

# Filter Summary Report: TIA simple Z1 Z5 ZL

Generated by MacAnalog-Symbolix

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## Contents

**1 Examined  $H(z)$  for TIA simple Z1 Z5 ZL:**  $\frac{Z_1 Z_L (Z_5 g_m - 1)}{Z_1 Z_5 g_m + 2Z_1 Z_L g_m + Z_1 + Z_5 + Z_L}$

$$H(z) = \frac{Z_1 Z_L (Z_5 g_m - 1)}{Z_1 Z_5 g_m + 2Z_1 Z_L g_m + Z_1 + Z_5 + Z_L}$$

**2 HP**

**3 BP**

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

$$H(s) = \frac{L_L R_1 s (R_4 g_m - 1)}{C_L L_L R_1 R_4 g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + 2L_L R_1 g_m s + L_L s + R_1 R_4 g_m + R_1 + R_4}$$

**Parameters:**

Q:  $\frac{C_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_4 g_m + R_1 + R_4)}{2R_1 g_m + 1}$

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

bandwidth:  $\frac{2R_1 g_m + 1}{C_L (R_1 R_4 g_m + R_1 + R_4)}$

K-LP: 0

K-HP: 0

K-BP:  $\frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1}$

Qz: 0

Wz: None

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

$$H(s) = \frac{L_L R_1 R_L s (R_4 g_m - 1)}{C_L L_L R_1 R_4 R_L g_m s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_4 R_L s^2 + L_L R_1 R_4 g_m s + 2L_L R_1 R_L g_m s + L_L R_1 s + L_L R_4 s + L_L R_L s + R_1 R_4 R_L g_m + R_1 R_L + R_4 R_L}$$

**Parameters:**

Q:  $\frac{C_L R_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_4 g_m + R_1 + R_4)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$   
 wo:  $\sqrt{\frac{1}{C_L L_L}}$   
 bandwidth:  $\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_L R_L (R_1 R_4 g_m + R_1 + R_4)}$   
 K-LP: 0  
 K-HP: 0  
 K-BP:  $\frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$   
 QZ: 0  
 Wz: None

**3.3 BP-3**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1)}{C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

**Parameters:**

Q:  $\frac{C_L L_1 \sqrt{\frac{1}{C_L L_1 (R_4 g_m + 1)}} (R_4 g_m + 1)}{C_L R_4 + 2L_1 g_m}$   
 wo:  $\sqrt{\frac{1}{C_L L_1 (R_4 g_m + 1)}}$   
 bandwidth:  $\frac{C_L R_4 + 2L_1 g_m}{C_L L_1 (R_4 g_m + 1)}$   
 K-LP: 0  
 K-HP: 0  
 K-BP:  $\frac{L_1 (R_4 g_m - 1)}{C_L R_4 + 2L_1 g_m}$   
 QZ: 0  
 Wz: None

**3.4 BP-4**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1)}{C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L R_4 R_L s + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_L L_1 R_L \sqrt{\frac{R_4 + R_L}{C_L L_1 R_L (R_4 g_m + 1)}} (R_4 g_m + 1)}{C_L R_4 R_L + L_1 R_4 g_m + 2 L_1 R_L g_m + L_1} \\ \text{wo: } & \sqrt{\frac{R_4 + R_L}{C_L L_1 R_L (R_4 g_m + 1)}} \\ \text{bandwidth: } & \frac{C_L R_4 R_L + L_1 R_4 g_m + 2 L_1 R_L g_m + L_1}{C_L L_1 R_L (R_4 g_m + 1)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{L_1 R_L (R_4 g_m - 1)}{C_L R_4 R_L + L_1 R_4 g_m + 2 L_1 R_L g_m + L_1} \\ \text{Qz: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.5 \quad BP-5} \quad Z(s) = \left( L_1 s, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1)}{C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 \sqrt{\frac{1}{C_1 L_1}} (R_4 + R_L)}{R_4 g_m + 2 R_L g_m + 1} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_4 g_m + 2 R_L g_m + 1}{C_1 (R_4 + R_L)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2 R_L g_m + 1} \\ \text{Qz: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

$$\mathbf{3.6 \quad BP-6} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (R_4 g_m - 1)}{C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + L_1 R_1 R_4 g_m s + 2 L_1 R_1 R_L g_m s + L_1 R_1 s + L_1 R_4 s + L_1 R_L s + R_1 R_4 + R_1 R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 R_1 \sqrt{\frac{1}{C_1 L_1}} (R_4 + R_L)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\ \text{bandwidth: } & \frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_1 R_1 (R_4 + R_L)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

## 4 LP

$$4.1 \quad \text{LP-1 } Z(s) = \left( \infty, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_4 g_m - 1}{C_1 C_L R_4 s^2 + C_1 s + C_L R_4 g_m s + C_L s + 2g_m}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{\sqrt{2} C_1 C_L R_4 \sqrt{\frac{g_m}{C_1 C_L R_4}}}{C_1 + C_L R_4 g_m + C_L} \\ \text{wo: } & \sqrt{2} \sqrt{\frac{g_m}{C_1 C_L R_4}} \\ \text{bandwidth: } & \frac{C_1 + C_L R_4 g_m + C_L}{C_1 C_L R_4} \\ \text{K-LP: } & \frac{R_4 g_m - 1}{2g_m} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{Wz: } & \text{None} \end{aligned}$$

**4.2 LP-2**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1)}{C_1 C_L R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + C_L R_4 R_L g_m s + C_L R_L s + R_4 g_m + 2 R_L g_m + 1}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_4 R_L \sqrt{\frac{R_4 g_m + 2 R_L g_m + 1}{C_1 C_L R_4 R_L}}}{C_1 R_4 + C_1 R_L + C_L R_4 R_L g_m + C_L R_L}$   
 wo:  $\sqrt{\frac{R_4 g_m + 2 R_L g_m + 1}{C_1 C_L R_4 R_L}}$   
 bandwidth:  $\frac{C_1 R_4 + C_1 R_L + C_L R_4 R_L g_m + C_L R_L}{C_1 C_L R_4 R_L}$   
 K-LP:  $\frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2 R_L g_m + 1}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.3 LP-3**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1)}{C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2 R_1 g_m + 1}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_1 R_4 \sqrt{\frac{2 R_1 g_m + 1}{C_1 C_L R_1 R_4}}}{C_1 R_1 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4}$   
 wo:  $\sqrt{\frac{2 R_1 g_m + 1}{C_1 C_L R_1 R_4}}$   
 bandwidth:  $\frac{C_1 R_1 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4}{C_1 C_L R_1 R_4}$   
 K-LP:  $\frac{R_1 (R_4 g_m - 1)}{2 R_1 g_m + 1}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 WZ: None

**4.4 LP-4**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1)}{C_1 C_L R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_L R_1 R_4 R_L g_m s + C_L R_1 R_L s + C_L R_4 R_L s + R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_1 R_4 R_L \sqrt{\frac{R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}{C_1 C_L R_1 R_4 R_L}}}{C_1 R_1 R_4 + C_1 R_1 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L}$   
 wo:  $\sqrt{\frac{R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}{C_1 C_L R_1 R_4 R_L}}$   
 bandwidth:  $\frac{C_1 R_1 R_4 + C_1 R_1 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L}{C_1 C_L R_1 R_4 R_L}$   
 K-LP:  $\frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}$   
 K-HP: 0  
 K-BP: 0  
 QZ: None  
 Wz: None

## 5 BS

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

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L L_L s^2 + 1)}{2 C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2 R_1 g_m + 1}$$

**Parameters:**

Q:  $\frac{L_L \sqrt{\frac{1}{C_L L_L}} (2 R_1 g_m + 1)}{R_1 R_4 g_m + R_1 + R_4}$   
 wo:  $\sqrt{\frac{1}{C_L L_L}}$   
 bandwidth:  $\frac{R_1 R_4 g_m + R_1 + R_4}{L_L (2 R_1 g_m + 1)}$   
 K-LP:  $\frac{R_1 (R_4 g_m - 1)}{2 R_1 g_m + 1}$   
 K-HP:  $\frac{R_1 (R_4 g_m - 1)}{2 R_1 g_m + 1}$   
 K-BP: 0

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

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

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_L L_L R_1 R_4 g_m s^2 + 2C_L L_L R_1 R_L g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + C_L R_1 R_4 R_L g_m s + C_L R_1 R_L s + C_L R_4 R_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

Q:  $\frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{R_L (R_1 R_4 g_m + R_1 + R_4)}$   
wo:  $\sqrt{\frac{1}{C_L L_L}}$   
bandwidth:  $\frac{R_L (R_1 R_4 g_m + R_1 + R_4)}{L_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}$   
K-LP:  $\frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$   
K-HP:  $\frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$   
K-BP: 0  
Qz: None  
Wz:  $\sqrt{\frac{1}{C_L L_L}}$

**5.3 BS-3**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_4 s + C_1 R_L s + R_4 g_m + 2R_L g_m + 1}$$

**Parameters:**

Q:  $\frac{L_1 \sqrt{\frac{1}{C_1 L_1}} (R_4 g_m + 2R_L g_m + 1)}{R_4 + R_L}$   
wo:  $\sqrt{\frac{1}{C_1 L_1}}$   
bandwidth:  $\frac{R_4 + R_L}{L_1 (R_4 g_m + 2R_L g_m + 1)}$   
K-LP:  $\frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1}$



$$\begin{aligned} \text{K-HP: } & \frac{R_L(R_4g_m-1)}{R_4g_m+2R_Lg_m+1} \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_1L_1}} \end{aligned}$$

**5.4 BS-4**  $Z(s) = \left( \frac{L_1s}{C_1L_1s^2+1}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1R_L(R_4g_m-1)(C_1L_1s^2+1)}{C_1L_1R_1R_4g_ms^2 + 2C_1L_1R_1R_Lg_ms^2 + C_1L_1R_1s^2 + C_1L_1R_4s^2 + C_1L_1R_Ls^2 + C_1R_1R_4s + C_1R_1R_Ls + R_1R_4g_m + 2R_1R_Lg_m + R_1 + R_4 + R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_1\sqrt{\frac{1}{C_1L_1}}(R_1R_4g_m+2R_1R_Lg_m+R_1+R_4+R_L)}{R_1(R_4+R_L)} \\ \text{wo: } & \sqrt{\frac{1}{C_1L_1}} \\ \text{bandwidth: } & \frac{R_1(R_4+R_L)}{L_1(R_1R_4g_m+2R_1R_Lg_m+R_1+R_4+R_L)} \\ \text{K-LP: } & \frac{R_1R_L(R_4g_m-1)}{R_1R_4g_m+2R_1R_Lg_m+R_1+R_4+R_L} \\ \text{K-HP: } & \frac{R_1R_L(R_4g_m-1)}{R_1R_4g_m+2R_1R_Lg_m+R_1+R_4+R_L} \\ \text{K-BP: } & 0 \\ \text{QZ: } & \text{None} \\ \text{WZ: } & \sqrt{\frac{1}{C_1L_1}} \end{aligned}$$

## 6 GE

**6.1 GE-1**  $Z(s) = \left( R_1, \infty, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{R_1(R_4g_m-1)(C_LL_Ls^2 + C_LR_Ls + 1)}{2C_LL_LR_1g_ms^2 + C_LL_Ls^2 + C_LR_1R_4g_ms + 2C_LR_1R_Lg_ms + C_LR_1s + C_LR_4s + C_LR_Ls + 2R_1g_m + 1}$$

**Parameters:**

$$\text{Q: } \frac{L_L\sqrt{\frac{1}{C_LL_L}}(2R_1g_m+1)}{R_1R_4g_m+2R_1R_Lg_m+R_1+R_4+R_L}$$

$$\begin{aligned}
\text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\
\text{bandwidth: } & \frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{L_L (2R_1 g_m + 1)} \\
\text{K-LP: } & \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1} \\
\text{K-HP: } & \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1} \\
\text{K-BP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{QZ: } & \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\
\text{WZ: } & \sqrt{\frac{1}{C_L L_L}}
\end{aligned}$$

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

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_L L_L R_1 R_4 g_m s^2 + 2C_L L_L R_1 R_L g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + 2L_L R_1 g_m s + L_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{2R_1 g_m + 1} \\
\text{wo: } & \sqrt{\frac{1}{C_L L_L}} \\
\text{bandwidth: } & \frac{2R_1 g_m + 1}{C_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)} \\
\text{K-LP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{K-HP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{K-BP: } & \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1} \\
\text{QZ: } & C_L R_L \sqrt{\frac{1}{C_L L_L}} \\
\text{WZ: } & \sqrt{\frac{1}{C_L L_L}}
\end{aligned}$$

**6.3 GE-3**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{L_4 \sqrt{\frac{1}{C_4 L_4}} (R_1 g_m + 1)}{2R_1 R_L g_m + R_1 + R_L} \\
\text{wo: } & \sqrt{\frac{1}{C_4 L_4}} \\
\text{bandwidth: } & \frac{2R_1 R_L g_m + R_1 + R_L}{L_4 (R_1 g_m + 1)} \\
\text{K-LP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\
\text{K-HP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\
\text{K-BP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
\text{QZ: } & -L_4 g_m \sqrt{\frac{1}{C_4 L_4}} \\
\text{WZ: } & \sqrt{\frac{1}{C_4 L_4}}
\end{aligned}$$

**6.4 GE-4**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + L_4 R_1 g_m s + L_4 s + 2R_1 R_L g_m + R_1 + R_L}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{C_4 \sqrt{\frac{1}{C_4 L_4}} (2R_1 R_L g_m + R_1 + R_L)}{R_1 g_m + 1} \\
\text{wo: } & \sqrt{\frac{1}{C_4 L_4}} \\
\text{bandwidth: } & \frac{R_1 g_m + 1}{C_4 (2R_1 R_L g_m + R_1 + R_L)} \\
\text{K-LP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
\text{K-HP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
\text{K-BP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\
\text{QZ: } & -\frac{C_4 \sqrt{\frac{1}{C_4 L_4}}}{g_m} \\
\text{WZ: } & \sqrt{\frac{1}{C_4 L_4}}
\end{aligned}$$

**6.5 GE-5**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s + C_4 R_L s + R_1 g_m + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{L_4 \sqrt{\frac{1}{C_4 L_4}} (R_1 g_m + 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_4 L_4}} \\ \text{bandwidth: } & \frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{L_4 (R_1 g_m + 1)} \\ \text{K-LP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\ \text{K-HP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\ \text{K-BP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{QZ: } & \frac{L_4 g_m \sqrt{\frac{1}{C_4 L_4}}}{R_4 g_m - 1} \\ \text{WZ: } & \sqrt{\frac{1}{C_4 L_4}} \end{aligned}$$

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

$$H(s) = \frac{R_1 R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{2C_4 L_4 R_1 R_4 R_L g_m s^2 + C_4 L_4 R_1 R_4 s^2 + C_4 L_4 R_4 R_L s^2 + L_4 R_1 R_4 g_m s + 2L_4 R_1 R_L g_m s + L_4 R_1 s + L_4 R_4 s + L_4 R_L s + 2R_1 R_4 R_L g_m + R_1 R_4 + R_4 R_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_4 R_4 \sqrt{\frac{1}{C_4 L_4}} (2R_1 R_L g_m + R_1 + R_L)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{wo: } & \sqrt{\frac{1}{C_4 L_4}} \\ \text{bandwidth: } & \frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_4 R_4 (2R_1 R_L g_m + R_1 + R_L)} \\ \text{K-LP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\ \text{K-HP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\ \text{K-BP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{QZ: } & -\frac{C_4 R_4 \sqrt{\frac{1}{C_4 L_4}}}{R_4 g_m - 1} \end{aligned}$$

$$\text{Wz: } \sqrt{\frac{1}{C_4 L_4}}$$

$$\mathbf{6.7 \quad GE-7} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 L_4 R_1 R_4 g_m s^2 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + L_4 R_1 g_m s + L_4 s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

$$\text{Q: } \frac{C_4 \sqrt{\frac{1}{C_4 L_4}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{R_1 g_m + 1}$$

$$\text{wo: } \sqrt{\frac{1}{C_4 L_4}}$$

$$\text{bandwidth: } \frac{R_1 g_m + 1}{C_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}$$

$$\text{K-LP: } \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

$$\text{K-HP: } \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

$$\text{K-BP: } \frac{R_1 R_L g_m}{R_1 g_m + 1}$$

$$\text{QZ: } \frac{C_4 \sqrt{\frac{1}{C_4 L_4}} (R_4 g_m - 1)}{g_m}$$

$$\text{Wz: } \sqrt{\frac{1}{C_4 L_4}}$$

$$\mathbf{6.8 \quad GE-8} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 L_4 R_1 R_4 g_m s^2 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

$$\text{Q: } \frac{L_4 \sqrt{\frac{1}{C_4 L_4}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{R_4 (2R_1 R_L g_m + R_1 + R_L)}$$

$$\text{wo: } \sqrt{\frac{1}{C_4 L_4}}$$

$$\text{bandwidth: } \frac{R_4 (2R_1 R_L g_m + R_1 + R_L)}{L_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}$$

$$\text{K-LP: } \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

$$\begin{aligned}
\text{K-HP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{K-BP: } & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
\text{QZ: } & \frac{L_4 \sqrt{\frac{1}{C_4 L_4}} (-R_4 g_m + 1)}{R_4} \\
\text{WZ: } & \sqrt{\frac{1}{C_4 L_4}}
\end{aligned}$$

**6.9 GE-9**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + R_4 g_m + 2R_L g_m + 1}$$

**Parameters:**

$$\begin{aligned}
\text{Q: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}} (R_4 g_m + 2R_L g_m + 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\
\text{bandwidth: } & \frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{L_1 (R_4 g_m + 2R_L g_m + 1)} \\
\text{K-LP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\
\text{K-HP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\
\text{K-BP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{QZ: } & \frac{L_1 \sqrt{\frac{1}{C_1 L_1}}}{R_1} \\
\text{WZ: } & \sqrt{\frac{1}{C_1 L_1}}
\end{aligned}$$

**6.10 GE-10**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 L_1 R_1 R_4 g_m s^2 + 2C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

$$\text{Q: } \frac{C_1 \sqrt{\frac{1}{C_1 L_1}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{R_4 g_m + 2R_L g_m + 1}$$

$$\begin{aligned}
\text{wo: } & \sqrt{\frac{1}{C_1 L_1}} \\
\text{bandwidth: } & \frac{R_4 g_m + 2R_L g_m + 1}{C_1 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)} \\
\text{K-LP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{K-HP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\
\text{K-BP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\
\text{Qz: } & C_1 R_1 \sqrt{\frac{1}{C_1 L_1}} \\
\text{Wz: } & \sqrt{\frac{1}{C_1 L_1}}
\end{aligned}$$

## 7 AP

## 8 INVALID-NUMER

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

$$H(s) = \frac{R_1 R_L (-C_4 s + g_m)}{C_4 C_L R_1 R_L s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + C_L R_1 R_L g_m s + C_L R_L s + R_1 g_m + 1}$$

Parameters:

$$\begin{aligned}
\text{Q: } & \frac{C_4 C_L R_1 R_L \sqrt{\frac{R_1 g_m + 1}{C_4 C_L R_1 R_L}}}{2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L} \\
\text{wo: } & \sqrt{\frac{R_1 g_m + 1}{C_4 C_L R_1 R_L}} \\
\text{bandwidth: } & \frac{2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}{C_4 C_L R_1 R_L} \\
\text{K-LP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\
\text{K-HP: } & 0 \\
\text{K-BP: } & -\frac{C_4 R_1 R_L}{2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L} \\
\text{Qz: } & 0 \\
\text{Wz: } & \text{None}
\end{aligned}$$

## 8.2 INVALID-NUMER-2 $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L R_1 R_4 s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L R_1 R_4 \sqrt{\frac{2R_1 g_m + 1}{C_4 C_L R_1 R_4}}}{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4} \\ \text{wo: } & \sqrt{\frac{2R_1 g_m + 1}{C_4 C_L R_1 R_4}} \\ \text{bandwidth: } & \frac{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4}{C_4 C_L R_1 R_4} \\ \text{K-LP: } & \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_1 R_4}{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

## 8.3 INVALID-NUMER-3 $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L R_1 R_4 R_L s^2 + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + C_L R_1 R_4 R_L g_m s + C_L R_1 R_L s + C_L R_4 R_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L R_1 R_4 R_L \sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_4 C_L R_1 R_4 R_L}}}{2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L} \\ \text{wo: } & \sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_4 C_L R_1 R_4 R_L}} \\ \text{bandwidth: } & \frac{2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L}{C_4 C_L R_1 R_4 R_L} \\ \text{K-LP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_1 R_4 R_L}{2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$



#### 8.4 INVALID-NUMER-4 $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_L s^2 + C_4 C_L R_4 R_L s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s + C_4 R_L s + C_L R_1 R_L g_m s + C_L R_L s + R_1 g_m + 1}$$

Parameters:

Q:  $\frac{C_4 C_L R_L \sqrt{\frac{R_1 g_m + 1}{C_4 C_L R_L (R_1 R_4 g_m + R_1 + R_4)}} (R_1 R_4 g_m + R_1 + R_4)}{C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}$   
 wo:  $\sqrt{\frac{R_1 g_m + 1}{C_4 C_L R_L (R_1 R_4 g_m + R_1 + R_4)}}$   
 bandwidth:  $\frac{C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}{C_4 C_L R_L (R_1 R_4 g_m + R_1 + R_4)}$   
 K-LP:  $\frac{R_1 R_L g_m}{R_1 g_m + 1}$   
 K-HP: 0  
 K-BP:  $\frac{C_4 R_1 R_L (R_4 g_m - 1)}{C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}$   
 QZ: 0  
 Wz: None

#### 8.5 INVALID-NUMER-5 $Z(s) = \left( \frac{R_1 (L_1 s + \frac{1}{C_1 s})}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L R_L s + 1)}{C_L L_1 R_4 g_m s^2 + 2C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L R_4 s + C_L R_L s + 2L_1 g_m s + 1}$$

Parameters:

Q:  $\frac{C_L L_1 \sqrt{\frac{1}{C_L L_1 (R_4 g_m + 2R_L g_m + 1)}} (R_4 g_m + 2R_L g_m + 1)}{C_L R_4 + C_L R_L + 2L_1 g_m}$   
 wo:  $\sqrt{\frac{1}{C_L L_1 (R_4 g_m + 2R_L g_m + 1)}}$   
 bandwidth:  $\frac{C_L R_4 + C_L R_L + 2L_1 g_m}{C_L L_1 (R_4 g_m + 2R_L g_m + 1)}$   
 K-LP: 0  
 K-HP:  $\frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1}$   
 K-BP:  $\frac{L_1 (R_4 g_m - 1)}{C_L R_4 + C_L R_L + 2L_1 g_m}$   
 QZ:  $C_L R_L \sqrt{\frac{1}{C_L L_1 (R_4 g_m + 2R_L g_m + 1)}}$   
 Wz: None

## 8.6 INVALID-NUMER-6 $Z(s) = (\infty, R_2, \infty, \infty, \infty, R_L)$

$$H(s) = \frac{L_1 R_L s (-C_4 s + g_m)}{2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_L s + L_1 g_m s + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_4 L_1 \sqrt{\frac{1}{C_4 L_1 (2R_L g_m + 1)}} (2R_L g_m + 1)}{C_4 R_L + L_1 g_m} \\ \text{wo: } & \sqrt{\frac{1}{C_4 L_1 (2R_L g_m + 1)}} \\ \text{bandwidth: } & \frac{C_4 R_L + L_1 g_m}{C_4 L_1 (2R_L g_m + 1)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & -\frac{R_L}{2R_L g_m + 1} \\ \text{K-BP: } & \frac{L_1 R_L g_m}{C_4 R_L + L_1 g_m} \\ \text{QZ: } & -\frac{C_4 \sqrt{\frac{1}{C_4 L_1 (2R_L g_m + 1)}}}{g_m} \\ \text{Wz: } & \text{None} \end{aligned}$$

## 8.7 INVALID-NUMER-7 $Z(s) = \left(\infty, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 (-C_4 s + g_m)}{C_4 C_L L_1 s^2 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1}}}{g_m (2C_4 + C_L)} \\ \text{wo: } & \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1}} \\ \text{bandwidth: } & \frac{g_m (2C_4 + C_L)}{C_4 C_L} \\ \text{K-LP: } & \frac{L_1 g_m}{C_4 + C_L} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4}{g_m (2C_4 + C_L)} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

### 8.8 INVALID-NUMER-8 $Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_4 R_L s + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 L_1 R_4 \sqrt{\frac{R_4 + R_L}{C_4 L_1 R_4 (2R_L g_m + 1)}} (2R_L g_m + 1)}{C_4 R_4 R_L + L_1 R_4 g_m + 2L_1 R_L g_m + L_1} \\ \text{wo: } & \sqrt{\frac{R_4 + R_L}{C_4 L_1 R_4 (2R_L g_m + 1)}} \\ \text{bandwidth: } & \frac{C_4 R_4 R_L + L_1 R_4 g_m + 2L_1 R_L g_m + L_1}{C_4 L_1 R_4 (2R_L g_m + 1)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & -\frac{R_L}{2R_L g_m + 1} \\ \text{K-BP: } & \frac{L_1 R_L (R_4 g_m - 1)}{C_4 R_4 R_L + L_1 R_4 g_m + 2L_1 R_L g_m + L_1} \\ \text{QZ: } & -\frac{C_4 R_4 \sqrt{\frac{R_4 + R_L}{C_4 L_1 R_4 (2R_L g_m + 1)}}}{R_4 g_m - 1} \\ \text{Wz: } & \text{None} \end{aligned}$$

