4+C_3L_3L_Ls^3+C_3L_3R_Ls^2+C_LL_Ls^2+L_3s+L_Ls+R_L} \\
10.584 \quad \text{INVALID-ORDER-584} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right) \\
H(s) &= \frac{L_3R_Ls(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_Ls^4+C_3L_3R_Ls^2+C_LL_Ls^2+L_3L_3s^3+C_LL_Ls^2+C_LL_Ls^2+L_3s+R_L}
\end{aligned}$$

$$10.585 \quad \text{INVALID-ORDER-585} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_3L_3s^2 + C_3R_3s + 1}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.586 \quad \text{INVALID-ORDER-586} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3R_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LR_Ls + 1}$$

$$10.587 \quad \text{INVALID-ORDER-587} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LR_Ls + 1)(C_3L_3s^2 + C_3R_3s + 1)}{s(C_3C_LL_3s^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.588 \quad \text{INVALID-ORDER-588} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3 + C_L)}$$

$$10.589 \quad \text{INVALID-ORDER-589} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_LL_Ls^2 + 1}$$

$$10.590 \quad \text{INVALID-ORDER-590} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{s(C_3C_LL_3s^2 + C_3C_LL_Ls^2 + C_3C_LR_3s + C_3C_LR_Ls + C_3 + C_L)}$$

$$10.591 \quad \text{INVALID-ORDER-591} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_Ls(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_LR_Ls^4 + C_3C_LL_LR_3R_Ls^3 + C_3L_3L_Ls^3 + C_3L_3R_Ls^2 + C_3L_LR_3s^2 + C_3L_LR_Ls^2 + C_3R_3R_Ls + C_LL_LR_Ls^2 + L_Ls + R_L}$$

$$10.592 \quad \text{INVALID-ORDER-592} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{(C_3L_3s^2 + C_3R_3s + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_Ls^4 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3L_3s^2 + C_3L_Ls^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + 1}$$

$$10.593 \quad \text{INVALID-ORDER-593} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L(C_LL_Ls^2 + 1)(C_3L_3s^2 + C_3R_3s + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_3s^3 + C_3C_LL_LR_Ls^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_3R_Ls + C_LL_Ls^2 + C_LR_Ls + 1}$$

$$\begin{aligned}
10.594 \quad \text{INVALID-ORDER-594} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, R_L + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3R_3s(C_LR_Ls+1)}{C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_LL_3R_3s^2 + C_LL_3R_Ls^2 + C_LR_3R_Ls + L_3s + R_3} \\
10.595 \quad \text{INVALID-ORDER-595} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3R_3s(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_3s^4 + C_3L_3R_3s^2 + C_LL_3L_Ls^3 + C_LL_3R_3s^2 + C_LL_LR_3s^2 + L_3s + R_3} \\
10.596 \quad \text{INVALID-ORDER-596} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{L_3R_3s(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_LL_3L_Ls^3 + C_LL_3R_3s^2 + C_LL_3R_Ls^2 + C_LL_LR_3s^2 + C_LR_3R_Ls + L_3s + R_3} \\
10.597 \quad \text{INVALID-ORDER-597} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right) \\
H(s) &= \frac{L_3R_3s(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_3s^3 + C_LL_3L_LR_Ls^3 + C_LL_LR_3R_Ls^2 + L_3L_Ls^2 + L_3R_3s + L_3R_Ls + L_LR_3s + R_3R_L} \\
10.598 \quad \text{INVALID-ORDER-598} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right) \\
H(s) &= \frac{L_3R_3R_Ls(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_3s^3 + C_LL_3L_LR_Ls^3 + C_LL_3R_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_3R_3s + L_3R_Ls + R_3R_L} \\
10.599 \quad \text{INVALID-ORDER-599} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{1}{C_Ls} \right) \\
H(s) &= \frac{C_3L_3R_3s^2 + L_3s + R_3}{C_3C_LL_3R_3s^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_3s + 1} \\
10.600 \quad \text{INVALID-ORDER-600} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right) \\
H(s) &= \frac{R_L(C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_LL_3R_Ls^2 + C_LR_3R_Ls + L_3s + R_3 + R_L} \\
10.601 \quad \text{INVALID-ORDER-601} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, R_L + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{(C_LR_Ls+1)(C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LR_3s + C_LR_Ls + 1} \\
10.602 \quad \text{INVALID-ORDER-602} \quad Z(s) &= \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right) \\
H(s) &= \frac{(C_LL_Ls^2+1)(C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_3s^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_3s + 1}
\end{aligned}$$

