

Filter Summary Report: CG,Test,simple,Z2,ZL

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Contents

1 Examined $H(z)$ for CG Test simple **Z2 ZL:** Z_L

$$H(z) = Z_L$$

2 HP

3 BP

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

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

Parameters:

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

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

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

Parameters:

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

3.3 **BP-3** $Z(s) = \left(\infty, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

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

Parameters:

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

3.4 BP-4 $Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

3.5 BP-5 $Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

3.6 BP-6 $Z(s) = \left(\infty, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

3.7 BP-7 $Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$

Parameters:

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

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

K-LP: 0
 K-HP: 0
 K-BP: R_L
 Qz: 0
 Wz: None

$$\mathbf{3.8 \quad BP-8} \quad Z(s) = \left(\infty, \frac{R_2(C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L} \right)$$

Parameters:

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

4 LP

5 BS

$$\mathbf{5.1 \quad BS-1} \quad Z(s) = \left(\infty, R_2, \infty, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

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

$$\mathbf{5.2 \quad BS-2} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L(C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L}$
 wo: $\sqrt{\frac{1}{C_L L_L}}$
 bandwidth: $\frac{R_L}{L_L}$
 K-LP: R_L

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

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

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

K-HP: R_L
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_L L_L}}$

$$\textbf{5.3 BS-3 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

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

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

$$\textbf{5.4 BS-4 } Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

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

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

$$\textbf{5.5 BS-5 } Z(s) = \left(\infty, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (C_L L_L s^2 + 1)}{C_L L_L s^2 + C_L R_L s + 1} \right)$$

Parameters:

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

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

5.6 BS-6 $Z(s) = \left(\infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

Parameters:

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

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

5.7 BS-7 $Z(s) = \left(\infty, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

Parameters:

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

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

5.8 BS-8 $Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, \frac{R_L(C_LL_Ls^2+1)}{C_LL_Ls^2+C_LR_Ls+1} \right)$

Parameters:

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

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

6 GE

7 AP

8 INVALID-NUMER

9 INVALID-WZ

10 INVALID-ORDER

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

$$H(s) = R_L$$

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

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

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

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

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

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

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

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

10.6 INVALID-ORDER-6 $Z(s) = \left(\infty, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

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

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

10.8 INVALID-ORDER-8 $Z(s) = \left(\infty, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$

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

$$\mathbf{10.9 \quad INVALID-ORDER-9} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = R_L$$

$$\mathbf{10.10 \quad INVALID-ORDER-10} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.11 \quad INVALID-ORDER-11} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$\mathbf{10.12 \quad INVALID-ORDER-12} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.13 \quad INVALID-ORDER-13} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.14 \quad INVALID-ORDER-14} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$\mathbf{10.15 \quad INVALID-ORDER-15} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.16 \quad INVALID-ORDER-16} \quad Z(s) = \left(\infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$\mathbf{10.17 \quad INVALID-ORDER-17} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = R_L$$

$$\mathbf{10.18 \quad INVALID-ORDER-18} \quad Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$\textbf{10.19 INVALID-ORDER-19 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$\textbf{10.20 INVALID-ORDER-20 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$\textbf{10.21 INVALID-ORDER-21 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$\textbf{10.22 INVALID-ORDER-22 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$\textbf{10.23 INVALID-ORDER-23 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$\textbf{10.24 INVALID-ORDER-24 } Z(s) = \left(\infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$\textbf{10.25 INVALID-ORDER-25 } Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = R_L$$

$$\textbf{10.26 INVALID-ORDER-26 } Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$\textbf{10.27 INVALID-ORDER-27 } Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$\textbf{10.28 INVALID-ORDER-28 } Z(s) = \left(\infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.29 \quad INVALID-ORDER-29} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.30 \quad INVALID-ORDER-30} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$\mathbf{10.31 \quad INVALID-ORDER-31} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.32 \quad INVALID-ORDER-32} \quad Z(s) = \left(\infty, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$\mathbf{10.33 \quad INVALID-ORDER-33} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = R_L$$

$$\mathbf{10.34 \quad INVALID-ORDER-34} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.35 \quad INVALID-ORDER-35} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$\mathbf{10.36 \quad INVALID-ORDER-36} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.37 \quad INVALID-ORDER-37} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.38 \quad INVALID-ORDER-38} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.39 \quad \text{INVALID-ORDER-39} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.40 \quad \text{INVALID-ORDER-40} \quad Z(s) = \left(\infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.41 \quad \text{INVALID-ORDER-41} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = R_L$$

$$10.42 \quad \text{INVALID-ORDER-42} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

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

$$10.43 \quad \text{INVALID-ORDER-43} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.44 \quad \text{INVALID-ORDER-44} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

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

$$10.45 \quad \text{INVALID-ORDER-45} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

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

$$10.46 \quad \text{INVALID-ORDER-46} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.47 \quad \text{INVALID-ORDER-47} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.48 \quad \text{INVALID-ORDER-48} \quad Z(s) = \left(\infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.49 \quad \text{INVALID-ORDER-49} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L \right)$$

$$H(s) = R_L$$

$$10.50 \quad \text{INVALID-ORDER-50} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$10.51 \quad \text{INVALID-ORDER-51} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

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

$$10.52 \quad \text{INVALID-ORDER-52} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

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

$$10.53 \quad \text{INVALID-ORDER-53} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

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

$$10.54 \quad \text{INVALID-ORDER-54} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

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

$$10.55 \quad \text{INVALID-ORDER-55} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

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

$$10.56 \quad \text{INVALID-ORDER-56} \quad Z(s) = \left(\infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

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

$$10.57 \quad \text{INVALID-ORDER-57} \quad Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = R_L$$

$$10.58 \quad \text{INVALID-ORDER-58} \quad Z(s) = \left(\infty, \frac{R_2 (C_2 L_2 s^2 + 1)}{C_2 L_2 s^2 + C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

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

$$\mathbf{10.59} \quad \mathbf{INVALID-ORDER-59} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1} \right)$$

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

$$\mathbf{10.60} \quad \mathbf{INVALID-ORDER-60} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LR_Ls+1}{C_Ls}$$

$$\mathbf{10.61} \quad \mathbf{INVALID-ORDER-61} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{C_LL_Ls^2+1}{C_Ls}$$

$$\mathbf{10.62} \quad \mathbf{INVALID-ORDER-62} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = \frac{L_Ls}{C_LL_Ls^2+1}$$

$$\mathbf{10.63} \quad \mathbf{INVALID-ORDER-63} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

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

$$\mathbf{10.64} \quad \mathbf{INVALID-ORDER-64} \quad Z(s) = \left(\infty, \frac{R_2(C_2L_2s^2+1)}{C_2L_2s^2+C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$$

$$H(s) = \frac{C_LL_LR_Ls^2 + L_Ls + R_L}{C_LL_Ls^2+1}$$

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