### 8.9 INVALID-NUMER-9 $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 L_1 R_4 g_m s^2 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_4 s + C_4 R_L s + L_1 g_m s + 1}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 L_1 \sqrt{\frac{1}{C_4 L_1 (R_4 g_m + 2R_L g_m + 1)}} (R_4 g_m + 2R_L g_m + 1)}{C_4 R_4 + C_4 R_L + L_1 g_m} \\ \text{wo: } & \sqrt{\frac{1}{C_4 L_1 (R_4 g_m + 2R_L g_m + 1)}} \\ \text{bandwidth: } & \frac{C_4 R_4 + C_4 R_L + L_1 g_m}{C_4 L_1 (R_4 g_m + 2R_L g_m + 1)} \\ \text{K-LP: } & 0 \\ \text{K-HP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\ \text{K-BP: } & \frac{L_1 R_L g_m}{C_4 R_4 + C_4 R_L + L_1 g_m} \\ \text{QZ: } & \frac{C_4 \sqrt{\frac{1}{C_4 L_1 (R_4 g_m + 2R_L g_m + 1)}} (R_4 g_m - 1)}{g_m} \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.10 INVALID-NUMER-10**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L L_1 \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (R_4 g_m + 1)}} (R_4 g_m + 1)}{C_4 C_L R_4 + 2C_4 L_1 g_m + C_L L_1 g_m} \\ \text{wo: } & \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (R_4 g_m + 1)}} \\ \text{bandwidth: } & \frac{C_4 C_L R_4 + 2C_4 L_1 g_m + C_L L_1 g_m}{C_4 C_L L_1 (R_4 g_m + 1)} \\ \text{K-LP: } & \frac{L_1 g_m}{C_4 + C_L} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_4 L_1 (R_4 g_m - 1)}{C_4 C_L R_4 + 2C_4 L_1 g_m + C_L L_1 g_m} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.11 INVALID-NUMER-11**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_L R_L s + 1)}{C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + C_L R_4 g_m s + 2C_L R_L g_m s + C_L s + 2g_m}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{\sqrt{2} C_1 C_L \sqrt{\frac{g_m}{C_1 C_L (R_4 + R_L)}} (R_4 + R_L)}{C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L} \\ \text{wo: } & \sqrt{2} \sqrt{\frac{g_m}{C_1 C_L (R_4 + R_L)}} \\ \text{bandwidth: } & \frac{C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L}{C_1 C_L (R_4 + R_L)} \\ \text{K-LP: } & \frac{R_4 g_m - 1}{2g_m} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_L R_L (R_4 g_m - 1)}{C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.12 INVALID-NUMER-12**  $Z(s) = \left( \infty, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (-C_4 s + g_m)}{C_1 C_4 R_L s^2 + C_1 s + 2C_4 R_L g_m s + C_4 s + g_m}$$

**Parameters:**

$$Q: \frac{C_1 C_4 R_L \sqrt{\frac{g_m}{C_1 C_4 R_L}}}{C_1 + 2C_4 R_L g_m + C_4}$$

$$\text{wo: } \sqrt{\frac{g_m}{C_1 C_4 R_L}}$$

$$\text{bandwidth: } \frac{C_1 + 2C_4 R_L g_m + C_4}{C_1 C_4 R_L}$$

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

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

$$\text{K-BP: } -\frac{C_4 R_L}{C_1 + 2C_4 R_L g_m + C_4}$$

$$\text{QZ: } 0$$

$$\text{Wz: None}$$

**8.13 INVALID-NUMER-13**  $Z(s) = \left( \infty, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (-C_4 s + g_m)}{C_1 C_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L R_L s^2 + 2C_4 R_L g_m s + C_4 s + C_L R_L g_m s + g_m}$$

**Parameters:**

$$Q: \frac{R_L \sqrt{\frac{g_m}{R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 + 2C_4 R_L g_m + C_4 + C_L R_L g_m}$$

$$\text{wo: } \sqrt{\frac{g_m}{R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}}$$

$$\text{bandwidth: } \frac{C_1 + 2C_4 R_L g_m + C_4 + C_L R_L g_m}{R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}$$

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

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

$$\text{K-BP: } -\frac{C_4 R_L}{C_1 + 2C_4 R_L g_m + C_4 + C_L R_L g_m}$$

$$\text{QZ: } 0$$

$$\text{Wz: None}$$

### 8.14 INVALID-NUMER-14 $Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + 2C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2R_L g_m + 1}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_1 C_4 R_4 R_L \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_4 R_4 R_L}}}{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4} \\ \text{wo: } & \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_4 R_4 R_L}} \\ \text{bandwidth: } & \frac{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4}{C_1 C_4 R_4 R_L} \\ \text{K-LP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_4 R_L}{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

### 8.15 INVALID-NUMER-15 $Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{-C_4 R_4 s + R_4 g_m - 1}{C_1 C_4 R_4 s^2 + C_1 C_L R_4 s^2 + C_1 s + C_4 C_L R_4 s^2 + 2C_4 R_4 g_m s + C_L R_4 g_m s + C_L s + 2g_m}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{\sqrt{2} R_4 \sqrt{\frac{g_m}{R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 + 2C_4 R_4 g_m + C_L R_4 g_m + C_L} \\ \text{wo: } & \sqrt{2} \sqrt{\frac{g_m}{R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)}} \\ \text{bandwidth: } & \frac{C_1 + 2C_4 R_4 g_m + C_L R_4 g_m + C_L}{R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)} \\ \text{K-LP: } & \frac{R_4 g_m - 1}{2g_m} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_4}{C_1 + 2C_4 R_4 g_m + C_L R_4 g_m + C_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

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

$$H(s) = \frac{R_L (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 R_4 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + C_4 C_L R_4 R_L s^2 + 2C_4 R_4 R_L g_m s + C_4 R_4 s + C_L R_4 R_L g_m s + C_L R_L s + R_4 g_m + 2R_L g_m + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{R_4 R_L \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4 + C_L R_4 R_L g_m + C_L R_L} \\ \text{wo: } & \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} \\ \text{bandwidth: } & \frac{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4 + C_L R_4 R_L g_m + C_L R_L}{R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)} \\ \text{K-LP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_4 R_L}{C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4 + C_L R_4 R_L g_m + C_L R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.17 INVALID-NUMER-17**  $Z(s) = \left( \infty, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 s + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + g_m}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 C_4 \sqrt{\frac{g_m}{C_1 C_4 (R_4 + R_L)}} (R_4 + R_L)}{C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4} \\ \text{wo: } & \sqrt{\frac{g_m}{C_1 C_4 (R_4 + R_L)}} \\ \text{bandwidth: } & \frac{C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4}{C_1 C_4 (R_4 + R_L)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_4 R_L (R_4 g_m - 1)}{C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.18 INVALID-NUMER-18**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L R_L s + 1)}{C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_L R_1 R_4 g_m s + 2 C_L R_1 R_L g_m s + C_L R_1 s + C_L R_4 s + C_L R_L s + 2 R_1 g_m + 1}$$

**Parameters:**

Q:  $\frac{C_1 C_L R_1 \sqrt{\frac{2 R_1 g_m + 1}{C_1 C_L R_1 (R_4 + R_L)}} (R_4 + R_L)}{C_1 R_1 + C_L R_1 R_4 g_m + 2 C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}$   
 wo:  $\sqrt{\frac{2 R_1 g_m + 1}{C_1 C_L R_1 (R_4 + R_L)}}$   
 bandwidth:  $\frac{C_1 R_1 + C_L R_1 R_4 g_m + 2 C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}{C_1 C_L R_1 (R_4 + R_L)}$   
 K-LP:  $\frac{R_1 (R_4 g_m - 1)}{2 R_1 g_m + 1}$   
 K-HP: 0  
 K-BP:  $\frac{C_L R_1 R_L (R_4 g_m - 1)}{C_1 R_1 + C_L R_1 R_4 g_m + 2 C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}$   
 QZ: 0  
 Wz: None

**8.19 INVALID-NUMER-19**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (-C_4 s + g_m)}{C_1 C_4 R_1 R_L s^2 + C_1 R_1 s + 2 C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**Parameters:**

Q:  $\frac{C_1 C_4 R_1 R_L \sqrt{\frac{R_1 g_m + 1}{C_1 C_4 R_1 R_L}}}{C_1 R_1 + 2 C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L}$   
 wo:  $\sqrt{\frac{R_1 g_m + 1}{C_1 C_4 R_1 R_L}}$   
 bandwidth:  $\frac{C_1 R_1 + 2 C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L}{C_1 C_4 R_1 R_L}$   
 K-LP:  $\frac{R_1 R_L g_m}{R_1 g_m + 1}$   
 K-HP: 0  
 K-BP:  $-\frac{C_4 R_1 R_L}{C_1 R_1 + 2 C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L}$   
 QZ: 0  
 Wz: None



**8.20 INVALID-NUMER-20**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (-C_4 s + g_m)}{C_1 C_4 R_1 R_L s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L R_1 R_L s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + C_L R_1 R_L g_m s + C_L R_L s + R_1 g_m + 1}$$

**Parameters:**

Q:  $\frac{R_1 R_L \sqrt{\frac{R_1 g_m + 1}{R_1 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 R_1 + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}$   
 wo:  $\sqrt{\frac{R_1 g_m + 1}{R_1 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}}$   
 bandwidth:  $\frac{C_1 R_1 + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}{R_1 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}$   
 K-LP:  $\frac{R_1 R_L g_m}{R_1 g_m + 1}$   
 K-HP: 0  
 K-BP:  $-\frac{C_4 R_1 R_L}{C_1 R_1 + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_L + C_L R_1 R_L g_m + C_L R_L}$   
 QZ: 0  
 Wz: None

**8.21 INVALID-NUMER-21**  $Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**Parameters:**

Q:  $\frac{C_1 C_4 R_1 R_4 R_L \sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_1 C_4 R_1 R_4 R_L}}}{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L}$   
 wo:  $\sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{C_1 C_4 R_1 R_4 R_L}}$   
 bandwidth:  $\frac{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L}{C_1 C_4 R_1 R_4 R_L}$   
 K-LP:  $\frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$   
 K-HP: 0  
 K-BP:  $-\frac{C_4 R_1 R_4 R_L}{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L}$   
 QZ: 0  
 Wz: None

## 8.22 INVALID-NUMER-22 $Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 R_1 R_4 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + C_4 C_L R_1 R_4 s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{R_1 R_4 \sqrt{\frac{2R_1 g_m + 1}{R_1 R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 R_1 + 2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4} \\ \text{wo: } & \sqrt{\frac{2R_1 g_m + 1}{R_1 R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)}} \\ \text{bandwidth: } & \frac{C_1 R_1 + 2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4}{R_1 R_4 (C_1 C_4 + C_1 C_L + C_4 C_L)} \\ \text{K-LP: } & \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_1 R_4}{C_1 R_1 + 2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + C_L R_1 + C_L R_4} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

## 8.23 INVALID-NUMER-23 $Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_4 C_L R_1 R_4 R_L s^2 + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + C_L R_1 R_4 R_L g_m s + C_L R_1 R_L s + C_L R_4 R_L s +}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{R_1 R_4 R_L \sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{R_1 R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L} \\ \text{wo: } & \sqrt{\frac{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}{R_1 R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)}} \\ \text{bandwidth: } & \frac{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L}{R_1 R_4 R_L (C_1 C_4 + C_1 C_L + C_4 C_L)} \\ \text{K-LP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4 R_1 R_4 R_L}{C_1 R_1 R_4 + C_1 R_1 R_L + 2C_4 R_1 R_4 R_L g_m + C_4 R_1 R_4 + C_4 R_4 R_L + C_L R_1 R_4 R_L g_m + C_L R_1 R_L + C_L R_4 R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

## 8.24 INVALID-NUMER-24 $Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 R_1 s + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s + C_4 R_L s + R_1 g_m + 1}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_1 C_4 R_1 \sqrt{\frac{R_1 g_m + 1}{C_1 C_4 R_1 (R_4 + R_L)}} (R_4 + R_L)}{C_1 R_1 + C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L} \\ \text{wo: } & \sqrt{\frac{R_1 g_m + 1}{C_1 C_4 R_1 (R_4 + R_L)}} \\ \text{bandwidth: } & \frac{C_1 R_1 + C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L}{C_1 C_4 R_1 (R_4 + R_L)} \\ \text{K-LP: } & \frac{R_1 R_L g_m}{R_1 g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_4 R_1 R_L (R_4 g_m - 1)}{C_1 R_1 + C_4 R_1 R_4 g_m + 2C_4 R_1 R_L g_m + C_4 R_1 + C_4 R_4 + C_4 R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

## 8.25 INVALID-NUMER-25 $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s}, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 R_1 s + 1)}{C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + 2C_1 R_1 g_m s + C_1 s + C_L R_4 g_m s + C_L s + 2g_m}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{\sqrt{2} C_1 C_L \sqrt{\frac{g_m}{C_1 C_L (R_1 R_4 g_m + R_1 + R_4)}} (R_1 R_4 g_m + R_1 + R_4)}{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + C_L} \\ \text{wo: } & \sqrt{2} \sqrt{\frac{g_m}{C_1 C_L (R_1 R_4 g_m + R_1 + R_4)}} \\ \text{bandwidth: } & \frac{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + C_L}{C_1 C_L (R_1 R_4 g_m + R_1 + R_4)} \\ \text{K-LP: } & \frac{R_4 g_m - 1}{2g_m} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_1 R_1 (R_4 g_m - 1)}{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + C_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.26 INVALID-NUMER-26**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 R_1 s + 1)}{C_1 C_L R_1 R_4 R_L g_m s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + C_L R_4 R_L g_m s + C_L R_L s + R_4 g_m + 2R_L g_m + 1}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{C_1 C_L R_L \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_L R_L (R_1 R_4 g_m + R_1 + R_4)}} (R_1 R_4 g_m + R_1 + R_4)}{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + C_L R_4 R_L g_m + C_L R_L} \\ \text{wo: } & \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_L R_L (R_1 R_4 g_m + R_1 + R_4)}} \\ \text{bandwidth: } & \frac{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + C_L R_4 R_L g_m + C_L R_L}{C_1 C_L R_L (R_1 R_4 g_m + R_1 + R_4)} \\ \text{K-LP: } & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & \frac{C_1 R_1 R_L (R_4 g_m - 1)}{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + C_L R_4 R_L g_m + C_L R_L} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.27 INVALID-NUMER-27**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (-C_4 s + g_m)}{C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 s^2 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**Parameters:**

$$\begin{aligned} \text{Q: } & \frac{\sqrt{\frac{C_4 + C_L}{L_1 (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{g_m (2C_4 + C_L)} \\ \text{wo: } & \sqrt{\frac{C_4 + C_L}{L_1 (C_1 C_4 + C_1 C_L + C_4 C_L)}} \\ \text{bandwidth: } & \frac{g_m (2C_4 + C_L)}{C_1 C_4 + C_1 C_L + C_4 C_L} \\ \text{K-LP: } & \frac{L_1 g_m}{C_4 + C_L} \\ \text{K-HP: } & 0 \\ \text{K-BP: } & -\frac{C_4}{g_m (2C_4 + C_L)} \\ \text{QZ: } & 0 \\ \text{Wz: } & \text{None} \end{aligned}$$

**8.28 INVALID-NUMER-28**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (-C_4 s + g_m)}{C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_1 s^2 + 2C_4 L_1 R_1 g_m s + C_4 L_1 s + C_4 R_1 + C_L L_1 R_1 g_m s + C_L L_1 s + C_L R_1}$$

**Parameters:**

$$\text{Q: } \frac{R_1 \sqrt{\frac{C_4 + C_L}{L_1 (C_1 C_4 + C_1 C_L + C_4 C_L)}} (C_1 C_4 + C_1 C_L + C_4 C_L)}{2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}$$

$$\text{wo: } \sqrt{\frac{C_4 + C_L}{L_1 (C_1 C_4 + C_1 C_L + C_4 C_L)}}$$

$$\text{bandwidth: } \frac{2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}{R_1 (C_1 C_4 + C_1 C_L + C_4 C_L)}$$

$$\text{K-LP: } \frac{L_1 g_m}{C_4 + C_L}$$

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

$$\text{K-BP: } -\frac{C_4 R_1}{2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}$$

$$\text{QZ: } 0$$

$$\text{Wz: None}$$

## 9 INVALID-WZ

**9.1 INVALID-WZ-1**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_4 s^2 + C_4 C_L R_4 R_L s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + C_L R_1 R_4 g_m s + 2C_L R_1 R_L g_m s + C_L R_1 s + C_L R_4 s + C_L R_L s + 2R_1 g_m + 1}$$

**Parameters:**

$$\text{Q: } \frac{C_4 C_L R_4 \sqrt{\frac{2R_1 g_m + 1}{C_4 C_L R_4 (2R_1 R_L g_m + R_1 + R_L)}} (2R_1 R_L g_m + R_1 + R_L)}{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + 2C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}$$

$$\text{wo: } \sqrt{\frac{2R_1 g_m + 1}{C_4 C_L R_4 (2R_1 R_L g_m + R_1 + R_L)}}$$

$$\text{bandwidth: } \frac{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + 2C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}{C_4 C_L R_4 (2R_1 R_L g_m + R_1 + R_L)}$$

$$\text{K-LP: } \frac{R_1 (R_4 g_m - 1)}{2R_1 g_m + 1}$$

$$\text{K-HP: } -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L}$$

$$\text{K-BP: } \frac{R_1 (-C_4 R_4 + C_L R_4 R_L g_m - C_L R_L)}{2C_4 R_1 R_4 g_m + C_4 R_4 + C_L R_1 R_4 g_m + 2C_L R_1 R_L g_m + C_L R_1 + C_L R_4 + C_L R_L}$$

$$\begin{aligned} \text{QZ: } & \frac{C_4 C_L R_4 R_L \sqrt{\frac{2R_1 g_m + 1}{C_4 C_L R_4 (2R_1 R_L g_m + R_1 + R_L)}}}{C_4 R_4 - C_L R_4 R_L g_m + C_L R_L} \\ \text{WZ: } & \sqrt{\frac{-R_4 g_m + 1}{C_4 C_L R_4 R_L}} \end{aligned}$$

## 9.2 INVALID-WZ-2 $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L R_L s + 1)}{2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L L_1 \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (2R_L g_m + 1)}} (2R_L g_m + 1)}{C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m} \\ \text{wo: } & \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (2R_L g_m + 1)}} \\ \text{bandwidth: } & \frac{C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m}{C_4 C_L L_1 (2R_L g_m + 1)} \\ \text{K-LP: } & \frac{L_1 g_m}{C_4 + C_L} \\ \text{K-HP: } & -\frac{R_L}{2R_L g_m + 1} \\ \text{K-BP: } & \frac{L_1 (-C_4 + C_L R_L g_m)}{C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m} \\ \text{QZ: } & \frac{C_4 C_L R_L \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (2R_L g_m + 1)}}}{C_4 - C_L R_L g_m} \\ \text{WZ: } & \sqrt{-\frac{g_m}{C_4 C_L R_L}} \end{aligned}$$

## 9.3 INVALID-WZ-3 $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 R_4 g_m s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_4 C_L L_1 \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (R_4 g_m + 2R_L g_m + 1)}} (R_4 g_m + 2R_L g_m + 1)}{C_4 C_L R_4 + C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m} \\ \text{wo: } & \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (R_4 g_m + 2R_L g_m + 1)}} \end{aligned}$$

$$\text{bandwidth: } \frac{C_4 C_L R_4 + C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m}{C_4 C_L L_1 (R_4 g_m + 2R_L g_m + 1)}$$

$$\text{K-LP: } \frac{L_1 g_m}{C_4 + C_L}$$

$$\text{K-HP: } \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1}$$

$$\text{K-BP: } \frac{L_1 (C_4 R_4 g_m - C_4 + C_L R_L g_m)}{C_4 C_L R_4 + C_4 C_L R_L + 2C_4 L_1 g_m + C_L L_1 g_m}$$

$$\text{QZ: } \frac{C_4 C_L R_L \sqrt{\frac{C_4 + C_L}{C_4 C_L L_1 (R_4 g_m + 2R_L g_m + 1)}} (R_4 g_m - 1)}{C_4 R_4 g_m - C_4 + C_L R_L g_m}$$

$$\text{WZ: } \sqrt{\frac{g_m}{C_4 C_L R_L (R_4 g_m - 1)}}$$

$$\mathbf{9.4 \quad INVALID-WZ-4} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 R_1 s + 1) (C_L R_L s + 1)}{C_1 C_L R_1 R_4 g_m s^2 + 2C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + 2C_1 R_1 g_m s + C_1 s + C_L R_4 g_m s + 2C_L R_L g_m s + C_L s + 2g_m}$$

**Parameters:**

$$\text{Q: } \frac{\sqrt{2} C_1 C_L \sqrt{\frac{g_m}{C_1 C_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L}$$

$$\text{wo: } \sqrt{2} \sqrt{\frac{g_m}{C_1 C_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}}$$

$$\text{bandwidth: } \frac{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L}{C_1 C_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}$$

$$\text{K-LP: } \frac{R_4 g_m - 1}{2g_m}$$

$$\text{K-HP: } \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

$$\text{K-BP: } \frac{C_1 R_1 R_4 g_m - C_1 R_1 + C_L R_4 R_L g_m - C_L R_L}{2C_1 R_1 g_m + C_1 + C_L R_4 g_m + 2C_L R_L g_m + C_L}$$

$$\text{QZ: } \frac{\sqrt{2} C_1 C_L R_1 R_L \sqrt{\frac{g_m}{C_1 C_L (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}}}{C_1 R_1 + C_L R_L}$$

$$\text{WZ: } \sqrt{\frac{1}{C_1 C_L R_1 R_L}}$$

$$\mathbf{9.5 \quad INVALID-WZ-5} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, R_L \right)$$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 R_1 s + 1)}{2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 R_1 g_m s + C_1 s + 2C_4 R_L g_m s + C_4 s + g_m}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_1 C_4 \sqrt{\frac{g_m}{C_1 C_4 (2R_1 R_L g_m + R_1 + R_L)}} (2R_1 R_L g_m + R_1 + R_L)}{C_1 R_1 g_m + C_1 + 2C_4 R_L g_m + C_4} \\
wo: & \sqrt{\frac{g_m}{C_1 C_4 (2R_1 R_L g_m + R_1 + R_L)}} \\
bandwidth: & \frac{C_1 R_1 g_m + C_1 + 2C_4 R_L g_m + C_4}{C_1 C_4 (2R_1 R_L g_m + R_1 + R_L)} \\
K-LP: & R_L \\
K-HP: & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
K-BP: & \frac{R_L (C_1 R_1 g_m - C_4)}{C_1 R_1 g_m + C_1 + 2C_4 R_L g_m + C_4} \\
QZ: & -\frac{C_1 C_4 R_1 \sqrt{\frac{g_m}{C_1 C_4 (2R_1 R_L g_m + R_1 + R_L)}}}{C_1 R_1 g_m - C_4} \\
Wz: & \sqrt{-\frac{g_m}{C_1 C_4 R_1}}
\end{aligned}$$

## 9.6 INVALID-WZ-6 $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, R_L \right)$

$$H(s) = -\frac{R_L (C_1 R_1 s + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + 2C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2R_L g_m + 1}$$

**Parameters:**

$$\begin{aligned}
Q: & \frac{C_1 C_4 R_4 \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_4 R_4 (2R_1 R_L g_m + R_1 + R_L)}} (2R_1 R_L g_m + R_1 + R_L)}{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4} \\
wo: & \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_4 R_4 (2R_1 R_L g_m + R_1 + R_L)}} \\
bandwidth: & \frac{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4}{C_1 C_4 R_4 (2R_1 R_L g_m + R_1 + R_L)} \\
K-LP: & \frac{R_L (R_4 g_m - 1)}{R_4 g_m + 2R_L g_m + 1} \\
K-HP: & -\frac{R_1 R_L}{2R_1 R_L g_m + R_1 + R_L} \\
K-BP: & \frac{R_L (C_1 R_1 R_4 g_m - C_1 R_1 - C_4 R_4)}{C_1 R_1 R_4 g_m + 2C_1 R_1 R_L g_m + C_1 R_1 + C_1 R_4 + C_1 R_L + 2C_4 R_4 R_L g_m + C_4 R_4} \\
QZ: & \frac{C_1 C_4 R_1 R_4 \sqrt{\frac{R_4 g_m + 2R_L g_m + 1}{C_1 C_4 R_4 (2R_1 R_L g_m + R_1 + R_L)}}}{-C_1 R_1 R_4 g_m + C_1 R_1 + C_4 R_4} \\
Wz: & \sqrt{\frac{-R_4 g_m + 1}{C_1 C_4 R_1 R_4}}
\end{aligned}$$



## 9.7 INVALID-WZ-7 $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, R_L \right)$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + g_m}$$