$$10.603 \quad \text{INVALID-ORDER-603} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3s^4 + C_3L_3L_Ls^3 + C_3L_3R_3s^2 + C_LL_3L_Ls^3 + C_LL_LR_3s^2 + L_3s + L_Ls + R_3}$$

$$10.604 \quad \text{INVALID-ORDER-604} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + C_LR_Ls + 1) (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_LL_3s^2 + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

$$10.605 \quad \text{INVALID-ORDER-605} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$$

$$H(s) = \frac{L_LR_Ls (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3L_LR_Ls^3 + C_3L_3R_3R_Ls^2 + C_LL_3L_LR_Ls^3 + C_LL_LR_3R_Ls^2 + L_3L_Ls^2 + L_3R_Ls + L_LR_3s + L_LR_Ls + R_3R_L}$$

$$10.606 \quad \text{INVALID-ORDER-606} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{(C_3L_3R_3s^2 + L_3s + R_3) (C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3L_3L_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + L_3s + L_Ls + R_3 + R_L}$$

$$10.607 \quad \text{INVALID-ORDER-607} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_L (C_LL_Ls^2 + 1) (C_3L_3R_3s^2 + L_3s + R_3)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_LL_3L_Ls^3 + C_LL_3R_Ls^2 + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + C_LR_3R_Ls + L_3s + R_3 + R_L}$$

$$10.608 \quad \text{INVALID-ORDER-608} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3 (C_3L_3s^2 + 1)}{C_3C_LL_3R_3s^3 + C_3L_3s^2 + C_3R_3s + C_LR_3s + 1}$$

$$10.609 \quad \text{INVALID-ORDER-609} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{R_3R_L (C_3L_3s^2 + 1)}{C_3C_LL_3R_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3R_3R_Ls + C_LR_3R_Ls + R_3 + R_L}$$

$$10.610 \quad \text{INVALID-ORDER-610} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3 (C_3L_3s^2 + 1) (C_LR_Ls + 1)}{C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3C_LL_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_LR_3s + C_LR_Ls + 1}$$

$$10.611 \quad \text{INVALID-ORDER-611} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_3 (C_3L_3s^2 + 1) (C_LL_Ls^2 + 1)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3L_3s^2 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + 1}$$

10.612 INVALID-ORDER-612 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{L_LR_3s(C_3L_3s^2+1)}{C_3C_LL_3L_LR_3s^4 + C_3L_3L_Ls^3 + C_3L_3R_3s^2 + C_3L_LR_3s^2 + C_LL_LR_3s^2 + L_Ls + R_3}$$

10.613 INVALID-ORDER-613 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_3(C_3L_3s^2+1)(C_LL_Ls^2 + C_LR_Ls + 1)}{C_3C_LL_3L_Ls^4 + C_3C_LL_3R_3s^3 + C_3C_LL_3R_Ls^3 + C_3C_LL_LR_3s^3 + C_3C_LR_3R_Ls^2 + C_3L_3s^2 + C_3R_3s + C_LL_Ls^2 + C_LR_3s + C_LR_Ls + 1}$$

10.614 INVALID-ORDER-614 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L} \right)$

$$H(s) = \frac{L_LR_3R_Ls(C_3L_3s^2+1)}{C_3C_LL_3L_LR_3R_Ls^4 + C_3L_3L_LR_3s^3 + C_3L_3L_LR_Ls^3 + C_3L_3R_3R_Ls^2 + C_3L_LR_3R_Ls^2 + C_LL_LR_3R_Ls^2 + L_LR_3s + L_LR_Ls + R_3R_L}$$

10.615 INVALID-ORDER-615 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{R_3(C_3L_3s^2+1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3C_LL_LR_3R_Ls^3 + C_3L_3L_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3L_LR_3s^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + L_Ls + R_3 + R_L}$$

10.616 INVALID-ORDER-616 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \frac{R_3(C_3L_3s^2+1)}{C_3L_3s^2+C_3R_3s+1}, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

$$H(s) = \frac{R_3R_L(C_3L_3s^2+1)(C_LL_Ls^2+1)}{C_3C_LL_3L_LR_3s^4 + C_3C_LL_3L_LR_Ls^4 + C_3C_LL_3R_3R_Ls^3 + C_3C_LL_LR_3R_Ls^3 + C_3L_3R_3s^2 + C_3L_3R_Ls^2 + C_3R_3R_Ls + C_LL_LR_3s^2 + C_LL_LR_Ls^2 + C_LR_3R_Ls + R_3 + R_L}$$

11 PolynomialError