Parameters:

$$\begin{aligned} \text{Q: } & \frac{C_1 C_4 \sqrt{\frac{g_m}{C_1 C_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}} (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}{C_1 R_1 g_m + C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4} \\ \text{wo: } & \sqrt{\frac{g_m}{C_1 C_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}} \\ \text{bandwidth: } & \frac{C_1 R_1 g_m + C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4}{C_1 C_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)} \\ \text{K-LP: } & R_L \\ \text{K-HP: } & \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L} \\ \text{K-BP: } & \frac{R_L (C_1 R_1 g_m + C_4 R_4 g_m - C_4)}{C_1 R_1 g_m + C_1 + C_4 R_4 g_m + 2C_4 R_L g_m + C_4} \\ \text{QZ: } & \frac{C_1 C_4 R_1 \sqrt{\frac{g_m}{C_1 C_4 (R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L)}} (R_4 g_m - 1)}{C_1 R_1 g_m + C_4 R_4 g_m - C_4} \\ \text{WZ: } & \sqrt{\frac{g_m}{C_1 C_4 R_1 (R_4 g_m - 1)}} \end{aligned}$$

## 10 INVALID-ORDER

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

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1)}{R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

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

$$H(s) = \frac{R_1 (R_4 g_m - 1)}{C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

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

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1)}{C_L R_1 R_4 R_L g_m s + C_L R_1 R_L s + C_L R_4 R_L s + R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}$$

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

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L R_L s + 1)}{C_L R_1 R_4 g_m s + 2 C_L R_1 R_L g_m s + C_L R_1 s + C_L R_4 s + C_L R_L s + 2 R_1 g_m + 1}$$

**10.5 INVALID-ORDER-5**  $Z(s) = (L_1 s, \infty, \infty, \infty, \infty, R_L)$

$$H(s) = \frac{R_1 R_L (-C_4 s + g_m)}{2 C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**10.6 INVALID-ORDER-6**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (-C_4 s + g_m)}{s (C_4 C_L R_1 s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.7 INVALID-ORDER-7**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L R_L s + 1)}{s (2 C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.8 INVALID-ORDER-8**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L s^2 + 1)}{s (2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.9 INVALID-ORDER-9**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 s + g_m)}{C_4 C_L L_L R_1 s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + R_1 g_m + 1}$$

**10.10 INVALID-ORDER-10**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L s^2 + C_L R_L s + 1)}{s (2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.11 INVALID-ORDER-11**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 s + g_m)}{C_4 C_L L_L R_1 R_L s^3 + 2C_4 L_L R_1 R_L g_m s^2 + C_4 L_L R_1 s^2 + C_4 L_L R_L s^2 + C_4 R_1 R_L s + C_L L_L R_1 R_L g_m s^2 + C_L L_L R_L s^2 + L_L R_1 g_m s + L_L s + R_1 R_L g_m + R_L}$$

**10.12 INVALID-ORDER-12**  $Z(s) = \left( L_1 s, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + R_1 g_m + 1}$$

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

$$H(s) = -\frac{R_1 R_L (C_4 s - g_m) (C_L L_L s^2 + 1)}{2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + C_4 C_L R_1 R_L s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_L g_m s + C_L R_L s + R_1 g_m}$$

**10.14 INVALID-ORDER-14**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (-C_4 R_4 s + R_4 g_m - 1)}{2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + R_1 R_4 g_m + 2R_1 R_L g_m + R_1 + R_4 + R_L}$$

**10.15 INVALID-ORDER-15**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + 2C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

**10.16 INVALID-ORDER-16**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_L R_1 R_4 s^3 + 2C_4 L_L R_1 R_4 g_m s^2 + C_4 L_L R_4 s^2 + C_4 R_1 R_4 s + C_L L_L R_1 R_4 g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + 2L_L R_1 g_m s + L_L s + R_1 R_4 g_m + R_1 + R_4}$$

**10.17 INVALID-ORDER-17**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 R_4 s - R_4 g_m + 1) (C_L L_L s^2 + C_L R_L s + 1)}{2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_4 s^2 + C_4 C_L R_4 R_L s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + 2C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_4 g_m s + 2C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

**10.18 INVALID-ORDER-18**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_L R_1 R_4 R_L s^3 + 2C_4 L_L R_1 R_4 R_L g_m s^2 + C_4 L_L R_1 R_4 s^2 + C_4 L_L R_4 R_L s^2 + C_4 R_1 R_4 R_L s + C_L L_L R_1 R_4 R_L g_m s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_4 R_L s^2 + L_L R_1 R_4 g_m s + 2L_L R_1 s + L_L R_4 s + 2R_1 g_m + 1}$$

**10.19 INVALID-ORDER-19**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{R_1 (C_4 R_4 s - R_4 g_m + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{2C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L L_L R_4 R_L s^3 + 2C_4 L_L R_1 R_4 g_m s^2 + C_4 L_L R_4 s^2 + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + C_L L_L R_1 R_4 g_m s^2 + 2C_L L_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

**10.20 INVALID-ORDER-20**  $Z(s) = \left( \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{R_1 R_L (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L L_L R_4 R_L s^3 + C_4 C_L R_1 R_4 R_L s^2 + 2C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_4 s + C_4 R_4 R_L s + C_L L_L R_1 R_4 g_m s^2 + 2C_L L_L R_1 R_L g_m s^2 +}$$

**10.21 INVALID-ORDER-21**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s + C_4 R_L s + R_1 g_m + 1}$$

**10.22 INVALID-ORDER-22**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.23 INVALID-ORDER-23**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L R_1 R_4 g_m s + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.24 INVALID-ORDER-24**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.25 INVALID-ORDER-25**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 R_4 g_m s + C_4 R_1 s + C_4 R_4 s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + R_1 g_m + 1}$$

**10.26 INVALID-ORDER-26**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.27 INVALID-ORDER-27**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_L s^3 + C_4 C_L L_L R_4 R_L s^3 + C_4 L_L R_1 R_4 g_m s^2 + 2C_4 L_L R_1 R_L g_m s^2 + C_4 L_L R_1 s^2 + C_4 L_L R_4 s^2 + C_4 L_L R_L s^2 + C_4 R_1 R_4 R_L g_m s + C_4 R_1 R_L s}$$

**10.28 INVALID-ORDER-28**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1 (C_4 R_4 g_m s - C_4 s + g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_4 C_L L_L R_1 R_4 g_m s^3 + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s}$$

**10.29 INVALID-ORDER-29**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_1 R_L (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_L R_1 R_4 g_m s^3 + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_L s^2 + C_4 C_L R_4 R_L s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L s}$$

**10.30 INVALID-ORDER-30**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

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

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L R_1 R_L s^2 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + C_L R_1 R_L g_m s + C_L R_L s + R_1 g_m + 1}$$

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

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.33 INVALID-ORDER-33**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.34 INVALID-ORDER-34**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 s^3 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + R_1 g_m + 1}$$

**10.35 INVALID-ORDER-35**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

$$\mathbf{10.36 \quad INVALID-ORDER-36} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_L R_1 R_L s^3 + C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_L s^2 + 2 C_4 L_L R_1 R_L g_m s^2 + C_4 L_L R_1 s^2 + C_4 L_L R_L s^2 + C_4 L_L s^2 + C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 L_L g_m + C_4}$$

$$\mathbf{10.37 \quad INVALID-ORDER-37} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + 2 C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2 C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + 2 C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 L_L g_m + C_4}$$

$$\mathbf{10.38 \quad INVALID-ORDER-38} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_1 R_L (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + 2 C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + C_4 C_L R_1 R_L s^2 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 R_L s^2 + C_4 L_L R_1 g_m s + C_4 L_L s + C_4 R_1 R_L g_m + C_4 R_1 s + C_4 L_L g_m + C_4}$$

$$\mathbf{10.39 \quad INVALID-ORDER-39} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_4 R_1 s^3 + 2 C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + C_L R_1 s + 2 R_1 g_m + 1}$$

$$\mathbf{10.40 \quad INVALID-ORDER-40} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_4 R_1 R_L s^3 + 2 C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 R_1 R_L g_m s^2 + C_L L_4 R_L s^2 + C_L R_1 R_L s + L_4 R_1 g_m s + L_4 s + 2 R_1 R_L g_m + R_1 + R_L}$$



$$10.41 \quad \text{INVALID-ORDER-41} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + 2C_L R_1 R_L g_m s + C_L R_1 s + C_L R_L s + 2R_1 g_m + 1}$$

$$10.42 \quad \text{INVALID-ORDER-42} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + 2C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 s + 2R_1 g_m + 1}$$

$$10.43 \quad \text{INVALID-ORDER-43} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_4 L_L R_1 s^4 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3 + C_L L_L R_1 s^2 + L_4 R_1 g_m s + L_4 s + 2L_L R_1 g_m s + L_L s + R_1}$$

$$10.44 \quad \text{INVALID-ORDER-44} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_4 L_4 s^2 - L_4 g_m s + 1) (C_L L_L s^2 + C_L R_L s + 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + 2C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 s + 2R_1 g_m + 1}$$

$$10.45 \quad \text{INVALID-ORDER-45} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_4 L_L R_1 R_L s^4 + 2C_4 L_4 L_L R_1 R_L g_m s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_L s^3 + C_4 L_4 R_1 R_L s^2 + C_L L_4 L_L R_1 R_L g_m s^3 + C_L L_4 L_L R_L s^3 + C_L L_L R_1 R_L s^2 + L_4 L_L R_1 g_m s^2 + L_4 L_L s^2 + L_4 R_1 g_m s + L_4 s + 2L_L R_1 g_m s + L_L s + R_1}$$

**10.46 INVALID-ORDER-46**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{R_1 (C_4 L_4 s^2 - L_4 g_m s + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_L s^4 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L R_L s^3 + C_L L_4 L_L R_1 s^3 + C_L L_4 L_L R_L s^2 + C_L L_4 L_L R_L s + C_L L_4 L_L R_L}$$

**10.47 INVALID-ORDER-47**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{R_1 R_L (C_L L_L s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_1 R_L s^3 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3 + C_L L_4 L_L R_1 s^3 + C_L L_4 L_L R_L s^3 + C_L L_4 L_L R_1 g_m s^2 + C_L L_4 L_L R_L s^2 + C_L L_4 L_L R_1 s^2 + C_L L_4 L_L R_L g_m s + C_L L_4 L_L s + C_L L_4 L_L R_1 + C_L L_4 L_L R_L)}{2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_1 R_L s^3 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3 + C_L L_4 L_L R_1 s^3 + C_L L_4 L_L R_L s^3 + C_L L_4 L_L R_1 g_m s^2 + C_L L_4 L_L R_L s^2 + C_L L_4 L_L R_1 s^2 + C_L L_4 L_L R_L g_m s + C_L L_4 L_L s + C_L L_4 L_L R_1 + C_L L_4 L_L R_L}$$

**10.48 INVALID-ORDER-48**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.49 INVALID-ORDER-49**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_L s^2 + C_4 C_L R_4 R_L s^2 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_4 s +}$$

**10.50 INVALID-ORDER-50**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_1 R_4 g_m s + 2 C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.51 INVALID-ORDER-51**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.52 INVALID-ORDER-52**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 R_4 g_m s + C_4 R_1 s + C_4 R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}$$

**10.53 INVALID-ORDER-53**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.54 INVALID-ORDER-54**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_L s^3 + C_4 C_L L_L R_4 R_L s^3 + C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_L s^2 + C_4 R_1 R_4 g_m s + C_4 R_1 s + C_4 R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}$$

**10.55 INVALID-ORDER-55**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1 (C_L L_L R_L s^2 + L_L s + R_L) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 R_4 g_m s^3 + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 L_L R_1 g_m s + C_4 L_L s + C_4 R_1 R_4 g_m s + C_4 R_1 s + C_4 R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L}$$

**10.56 INVALID-ORDER-56**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{R_1 R_L (C_L s + 1)}{C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L L_L R_1 R_L g_m s^3 + 2 C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 -$$

**10.57 INVALID-ORDER-57**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_4 R_1 R_4 s^3 + 2 C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_4 s^2 + C_L L_4 R_1 R_4 g_m s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_4 s^2 + C_L R_1 R_4 s + 2 L_4 R_1 g_m s + L_4 s + 2 R_1 R_4 g_m + R_4}$$

**10.58 INVALID-ORDER-58**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_4 R_1 R_4 R_L s^3 + 2C_4 L_4 R_1 R_4 R_L g_m s^2 + C_4 L_4 R_1 R_4 s^2 + C_4 L_4 R_4 R_L s^2 + C_L L_4 R_1 R_4 R_L g_m s^2 + C_L L_4 R_1 R_L s^2 + C_L L_4 R_4 R_L s^2 + C_L R_1 R_4 R_L s + L_4 R_1 R_4 g_m s + 2L_4 R_1 R_4}$$

**10.59 INVALID-ORDER-59**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_L R_L s + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^3 + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_4 s^2 + C_L L_4 R_1 R_4 g_m s^2 + 2C_L L_4 R_1 R_L g_m s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_4 s^2 + C_L L_4 R_4 s + C_L R_4}$$

**10.60 INVALID-ORDER-60**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3 + 2C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_4 s^2 + 2C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3 + C_L L_4 R_1 R_4 g_m s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_4 s + C_L R_4}$$

**10.61 INVALID-ORDER-61**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_4 L_L R_1 R_4 s^4 + 2C_4 L_4 L_L R_1 R_4 g_m s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 R_1 R_4 s^2 + C_L L_4 L_L R_1 R_4 g_m s^3 + C_L L_4 L_L R_1 s^3 + C_L L_4 L_L R_4 s^3 + C_L L_L R_1 R_4 s^2 + 2L_4 L_L R_1 g_m s^2 + L_4 L_L$$

**10.62 INVALID-ORDER-62**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1(C_L L_L s^2 + C_L L_R)}{2C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^3 + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_4 s^2 + 2C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L R_1 s^3}$$

**10.63 INVALID-ORDER-63**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{L_L R_1 R_L s}{C_4 C_L L_4 L_L R_1 R_4 R_L s^4 + 2C_4 L_4 L_L R_1 R_4 R_L g_m s^3 + C_4 L_4 L_L R_1 R_4 s^3 + C_4 L_4 L_L R_4 R_L s^3 + C_4 L_4 R_1 R_4 R_L s^2 + C_L L_4 L_L R_1 R_4 R_L g_m s^3 + C_L L_4 L_L R_1 R_L s^3 + C_L L_4 L_L R_4 R_L s^3 -}$$

**10.64 INVALID-ORDER-64**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_4C_L L_4 L_L R_1 R_4 R_L q_m s^4 + C_4C_L L_4 L_L R_1 R_4 s^4 + C_4C_L L_4 L_L R_4 R_L s^4 + 2C_4L_4 L_L R_1 R_4 q_m s^3 + C_4L_4 L_L R_4 s^3 + 2C_4L_4 R_1 R_4 R_L q_m s^2 + C_4L_4 R_1 R_4 s^2 + C_4L_4 R_4 R_L s^2 + C_4L_4 R_4 s^2 + C_4L_4 s^2}{2C_4C_L L_4 L_L R_1 R_4 R_L q_m s^4 + C_4C_L L_4 L_L R_1 R_4 s^4 + C_4C_L L_4 L_L R_4 R_L s^4 + 2C_4L_4 L_L R_1 R_4 q_m s^3 + C_4L_4 L_L R_4 s^3 + 2C_4L_4 R_1 R_4 R_L q_m s^2 + C_4L_4 R_1 R_4 s^2 + C_4L_4 R_4 R_L s^2 + C_4L_4 R_4 s^2 + C_4L_4 s^2}.$$

**10.65 INVALID-ORDER-65**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_4C_LL_4L_LR_1R_4R_Lg_ms^4 + C_4C_LL_4L_LR_1R_4s^4 + C_4C_LL_4L_LR_4R_Ls^4 + C_4C_LL_4R_1R_4R_Ls^3 + 2C_4L_4R_1R_4R_Lg_ms^2 + C_4L_4R_1R_4s^2 + C_4L_4R_4R_Ls^2 + C_LL_4L_LR_1R_4g_ms}{2C_4C_LL_4L_LR_1R_4R_Lg_ms^4 + C_4C_LL_4L_LR_1R_4s^4 + C_4C_LL_4L_LR_4R_Ls^4 + C_4C_LL_4R_1R_4R_Ls^3 + 2C_4L_4R_1R_4R_Lg_ms^2 + C_4L_4R_1R_4s^2 + C_4L_4R_4R_Ls^2 + C_LL_4L_LR_1R_4g_ms}$$

$$10.66 \quad \text{INVALID-ORDER-66} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

$$10.67 \quad \text{INVALID-ORDER-67} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_4 L_4 R_1 R_4 g_m s^2 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_L L_4 R_1 R_L g_m s^2 + C_L L_4 R_L s^2}$$

$$10.68 \quad \text{INVALID-ORDER-68} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_4 R_1 R_4 g_m s^3 + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + C_L R_1 R_4 g_m s + 2C_L R_1 s}$$

$$10.69 \quad \text{INVALID-ORDER-69} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + 2C_L L_L R_1 g_m s^2 + C_L L_L s^2}$$

$$10.70 \quad \text{INVALID-ORDER-70} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3}$$

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

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_4 g_m s^3 + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s + C_L L_4 R_L s + C_L s}$$

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

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + 1)}{C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + C_4 L_4 L_L R_1 R_4 g_m s^3 + 2C_4 L_4 L_L R_1 R_L g_m s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 L_L R_L s^3 + C_L L_4 R_1 g_m s + C_L L_4 R_L s + C_L s}$$

$$\mathbf{10.73 \quad INVALID-ORDER-73} \quad Z(s) = \left( \frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + 1)}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 R_4 g_m s^2 + 2C_4 L_4 R_1 s^2 + C_L L_4 R_1 g_m s + C_L L_4 R_L s + C_L s}$$

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

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + 1)}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_L L_4 R_1 g_m s + C_L L_4 R_L s + C_L s}$$

$$\mathbf{10.75 \quad INVALID-ORDER-75} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2R_1 g_m + 1}$$

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

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_4 C_L R_1 R_4 R_L s^2 + C_4 L_4 R_1 R_4 g_m s^2 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + 2C_4 R_1 R_4 s^2 + C_4 R_1 R_L s^2 + C_4 R_1 s^2 + C_4 R_4 s^2 + C_4 R_L s^2 + C_4 s^2}$$

$$\mathbf{10.77 \quad INVALID-ORDER-77} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_L R_L s + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m + 1)}{C_4 C_L L_4 R_1 R_4 g_m s^3 + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_4 s^2 + C_4 C_L R_4 R_L s^2 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_4 R_1 R_4 s^2 + C_4 R_1 R_L s^2 + C_4 R_1 s^2 + C_4 R_4 s^2 + C_4 R_L s^2 + C_4 s^2}$$

$$\mathbf{10.78 \quad INVALID-ORDER-78} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_4 R_1 R_4 s^2 + C_4 R_1 R_L s^2 + C_4 R_1 s^2 + C_4 R_4 s^2 + C_4 R_L s^2 + C_4 s^2}$$

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

$$H(s) = \frac{L_L R_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_L R_1 R_4 s^3 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + 2C_4 L_L R_1 R_4 s^2 + C_4 L_L R_1 s^2 + C_4 L_L R_4 s^2 + C_4 R_1 R_4 s^2 + C_4 R_1 R_L s^2 + C_4 R_1 s^2 + C_4 R_4 s^2 + C_4 R_L s^2 + C_4 s^2}$$

$$\mathbf{10.80 \quad INVALID-ORDER-80} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_4 g_m s^3 + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_4 R_1 R_4 s^2 + C_4 R_1 R_L s^2 + C_4 R_1 s^2 + C_4 R_4 s^2 + C_4 R_L s^2 + C_4 s^2}$$



$$10.81 \quad \text{INVALID-ORDER-81} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + C_4 C_L L_L R_1 R_4 R_L s^3 + C_4 L_4 L_L R_1 R_4 g_m s^3 + 2 C_4 L_4 L_L R_1 R_L g_m s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 L_L R_L s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 L_L R_L s^3}{C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + C_4 C_L L_L R_1 R_4 R_L s^3 + C_4 L_4 L_L R_1 R_4 g_m s^3 + 2 C_4 L_4 L_L R_1 R_L g_m s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 L_L R_L s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 L_L R_L s^3}$$

$$10.82 \quad \text{INVALID-ORDER-82} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = - \frac{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + 2 C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L L_L R_4 R_L s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + 2 C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L L_L R_4 R_L s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3}$$

$$10.83 \quad \text{INVALID-ORDER-83} \quad Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3}{C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3}$$

$$10.84 \quad \text{INVALID-ORDER-84} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1)}{L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

$$10.85 \quad \text{INVALID-ORDER-85} \quad Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L s^2 + 1)}{2 C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L R_4 s + 2 L_1 g_m s + 1}$$

**10.86 INVALID-ORDER-86**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (R_4 g_m - 1)}{C_L L_1 L_L R_4 g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s^2 + 2 L_1 L_L g_m s^2 + L_1 R_4 g_m s + L_1 s + L_L s + R_4}$$

**10.87 INVALID-ORDER-87**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{2 C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + 2 C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L R_4 s + C_L R_L s + 2 L_1 g_m s + 1}$$

**10.88 INVALID-ORDER-88**  $Z(s) = \left( \frac{R_1 \left( L_1 s + \frac{1}{C_1 s} \right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (R_4 g_m - 1)}{C_L L_1 L_L R_4 R_L g_m s^3 + C_L L_1 L_L R_L s^3 + C_L L_L R_4 R_L s^2 + L_1 L_L R_4 g_m s^2 + 2 L_1 L_L R_L g_m s^2 + L_1 L_L s^2 + L_1 R_4 R_L g_m s + L_1 R_L s + L_L R_4 s + L_L R_L s + R_4 R_L}$$

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

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_L L_1 L_L R_4 g_m s^3 + 2 C_L L_1 L_L R_L g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + 2 L_1 L_L g_m s^2 + L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + L_L s + R_4 + R_L}$$

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

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_L L_1 L_L R_4 g_m s^3 + 2 C_L L_1 L_L R_L g_m s^3 + C_L L_1 L_L s^3 + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + C_L R_4 R_L s + L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

**10.91 INVALID-ORDER-91**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 s + g_m)}{C_4 C_L L_1 R_L s^3 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_L s + C_L L_1 R_L g_m s^2 + C_L R_L s + L_1 g_m s + 1}$$

**10.92 INVALID-ORDER-92**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L L_L s^2 + 1)}{2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.93 INVALID-ORDER-93**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (-C_4 s + g_m)}{C_4 C_L L_1 L_L s^4 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 s^2 + C_4 L_L s^2 + C_L L_1 L_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

**10.94 INVALID-ORDER-94**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L L_L s^2 + C_L R_L s + 1)}{2C_4 C_L L_1 L_L g_m s^3 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.95 INVALID-ORDER-95**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (-C_4 s + g_m)}{C_4 C_L L_1 L_L R_L s^4 + 2C_4 L_1 L_L R_L g_m s^3 + C_4 L_1 L_L s^3 + C_4 L_1 R_L s^2 + C_4 L_L R_L s^2 + C_L L_1 L_L R_L g_m s^3 + C_L L_L R_L s^2 + L_1 L_L g_m s^2 + L_1 R_L g_m s + L_L s + R_L}$$

**10.96 INVALID-ORDER-96**  $Z(s) = \left( \infty, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_1 s (C_4 s - g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_L s^3 + 2C_4 L_1 L_L g_m s^3 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_L s^2 + C_4 R_L s + C_L L_1 L_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

$$10.97 \quad \text{INVALID-ORDER-97} \quad Z(s) = \left( \infty, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{L_1 R_L s (C_4 s - g_m) (C_L L_L s^2 + 1)}{2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_L R_L s^3 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_L s + C_L L_1 L_L g_m s^3 + C_L L_1 R_L g_m s^2 + C_L L_L s^2 + C_L R_L s + L_1 g_m}$$

$$10.98 \quad \text{INVALID-ORDER-98} \quad Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 R_4 s^3 + 2C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

$$10.99 \quad \text{INVALID-ORDER-99} \quad Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 R_4 R_L s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_4 R_L s + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L R_4 R_L s + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

$$10.100 \quad \text{INVALID-ORDER-100} \quad Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^3 + C_4 C_L R_4 R_L s^2 + 2C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + 2C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L R_4 s + C_L R_L s + 2L_1 g_m s + 1}$$

$$10.101 \quad \text{INVALID-ORDER-101} \quad Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + 2C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

$$10.102 \quad \text{INVALID-ORDER-102} \quad Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 L_L R_4 s^4 + 2C_4 L_1 L_L R_4 g_m s^3 + C_4 L_1 R_4 s^2 + C_4 L_L R_4 s^2 + C_L L_1 L_L R_4 g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s^2 + 2L_1 L_L g_m s^2 + L_1 R_4 g_m s + L_1 s + L_L s + R_4}$$

**10.103 INVALID-ORDER-103**  $Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s (C_4 R_4 s - R_4 g_m + 1) (C_L L_L s^2 + C_L R_L s + 1)}{2C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_4 R_L s^2 + 2C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + 2C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + 2C_L L_1 R_L g_m s + 1}$$

**10.104 INVALID-ORDER-104**  $Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (-C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 L_L R_4 R_L s^4 + 2C_4 L_1 L_L R_4 R_L g_m s^3 + C_4 L_1 L_L R_4 s^3 + C_4 L_1 R_4 R_L s^2 + C_4 L_L R_4 R_L s^2 + C_L L_1 L_L R_4 R_L g_m s^3 + C_L L_1 L_L R_L s^3 + C_L L_L R_4 R_L s^2 + L_1 L_L R_4 g_m s^2 + 2L_1 L_L R_L g_m s + 1}$$

**10.105 INVALID-ORDER-105**  $Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_1 s (C_4 R_4 s - R_4 g_m + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{2C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_L R_4 R_L s^3 + 2C_4 L_1 L_L R_4 g_m s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 L_L R_4 s^2 + C_4 R_4 R_L s + C_L L_1 L_L R_4 g_m s^3 + 2C_L L_1 L_L R_L g_m s^2 + 2C_L L_1 R_4 g_m s + 1}$$

**10.106 INVALID-ORDER-106**  $Z(s) = \left( \infty, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{L_1 R_L s (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_1 R_4 R_L s^3 + C_4 C_L L_L R_4 R_L s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_4 R_L s + C_L L_1 L_L R_4 g_m s^3 + 2C_L L_1 L_L R_L g_m s^2 + 2C_L L_1 R_4 g_m s + 1}$$

**10.107 INVALID-ORDER-107**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_L s^3 + C_4 C_L R_4 R_L s^2 + C_4 L_1 R_4 g_m s^2 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_4 s + C_4 R_L s + C_L L_1 R_L g_m s^2 + C_L R_L s + L_1 g_m s + 1}$$

**10.108 INVALID-ORDER-108**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.109 INVALID-ORDER-109**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_4 s^3 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 R_4 g_m s^2 + C_4 L_1 s^2 + C_4 L_L s^2 + C_4 R_4 s + C_L L_1 L_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

**10.110 INVALID-ORDER-110**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.111 INVALID-ORDER-111**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_L s^4 + C_4 C_L L_L R_4 R_L s^3 + C_4 L_1 L_L R_4 g_m s^3 + 2C_4 L_1 L_L R_L g_m s^3 + C_4 L_1 L_L s^3 + C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_L s^2 + C_4 L_L R_4 s^2 + C_4 L_L R_L s^2 + C_4 R_4 s + C_L L_1 g_m s + C_L}$$

**10.112 INVALID-ORDER-112**  $Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (C_4 R_4 g_m s - C_4 s + g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 R_4 g_m s^2 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_L s^2 + C_4 R_4 s + C_L L_1 g_m s + C_L}$$

$$10.113 \quad \text{INVALID-ORDER-113} \quad Z(s) = \left( \infty, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L s (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_L R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + C_4 C_L R_4 R_L s^2 + C_4 L_1 R_4 g_m s^2 + 2 C_4 L_1 R_4 s^2 + C_4 L_1 R_L g_m s^2 + C_4 L_1 R_L s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 R_L s + L_1 g_m s + 1}$$

$$10.114 \quad \text{INVALID-ORDER-114} \quad Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 R_L s + L_1 g_m s + 1}$$

$$10.115 \quad \text{INVALID-ORDER-115} \quad Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

$$10.116 \quad \text{INVALID-ORDER-116} \quad Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_4 R_L s^3 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 R_L s + C_L L_1 R_L g_m s^2 + C_L R_L s + L_1 g_m s + 1}$$

$$10.117 \quad \text{INVALID-ORDER-117} \quad Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + 2 C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_L s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.118 INVALID-ORDER-118**  $Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L L_L s^2 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.119 INVALID-ORDER-119**  $Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_4 L_L s^4 + C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 L_L s^2 + C_L L_1 L_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

**10.120 INVALID-ORDER-120**  $Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.121 INVALID-ORDER-121**  $Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_L R_L s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 L_1 L_4 L_L g_m s^4 + C_4 L_1 L_4 R_L g_m s^3 + 2C_4 L_1 L_L R_L g_m s^3 + C_4 L_1 L_L s^3 + C_4 L_1 R_L s^2 + C_4 L_4 L_L s^3 + C_4 L_4 R_L s^2}$$

**10.122 INVALID-ORDER-122**  $Z(s) = \left( \infty, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (C_4 L_4 g_m s^2 - C_4 s + g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_4 C_L L_1 L_4 L_L g_m s^5 + 2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_L s^3 + C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_L g_m s^3 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 L_L s^2}$$



$$10.123 \quad \text{INVALID-ORDER-123} \quad Z(s) = \left( \infty, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L s (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_L g_m s^4 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_L s^3 + C_4 C_L L_L R_L s^3 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 L_4 s^3 + C_4 L_1 L_4 R_L s^2 + C_4 L_1 L_4 g_m s^2 + 2 L_1 R_L g_m s + L_1 s + L_4 s + R_L}$$

$$10.124 \quad \text{INVALID-ORDER-124} \quad Z(s) = \left( \infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{2 C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_L s^2 + L_1 L_4 g_m s^2 + 2 L_1 R_L g_m s + L_1 s + L_4 s + R_L}$$

$$10.125 \quad \text{INVALID-ORDER-125} \quad Z(s) = \left( \infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_1 L_4 s^4 + 2 C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + C_L L_1 s^2 + C_L L_4 s^2 + 2 L_1 g_m s + 1}$$

$$10.126 \quad \text{INVALID-ORDER-126} \quad Z(s) = \left( \infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_4 C_L L_1 L_4 R_L s^4 + 2 C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_L s^2 + C_L L_1 L_4 R_L g_m s^3 + C_L L_1 R_L s^2 + C_L L_4 R_L s^2 + L_1 L_4 g_m s^2 + 2 L_1 R_L g_m s + L_1 s + L_4 s + R_L}$$

$$10.127 \quad \text{INVALID-ORDER-127} \quad Z(s) = \left( \infty, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{L_1 s (C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2 C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_L s^3 + 2 C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + 2 C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L L_4 s^2 + C_L R_L s + 2 L_1 g_m s + 1}$$

**10.128 INVALID-ORDER-128**  $Z(s) = \left( \infty, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{L_1s (C_LL_Ls^2 + 1) (C_4L_4s^2 - L_4g_ms + 1)}{2C_4C_LL_1L_4L_Lg_ms^5 + C_4C_LL_1L_4s^4 + C_4C_LL_4L_Ls^4 + 2C_4L_1L_4g_ms^3 + C_4L_4s^2 + C_LL_1L_4g_ms^3 + 2C_LL_1L_Lg_ms^3 + C_LL_1s^2 + C_LL_4s^2 + C_LL_Ls^2 + 2L_1g_ms + 1}$$

**10.129 INVALID-ORDER-129**  $Z(s) = \left( \infty, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$

$$H(s) = \frac{L_1L_Ls (-C_4L_4s^2 + L_4g_ms - 1)}{C_4C_LL_1L_4L_Ls^4 + 2C_4L_1L_4L_Lg_ms^3 + C_4L_1L_4s^2 + C_4L_4L_Ls^2 + C_LL_1L_4L_Lg_ms^3 + C_LL_1L_Ls^2 + C_LL_4L_Ls^2 + L_1L_4g_ms + 2L_1L_Lg_ms + L_1 + L_4 + L_L}$$

**10.130 INVALID-ORDER-130**  $Z(s) = \left( \infty, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{L_1s (C_4L_4s^2 - L_4g_ms + 1) (C_LL_Ls^2 + C_LR_Ls + 1)}{2C_4C_LL_1L_4L_Lg_ms^5 + 2C_4C_LL_1L_4R_Lg_ms^4 + C_4C_LL_1L_4s^4 + C_4C_LL_4L_Ls^4 + C_4C_LL_4R_Ls^3 + 2C_4L_1L_4g_ms^3 + C_4L_4s^2 + C_LL_1L_4g_ms^3 + 2C_LL_1L_Lg_ms^3 + 2C_LL_1R_Lg_ms^3 + C_LL_1s^2 + C_LL_4s^2 + C_LL_Ls^2 + 2L_1g_ms + 2L_1R_Lg_ms + L_1 + L_4 + R_L}$$

**10.131 INVALID-ORDER-131**  $Z(s) = \left( \infty, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{L_1L_LR_Ls (-C_4L_4s^2 + L_4g_ms - 1)}{C_4C_LL_1L_4L_LR_Ls^4 + 2C_4L_1L_4L_LR_Lg_ms^3 + C_4L_1L_4L_Ls^3 + C_4L_1L_4R_Ls^2 + C_4L_4L_LR_Ls^2 + C_LL_1L_4L_LR_Lg_ms^3 + C_LL_1L_LR_Ls^2 + C_LL_4L_LR_Ls^2 + L_1L_4L_LR_Lg_ms^2 + L_1L_4R_Lg_ms^2 + L_1L_4s^2 + L_1R_Lg_ms^2 + L_1L_Lg_ms^2 + L_1 + L_4 + R_L}$$

**10.132 INVALID-ORDER-132**  $Z(s) = \left( \infty, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_1s (C_4L_4s^2 - L_4g_ms + 1) (C_LL_LR_Ls^2 + L_Ls + R_L)}{2C_4C_LL_1L_4L_LR_Lg_ms^5 + C_4C_LL_1L_4L_Ls^5 + C_4C_LL_4L_LR_Ls^4 + 2C_4L_1L_4L_LR_Lg_ms^4 + 2C_4L_1L_4R_Lg_ms^3 + C_4L_1L_4s^3 + C_4L_4L_Ls^3 + C_4L_4R_Ls^2 + C_LL_1L_4L_LR_Lg_ms^4 + 2C_LL_1L_LR_Lg_ms^3 + C_LL_1s^2 + C_LL_4s^2 + C_LL_Ls^2 + 2L_1g_ms + 2L_1R_Lg_ms + L_1 + L_4 + R_L}$$

$$10.133 \quad \text{INVALID-ORDER-133} \quad Z(s) = \left( \infty, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$$

$$H(s) = -\frac{L_1R_Ls \left( C_LL_Ls^2 + 1 \right) \left( C_4L_4s^2 - L_4g_ms - \frac{1}{C_4s} \right)}{2C_4C_LL_1L_4L_LR_Lg_ms^5 + C_4C_LL_1L_4L_Ls^5 + C_4C_LL_1L_4R_Ls^4 + C_4C_LL_4L_LR_Ls^4 + 2C_4L_1L_4R_Lg_ms^3 + C_4L_1L_4s^3 + C_4L_4R_Ls^2 + C_LL_1L_4L_LR_Lg_ms^4 + C_LL_1L_4R_Lg_ms^3 + 2C_4L_1L_4R_Ls^2 + C_4L_4s^2 + C_4R_4s + C_4R_Ls + L_1g_ms + 1}$$

$$10.134 \quad \text{INVALID-ORDER-134} \quad Z(s) = \left( \infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1R_Ls \left( C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m \right)}{C_4L_1L_4g_ms^3 + C_4L_1R_4g_ms^2 + 2C_4L_1R_Lg_ms^2 + C_4L_1s^2 + C_4L_4s^2 + C_4R_4s + C_4R_Ls + L_1g_ms + 1}$$

$$10.135 \quad \text{INVALID-ORDER-135} \quad Z(s) = \left( \infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_1 \left( C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m \right)}{C_4C_LL_1L_4g_ms^3 + C_4C_LL_1R_4g_ms^2 + C_4C_LL_1s^2 + C_4C_LL_4s^2 + C_4C_LR_4s + 2C_4L_1g_ms + C_4 + C_LL_1g_ms + C_L}$$

$$10.136 \quad \text{INVALID-ORDER-136} \quad Z(s) = \left( \infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = \frac{L_1R_Ls \left( C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m \right)}{C_4C_LL_1L_4R_Lg_ms^4 + C_4C_LL_1R_4R_Lg_ms^3 + C_4C_LL_1R_Ls^3 + C_4C_LL_4R_Ls^3 + C_4C_LR_4R_Ls^2 + C_4L_1L_4g_ms^3 + C_4L_1R_4g_ms^2 + 2C_4L_1R_Lg_ms^2 + C_4L_1s^2 + C_4L_4s^2 + C_4R_4s + C_4R_Ls + L_1g_ms + 1}$$

$$10.137 \quad \text{INVALID-ORDER-137} \quad Z(s) = \left( \infty, \quad L_2s + R_2 + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{L_1 \left( C_LR_Ls + 1 \right) \left( C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m \right)}{C_4C_LL_1L_4g_ms^3 + C_4C_LL_1R_4g_ms^2 + 2C_4C_LL_1R_Lg_ms^2 + C_4C_LL_1s^2 + C_4C_LL_4s^2 + C_4C_LR_4s + C_4C_LR_Ls + 2C_4L_1g_ms + C_4 + C_LL_1g_ms + C_L}$$

**10.138 INVALID-ORDER-138**  $Z(s) = \left( \infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.139 INVALID-ORDER-139**  $Z(s) = \left( \infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_4 s^3 + C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 R_4 g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 L_L s^2}$$

**10.140 INVALID-ORDER-140**  $Z(s) = \left( \infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s}$$

**10.141 INVALID-ORDER-141**  $Z(s) = \left( \infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2}{C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_L s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_L R_4 R_L s^3 + C_4 L_1 L_4 L_L g_m s^4 + C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_L R_4 g_m s^3 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s}$$

**10.142 INVALID-ORDER-142**  $Z(s) = \left( \infty, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (C_L L_L R_L s^2 + L_L s + R_L) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_4 s^3 + C_4 C_L L_L R_L s^3 + C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 R_4 g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 L_L s^2}$$

$$10.143 \quad \text{INVALID-ORDER-143} \quad Z(s) = \left( \infty, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_L s^3 + C_4 C_L L_4 R_L s^2 + C_4 C_L L_4 R_L s + C_4 C_L L_4 R_L)}{C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_L s^3 + C_4 C_L L_4 R_L s^2 + C_4 C_L L_4 R_L s + C_4 C_L L_4 R_L}$$

$$10.144 \quad \text{INVALID-ORDER-144} \quad Z(s) = \left( \infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{2C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + L_1 L_4 R_4 g_m s^2 + 2L_1 L_4 R_L g_m s^2 + L_1 L_4 s^2 + 2L_1 R_4 R_L g_m s + L_1 R_4 s + L_4 R_4 s + L_4 R_L s + R_4 R_L}$$

$$10.145 \quad \text{INVALID-ORDER-145} \quad Z(s) = \left( \infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_1 L_4 R_4 s^4 + 2C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + C_L L_1 L_4 R_4 g_m s^3 + C_L L_1 L_4 s^3 + C_L L_1 R_4 s^2 + C_L L_4 R_4 s^2 + 2L_1 L_4 g_m s^2 + 2L_1 R_4 g_m s + L_4 s + R_4}$$

$$10.146 \quad \text{INVALID-ORDER-146} \quad Z(s) = \left( \infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_1 L_4 R_4 R_L s^4 + 2C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + C_L L_1 L_4 R_4 R_L g_m s^3 + C_L L_1 L_4 R_L s^3 + C_L L_1 R_4 R_L s^2 + C_L L_4 R_4 R_L s^2 + L_1 L_4 R_4 g_m s^2 + 2L_1 L_4 R_4 g_m s + L_4 s + R_4}$$

$$10.147 \quad \text{INVALID-ORDER-147} \quad Z(s) = \left( \infty, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_L R_L s + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + C_L L_1 L_4 R_4 g_m s^3 + 2C_L L_1 L_4 R_L g_m s^3 + C_L L_1 L_4 s^3 + 2C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_4 s^2 + C_L L_4 R_4 s^2 + C_L L_4 R_4 s + C_L L_4 R_4}$$

**10.148 INVALID-ORDER-148**  $Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + 2C_L L_1 L_4 L_L g_m s^4 + C_L L_1 L_4 R_4 g_m s^3 + C_L L_1 L_4 s^3 + 2C_L L_1 L_L R_4 g_m s^3 +}$$

**10.149 INVALID-ORDER-149**  $Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_4 C_L L_1 L_4 L_L R_4 s^4 + 2C_4 L_1 L_4 L_L R_4 g_m s^3 + C_4 L_1 L_4 R_4 s^2 + C_4 L_4 L_L R_4 s^2 + C_L L_1 L_4 L_L R_4 g_m s^3 + C_L L_1 L_4 L_L s^3 + C_L L_1 L_L R_4 s^2 + C_L L_4 L_L R_4 s^2 + 2L_1 L_4 L_L g_m s^2 + L_1 L_4 R_4 s + L_1 R_4}$$

**10.150 INVALID-ORDER-150**  $Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s \left( C_L L_L s^2 + 2C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + 2C_L L_1 L_4 L_L g_m s^4 + C_L L_1 L \right)}{2C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + 2C_L L_1 L_4 L_L g_m s^4 + C_L L_1 L}$$

10.151 INVALID-ORDER-151  $Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s (-C_L + C_R)}{C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_{Lg} m s^3 + C_4 L_1 L_4 L_L R_4 s^3 + C_4 L_1 L_4 R_4 R_L s^2 + C_4 L_4 L_L R_4 R_L s^2 + C_L L_1 L_4 L_L R_4 R_{Lg} m s^3 + C_L L_1 L_4 L_L R_L s^3 + C_L L_1 L_L R_4 R_L s^2 +$$

**10.152 INVALID-ORDER-152**  $Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_4C_LL_1L_4L_LR_4R_Lg_ms^5 + C_4C_LL_1L_4L_LR_4s^5 + C_4C_LL_4L_LR_4R_Ls^4 + 2C_4L_1L_4L_LR_4g_ms^4 + 2C_4L_1L_4R_4R_Lg_ms^3 + C_4L_1L_4R_4s^3 + C_4L_4L_LR_4s^3 + C_4L_4R_4R_Ls^2 + C_L}{2C_4C_LL_1L_4L_LR_4R_Lg_ms^5 + C_4C_LL_1L_4L_LR_4s^5 + C_4C_LL_4L_LR_4R_Ls^4 + 2C_4L_1L_4L_LR_4g_ms^4 + 2C_4L_1L_4R_4R_Lg_ms^3 + C_4L_1L_4R_4s^3 + C_4L_4L_LR_4s^3 + C_4L_4R_4R_Ls^2 + C_L}$$

$$10.153 \quad \text{INVALID-ORDER-153} \quad Z(s) = \left( \infty, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{2C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^5 + C_4 C_L L_1 L_4 L_L R_4 s^5 + C_4 C_L L_1 L_4 R_4 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + 2C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + C_L L_1 L_4 L_L R_4 g_m s^4}{2C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^5 + C_4 C_L L_1 L_4 L_L R_4 s^5 + C_4 C_L L_1 L_4 R_4 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + 2C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + C_L L_1 L_4 L_L R_4 g_m s^4}$$

$$10.154 \quad \text{INVALID-ORDER-154} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + L_1 L_4 g_m s^2 + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + L_4 s + R_4 + R_L}$$

$$10.155 \quad \text{INVALID-ORDER-155} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L L_4 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

$$10.156 \quad \text{INVALID-ORDER-156} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_4 R_4 R_L s^3 + C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_L L_1 L_4 R_L g_m s^3 + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 s^2 + C_L L_4 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

$$10.157 \quad \text{INVALID-ORDER-157} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 g_m s^4 + 2C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + C_L L_1 R_4 g_m s^2 + 2C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L L_4 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

$$\mathbf{10.158 \quad INVALID-ORDER-158} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_L L_L s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{2C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + 2C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 L_L R_4 g_m s + C_L L_1 L_L s^2 + C_L R_4 g_m s + C_L s^2 + C_L}$$

$$\mathbf{10.159 \quad INVALID-ORDER-159} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_1 L_4 L_L g_m s^4 + C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_4 s^2 + C_L L_1 L_4 L_L g_m s^4 + C_L L_1 L_L R_4 g_m s + C_L L_1 L_L s^2 + C_L R_4 g_m s + C_L s^2 + C_L}$$

$$\mathbf{10.160 \quad INVALID-ORDER-160} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{2C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + C_L L_1 L_L R_4 g_m s + C_L L_1 L_L s^2 + C_L R_4 g_m s + C_L s^2 + C_L}$$

$$\mathbf{10.161 \quad INVALID-ORDER-161} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 s (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^5 + C_4 C_L L_1 L_4 L_L R_L s^5 + C_4 C_L L_4 L_L R_4 R_L s^4 + C_4 L_1 L_4 L_L R_4 g_m s^4 + 2C_4 L_1 L_4 L_L R_L g_m s^4 + C_4 L_1 L_4 L_L s^4 + C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_L s^3 + C_L L_1 L_4 R_4 g_m s^3 + C_L L_1 L_L R_4 g_m s + C_L L_1 L_L s^2 + C_L R_4 g_m s + C_L s^2 + C_L}$$

$$\mathbf{10.162 \quad INVALID-ORDER-162} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 s (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + 2C_4 L_1 L_4 L_L g_m s^4 + C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_L L_1 L_4 R_4 g_m s^3 + C_L L_1 L_L R_4 g_m s + C_L L_1 L_L s^2 + C_L R_4 g_m s + C_L s^2 + C_L}$$



$$10.163 \quad \text{INVALID-ORDER-163} \quad Z(s) = \left( \infty, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_4 R_4 R_L s^3 +$$

$$10.164 \quad \text{INVALID-ORDER-164} \quad Z(s) = (\infty, \infty, R_3, \infty, \infty, R_L)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + C_4 R_4 R_L s + L_1 R_4 g_m s + 2L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

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

$$H(s) = \frac{L_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s +$$

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

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_1 R_4 R_L s^3 + C_4 C_L L_4 R_4 R_L s^3 + C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 L_4 s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s +$$

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

$$H(s) = -\frac{L_1 s (C_L R_L s + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m - 1)}{C_4 C_L L_1 L_4 R_4 g_m s^4 + 2C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + 2C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L R_4 R_L s^2 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s +$$

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

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m)}{2C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + 2C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_4 R_4 s^2 + C_4 L_1 L_4 s^2 + C_4 L_1 R_4 s + C_4 L_1 g_m}$$

$$10.169 \quad \text{INVALID-ORDER-169} \quad Z(s) = \left( \infty, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m)}{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_1 L_4 L_L g_m s^4 + C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_1 L_4 s^3 + 2C_4 L_1 L_L R_4 g_m s^3 + C_4 L_1 R_4 s^2 + C_4 L_1 g_m}$$

$$10.170 \quad \text{INVALID-ORDER-170} \quad Z(s) = \left( \infty, \infty, R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1)}{2C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + 2C_4 C_L L_1 L_L R_4 g_m s^4 + 2C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_4 s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_4 R_4 s^2 + C_4 L_1 L_4 s^2 + C_4 L_1 R_4 s + C_4 L_1 g_m}$$

$$10.171 \quad \text{INVALID-ORDER-171} \quad Z(s) = \left( \infty, \infty, R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^5 + C_4 C_L L_1 L_4 L_L R_L s^5 + C_4 C_L L_1 L_L R_4 R_L s^4 + C_4 C_L L_4 L_L R_4 R_L s^4 + C_4 L_1 L_4 L_L R_4 g_m s^4 + 2C_4 L_1 L_4 L_L R_L g_m s^4 + C_4 L_1 L_4 L_L s^4 + C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_1 L_L R_4 R_L s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_4 R_4 s^2 + C_4 L_1 L_4 s^2 + C_4 L_1 R_4 s + C_4 L_1 g_m}$$

$$10.172 \quad \text{INVALID-ORDER-172} \quad Z(s) = \left( \infty, \infty, R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{1}{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + 2C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_4 L_L R_4 s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_L R_4 R_L s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 L_4 R_4 s^2 + C_4 L_1 L_4 s^2 + C_4 L_1 R_4 s + C_4 L_1 g_m}$$

**10.173**   **INVALID-ORDER-173**  $Z(s) = \left( \infty, \infty, R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + 2C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_1 R_4 R_L g_m s^4 + C_4 C_L L_1 R_4 s^4 + C_4 C_L L_L R_4 R_L g_m s^4 + C_4 C_L L_L R_4 s^4 + C_4 C_L R_4 R_L g_m s^4 + C_4 C_L R_4 s^4 + C_4 C_L s^4}{C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + 2C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + 2C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_1 R_4 R_L g_m s^4 + C_4 C_L L_1 R_4 s^4 + C_4 C_L L_L R_4 R_L g_m s^4 + C_4 C_L L_L R_4 s^4 + C_4 C_L R_4 R_L g_m s^4 + C_4 C_L R_4 s^4 + C_4 C_L s^4}.$$

**10.174 INVALID-ORDER-174**  $Z(s) = \left( \infty, \infty, \frac{1}{C_{3s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1)}{C_1 R_4 s + C_1 R_L s + R_4 g_m + 2 R_L g_m + 1}$$

**10.175 INVALID-ORDER-175**  $Z(s) = \left( \infty, \infty, \frac{1}{C_{3s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_L L_L s^2 + 1)}{C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.176 INVALID-ORDER-176**  $Z(s) = \left( \infty, \infty, \frac{1}{C_{3s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (R_4 g_m - 1)}{C_1 C_L L_L R_4 s^3 + C_1 L_L s^2 + C_1 R_4 s + C_L L_L R_4 g_m s^2 + C_L L_L s^2 + 2 L_L g_m s + R_4 g_m + 1}$$

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

$$H(s) = \frac{(R_4 g_m - 1)(C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + 2C_L R_L g_m s + C_L s + 2g_m}$$

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

$$H(s) = \frac{L_L R_L s (R_4 g_m - 1)}{C_1 C_L L_L R_4 R_L s^3 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2 + C_1 R_4 R_L s + C_L L_L R_4 R_L g_m s^2 + C_L L_L R_L s^2 + L_L R_4 g_m s + 2 L_L R_L g_m s + L_L s + R_4 R_L g_m + R_L}$$

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

$$H(s) = \frac{(R_4 g_m - 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 L_L s^2 + C_1 R_4 s + C_1 R_L s + C_L L_L R_4 g_m s^2 + 2 C_L L_L R_L g_m s^2 + C_L L_L s^2 + 2 L_L g_m s + R_4 g_m + 2 R_L g_m + 1}$$

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

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + C_L L_L R_4 g_m s^2 + 2 C_L L_L R_L g_m s^2 + C_L L_L s^2 + C_L R_4 R_L g_m s + C_L R_L s + R_4 g_m + 2 R_L g_m + 1}$$

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

$$H(s) = \frac{-C_4 s + g_m}{s (C_1 C_4 s + C_1 C_L s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

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

$$H(s) = -\frac{(C_4 s - g_m) (C_L R_L s + 1)}{s (C_1 C_4 C_L R_L s^2 + C_1 C_4 s + C_1 C_L s + 2 C_4 C_L R_L g_m s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

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

$$H(s) = -\frac{(C_4 s - g_m)(C_L L_L s^2 + 1)}{s(C_1 C_4 C_L L_L s^3 + C_1 C_4 s + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

**10.184 INVALID-ORDER-184**  $Z(s) = \left( \infty, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s(-C_4 s + g_m)}{C_1 C_4 L_L s^3 + C_1 C_L L_L s^3 + C_1 s + C_4 C_L L_L s^3 + 2C_4 L_L g_m s^2 + C_4 s + C_L L_L g_m s^2 + g_m}$$

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

$$H(s) = -\frac{(C_4 s - g_m)(C_L L_L s^2 + C_L R_L s + 1)}{s(C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_L s^2 + C_1 C_4 s + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + 2C_4 C_L R_L g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

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

$$H(s) = \frac{L_L R_L s(-C_4 s + g_m)}{C_1 C_4 L_L R_L s^3 + C_1 C_L L_L R_L s^3 + C_1 L_L s^2 + C_1 R_L s + C_4 C_L L_L R_L s^3 + 2C_4 L_L R_L g_m s^2 + C_4 L_L s^2 + C_4 R_L s + C_L L_L R_L g_m s^2 + L_L g_m s + R_L g_m}$$

**10.187 INVALID-ORDER-187**  $Z(s) = \left( \infty, \infty, \frac{R_3}{C_3 R_3 s + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_L s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 s + 2C_4 C_L L_L R_L g_m s^3 + C_4 C_L L_L s^3 + 2C_4 L_L g_m s^2 + 2C_4 R_L g_m s + C_4 s + C_L L_L g_m s^2 + g_m}$$

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

$$H(s) = - \frac{R_L (C_4 s - g_m) (C_L L_L s^2 + 1)}{C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 C_L R_L s^2 + C_1 s + 2C_4 C_L L_L R_L g_m s^3 + C_4 C_L L_L s^3 + C_4 C_L R_L s^2 + 2C_4 R_L g_m s + C_4 s + C_L L_L g_m s^2 + C_L R_L g_m s + g_m}$$

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

$$H(s) = - \frac{(C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + 2C_4 C_L R_4 R_L g_m s^2 + C_4 C_L R_4 s^2 + 2C_4 R_4 g_m s + C_L R_4 g_m s + 2C_L R_L g_m s + C_L s + 2g_m}$$

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

$$H(s) = - \frac{(C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 R_4 s^2 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 s + 2C_4 C_L L_L R_4 g_m s^3 + C_4 C_L R_4 s^2 + 2C_4 R_4 g_m s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + C_L s + 2g_m}$$

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

$$H(s) = \frac{L_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_L R_4 s^3 + C_1 C_L L_L R_4 s^3 + C_1 L_L s^2 + C_1 R_4 s + C_4 C_L L_L R_4 s^3 + 2C_4 L_L R_4 g_m s^2 + C_4 R_4 s + C_L L_L R_4 g_m s^2 + C_L L_L s^2 + 2L_L g_m s + R_4 g_m + 1}$$

$$10.192 \quad \text{INVALID-ORDER-192} \quad Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{(C_4 R_4 s - R_4 g_m + 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + 2C_4 C_L L_L R_4 g_m s^3 + 2C_4 C_L R_4 R_L g_m s^2 + C_4 C_L R_4 s^2 + 2C_4 R_4 g_m s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + C_L s + 2g_m}$$

$$10.193 \quad \text{INVALID-ORDER-193} \quad Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_L R_4 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2 + C_1 R_4 R_L s + C_4 C_L L_L R_4 R_L s^3 + 2C_4 L_L R_4 R_L g_m s^2 + C_4 L_L R_4 s^2 + C_4 R_4 R_L s + C_L L_L R_4 R_L g_m s^2 + C_L L_L R_4 R_L s^2}$$

$$10.194 \quad \text{INVALID-ORDER-194} \quad Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{(C_4 R_4 s - R_4 g_m + 1)(C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 L_L s^2 + C_1 R_4 s + C_1 R_L s + 2C_4 C_L L_L R_4 R_L g_m s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_L R_4 g_m s^2}$$

$$10.195 \quad \text{INVALID-ORDER-195} \quad Z(s) = \left( \infty, \infty, R_3 + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{R_L (C_L L_L s^2 + 1)(C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + 2C_4 C_L L_L R_4 R_L g_m s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_4 R_L s^2 + 2C_4 L_L R_4 g_m s^2}$$

$$10.196 \quad \text{INVALID-ORDER-196} \quad Z(s) = \left( \infty, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{C_4 R_4 g_m s - C_4 s + g_m}{s(C_1 C_4 C_L R_4 s^2 + C_1 C_4 s + C_1 C_L s + C_4 C_L R_4 g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$10.197 \quad \text{INVALID-ORDER-197} \quad Z(s) = \left( \infty, \infty, L_3 s + \frac{1}{C_3 s}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L R_4 R_L g_m s^2 + C_4 C_L R_L s^2 + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + C_L R_L g_m s + g_m}$$

**10.198 INVALID-ORDER-198**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LR_Ls + 1)(C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LR_4s^2 + C_1C_4C_LR_Ls^2 + C_1C_4s + C_1C_Ls + C_4C_LR_4g_ms + 2C_4C_LR_Lg_ms + C_4C_Ls + 2C_4g_m + C_Lg_m)}$$

**10.199 INVALID-ORDER-199**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_Ls^3 + C_1C_4C_LR_4s^2 + C_1C_4s + C_1C_Ls + 2C_4C_LL_Lg_ms^2 + C_4C_LR_4g_ms + C_4C_Ls + 2C_4g_m + C_Lg_m)}$$

**10.200 INVALID-ORDER-200**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$

$$H(s) = \frac{L_Ls(C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_LR_4s^4 + C_1C_4L_Ls^3 + C_1C_4R_4s^2 + C_1C_LL_Ls^3 + C_1s + C_4C_LL_LR_4g_ms^3 + C_4C_LL_Ls^3 + 2C_4L_Lg_ms^2 + C_4R_4g_ms + C_4s + C_LL_Lg_ms^2 + g_m}$$

**10.201 INVALID-ORDER-201**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + C_LR_Ls + 1)(C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_Ls^3 + C_1C_4C_LR_4s^2 + C_1C_4C_LR_Ls^2 + C_1C_4s + C_1C_Ls + 2C_4C_LL_Lg_ms^2 + C_4C_LR_4g_ms + 2C_4C_LR_Lg_ms + C_4C_Ls + 2C_4g_m + C_Lg_m)}$$

**10.202 INVALID-ORDER-202**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{L_LR_Ls(C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_LR_4R_Ls^4 + C_1C_4L_LR_4s^3 + C_1C_4L_LR_Ls^3 + C_1C_4R_4R_Ls^2 + C_1C_LL_LR_Ls^3 + C_1L_Ls^2 + C_1R_Ls + C_4C_LL_LR_4R_Lg_ms^3 + C_4C_LL_LR_Ls^3 + C_4L_LR_4g_ms^2 + 2C_4L_LR_Lg_ms}$$

**10.203 INVALID-ORDER-203**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$

$$H(s) = \frac{(C_4R_4g_ms - C_4s + g_m)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_1C_4C_LL_LR_4s^4 + C_1C_4C_LL_LR_Ls^4 + C_1C_4L_Ls^3 + C_1C_4R_4s^2 + C_1C_4R_Ls^2 + C_1C_LL_Ls^3 + C_1s + C_4C_LL_LR_4g_ms^3 + 2C_4C_LL_LR_Lg_ms^3 + C_4C_LL_Ls^3 + 2C_4L_Lg_ms^2 + C_4L_LR_Lg_ms}$$



**10.204 INVALID-ORDER-204**  $Z(s) = \left( \infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$

$$H(s) = \frac{R_L (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_L R_4 g_m s^3 + 2 C_4 C_L L_L R_L g_m s^3 + C_4 C_L L_L s^3}$$

**10.205 INVALID-ORDER-205**  $Z(s) = \left( \infty, \infty, \frac{L_3s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_4 s^3 + C_1 C_4 R_L s^2 + C_1 s + C_4 L_4 g_m s^2 + 2 C_4 R_L g_m s + C_4 s + g_m}$$

**10.206 INVALID-ORDER-206**  $Z(s) = \left( \infty, \infty, \frac{L_3s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_4 L_4 g_m s^2 - C_4 s + g_m}{s (C_1 C_4 C_L L_4 s^3 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

**10.207 INVALID-ORDER-207**  $Z(s) = \left( \infty, \infty, \frac{L_3s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_4 R_L g_m s^3 + C_4 C_L R_L s^2 + C_4 L_4 g_m s^2 + 2 C_4 R_L g_m s + C_4 s + C_L R_L g_m s + g_m}$$

**10.208 INVALID-ORDER-208**  $Z(s) = \left( \infty, \infty, \frac{L_3s}{C_3 L_3 s^2 + 1}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_L s^2 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2 C_4 C_L R_L g_m s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

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

$$H(s) = \frac{(C_L L_L s^2 + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2C_4 C_L L_L g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

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

$$H(s) = \frac{L_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_L L_L s^3 + C_1 s + C_4 C_L L_4 L_L g_m s^4 + C_4 C_L L_L s^3 + C_4 L_4 g_m s^2 + 2C_4 L_L g_m s^2 + C_4 s + C_L L_L g_m s^2 + g_m}$$

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

$$H(s) = \frac{(C_L L_L s^2 + C_L R_L s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_L s^2 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2C_4 C_L L_L g_m s^2 + 2C_4 C_L R_L g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

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

$$H(s) = \frac{L_L R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_L L_L R_L s^3 + C_1 L_L s^2 + C_1 R_L s + C_4 C_L L_4 L_L R_L g_m s^4 + C_4 C_L L_L R_L s^3 + C_4 L_4 L_L g_m s^3 + C_4 L_4 R_L s^2 + C_4 L_L g_m s^2 + C_4 s + C_L g_m}$$

**10.213 INVALID-ORDER-213**  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(C_4 L_4 g_m s^2 - C_4 s + g_m)(C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 s + C_4 C_L L_4 L_L g_m s^4 + 2C_4 C_L L_L R_L g_m s^3 + C_4 C_L L_L s^3 + C_4 L_4 g_m s^2 + 2C_4 L_L g_m s^2 + C_4 s + C_L g_m}$$

$$10.214 \quad \text{INVALID-ORDER-214} \quad Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_4 L_L g_m s^4 + C_4 C_L L_4 R_L g_m s^3 + 2 C_4 C_L L_L R_L g_m s^2 + C_4 C_L L_L s + g_m}$$

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

$$H(s) = \frac{R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 R_L s^3 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

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

$$H(s) = \frac{-C_4 L_4 s^2 + L_4 g_m s - 1}{C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 s + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 g_m s^2 + C_L s + 2 g_m}$$

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

$$H(s) = \frac{R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 R_L s^3 + C_1 L_4 s^2 + C_1 R_L s + C_4 C_L L_4 R_L s^3 + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_L g_m s^2 + C_L R_L s + L_4 g_m s + 2 R_L g_m + 1}$$

$$10.218 \quad \text{INVALID-ORDER-218} \quad Z(s) = \left( \infty, \infty, L_3 s + R_3 + \frac{1}{C_3 s}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_L s^2 + C_1 s + 2 C_4 C_L L_4 R_L g_m s^3 + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 g_m s^2 + 2 C_L R_L g_m s + C_L s + 2 g_m}$$

$$10.219 \quad \text{INVALID-ORDER-219} \quad Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = -\frac{(C_LL_Ls^2 + 1)(C_4L_4s^2 - L_4g_ms + 1)}{C_1C_4C_LL_4L_Ls^5 + C_1C_4L_4s^3 + C_1C_LL_4s^3 + C_1C_LL_Ls^3 + C_1s + 2C_4C_LL_4L_Lg_ms^4 + C_4C_LL_4s^3 + 2C_4L_4g_ms^2 + C_LL_4g_ms^2 + 2C_LL_Lg_ms^2 + C_Ls + 2g_m}$$

$$10.220 \quad \text{INVALID-ORDER-220} \quad Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$$

$$H(s) = \frac{L_Ls(-C_4L_4s^2 + L_4g_ms - 1)}{C_1C_4L_4L_Ls^4 + C_1C_LL_4L_Ls^4 + C_1L_4s^2 + C_1L_Ls^2 + C_4C_LL_4L_Ls^4 + 2C_4L_4L_Lg_ms^3 + C_4L_4s^2 + C_LL_4L_Lg_ms^3 + C_LL_Ls^2 + L_4g_ms + 2L_Lg_ms + 1}$$

$$10.221 \quad \text{INVALID-ORDER-221} \quad Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = -\frac{(C_4L_4s^2 - L_4g_ms + 1)(C_LL_Ls^2 + C_LR_Ls + 1)}{C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_4R_Ls^4 + C_1C_4L_4s^3 + C_1C_LL_4s^3 + C_1C_LL_Ls^3 + C_1C_LR_Ls^2 + C_1s + 2C_4C_LL_4L_Lg_ms^4 + 2C_4C_LL_4R_Lg_ms^3 + C_4C_LL_4s^3 + 2C_4L_4g_ms^2 + C_LR_Ls^2 + C_LL_Lg_ms^2 + C_LR_Lg_ms^2 + C_LR_Ls + 2g_m}$$

$$10.222 \quad \text{INVALID-ORDER-222} \quad Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{L_LR_Ls(-C_4L_4s^2 + L_4g_ms - 1)}{C_1C_4L_4L_LR_Ls^4 + C_1C_LL_4L_LR_Ls^4 + C_1L_4L_Ls^3 + C_1L_4R_Ls^2 + C_1L_LR_Ls^2 + C_4C_LL_4L_LR_Ls^4 + 2C_4L_4L_LR_Lg_ms^3 + C_4L_4L_Ls^3 + C_4L_4R_Ls^2 + C_LL_4L_LR_Lg_ms^3 + C_LL_Ls^2 + L_4g_ms + 2L_LR_Lg_ms + 1}$$

$$10.223 \quad \text{INVALID-ORDER-223} \quad Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$$

$$H(s) = -\frac{(C_4L_4s^2 - L_4g_ms + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)}{C_1C_4C_LL_4L_LR_Ls^5 + C_1C_4L_4L_Ls^4 + C_1C_4L_4R_Ls^3 + C_1C_LL_4L_Ls^4 + C_1C_LL_LR_Ls^3 + C_1L_4s^2 + C_1L_Ls^2 + C_1R_Ls + 2C_4C_LL_4L_LR_Lg_ms^4 + C_4C_LL_4L_Ls^4 + 2C_4L_4L_LR_Lg_ms^3 + C_4L_4L_Ls^3 + C_4L_4R_Ls^2 + C_LL_4L_LR_Lg_ms^3 + C_LL_Ls^2 + L_4g_ms + 2L_LR_Lg_ms + 1}$$

**10.224 INVALID-ORDER-224**  $Z(s) = \left( \infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$

$$H(s) = - \frac{R_L (C_L L_L s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_L s^3 + C_1 C_L L_L R_L s^3 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 C_L L_4 L_L R_L g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_L s^3 + 2 C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m}$$

**10.225 INVALID-ORDER-225**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 s + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + 2 C_4 R_L g_m s + C_4 s + g_m}$$

**10.226 INVALID-ORDER-226**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{1}{C_Ls} \right)$

$$H(s) = \frac{C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m}{s (C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L R_4 g_m s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

**10.227 INVALID-ORDER-227**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_4 R_L g_m s^3 + C_4 C_L R_4 R_L g_m s^2 + C_4 C_L R_L s^2 + C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m}$$

**10.228 INVALID-ORDER-228**  $Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L R_4 g_m s + 2 C_4 C_L R_L g_m s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

$$10.229 \quad \text{INVALID-ORDER-229} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4s^3 + C_1C_4C_LL_Ls^3 + C_1C_4C_LR_4s^2 + C_1C_4s + C_1C_Ls + C_4C_LL_4g_ms^2 + 2C_4C_LL_Lg_ms^2 + C_4C_LR_4g_ms + C_4C_Ls + 2C_4g_m + C_Lg_m)}$$

$$10.230 \quad \text{INVALID-ORDER-230} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$$

$$H(s) = \frac{L_Ls(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_LR_4s^4 + C_1C_4L_4s^3 + C_1C_4L_Ls^3 + C_1C_4R_4s^2 + C_1C_LL_Ls^3 + C_1s + C_4C_LL_4L_Lg_ms^4 + C_4C_LL_LR_4g_ms^3 + C_4C_LL_Ls^3 + C_4L_4g_ms^2 + 2C_4L_Lg_m}$$

$$10.231 \quad \text{INVALID-ORDER-231} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_LL_Ls^2 + C_LR_Ls + 1)(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4s^3 + C_1C_4C_LL_Ls^3 + C_1C_4C_LR_4s^2 + C_1C_4C_LR_Ls^2 + C_1C_4s + C_1C_Ls + C_4C_LL_4g_ms^2 + 2C_4C_LL_Lg_ms^2 + C_4C_LR_4g_ms + 2C_4C_LR_Lg_ms + C_4C_Ls + 2C_4g_m + C_Lg_m)}$$

$$10.232 \quad \text{INVALID-ORDER-232} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{L_LR_Ls(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_4L_LR_Ls^5 + C_1C_4C_LL_LR_4s^4 + C_1C_4L_4L_Ls^4 + C_1C_4L_4R_Ls^3 + C_1C_4L_LR_4s^3 + C_1C_4L_LR_Ls^3 + C_1C_4R_4R_Ls^2 + C_1C_LL_LR_Ls^3 + C_1L_Ls^2 + C_1R_Ls + C_4C_LL_4g_ms^2 + 2C_4C_LL_LR_4g_ms^2 + C_4C_LR_4g_ms + 2C_4C_LR_Lg_ms + C_4C_Ls + 2C_4g_m + C_Lg_m}$$

$$10.233 \quad \text{INVALID-ORDER-233} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3s + \frac{1}{R_3} + \frac{1}{L_3s}}, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L \right)$$

$$H(s) = \frac{(C_LL_LR_Ls^2 + L_Ls + R_L)(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_LR_4s^4 + C_1C_4C_LL_LR_Ls^4 + C_1C_4L_4s^3 + C_1C_4L_Ls^3 + C_1C_4R_4s^2 + C_1C_4R_Ls^2 + C_1C_LL_Ls^3 + C_1s + C_4C_LL_4L_Lg_ms^4 + C_4C_LL_LR_4g_ms^3 + 2C_4C_LL_LR_Lg_ms^2 + C_4C_LR_4g_ms + 2C_4C_LR_Lg_ms + C_4C_Ls + 2C_4g_m + C_Lg_m}$$

$$10.234 \quad \text{INVALID-ORDER-234} \quad Z(s) = \left( \infty, \infty, \frac{1}{C_3 s + \frac{1}{R_3} + \frac{1}{L_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (C_L L_L s^2}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_L s^3 + C_1 C_L R_L s^2 + C_1 s + C_1}$$

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

$$H(s) = \frac{R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 R_4 R_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + C_1 R_4 R_L s + 2C_4 L_4 R_4 R_L g_m s^2 + C_4 L_4 R_4 s^2 + L_4 R_4 g_m s + 2L_4 R_L g_m s + L_4 s + 2R_4 R_L g_m + R_4}$$

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

$$H(s) = \frac{-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4}{C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 R_4 s^3 + C_1 L_4 s^2 + C_1 R_4 s + C_4 C_L L_4 R_4 s^3 + 2C_4 L_4 R_4 g_m s^2 + C_L L_4 R_4 g_m s^2 + C_L L_4 s^2 + C_L R_4 s + 2L_4 g_m s + 2R_4 g_m}$$

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

$$H(s) = \frac{R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 R_4 R_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + C_1 R_4 R_L s + C_4 C_L L_4 R_4 R_L s^3 + 2C_4 L_4 R_4 R_L g_m s^2 + C_4 L_4 R_4 s^2 + C_L L_4 R_4 R_L g_m s^2 + C_L L_4 R_L s^2 + C_L R_4 R_L}$$

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

$$H(s) = -\frac{(C_L R_L s + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 R_4 s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_4 s^2 + C_1 R_4 s + 2C_4 C_L L_4 R_4 R_L g_m s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_4 R_4 g_m s^2 + C_L L_4}$$

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

$$H(s) = -\frac{(C_L L_L s^2 + 1)(C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_4 s^3 + C_1 C_L L_L R_4 s^3 + C_1 L_4 s^2 + C_1 R_4 s + 2C_4 C_L L_4 L_L R_4 g_m s^4 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_4 R_4 g_m s^2 + 2C_L L_4 R_4 s}$$

**10.240 INVALID-ORDER-240**  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_L L_4 L_L R_4 s^4 + C_1 L_4 L_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_L R_4 s^2 + C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_4 L_L R_4 g_m s^3 + C_4 L_4 R_4 s^2 + C_L L_4 L_L R_4 g_m s^3 + C_L L_4 L_L s^3 + C_L L_L R_4 s}$$

**10.241 INVALID-ORDER-241**  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_L L_L s^2 + C_L R_L)}{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_4 s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_4 s^2 + C_1 R_4 s + 2C_4 C_L L_4 L_L R_4 s^4 + 2C_4 L_4 L_L R_4 g_m s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 R_4 s^2 + C_L L_4 L_L R_4 g_m s^3 + C_L L_4 L_L s^3 + C_L L_L R_4 s}$$

**10.242 INVALID-ORDER-242**  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_L s (-C_4 L_4 R_4 s^2)}{C_1 C_4 L_4 L_L R_4 R_L s^4 + C_1 C_L L_4 L_L R_4 R_L s^4 + C_1 L_4 L_L R_4 s^3 + C_1 L_4 L_L R_L s^3 + C_1 L_4 R_4 R_L s^2 + C_1 L_L R_4 R_L s^2 + C_4 C_L L_4 L_L R_4 R_L s^4 + 2C_4 L_4 L_L R_4 R_L g_m s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 R_4 s^2 + C_L L_4 L_L R_4 g_m s^3 + C_L L_4 L_L s^3 + C_L L_L R_4 s}$$

**10.243 INVALID-ORDER-243**  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_L R_L s (-C_4 L_4 R_4 s^2)}{C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 L_L R_4 s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_4 L_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + C_1 L_L R_4 s}$$



10.244 INVALID-ORDER-244  $Z(s) = \left( \infty, \infty, \frac{L_3 s}{C_3 L_3 s^2 + 1} + R_3, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 L_L R_4 s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_4 R_4 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + C_1 R_4 R_L s + 2 C_4 C_L L_L}{C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 L_L R_4 s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_4 R_4 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + C_1 R_4 R_L s + 2 C_4 C_L L_L}$$

10.245 INVALID-ORDER-245  $Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_4 s^2 + C_1 R_4 s + C_1 R_L s + C_4 L_4 R_4 g_m s^2 + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + R_4 g_m + 2 R_L g_m + 1}$$

10.246 INVALID-ORDER-246  $Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1}{C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_4 s^2 + C_1 s + C_4 C_L L_4 R_4 g_m s^3 + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 g_m s^2 + C_L R_4 g_m s + C_L s + 2 g_m}$$

**10.247 INVALID-ORDER-247**  $Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_4 s^2 + C_1 R_4 s + C_1 R_L s + C_4 C_L L_4 R_4 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 L_4 R_4 g_m s^2 +}$$

10.248 INVALID-ORDER-248  $Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1)(C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_4 R_4 g_m s^3 + 2C_4 C_L L_4 R_L g_m s^3 + C_4 C_L L_4 s^3 + 2C_4 L_4 g_m s^2 + C_L L_4}$$

$$\mathbf{10.249 \quad INVALID-ORDER-249} \quad Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_L L_L s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 s + 2 C_4 C_L L_4 L_L g_m s^4 + C_4 C_L L_4 R_4 g_m s^3 + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 s}$$

$$\mathbf{10.250 \quad INVALID-ORDER-250} \quad Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_L R_4 s^3 + C_1 L_4 s^2 + C_1 L_L s^2 + C_1 R_4 s + C_4 C_L L_4 L_L R_4 g_m s^4 + C_4 C_L L_4 L_L s^4 + 2 C_4 L_4 L_L g_m s^3 + C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s}$$

$$\mathbf{10.251 \quad INVALID-ORDER-251} \quad Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + 2 C_4 C_L L_4 L_L g_m s^4 + C_4 C_L L_4 R_4 g_m s^3 + C_4 C_L L_4 R_L g_m s^3 + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + C_4 R_L g_m}$$

$$\mathbf{10.252 \quad INVALID-ORDER-252} \quad Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{(C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 L_L R_L s^4 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_4 L_L s^3 + C_1 L_4 R_L s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_L s}$$

$$\mathbf{10.253 \quad INVALID-ORDER-253} \quad Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{(C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 L_4 s^2 + C_1 L_L s^2 + C_1 R_4 s + C_1 R_L s}$$

**10.254 INVALID-ORDER-254**  $Z(s) = \left( \infty, \infty, \frac{R_3 \left( L_3 s + \frac{1}{C_3 s} \right)}{L_3 s + R_3 + \frac{1}{C_3 s}}, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_L s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L R_L s^3}{\dots}$$

**10.255 INVALID-ORDER-255**  $Z(s) = (\infty, \infty, \infty, R_4, \infty, R_L)$

$$H(s) = \frac{R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + C_4 L_4 R_4 g_m s^2 + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + 2 C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2 R_L g_m + 1}$$

**10.256** INVALID-ORDER-256  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{1}{C_{Ls}} \right)$

$$H(s) = \frac{C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1}{C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_L R_4 s^2 + C_1 s + C_4 C_L L_4 R_4 g_m s^3 + C_4 C_L L_4 s^3 + C_4 C_L R_4 s^2 + 2C_4 L_4 g_m s^2 + 2C_4 R_4 g_m s + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.257 INVALID-ORDER-257**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 R_4 s + C_1 R_L s + C_4 C_L L_4 R_4 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L R_4 R_L s^2 + C_4 L_4 R_4 g_m}$$

**10.258 INVALID-ORDER-258**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_L R_L s + 1)(-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s + C_4 C_L L_4 R_4 g_m s^3 + 2C_4 C_L L_4 R_L g_m s^3 + C_4 C_L L_4 s^3 +}$$

**10.259 INVALID-ORDER-259**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = - \frac{(C_L L_L s^2 + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 s + 2 C_4 C_L L_4 L_L g_m s^4 + C_4 C_L L_4 R_4 g_m s^3 + C_4 C_L L_4 s^3 +}$$

**10.260 INVALID-ORDER-260**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_L L_L R_4 s^3 + C_1 L_L s^2 + C_1 R_4 s + C_4 C_L L_4 L_L R_4 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_4 s^3 + 2 C_4 L_4 L_L s^3 +}$$

**10.261 INVALID-ORDER-261**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = - \frac{(C_L L_L s^2 + C_L R_L)}{C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s +}$$

**10.262 INVALID-ORDER-262**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 L_L R_L s^4 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_4 L_L R_4 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2 + C_1 R_4 R_L s + C_4 C_L L_4 L_L s^3 + C_4 C_L L_4 R_4 s^2 + C_4 C_L L_L R_4 s^2 + C_4 C_L R_4 s^2 + C_4 C_L R_L s^2 + C_4 s +}$$

**10.263 INVALID-ORDER-263**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = - \frac{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_4 s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 s +}$$

**10.264 INVALID-ORDER-264**  $Z(s) = \left( \infty, \infty, \infty, R_4, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 +$$

**10.265 INVALID-ORDER-265**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1)}{C_1 R_1 R_4 s + C_1 R_1 R_L s + R_1 R_4 g_m + 2 R_1 R_L g_m + R_1 + R_4 + R_L}$$

**10.266 INVALID-ORDER-266**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + 2 C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2 R_1 g_m + 1}$$

**10.267 INVALID-ORDER-267**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (R_4 g_m - 1)}{C_1 C_L L_L R_1 R_4 s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_L L_L R_1 R_4 g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + 2 L_L R_1 g_m s + L_L s + R_1 R_4 g_m + R_1 + R_4}$$

**10.268 INVALID-ORDER-268**  $Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2 C_L L_L R_1 g_m s^2 + C_L L_L s^2 + C_L R_1 R_4 g_m s + 2 C_L R_1 R_L g_m s + C_L R_1 s + C_L R_4 s + C_L R_L s + 2 R_1 g_m + 1}$$

$$10.269 \quad \text{INVALID-ORDER-269} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (R_4 g_m - 1)}{C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_L R_1 R_4 s^2 + C_1 L_L R_1 R_L s^2 + C_1 R_1 R_4 R_L s + C_L L_L R_1 R_4 R_L g_m s^2 + C_L L_L R_1 R_L s^2 + C_L L_L R_4 R_L s^2 + L_L R_1 R_4 g_m s + 2 L_L R_1 R_L g_m s + L_L R_1 s + L_L}$$

$$10.270 \quad \text{INVALID-ORDER-270} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_L L_L R_1 R_4 g_m s^2 + 2 C_L L_L R_1 R_L g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + 2 L_L R_1 g_m s}$$

$$10.271 \quad \text{INVALID-ORDER-271} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s}, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_L L_L R_1 R_4 g_m s^2 + 2 C_L L_L R_1 R_L g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + C_L R_1}$$

$$10.272 \quad \text{INVALID-ORDER-272} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (-C_4 s + g_m)}{s (C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L R_1 s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

$$10.273 \quad \text{INVALID-ORDER-273} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L R_L s + 1)}{s (C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + 2 C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.274 INVALID-ORDER-274**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L s^2 + 1)}{s (C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 R_1 s + C_1 C_L R_1 s + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.275 INVALID-ORDER-275**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 s + g_m)}{C_1 C_4 L_L R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_L R_1 s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 s + C_L L_L R_1 g_m s^2 + C_L L_L s^2 + R_1 g_m + 1}$$

**10.276 INVALID-ORDER-276**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L s^2 + C_L R_L s + 1)}{s (C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m)}$$

**10.277 INVALID-ORDER-277**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 s + g_m)}{C_1 C_4 L_L R_1 R_L s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_L s + C_4 C_L L_L R_1 R_L s^3 + 2C_4 L_L R_1 R_L g_m s^2 + C_4 L_L R_1 s^2 + C_4 L_L R_L s^2 + C_4 R_1 R_L s + C_L L_L R_1 R_L g_m s^2 + C_L L_L}$$

**10.278 INVALID-ORDER-278**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + 2C_4}$$

$$10.279 \quad \text{INVALID-ORDER-279} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{R_1 R_L (C_4 s - g_m) (C_L L_L s^2 + 1)}{C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_L s^3 + C_4 C_L R_1 R_L s^2 + 2C_4 R_1 R_L g_m s}$$

$$10.280 \quad \text{INVALID-ORDER-280} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{R_1 (C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_4 s^2 + C_4 C_L R_4 R_L s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + C_L R_1 s}$$

$$10.281 \quad \text{INVALID-ORDER-281} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{R_1 (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + 2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2C_4 R_1 R_4 g_m s + C_4 R_4 s + 2C_L L_L R_1 s}$$

$$10.282 \quad \text{INVALID-ORDER-282} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_L R_1 R_4 s^3 + 2C_4 L_L R_1 R_4 g_m s^2 + C_4 L_L R_4 s^2 + C_4 R_1 R_4 s + C_L L_L R_1 R_4 g_m s^2 + C_L L_L R_1 s^2 + C_L L_L R_4 s}$$

$$10.283 \quad \text{INVALID-ORDER-283} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{R_1 (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 C_L R_1 s}$$



$$10.284 \quad \text{INVALID-ORDER-284} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 R_4 s}{C_1 C_4 L_L R_1 R_4 R_L s^3 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_L R_1 R_4 s^2 + C_1 L_L R_1 R_L s^2 + C_1 R_1 R_4 R_L s + C_4 C_L L_L R_1 R_4 R_L s^3 + 2C_4 L_L R_1 R_4 R_L g_m s^2 + C_4 L_L R_1 R_4 s^2 + C_4 L_L R_4 R_L s^2 +$$

$$10.285 \quad \text{INVALID-ORDER-285} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + 2C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4$$

$$10.286 \quad \text{INVALID-ORDER-286} \quad Z(s) = \left( \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + 2C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_4 s^2 +$$

$$10.287 \quad \text{INVALID-ORDER-287} \quad Z(s) = \left( \infty, \infty, \infty, L_4 s + \frac{1}{C_4 s}, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

$$10.288 \quad \text{INVALID-ORDER-288} \quad Z(s) = \left( \infty, \infty, \infty, L_4 s + \frac{1}{C_4 s}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L R_1 R_4 R_L g_m s^2 + C_4 C_L R_1 R_L s^2 + C_4 C_L R_4 R_L s^2 + C_4 R_1 R_4 g_m s + 2C_4 R_1 R_L g_m s + C_4}$$

$$10.289 \quad \text{INVALID-ORDER-289} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L R_1 R_4 g_m s + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L R_4 s + C_L R_L s)}$$

$$10.290 \quad \text{INVALID-ORDER-290} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L R_4 s + C_L R_L s)}$$

$$10.291 \quad \text{INVALID-ORDER-291} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_1 s^3 + C_4 C_L L_L R_4 s^3 + 2C_4 L_L R_1 g_m s^2 + C_4 L_L s^2 + C_4 R_1 R_4 s + C_4 R_L s + C_4 R_4 s}$$

$$10.292 \quad \text{INVALID-ORDER-292} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + 2C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + 2C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s)}$$

$$10.293 \quad \text{INVALID-ORDER-293} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{R_1 (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_L s + C_4 C_L L_L R_1 R_4 R_L g_m s^3 + C_4 C_L L_L R_1 R_L s^3 + C_4 C_L R_1 R_4 R_L s^2 + C_4 C_L R_1 R_L s + C_4 C_L R_4 s + C_4 C_L R_L s}$$

$$10.294 \quad \text{INVALID-ORDER-294} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{R_1 (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_L R_1 R_4 g_m s^3 + 2C_4 C_L L_L R_1 R_L g_m s^3 + C_4 C_L R_1 R_4 s^2 + C_4 C_L R_1 R_L s + C_4 C_L R_4 s + C_4 C_L R_L s}$$

$$10.295 \quad \text{INVALID-ORDER-295} \quad Z(s) = \left( \infty, \infty, \infty, L_4 s + \frac{1}{C_4 s}, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_L R_1 R_4 g_m s^3 + 2 C_4 C_L R_1 R_4 g_m s^2 + C_4 C_L R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}{C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_L R_1 R_4 g_m s^3 + 2 C_4 C_L R_1 R_4 g_m s^2 + C_4 C_L R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

$$10.296 \quad \text{INVALID-ORDER-296} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 R_1 s + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2 C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

$$10.297 \quad \text{INVALID-ORDER-297} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_1 s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

$$10.298 \quad \text{INVALID-ORDER-298} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_L s^3 + C_4 C_L R_1 R_L s^2 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2 C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

$$10.299 \quad \text{INVALID-ORDER-299} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2 C_4 C_L R_1 R_L g_m s + C_4 C_L R_1 s + C_4 C_L R_L s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m + 1)}$$

**10.300 INVALID-ORDER-300**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 s + 2 C_4 R_1 g_m + C_4 + C_L R_1 g_m)}$$

**10.301 INVALID-ORDER-301**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 s^3 + C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + 2 C_4 L_L R_1 g_m s + C_4 R_1 g_m + C_4}$$

**10.302 INVALID-ORDER-302**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + 2 C_4 C_L R_1 R_L g_m s + C_4 R_1 g_m + C_4)}$$

**10.303 INVALID-ORDER-303**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 L_L R_1 R_L s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_L s + C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L R_L s^4 + C_4 C_L L_L R_1 R_L g_m s^2 + C_4 C_L L_L s^2 + 2 C_4 C_L R_1 R_L g_m s + C_4 R_1 g_m + C_4}$$

**10.304 INVALID-ORDER-304**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + 2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + 2 C_4 C_L R_1 R_L g_m s + C_4 R_1 g_m + C_4}$$

**10.305 INVALID-ORDER-305**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_L R_1 R_L s^2 + C_4 C_L R_1 R_L s + C_4 R_1}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_L R_1 R_L s^2 + C_4 C_L R_1 R_L s + C_4 R_1}$$

**10.306 INVALID-ORDER-306**  $Z(s) = \left( \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 R_1 R_L s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_L s + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + L_4 R_1 g_m s + L_4 s + 2R_1 R_L g_m + R_1 + R_L}$$

**10.307 INVALID-ORDER-307**  $Z(s) = \left( \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 R_1 s + C_4 C_L L_4 R_1 s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s^2 + C_L L_4 s^2 + C_L R_1 s + 2R_1 g_m + 1}$$

**10.308 INVALID-ORDER-308**  $Z(s) = \left( \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_L s + C_4 C_L L_4 R_1 R_L s^3 + 2C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 R_1 R_L g_m s^2 + C_L L_4 R_L s^2 + C_L R_1 R_L s + 2R_1 g_m + 1}$$

**10.309 INVALID-ORDER-309**  $Z(s) = \left( \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_L s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 R_L s^2 + C_L L_4 R_L s^2 + C_L R_1 R_L s + 2R_1 g_m + 1}$$

**10.310 INVALID-ORDER-310**  $Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + 2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 s^3 + 2C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 s}$$

**10.311 INVALID-ORDER-311**  $Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, \frac{L_Ls}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_L L_4 L_L R_1 s^4 + C_1 L_4 R_1 s^2 + C_1 L_L R_1 s^2 + C_4 C_L L_4 L_L R_1 s^4 + 2C_4 L_4 L_L R_1 g_m s^3 + C_4 L_4 L_L s^3 + C_4 L_4 R_1 s^2 + C_L L_4 L_L R_1 g_m s^3 + C_L L_4 L_L s^3 + C_L L_L R_1 s}$$

**10.312 INVALID-ORDER-312**  $Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{R_1 (C_4 L_4 s^2 - L_4 g_m s - 1)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + 2C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_L s^2 + C_4 L_4 R_1 s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_L s^2 + C_L R_1 s}$$

**10.313 INVALID-ORDER-313**  $Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{L_L R_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_4 L_L R_1 R_L s^4 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 L_4 L_L R_1 s^3 + C_1 L_4 R_1 R_L s^2 + C_1 L_L R_1 R_L s^2 + C_4 C_L L_4 L_L R_1 R_L s^4 + 2C_4 L_4 L_L R_1 R_L g_m s^3 + C_4 L_4 L_L R_1 s^3 + C_4 L_4 L_L R_L s^3 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_L s^2 + C_L R_1 s}$$

**10.314 INVALID-ORDER-314**  $Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, \frac{L_Ls}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{R_1 (C_4 L_4 s^2 - L_4 g_m s - 1)}{C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_4 R_1 s^2 + C_1 L_L R_1 s^2 + C_1 R_1 R_L s + 2C_4 C_L L_4 L_L R_1 R_L g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_L s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_L s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_L s^2 + C_L R_1 s}$$

$$\mathbf{10.315 \quad INVALID-ORDER-315} \quad Z(s) = \left( \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_Ls} \right)}{L_Ls + R_L + \frac{1}{C_Ls}} \right)$$

$$H(s) = - \frac{C_1C_4C_LL_4L_LR_1R_Ls^5 + C_1C_4L_4R_1R_Ls^3 + C_1C_LL_4L_LR_1s^4 + C_1C_LL_4R_1R_Ls^3 + C_1C_LL_LR_1R_Ls^3 + C_1L_4R_1s^2 + C_1R_1R_Ls + 2C_4C_LL_4L_LR_1R_Lg_ms^4 + C_4C_LL_4L_LR_1s^3}{C_1C_4C_LL_4L_LR_1R_Ls^5 + C_1C_4L_4R_1R_Ls^3 + C_1C_LL_4L_LR_1s^4 + C_1C_LL_4R_1R_Ls^3 + C_1C_LL_LR_1R_Ls^3 + C_1L_4R_1s^2 + C_1R_1R_Ls + 2C_4C_LL_4L_LR_1R_Lg_ms^4 + C_4C_LL_4L_LR_1s^3}$$

$$\mathbf{10.316 \quad INVALID-ORDER-316} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, R_L \right)$$

$$H(s) = \frac{R_1R_L (C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{C_1C_4L_4R_1s^3 + C_1C_4R_1R_4s^2 + C_1C_4R_1R_Ls^2 + C_1R_1s + C_4L_4R_1g_ms^2 + C_4L_4s^2 + C_4R_1R_4g_ms + 2C_4R_1R_Lg_ms + C_4R_1s + C_4R_4s + C_4R_Ls + R_1g_m + 1}$$

$$\mathbf{10.317 \quad INVALID-ORDER-317} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4R_1s^3 + C_1C_4C_LR_1R_4s^2 + C_1C_4R_1s + C_1C_LR_1s + C_4C_LL_4R_1g_ms^2 + C_4C_LL_4s^2 + C_4C_LR_1R_4g_ms + C_4C_LR_1s + C_4C_LR_4s + 2C_4R_1g_m + C_4 + C_LR_1g_m + C)}$$

$$\mathbf{10.318 \quad INVALID-ORDER-318} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, \frac{R_L}{C_LR_Ls + 1} \right)$$

$$H(s) = \frac{R_1R_L (C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{C_1C_4C_LL_4R_1R_Ls^4 + C_1C_4C_LR_1R_4R_Ls^3 + C_1C_4L_4R_1s^3 + C_1C_4R_1R_4s^2 + C_1C_4R_1R_Ls^2 + C_1C_LR_1R_Ls^2 + C_1R_1s + C_4C_LL_4R_1R_Lg_ms^3 + C_4C_LL_4R_Ls^3 + C_4C_LR_1R_4R_Ls^2 + C_4C_LR_1R_4s^2 + C_4C_LR_1R_Ls^2 + C_4C_LR_1s + C_4C_LR_4s + 2C_4R_1g_m + C_4 + C_LR_1g_m + C}$$

$$\mathbf{10.319 \quad INVALID-ORDER-319} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_LR_Ls + 1) (C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4R_1s^3 + C_1C_4C_LR_1R_4s^2 + C_1C_4C_LR_1R_Ls^2 + C_1C_4R_1s + C_1C_LR_1s + C_4C_LL_4R_1g_ms^2 + C_4C_LL_4s^2 + C_4C_LR_1R_4g_ms + 2C_4C_LR_1R_Lg_ms + C_4C_LR_1s + C_4C_LR_4s + 2C_4R_1g_m + C_4 + C_LR_1g_m + C)}$$

$$\mathbf{10.320 \quad INVALID-ORDER-320} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s)}$$

$$\mathbf{10.321 \quad INVALID-ORDER-321} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_1 s^3}$$

$$\mathbf{10.322 \quad INVALID-ORDER-322} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{R_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_L R_1 s + C_4 C_L L_4 R_1 g_m s^2 + C_4 C_L L_4 s^2 + 2 C_4 C_L L_L R_1 g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L R_1 R_4 g_m s + C_4 C_L R_1 s)}$$

$$\mathbf{10.323 \quad INVALID-ORDER-323} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_L R_1 s}$$

$$\mathbf{10.324 \quad INVALID-ORDER-324} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_L R_1 s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s^3 + C_1 R_1 s + C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_L R_1 R_4 g_m s^3 + C_4 C_L L_L R_1 s^3}$$



$$\mathbf{10.325 \quad INVALID-ORDER-325} \quad Z(s) = \left( \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 s}$$

$$\mathbf{10.326 \quad INVALID-ORDER-326} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 L_4 R_1 R_4 s^2 + C_1 L_4 R_1 R_L s^2 + C_1 R_1 R_4 R_L s + 2C_4 L_4 R_1 R_4 R_L g_m s^2 + C_4 L_4 R_1 R_4 s^2 + C_4 L_4 R_4 R_L s^2 + L_4 R_1 R_4 g_m s + 2L_4 R_1 R_L g_m s + L_4 R_1 s + L_4 R_4}$$

$$\mathbf{10.327 \quad INVALID-ORDER-327} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_4 R_1 R_4 s^3 + 2C_4 L_4 R_1 R_4 g_m s^2 + C_4 L_4 R_4 s^2 + C_L L_4 R_1 R_4 g_m s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_4 s^2 + C_L R_1 R_4 s}$$

$$\mathbf{10.328 \quad INVALID-ORDER-328} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_1 R_L (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 R_1 R_4 R_L s^3 + C_1 L_4 R_1 R_4 s^2 + C_1 L_4 R_1 R_L s^2 + C_1 R_1 R_4 R_L s + C_4 C_L L_4 R_1 R_4 R_L s^3 + 2C_4 L_4 R_1 R_4 R_L g_m s^2 + C_4 L_4 R_1 R_4 s^2 + C_4 L_4 R_4 R_L s^2 + C_L L_4 R_1 R_4 g_m s^2 + C_L L_4 R_1 s^2 + C_L L_4 R_4 s^2 + C_L R_1 R_4 s}$$

$$\mathbf{10.329 \quad INVALID-ORDER-329} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{R_1}{C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + 2C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^3}$$

**10.330 INVALID-ORDER-330**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + 2 C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_4 s^4)}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + 2 C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_4 s^4}$$

**10.331 INVALID-ORDER-331**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (-C_4 L_4 R_4 s^2 + L_4 R_4)}{C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 L_4 L_L R_1 s^3 + C_1 L_4 R_1 R_4 s^2 + C_1 L_L R_1 R_4 s^2 + C_4 C_L L_4 L_L R_1 R_4 s^4 + 2C_4 L_4 L_L R_1 R_4 q_m s^3 + C_4 L_4 L_L R_4 s^3 + C_4 L_4 R_1 R_4 s^2 + C_L}$$

**10.332 INVALID-ORDER-332**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_4 s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_4 R_1 R_4 R_L s^2}$$

**10.333 INVALID-ORDER-333**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + C_1 L_4 L_L R_1 R_4 s^3 + C_1 L_4 L_L R_1 R_L s^3 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_4 L_L R_1 R_4 R_L s^4 + 2C_4 L_4 L_L R_1 R_4 R_L g}{C_1 C_4 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + C_1 L_4 L_L R_1 R_4 s^3 + C_1 L_4 L_L R_1 R_L s^3 + C_1 L_4 R_1 R_4 R_L s^2 + C_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_4 L_L R_1 R_4 R_L s^4 + 2C_4 L_4 L_L R_1 R_4 R_L g}$$

**10.334 INVALID-ORDER-334**  $Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_4 L_L R_1 s^3 + C_1 L_4 R_1 R_4 s^2 +$$

$$\mathbf{10.335 \quad INVALID-ORDER-335} \quad Z(s) = \left( \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_4 R_1 R_4 R_L s^3 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_4 R_1 R_4 s^2 + C_1 L_4 R_1 R_L s^2 +$$

$$\mathbf{10.336 \quad INVALID-ORDER-336} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, R_L \right)$$

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_4 L_4 R_1 R_4 g_m s^2 + 2 C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + L_4 R_1 g_m s + L_4 s +$$

$$\mathbf{10.337 \quad INVALID-ORDER-337} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + 2 C_4 L_4 R_1 g_m s^2 + C_4 L_4 s^2 + C_L L_4 R_1 g_m s +$$

$$\mathbf{10.338 \quad INVALID-ORDER-338} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 L_4 R_1 s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^3 +$$

$$\mathbf{10.339 \quad INVALID-ORDER-339} \quad Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_4 g_m s^3 + 2 C_4 C_L L_4 R_1 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^3 +$$

**10.340 INVALID-ORDER-340**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_L L_L s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 R_4)}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + 2 C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L s^4 + C_4 C_L L_4 R_1 R_4}$$

10.341 INVALID-ORDER-341  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_4 R_1 s^2 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 R_4 s^3 + C_4 C_L L_4 L_L R_1 R_4 s^2 + C_4 C_L L_4 L_L R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_4 R_1 s^2 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 R_4 s^3 + C_4 C_L L_4 L_L R_1 R_4 s^2 + C_4 C_L L_4 L_L R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4}$$

**10.342 INVALID-ORDER-342**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2 C_4 C_L L_4 L_L R_1}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + 2 C_4 C_L L_4 L_L R_1}$$

**10.343 INVALID-ORDER-343**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_4 L_L R_1 s^3 + C_1 L_4 R_1 R_L s^2 + C_1 L_4 R_1 s}{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 s^4 + C_1 C_4 C_L L_4 L_L R_1 s^4 + C_1 C_4 C_L L_4 L_R R_1 R_L s^4 + C_1 C_4 C_L L_4 L_R R_1 s^3 + C_1 C_4 C_L L_4 L_R R_L s^3 + C_1 C_4 C_L L_4 L_R s^2 + C_1 C_4 C_L L_4 R_1 R_L s^2 + C_1 C_4 C_L L_4 R_1 s + C_1 C_4 C_L L_R R_1 R_L s^2 + C_1 C_4 C_L L_R R_1 s + C_1 C_4 C_L L_R s + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 C_L R_1 s + C_1 C_4 C_L s + C_1 C_4 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_4 s^3 + C_1 C_4 L_4 L_L R_1 R_L s^3 + C_1 C_4 L_4 L_L R_1 s^2 + C_1 C_4 L_4 L_L R_L s^2 + C_1 C_4 L_4 L_L s + C_1 C_4 L_4 L_R R_1 R_L s^3 + C_1 C_4 L_4 L_R R_1 s^2 + C_1 C_4 L_4 L_R R_L s^2 + C_1 C_4 L_4 L_R s + C_1 C_4 L_4 R_1 R_L s^2 + C_1 C_4 L_4 R_1 s + C_1 C_4 L_4 s + C_1 C_4 L_R R_1 R_L s^2 + C_1 C_4 L_R R_1 s + C_1 C_4 L_R s + C_1 C_4 R_1 R_L s^2 + C_1 C_4 R_1 s + C_1 C_4 s + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_4 L_L R_1 s^3 + C_1 C_L L_4 L_L R_L s^3 + C_1 C_L L_4 L_L s^2 + C_1 C_L L_4 L_R R_1 R_L s^3 + C_1 C_L L_4 L_R R_1 s^2 + C_1 C_L L_4 L_R R_L s^2 + C_1 C_L L_4 L_R s + C_1 C_L L_4 R_1 R_L s^2 + C_1 C_L L_4 R_1 s + C_1 C_L L_4 s + C_1 C_L L_R R_1 R_L s^2 + C_1 C_L L_R R_1 s + C_1 C_L L_R s + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 s + C_1 C_L s + C_1 L_4 L_L R_1 R_4 R_L s^3 + C_1 L_4 L_L R_1 R_4 s^2 + C_1 L_4 L_L R_1 R_L s^2 + C_1 L_4 L_L R_1 s + C_1 L_4 L_L R_L s + C_1 L_4 L_L s + C_1 L_4 L_R R_1 R_L s^2 + C_1 L_4 L_R R_1 s + C_1 L_4 L_R s + C_1 L_4 R_1 R_L s^2 + C_1 L_4 R_1 s + C_1 L_4 s + C_1 L_R R_1 R_L s^2 + C_1 L_R R_1 s + C_1 L_R s + C_1 R_1 R_L s^2 + C_1 R_1 s + C_1 s}$$

**10.344 INVALID-ORDER-344**  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_4 R_1 R_4 s^3 + C_1 L_4 R_1 R_L s^3 + C_1 L_4 R_1 s^3 + C_1 L_4 R_1 s^2 + C_1 L_4 R_1 s + C_1 L_4 R_1}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 L_4 R_1 R_4 s^3 + C_1 L_4 R_1 R_L s^3 + C_1 L_4 R_1 s^3 + C_1 L_4 R_1 s^2 + C_1 L_4 R_1 s + C_1 L_4 R_1}$$

10.345 INVALID-ORDER-345  $Z(s) = \left( \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3}$$

**10.346 INVALID-ORDER-346**  $Z(s) = (\infty, \infty, \infty, \infty, R_4, R_L)$

$$H(s) = \frac{R_1 R_L (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_4 L_4 R_1 R_4 g_m s^2 + 2 C_4 L_4 R_1 R_L g_m s^2 + C_4 L_4 R_1 s^2 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + 2 C_4 R_1 R_4 R_L s + R_1 R_4 g_m - 1}$$

**10.347 INVALID-ORDER-347**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{1}{C_{Ls}} \right)$

$$H(s) = \frac{R_1 (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_4 g_m s^3 + C_4 C_L L_4 R_1 s^3 + C_4 C_L L_4 R_4 s^3 + C_4 C_L R_1 R_4 s^2 + 2 C_4 L_4 R_1 g_m s^2 + C_4 L_4 R_1 g_m s + C_4 R_1 g_m - 1}$$

**10.348 INVALID-ORDER-348**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L R_1 R_4 R_L s^2 + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_L s^3 + C_4 C_L L_4 R_1 R_4 s^2 + C_4 C_L L_4 R_1 R_L s + C_4 C_L L_4 R_1 R_4}{C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^3 + C_1 C_4 C_L L_4 R_1 R_L s^3 + C_1 C_4 C_L L_4 R_1 s^2 + C_1 C_4 C_L L_4 R_4 s^2 + C_1 C_4 C_L L_4 s + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 R_L s^2 + C_1 C_4 C_L R_1 s + C_1 C_4 C_L R_4 s + C_1 C_4 C_L s + C_4 C_L L_4 R_1 R_4 R_L g_m s^3 + C_4 C_L L_4 R_1 R_4 s^2 + C_4 C_L L_4 R_1 R_L s^2 + C_4 C_L L_4 R_1 s + C_4 C_L L_4 R_4 s + C_4 C_L L_4 s + C_4 C_L R_1 R_4 R_L s^2 + C_4 C_L R_1 R_4 s + C_4 C_L R_1 R_L s + C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L s + C_4 R_1 R_4 R_L s + C_4 R_1 R_4 s + C_4 R_1 R_L s + C_4 R_1 s + C_4 R_4 s + C_4 s}$$

**10.349 INVALID-ORDER-349**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_4 g_m s^3 + 2 C_4 C_L}{C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 R_1 s + C_4 C_L L_4 R_1 R_4 g_m s^3 + 2 C_4 C_L}$$

**10.350 INVALID-ORDER-350**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + 2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L R_1 g_m^2 s^5}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 R_1 s + 2C_4 C_L L_4 L_L R_1 g_m s^4 + C_4 C_L L_4 L_L R_1 g_m^2 s^5}$$

**10.351 INVALID-ORDER-351**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_1 R_4 s^4}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_4 s^3 + C_1 L_L R_1 s^2 + C_1 R_1 R_4 s + C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + C_4 C_L L_4 L_L R_1 s^4 + C_4 C_L L_4 L_L R_1 R_4 s^4}$$

**10.352 INVALID-ORDER-352**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2}{C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2}$$

**10.353 INVALID-ORDER-353**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_1 R_L s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_4 L_L R_1 R_4 R_L s^3 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_L R_1 R_4 s^2 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 s}{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L s^2 + C_1 C_4 C_R R_1 R_4 R_L s^3 + C_1 C_4 C_R R_1 R_4 s^3 + C_1 C_4 C_R R_1 s^3 + C_1 C_4 C_R R_4 s^3 + C_1 C_4 C_R s^3 + C_1 C_4 C_R R_1 R_4 s^2 + C_1 C_4 C_R R_1 s^2 + C_1 C_4 C_R R_4 s^2 + C_1 C_4 C_R s^2 + C_1 C_4 C_R s}.$$

**10.354 INVALID-ORDER-354**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 R_1 R_4 R_L s^2 +$$

**10.355 INVALID-ORDER-355**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 s}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 s}$$

**10.356 INVALID-ORDER-356**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, R_L \right)$

$$H(s) = \frac{R_L(R_4 g_m - 1)(C_1 R_1 s + 1)}{C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + R_4 g_m + 2R_L g_m + 1}$$

**10.357 INVALID-ORDER-357**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_{4s}}, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + 2C_1 R_1 g_m s + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.358 INVALID-ORDER-358**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_{4s}}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (R_4 g_m - 1) (C_1 R_1 s + 1)}{C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + 2 C_1 L_L R_1 g_m s^2 + C_1 L_L s^2 + C_1 R_1 R_4 g_m s + C_1 R_1 s + C_1 R_4 s + C_L L_L R_4 g_m s^2 + C_L L_L s^2 + 2 L_L g_m s + R_4 g_m + 1}$$

**10.359 INVALID-ORDER-359**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s}, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_1 R_1 s + 1)(C_L L_L s^2 + C_L R_L s + 1)}{2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 R_4 g_m s^2 + 2C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + 2C_1 R_1 g_m s + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + 2C_L R_L g_m}$$

$$\mathbf{10.360 \quad INVALID-ORDER-360} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L R_L s (R_4 g_m - 1) (C_1 R_1 s + 1)}{C_1 C_L L_L R_1 R_4 R_L g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_L R_1 R_4 g_m s^2 + 2 C_1 L_L R_1 R_L g_m s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2 + C_1 R_1 R_4 R_L g_m s + C_1 R_1 R_L s}$$

$$\mathbf{10.361 \quad INVALID-ORDER-361} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 R_1 s + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_L R_1 R_4 g_m s^3 + 2 C_1 C_L L_L R_1 R_L g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + 2 C_1 L_L R_1 g_m s^2 + C_1 L_L s^2 + C_1 R_1 R_4 g_m s + 2 C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s}$$

$$\mathbf{10.362 \quad INVALID-ORDER-362} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s}, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 R_1 s + 1) (C_L L_L s^2 + L_L s + R_L)}{C_1 C_L L_L R_1 R_4 g_m s^3 + 2 C_1 C_L L_L R_1 R_L g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L R_1 R_4 R_L g_m s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2 C_1 R_1 R_L s}$$

$$\mathbf{10.363 \quad INVALID-ORDER-363} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m) (C_1 R_1 s + 1)}{s (C_1 C_4 C_L R_1 s^2 + 2 C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L s + 2 C_4 g_m + C_L g_m)}$$

$$\mathbf{10.364 \quad INVALID-ORDER-364} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 R_1 s + 1)}{C_1 C_4 C_L R_1 R_L s^3 + 2 C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_L s^2 + C_1 R_1 g_m s + C_1 s + C_4 C_L R_L s^2 + 2 C_4 R_L g_m s + C_4 s + C_L R_L g_m s + g_m}$$



$$\mathbf{10.365 \quad INVALID-ORDER-365} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 R_1 s + 1)(C_L R_L s + 1)}{s(2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + 2C_4 C_L R_L g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$\mathbf{10.366 \quad INVALID-ORDER-366} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{s(2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$\mathbf{10.367 \quad INVALID-ORDER-367} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = -\frac{L_L s (C_4 s - g_m)(C_1 R_1 s + 1)}{C_1 C_4 C_L L_L R_1 s^4 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_1 s^2 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 R_1 g_m s + C_1 s + C_4 C_L L_L s^3 + 2C_4 L_L g_m s^2 + C_4 s + C_L L_L g_m s^2 + g_m}$$

$$\mathbf{10.368 \quad INVALID-ORDER-368} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 R_1 s + 1)(C_L L_L s^2 + C_L R_L s + 1)}{s(2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + 2C_4 R_L g_m s + C_4 s)}$$

$$\mathbf{10.369 \quad INVALID-ORDER-369} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = -\frac{L_L R_L s (C_4 s - g_m)(C_1 R_1 s + 1)}{C_1 C_4 C_L L_L R_1 R_L s^4 + 2C_1 C_4 L_L R_1 R_L g_m s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_L R_1 R_L g_m s^3 + C_1 C_L L_L R_L s^3 + C_1 L_L R_1 g_m s^2 + C_1 L_L s^2 + C_1 R_1 R_L s}$$

$$\mathbf{10.370 \quad INVALID-ORDER-370} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 R_1 s + 1)(C_L L_L R_L s^2 + L_L s + R_L)}{2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L R_L g_m s^2 + C_1 R_1 R_L s}$$

**10.371 INVALID-ORDER-371**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4}{C_4 R_4 s + 1}, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 R_1 s + 1) (C_L s + 1)}{2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L}$$

**10.372 INVALID-ORDER-372**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1)(C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + 2C_1 R_1 g_m s + C_1 s + C_4 C_L R_4 s^2 + 2C_4 R_4 g_m s + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.373 INVALID-ORDER-373**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{R_L(C_1 R_1 s + 1)(C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L R_1 R_4 R_L g_m s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 R_4}$$

**10.374 INVALID-ORDER-374**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1)(C_L R_L s + 1)(C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L R_1 R_4 g_m s^2 + 2C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C}$$

**10.375 INVALID-ORDER-375**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_{4s}}, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1)(C_L L_L s^2 + 1)(C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s + 1}$$

**10.376 INVALID-ORDER-376**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4s}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s (C_1 R_1 s + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + 2C_1 L_L R_1 g_m s^2 + C_1 L_L s^2 + C_1 R_1 R_4}$$

**10.377 INVALID-ORDER-377**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L}{2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L}$$

**10.378 INVALID-ORDER-378**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + 2C_1 C_4 L_L R_1 R_4 R_L g_m s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_4 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 R_L g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}{C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + 2C_1 C_4 L_L R_1 R_4 R_L g_m s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_4 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 R_L g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}$$

**10.379 INVALID-ORDER-379**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 L_L R_4 s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}{2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 L_L R_4 s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}$$

**10.380 INVALID-ORDER-380**  $Z(s) = \left( \infty, \infty, \infty, \infty, R_4 + \frac{1}{C_4 s}, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}{2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3}$$

**10.381 INVALID-ORDER-381**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + \frac{1}{C_4 s}, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1)(C_4 R_4 g_m s - C_4 s + g_m)}{s(C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L R_4 g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$10.382 \quad \text{INVALID-ORDER-382} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2}$$

$$10.383 \quad \text{INVALID-ORDER-383} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L R_4 g_m s + 2C_4 C_L R_1 s + C_4 C_L R_4 s + C_4 C_L R_L s + C_4 C_L s)}$$

$$10.384 \quad \text{INVALID-ORDER-384} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + C_4 C_L L_L s^2 + C_4 C_L s^2)}$$

$$10.385 \quad \text{INVALID-ORDER-385} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L s (C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2}$$

$$10.386 \quad \text{INVALID-ORDER-386} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_L L_L s^2 + C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2)}$$

$$10.387 \quad \text{INVALID-ORDER-387} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_L R_1 R_4 g_m s^3 + 2C_1 C_4 L_L R_1 R_L g_m s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2}$$

$$10.388 \quad \text{INVALID-ORDER-388} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \frac{L_Ls}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s + C_1 C_4 R_1 s + C_4 L_4 g_m s^2 + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.389 \quad \text{INVALID-ORDER-389} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 C_L R_1 s + C_4 L_4 g_m s^2 + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.390 \quad \text{INVALID-ORDER-390} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4s}{C_4 L_4 s^2 + 1}, R_L \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.391 \quad \text{INVALID-ORDER-391} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4s}{C_4 L_4 s^2 + 1}, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$10.392 \quad \text{INVALID-ORDER-392} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4s}{C_4 L_4 s^2 + 1}, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_L s + C_4 L_4 g_m s^2 + 2C_4 R_L g_m s + C_4 s + g_m}$$

**10.393 INVALID-ORDER-393**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1)(C_L R_L s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2C_4 C_L R_1 g_m s + C_4 C_L s)}$$

**10.394 INVALID-ORDER-394**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1)(C_L L_L s^2 + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2C_4 C_L R_1 g_m s + C_4 C_L s)}$$

**10.395 INVALID-ORDER-395**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (C_1 R_1 s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_1 s^2 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3}$$

**10.396 INVALID-ORDER-396**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1)(C_L L_L s^2 + C_L R_L s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L R_L s + C_1 C_L s)}$$

**10.397 INVALID-ORDER-397**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1)(C_L L_L s^2 + C_L R_L s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_L s^3 + 2C_1 C_4 L_L R_1 R_L g_m s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_L R_1 R_L g_m s + C_1 C_L R_L s + C_1 C_L s}$$

**10.398 INVALID-ORDER-398**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2 C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2 C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + 2 C_1 C_4 L_L R_L g_m s^2 + C_1 C_4 L_L s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

**10.399 INVALID-ORDER-399**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1}, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2 C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + 2 C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + 2 C_1 C_4 L_L R_L g_m s^2 + C_1 C_4 L_L s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

**10.400 INVALID-ORDER-400**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, R_L \right)$

$$H(s) = -\frac{R_L (C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_4 R_1 g_m s^2 + C_1 L_4 s^2 + 2 C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

**10.401 INVALID-ORDER-401**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 R_1 s^4 + 2 C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 R_1 g_m s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_1 s^2 + 2 C_1 R_1 g_m s + C_1 s + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 g_m s^2 + C_L s + 2 g_m}$$

**10.402 INVALID-ORDER-402**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{R_L (C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_4 R_1 R_L s^4 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 R_1 R_L g_m s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L R_1 R_L s^2 + C_1 L_4 R_1 g_m s^2 + C_1 L_4 s^2 + 2 C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

**10.403 INVALID-ORDER-403**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, R_L + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{(C_1R_1s+1)(C_LR_Ls+1)(C_4L_4s^2-L_4g_ms+1)}{2C_1C_4C_LL_4R_1R_Lg_ms^4+C_1C_4C_LL_4R_1s^4+C_1C_4C_LL_4R_Ls^4+2C_1C_4L_4R_1g_ms^3+C_1C_4L_4s^3+C_1C_LL_4R_1g_ms^3+C_1C_LL_4s^3+2C_1C_LR_1R_Lg_ms^2+C_1C_LR_1s^2+C_1C_L}$$

**10.404 INVALID-ORDER-404**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{(C_1R_1s+1)(C_LL_Ls^2+1)(C_4L_4s^2-L_4g_ms+1)}{2C_1C_4C_LL_4L_LR_1g_ms^5+C_1C_4C_LL_4L_Ls^5+C_1C_4C_LL_4R_1s^4+2C_1C_4L_4R_1g_ms^3+C_1C_4L_4s^3+C_1C_LL_4R_1g_ms^3+C_1C_LL_4s^3+2C_1C_LL_LR_1g_ms^3+C_1C_LL_Ls^3+C_1C_L}$$

**10.405 INVALID-ORDER-405**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = -\frac{L_Ls(C_1R_1s+1)(C_4L_4s^2-L_4g_ms+1)}{C_1C_4C_LL_4L_LR_1s^5+2C_1C_4L_4L_LR_1g_ms^4+C_1C_4L_4L_Ls^4+C_1C_4L_4R_1s^3+C_1C_LL_4L_LR_1g_ms^4+C_1C_LL_4L_Ls^4+C_1C_LL_LR_1s^3+C_1L_4R_1g_ms^2+C_1L_4s^2+2C_1L_LR_1g_m}$$

**10.406 INVALID-ORDER-406**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{L_Ls(C_1R_1s+1)(C_4L_4s^2-L_4g_ms+1)}{2C_1C_4C_LL_4L_LR_1g_ms^5+C_1C_4C_LL_4L_Ls^5+2C_1C_4C_LL_4R_1R_Lg_ms^4+C_1C_4C_LL_4R_1s^4+C_1C_4C_LL_4R_Ls^4+2C_1C_4L_4R_1g_ms^3+C_1C_4L_4s^3+C_1C_LL_4R_1g_ms^3+C_1C_LL_L}$$

**10.407 INVALID-ORDER-407**  $Z(s) = \left( \infty, \infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = -\frac{L_Ls(C_1R_1s+1)(C_4L_4s^2-L_4g_ms+1)}{C_1C_4C_LL_4L_LR_1R_Ls^5+2C_1C_4L_4L_LR_1R_Lg_ms^4+C_1C_4L_4L_LR_1s^4+C_1C_4L_4L_LR_Ls^4+C_1C_4L_4R_1R_Ls^3+C_1C_LL_4L_LR_1R_Lg_ms^4+C_1C_LL_4L_LR_Ls^4+C_1C_LL_LR_1R_Ls^3}$$



$$10.408 \quad \text{INVALID-ORDER-408} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_4 R_L g_m s^2 + C_1 C_4 L_4 R_L s^2 + C_1 C_4 L_4 R_L g_m s + C_1 C_4 L_4 R_L}{2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_4 R_L g_m s^2 + C_1 C_4 L_4 R_L s^2 + C_1 C_4 L_4 R_L g_m s + C_1 C_4 L_4 R_L}$$

$$10.409 \quad \text{INVALID-ORDER-409} \quad Z(s) = \left( \infty, \infty, \infty, \infty, L_4 s + R_4 + \frac{1}{C_4 s}, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 L_L R_1 g_m s^4 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_4 R_1 R_L g_m s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L L_4 R_L g_m s^2 + C_1 C_L L_4 R_L s^2 + C_1 C_L L_4 R_L g_m s + C_1 C_L L_4 R_L}{2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 L_L R_1 g_m s^4 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_4 R_1 R_L g_m s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_4 R_L s^3 + C_1 C_L L_4 R_L g_m s^2 + C_1 C_L L_4 R_L s^2 + C_1 C_L L_4 R_L g_m s + C_1 C_L L_4 R_L}$$

$$10.410 \quad \text{INVALID-ORDER-410} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, R_L \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.411 \quad \text{INVALID-ORDER-411} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L R_4 g_m s + C_4 C_L R_L g_m s + C_4 C_L s + g_m)}$$

$$10.412 \quad \text{INVALID-ORDER-412} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.413 \quad \text{INVALID-ORDER-413} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_1R_1s + 1)(C_LR_Ls + 1)(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4R_1g_ms^3 + C_1C_4C_LL_4s^3 + C_1C_4C_LR_1R_4g_ms^2 + 2C_1C_4C_LR_1R_Lg_ms^2 + C_1C_4C_LR_1s^2 + C_1C_4C_LR_4s^2 + C_1C_4C_LR_Ls^2 + 2C_1C_4R_1g_ms + C_1C_4s + C_1C_LR_1g_m)}$$

$$10.414 \quad \text{INVALID-ORDER-414} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_1R_1s + 1)(C_LL_Ls^2 + 1)(C_4L_4g_ms^2 + C_4R_4g_ms - C_4s + g_m)}{s(C_1C_4C_LL_4R_1g_ms^3 + C_1C_4C_LL_4s^3 + 2C_1C_4C_LL_LR_1g_ms^3 + C_1C_4C_LL_Ls^3 + C_1C_4C_LR_1R_4g_ms^2 + C_1C_4C_LR_1s^2 + C_1C_4C_LR_4s^2 + 2C_1C_4R_1g_ms + C_1C_4s + C_1C_LR_1g_m)}$$

$$10.415 \quad \text{INVALID-ORDER-415} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \frac{L_Ls}{C_LL_Ls^2 + 1} \right)$$

$$H(s) = \frac{L_Ls}{C_1C_4C_LL_4L_LR_1g_ms^5 + C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_LR_1R_4g_ms^4 + C_1C_4C_LL_LR_1s^4 + C_1C_4C_LL_LR_4s^4 + C_1C_4L_4R_1g_ms^3 + C_1C_4L_4s^3 + 2C_1C_4L_LR_1g_ms^3 + C_1C_4L_Ls^3 +}$$

$$10.416 \quad \text{INVALID-ORDER-416} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = \frac{(C_1R_1s + 1)(C_LL_Ls^2 + C_LR_Ls + 1)(C_4L_4g_ms^2 - C_4R_4g_ms + C_4s - g_m)}{s(C_1C_4C_LL_4R_1g_ms^3 + C_1C_4C_LL_4s^3 + 2C_1C_4C_LL_LR_1g_ms^3 + C_1C_4C_LL_Ls^3 + C_1C_4C_LR_1R_4g_ms^2 + 2C_1C_4C_LR_1R_Lg_ms^2 + C_1C_4C_LR_1s^2 + C_1C_4C_LR_4s^2 + C_1C_4C_LR_Ls^2 + 2C_1C_4R_1g_ms + C_1C_4s + C_1C_LR_1g_m)}$$

$$10.417 \quad \text{INVALID-ORDER-417} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4s + \frac{1}{R_4} + \frac{1}{L_4s}}, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$$

$$H(s) = \frac{1}{C_1C_4C_LL_4L_LR_1R_Lg_ms^5 + C_1C_4C_LL_4L_LR_Ls^5 + C_1C_4C_LL_LR_1R_4R_Lg_ms^4 + C_1C_4C_LL_LR_1R_Ls^4 + C_1C_4C_LL_LR_4R_Ls^4 + C_1C_4L_4L_LR_1g_ms^4 + C_1C_4L_4L_Ls^4 + C_1C_4L_4R_1g_ms^3 + C_1C_4L_4s^3 + 2C_1C_4L_LR_1g_ms^3 + C_1C_4L_Ls^3 +}$$

10.418 INVALID-ORDER-418  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_4 R_1 g_m s^3 +$$

10.419 INVALID-ORDER-419  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{1}{C_4 s + \frac{1}{R_4} + \frac{1}{L_4 s}}, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R$$

**10.420 INVALID-ORDER-420**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, R_L \right)$

$$H(s) = -\frac{R_L (C_1 R_1 s + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_1 C_4 L_4 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 L_4 R_1 R_4 g_m s^2 + 2C_1 L_4 R_1 R_L g_m s^2 + C_1 L_4 R_1 s^2 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L s^2 + 2C_1 R_1 R_4 R_L g_m s + C_1 R_1 R_4}$$

**10.421 INVALID-ORDER-421**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1)(C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 R_1 R_4 g_m s^3 + C_1 C_L L_4 R_1 s^3 + C_1 C_L L_4 R_4 s^3 + C_1 C_L R_1 R_4 s^2 + 2C_1 L_4 R_1 g_m s^2 + C_1 L_4 s^2 + 2C_1 R_1 R_4 g_m s + R_1 s + R_4}$$

**10.422 INVALID-ORDER-422**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{1}{C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + 2C_1 C_4 L_4 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_4 R_1 R_4 R_L g_m s^3 + C_1 C_L L_4 R_1 R_L s^3 + C_1 C_L L_4 R_4 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2}$$

**10.423 INVALID-ORDER-423**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 R_1 R_4 g_m s^3 + 2C_1 C_L L_4 R_1 R_L g_m s^3 + C_1 C_L L_4 R_1 s^3}{2C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 R_1 R_4 g_m s^3 + 2C_1 C_L L_4 R_1 R_L g_m s^3 + C_1 C_L L_4 R_1 s^3}$$

**10.424 INVALID-ORDER-424**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_4 L_L R_1 g_m s^4 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_1 R_4 g_m s^3}{2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_4 L_L R_1 g_m s^4 + C_1 C_L L_4 L_L s^4 + C_1 C_L L_4 R_1 R_4 g_m s^3}$$

**10.425 INVALID-ORDER-425**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 R_4 g_m s^4 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 L_L R_4 s^4 + C_1 C_L L_L R_1 R_4 s^3}{C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_4 L_L R_1 R_4 g_m s^4 + C_1 C_L L_4 L_L R_1 s^4 + C_1 C_L L_4 L_L R_4 s^4 + C_1 C_L L_L R_1 R_4 s^3}$$

**10.426 INVALID-ORDER-426**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_4 L_L R_1 R_4 g_m s^4 + C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_4 R_L s^4 + 2C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_4 L_L R_1 R_L s^4}{2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_4 L_L R_1 R_4 g_m s^4 + C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_4 R_L s^4 + 2C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_4 L_L R_1 R_L s^4}$$

**10.427 INVALID-ORDER-427**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + 2C_1 C_4 L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + 2C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_L s^4}{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + 2C_1 C_4 L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_L L_4 L_L R_1 R_L s^4 + C_1 C_L L_4 L_L R_1 R_4 R_L s^4 + 2C_1 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_L L_4 L_L R_1 R_L s^4}$$

**10.428 INVALID-ORDER-428**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_L L_4L_L R_1R_4R_L g_m s^5 + C_1C_4C_L L_4L_L R_1R_4 s^5 + C_1C_4C_L L_4L_L R_4R_L s^5 + 2C_1C_4L_4L_L R_1R_4g_m s^4 + C_1C_4L_4L_L R_4 s^4 + 2C_1C_4L_4R_1R_4R_L g_m s^3 + C_1C_4L_4R_1R_4 s^3 +$$

$$\text{10.429} \quad \text{INVALID-ORDER-429} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{L_4 s}{C_4 L_4 s^2 + 1} + R_4, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{2C_1C_4C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1C_4C_L L_4 L_L R_1 R_4 s^5 + C_1C_4C_L L_4 L_L R_4 R_L s^5 + C_1C_4C_L L_4 R_1 R_4 R_L s^4 + 2C_1C_4L_4R_1R_4R_L g_m s^3 + C_1C_4L_4R_1R_4 s^3 + C_1C_4L_4R_4R_L s^3 +$$

10.430 INVALID-ORDER-430  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, R_L \right)$

$$H(s) = \frac{R_L (C_1 R_1 s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_4 R_1 g_m s^2 + C_1 L_4 s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + C_1 R_4 s + C_1}$$

10.431 INVALID-ORDER-431  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 R_1 s + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2 C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 R_1 g_m s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2}$$

**10.432 INVALID-ORDER-432**  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 R_1 R_4 R_L g_m s^2 + C_1 C_L L_4 R_1 R_L s^2 + C_1 C_L L_4 R_4 R_L s^2 + C_1 C_L L_4 R_1 s^2 + C_1 C_L L_4 R_4 s^2 + C_1 C_L L_4 R_L s^2 + C_1 C_L L_4 s^2 + C_1 C_L R_1 R_4 R_L g_m s + C_1 C_L R_1 R_L s + C_1 C_L R_4 R_L s + C_1 C_L R_1 s + C_1 C_L R_4 s + C_1 C_L R_L s + C_1 C_L s + C_1 R_1 R_4 R_L g_m + C_1 R_1 R_L + C_1 R_4 R_L + C_1 R_1 + C_1 R_4 + C_1 R_L + C_1}{C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_4 R_1 R_4 R_L g_m s^2 + C_1 C_L L_4 R_1 R_L s^2 + C_1 C_L L_4 R_4 R_L s^2 + C_1 C_L L_4 R_1 s^2 + C_1 C_L L_4 R_4 s^2 + C_1 C_L L_4 R_L s^2 + C_1 C_L L_4 s^2 + C_1 C_L R_1 R_4 R_L g_m s + C_1 C_L R_1 R_L s + C_1 C_L R_4 R_L s + C_1 C_L R_1 s + C_1 C_L R_4 s + C_1 C_L R_L s + C_1 C_L s + C_1 R_1 R_4 R_L g_m + C_1 R_1 R_L + C_1 R_4 R_L + C_1 R_1 + C_1 R_4 + C_1 R_L + C_1}$$

$$10.433 \quad \text{INVALID-ORDER-433} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1)}{C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 R_1 g_m s^3 + C_1 C_L L_4 s^3 +}$$

$$10.434 \quad \text{INVALID-ORDER-434} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1)}{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_4 R_1 g_m s^3 + C_1 C_L L_4 s^3 +}$$

$$10.435 \quad \text{INVALID-ORDER-435} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1)}{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_4 s^3 +}$$

$$10.436 \quad \text{INVALID-ORDER-436} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1)}{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 +}$$

$$10.437 \quad \text{INVALID-ORDER-437} \quad Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{(C_1 R_1 s + 1)}{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + 2C_1 C_4 L_4 L_L R_1 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_L L_4 s^4 +}$$

10.438 INVALID-ORDER-438  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2 C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 g_m s^4 + C_1 C_4 L_4 R_1 s^4 + C_1 C_4 L_4 R_1 s^4}{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2 C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 g_m s^4 + C_1 C_4 L_4 R_1 s^4 + C_1 C_4 L_4 R_1 s^4}$$

10.439 INVALID-ORDER-439  $Z(s) = \left( \infty, \infty, \infty, \infty, \frac{R_4 \left( L_4 s + \frac{1}{C_4 s} \right)}{L_4 s + R_4 + \frac{1}{C_4 s}}, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 +$$

10.440 INVALID-ORDER-440  $Z(s) = (R_1, R_2, \infty, \infty, \infty, R_L)$

$$H(s) = -\frac{R_L (C_1 R_1 s + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s - C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + 2 C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2 C_1 R_1 R_4 s)}{C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + 2 C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 R_1 R_4 g_m s + 2 C_1 R_1 R_4 s}$$

**10.441 INVALID-ORDER-441**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 R_1 s + 1)(-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4)}{C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L R_1 R_4 g_m s^2 + C_1}$$

**10.442 INVALID-ORDER-442**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 +$$

**10.443 INVALID-ORDER-443**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3}{C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3}$$

**10.444 INVALID-ORDER-444**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3}{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3}$$

**10.445 INVALID-ORDER-445**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3}{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3}$$

**10.446 INVALID-ORDER-446**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3}{2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3}$$

**10.447 INVALID-ORDER-447**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + 2C_1 C_4 L_4 L_L R_1 R_L g_m s^4 + C_1 C_4 L_4 L_L R_4 g_m s^4 + C_1 C_4 L_4 L_L R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 s^3 + C_1 C_4 L_4 L_L R_4 s^3 + C_1 C_4 L_4 L_L R_L s^3}{C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + 2C_1 C_4 L_4 L_L R_1 R_L g_m s^4 + C_1 C_4 L_4 L_L R_4 g_m s^4 + C_1 C_4 L_4 L_L R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 s^3 + C_1 C_4 L_4 L_L R_4 s^3 + C_1 C_4 L_4 L_L R_L s^3}$$



**10.448 INVALID-ORDER-448**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4}{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4}$$

**10.449 INVALID-ORDER-449**  $Z(s) = \left( R_1, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4}{C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4}$$

**10.450 INVALID-ORDER-450**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_4 s^2 + 2C_1 L_1 g_m s^2 + C_1 s + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.451 INVALID-ORDER-451**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_4 s + C_1 R_L s + C_L R_4 R_L g_m s + C_L R_L s + R_4 g_m + 2R_L g_m + 1}$$

**10.452 INVALID-ORDER-452**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + 2C_1 L_1 g_m s^2 + C_1 s + C_L R_4 g_m s + 2C_L R_L g_m s + C_L s + 2g_m}$$

**10.453 INVALID-ORDER-453**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + 2C_1 L_1 g_m s^2 + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + C_L s + 2g_m}$$

**10.454 INVALID-ORDER-454**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 L_L R_4 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_4 s^3 + 2C_1 L_1 L_L g_m s^3 + C_1 L_1 R_4 g_m s^2 + C_1 L_1 s^2 + C_1 L_L s^2 + C_1 R_4 s + C_L L_L R_4 g_m s^2 + C_L L_L s^2 + 2L_L g_m s + R_4 g_m + 1}$$

**10.455 INVALID-ORDER-455**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1)}{2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + 2C_1 L_1 g_m s^2 + C_1 s + 2C_L L_L g_m s^2 + C_L R_4 g_m s + 2C_L R_L g_m s + 1}$$

**10.456 INVALID-ORDER-456**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_L R_L s (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_1 L_L R_4 g_m s^3 + 2C_1 L_1 L_L R_L g_m s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 R_L g_m s^2 + C_1 L_1 R_L s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2 + 1}$$

**10.457 INVALID-ORDER-457**  $Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_1 L_L R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + 2C_1 L_1 L_L g_m s^3 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_L s^2 + C_1 R_L s^2 + 1}$$

$$10.458 \quad \text{INVALID-ORDER-458} \quad Z(s) = \left( R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_4 s^2 + 2C_1 L_1 R_L g_m s^2 + 2C_1 L_1 R_L s^2 + C_1 L_1 s^2 + C_1 s + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.459 \quad \text{INVALID-ORDER-459} \quad Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.460 \quad \text{INVALID-ORDER-460} \quad Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m) (C_1 L_1 s^2 + 1)}{s (C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$10.461 \quad \text{INVALID-ORDER-461} \quad Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 R_L s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_1 R_L g_m s^3 + C_1 C_L R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + C_4 C_L R_L s^2 + 2C_4 R_L g_m s + C_4 s + C_L R_L g_m s + g_m}$$

$$10.462 \quad \text{INVALID-ORDER-462} \quad Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_4 s - g_m) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{s (2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + 2C_4 C_L R_L g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

**10.463 INVALID-ORDER-463**  $Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_L s^3 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

**10.464 INVALID-ORDER-464**  $Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s(C_4 s - g_m)(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_L s^5 + 2C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 s^3 + C_1 C_4 L_L s^3 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L s^3 + C_1 L_1 g_m s^2 + C_1 s + C_4 C_L L_L s^3 + 2C_4 L_L g_m s^2 + C_4 s + C_L L_L g_m s^2 + g_m}$$

**10.465 INVALID-ORDER-465**  $Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 L_1 s^2 + 1)(C_L L_L s^2 + C_L R_L s + 1)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + 2C_4 R_L g_m s + C_L g_m)}$$

**10.466 INVALID-ORDER-466**  $Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{L_L R_L s(C_4 s - g_m)(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_L R_L s^5 + 2C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_L R_L s^3 + C_1 L_1 L_L g_m s^3 + C_1 L_1 R_L g_m s^2 + C_1 L_1 s + C_L g_m}$$

**10.467 INVALID-ORDER-467**  $Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 L_1 s^2 + 1)(C_L L_L R_L s^2 + L_L s + R_L)}{2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_1 L_L g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L R_L s^3 + C_1 L_1 L_L g_m s^3 + C_1 L_1 R_L g_m s^2 + C_1 L_1 s + C_L g_m}$$

$$10.468 \quad \text{INVALID-ORDER-468} \quad Z(s) = \left( R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{R_L (C_4 s - g_m) (C_1 L_1 s^2 + 1) (C_L}{2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_L R_L s^4 + 2 C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_L g_m s^3 +$$

$$10.469 \quad \text{INVALID-ORDER-469} \quad Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = - \frac{R_L (C_1 L_1 s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2 C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_4 s + C_1 R_L s + 2 C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2 R_L g_m + 1}$$

$$10.470 \quad \text{INVALID-ORDER-470} \quad Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{(C_1 L_1 s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 R_4 s^4 + 2 C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_4 s^2 + 2 C_1 L_1 g_m s^2 + C_1 s + C_4 C_L R_4 s^2 + 2 C_4 R_4 g_m s + C_L R_4 g_m s + C_L s + 2 g_m}$$

$$10.471 \quad \text{INVALID-ORDER-471} \quad Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = - \frac{R_L (C_1 L_1 s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 R_4 R_L s^4 + 2 C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_4 s + C_1 R_L s + 2 C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2 R_L g_m + 1}$$

$$10.472 \quad \text{INVALID-ORDER-472} \quad Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{(C_1 L_1 s^2 + 1) (C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{2 C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L R_4 R_L s^3 + 2 C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_1 R_4 g_m s^3 + 2 C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 R_4 s + C_1 R_L s + 2 C_4 R_4 R_L g_m s + C_4 R_4 s + R_4 g_m + 2 R_L g_m + 1}$$

**10.473 INVALID-ORDER-473**  $Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L}$$

**10.474 INVALID-ORDER-474**  $Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s (C_1 L_1 s^2 + 1)(C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 L_L R_4 s^5 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_L L_1 L_L R_4 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_4 s^3 + 2C_1 L_1 L_L g_m s^3 + C_1 L_1 R_4 g_m s^2 + C_1 L_1}$$

**10.475 INVALID-ORDER-475**  $Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 R_4 s^2 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}$$

**10.476 INVALID-ORDER-476**  $Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + 2C_1 C_4 L_1 L_L R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_L R_4 R_L s^3 + C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + 2C_1 C_4 L_1 L_L R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_L R_4 R_L s^3 + C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}$$

**10.477 INVALID-ORDER-477**  $Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_4 R_L s^3 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_L s^3 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_4 R_L s + C_1 C_L R_4 R_L}$$

$$10.478 \quad \text{INVALID-ORDER-478} \quad Z(s) = \left( R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 L_L R_4 g_m s^4}{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 L_L R_4 g_m s^4}$$

$$10.479 \quad \text{INVALID-ORDER-479} \quad Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s + g_m}$$

$$10.480 \quad \text{INVALID-ORDER-480} \quad Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L R_4 g_m s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

$$10.481 \quad \text{INVALID-ORDER-481} \quad Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_1 R_L g_m s^3 + C_1 C_L R_L s^3}$$

$$10.482 \quad \text{INVALID-ORDER-482} \quad Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L R_4 g_m s + 2C_4 C_L s)}$$

**10.483 INVALID-ORDER-483**  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 R_4 g_m s - C_4 s + g_m)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + 2C_4 C_L L_L g_m s^2 + C_4 C_L s + 2C_4 C_L L_L s + 2C_4 C_L L_L g_m s + C_4 C_L g_m)}$$

**10.484 INVALID-ORDER-484**  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_4 s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L s^3}$$

**10.485 INVALID-ORDER-485**  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + C_L R_L s + 1)(C_4 R_4 g_m s - C_4 s + g_m)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m)}$$

10.486 INVALID-ORDER-486  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 g_m s^4 + 2 C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_L s^3 +$$

**10.487 INVALID-ORDER-487**  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(C_1 L_1 s^6 + C_2 L_1 s^5 + C_3 L_1 s^4 + C_4 L_1 s^3 + C_5 L_1 s^2 + C_6 L_1 s + C_7)}{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_1 s^2 + C_1 C_4 L_1 s + C_1 C_4}.$$



10.488 INVALID-ORDER-488  $Z(s) = \left( R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 +$$

**10.489 INVALID-ORDER-489**  $Z(s) = \left( R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + C_4 L_4 g_m s^2 + 2 C_4 R_L g_m s + C_4 s + g_m}$$

**10.490 INVALID-ORDER-490**  $Z(s) = \left( R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

**10.491 INVALID-ORDER-491**  $Z(s) = \left( R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_L s^2 + C_1 C_L L_1 R_L g_m s^3 + C_1 C_L R_L s^2}$$

**10.492 INVALID-ORDER-492**  $Z(s) = \left( R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)(C_L R_L s + 1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2C_4 C_L}$$

$$10.493 \quad \text{INVALID-ORDER-493} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + 2 C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L L_4 g_m s^2 + 2 C_4 C_L s)}$$

$$10.494 \quad \text{INVALID-ORDER-494} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L s (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L s^3}$$

$$10.495 \quad \text{INVALID-ORDER-495} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_L s^2 + 2 C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_L s + C_4 C_L L_4 g_m s^2 + 2 C_4 C_L s)}$$

$$10.496 \quad \text{INVALID-ORDER-496} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_L g_m s^4 + 2 C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L R_L s^3 + C_4 C_L L_4 g_m s^2 + 2 C_4 C_L s}$$

$$10.497 \quad \text{INVALID-ORDER-497} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + 2 C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L R_L s^3 + C_4 C_L L_4 g_m s^2 + 2 C_4 C_L s}$$

$$10.498 \quad \text{INVALID-ORDER-498} \quad Z(s) = \left( R_1, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L L_1 L_4 R_L g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L L_1 L_4 R_L g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

$$10.499 \quad \text{INVALID-ORDER-499} \quad Z(s) = \left( R_1, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = - \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

$$10.500 \quad \text{INVALID-ORDER-500} \quad Z(s) = \left( R_1, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{(C_1 L_1 s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + C_1 C_L L_1 s^3 + C_1 C_L L_4 s^3 + 2 C_1 L_1 g_m s^2 + C_1 s + C_4 C_L L_4 s^3 + 2 C_4 L_4 g_m s^2 + C_L L_4 g_m s^2 + C_L s + 2 g_m}$$

$$10.501 \quad \text{INVALID-ORDER-501} \quad Z(s) = \left( R_1, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = - \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1 L_4 R_L g_m s^4 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + 2 C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

$$10.502 \quad \text{INVALID-ORDER-502} \quad Z(s) = \left( R_1, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{(C_1 L_1 s^2 + 1) (C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_L s^4 + 2 C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + 2 C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_4 s^3 + C_1 C_L s^2 + C_1 L_1 L_4 g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_L s + 2 C_4 L_4 R_L g_m s^2 + C_4 L_4 s^2 + L_4 g_m s + 2 R_L g_m + 1}$$

**10.503 INVALID-ORDER-503**  $Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 s^3 + C_1 C_L L_4 s^3 + C_1 C_L L_L s^3 + C_1 C_L L_L s^2 + C_1 C_L L_L s + C_1 C_L}$$

**10.504 INVALID-ORDER-504**  $Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s (C_1 L_1 s^2 + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_L L_1 L_4 L_L g_m s^5 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_4 L_L s^4 + C_1 L_1 L_4 g_m s^3 + 2C_1 L_1 L_L g_m s^3 + C_1 L_1 L_L s^2 + C_1 L_1 L_L s + C_1 L_1}$$

**10.505 INVALID-ORDER-505**  $Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + 2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 s^3 + C_1 C_L L_4 s^3 + C_1 C_L L_L s^3 + C_1 C_L L_L s^2 + C_1 C_L L_L s + C_1 C_L}$$

**10.506 INVALID-ORDER-506**  $Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_4 L_L R_L s^4 + C_1 C_L L_1 L_4 L_L R_L g_m s^5 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L R_L s^2 + C_1 C_L L_L R_L s + C_1 C_L}$$

**10.507 INVALID-ORDER-507**  $Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_L L_L s^2 + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1 L_4 L_L R_L g_m s^5 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_4 L_L R_L s^4 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L R_L s^2 + C_1 C_L L_L R_L s + C_1 C_L}$$

$$10.508 \quad \text{INVALID-ORDER-508} \quad Z(s) = \left( R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1 L_4 L_L g_m s^5 -$$

$$10.509 \quad \text{INVALID-ORDER-509} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s}$$

$$10.510 \quad \text{INVALID-ORDER-510} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L R_4 s}$$

$$10.511 \quad \text{INVALID-ORDER-511} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 s + C_4 L_4 g_m s^2 + C_4 R_4 g_m s + 2C_4 R_L g_m s + C_4 s}$$

$$10.512 \quad \text{INVALID-ORDER-512} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L s + C_4 C_L L_4 g_m s^2 + C_4 C_L R_4 s}$$

$$10.513 \quad \text{INVALID-ORDER-513} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + 2 C_1 C_4 L_1 g_m s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}$$

$$10.514 \quad \text{INVALID-ORDER-514} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_L s (C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}$$

$$10.515 \quad \text{INVALID-ORDER-515} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}$$

$$10.516 \quad \text{INVALID-ORDER-516} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_L s (C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_1 L_4 L_L g_m s^4 + C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}$$

$$10.517 \quad \text{INVALID-ORDER-517} \quad Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_L s (C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_4 s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 s + C_1 C_L L_1 g_m s)}$$

10.518 INVALID-ORDER-518  $Z(s) = \left( R_1, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L$$

**10.519** INVALID-ORDER-519  $Z(s) = (L_1 s, R_2, \infty, \infty, \infty, R_L)$

$$H(s) = -\frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{2C_1 C_4 L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 L_1 L_4 R_4 g_m s^3 + 2C_1 L_1 L_4 R_L g_m s^3 + C_1 L_1 L_4 s^3 + 2C_1 L_1 R_4 R_L g_m s^2 + C_1 L_1 R_4 s^2 + C_1 L_4 R_4 s^2 + C_1 L_4 R_L}$$

**10.520 INVALID-ORDER-520**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(C_4 L_4 R_4 s^2 - L_4 R_4 g_m s + L_4 s + R_4)}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + 2C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_1 L_4 R_4 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_4 R_4 s^3 + 2C_1 L_1 L_4 g_m s^3 + 2C_1 L_1 R_4 g_m s^2 + C_1 L_4}$$

**10.521 INVALID-ORDER-521**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + 2C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_1 L_4 R_4 R_L g_m s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 C_L L_4 R_4 R_L s^3 +$$

**10.522 INVALID-ORDER-522**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_4R_4R_Ls^4 + 2C_1C_4L_1L_4R_4g_ms^4 + C_1C_4L_4R_4s^3 + C_1C_LL_1L_4R_4g_ms^4 + 2C_1C_LL_1L_4R_Lg_ms^4 + C_1C_LL_1L_4s^4}{2C_1C_4C_LL_1L_4R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_4R_4R_Ls^4 + 2C_1C_4L_1L_4R_4g_ms^4 + C_1C_4L_4R_4s^3 + C_1C_LL_1L_4R_4g_ms^4 + 2C_1C_LL_1L_4R_Lg_ms^4 + C_1C_LL_1L_4s^4}.$$

**10.523 INVALID-ORDER-523**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_1 L_4 L_L g_m s^5 + C_1 C_L L_1 L_4 R_4 g_m s^4 + C_1 C_L L_1 L_4 s^4 + \dots}{\dots}$$

**10.524 INVALID-ORDER-524**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + 2C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_L L_1 L_4 L_L R_4 g_m s^5 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_4 L_L R_4 s^4 + \dots}{\dots}$$

**10.525 INVALID-ORDER-525**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + 2C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_4 R_4 s^3 + 2C_1 C_L L_1 L_4 L_L R_4 g_m s^5 + \dots}{\dots}$$

**10.526 INVALID-ORDER-526**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 R_L g_m s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 + \dots}{\dots}$$

**10.527 INVALID-ORDER-527**  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_4 L_L R_4 s^4 + \dots}{\dots}$$



10.528 INVALID-ORDER-528  $Z(s) = \left( L_1 s, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_4L_LR_4R_Ls^5 + 2C_1C_4L_1L_4R_4R_Lg_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_4R_Ls^3 + C_1C_4L_4R_4s^3 + C_1C_4L_4s^3 + C_1C_4s^3}{2C_1C_4C_LL_1L_4L_LR_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_4L_LR_4R_Ls^5 + 2C_1C_4L_1L_4R_4R_Lg_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_4R_Ls^3 + C_1C_4L_4R_4s^3 + C_1C_4L_4s^3 + C_1C_4s^3}.$$

**10.529 INVALID-ORDER-529**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 s^2 + C_1 R_4 s + 1}$$

**10.530 INVALID-ORDER-530**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1) (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_4 s^4 + 2 C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_4 s^2 -$$

**10.531**    **INVALID-ORDER-531**     $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1}{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1}$$

**10.532 INVALID-ORDER-532**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + C_1 C_L L_1 R_4 g_m}$$

**10.533 INVALID-ORDER-533**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + 2C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 L_4 R_4 s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 L_4 R_4 s + C_1 C_L L_1 L_L s + C_1 C_L L_1 L_4 R_4 + C_1 C_L L_1 L_L}$$

**10.534 INVALID-ORDER-534**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + 2C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 L_4 R_4 s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 L_4 R_4 s + C_1 C_L L_1 L_L s + C_1 C_L L_1 L_4 R_4 + C_1 C_L L_1 L_L}$$

**10.535 INVALID-ORDER-535**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^3 + C_1 C_4 L_1 L_4 R_L s^3 + C_1 C_4 L_1 L_4 R_4 s^2 + C_1 C_4 L_1 L_4 R_L s^2 + C_1 C_4 L_1 L_4 R_4 s + C_1 C_4 L_1 L_4 R_L s + C_1 C_4 L_1 L_4 R_4 + C_1 C_4 L_1 L_4 R_L}$$

**10.536 INVALID-ORDER-536**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^3 + C_1 C_4 L_1 L_4 R_L s^3 + C_1 C_4 L_1 L_4 R_4 s^2 + C_1 C_4 L_1 L_4 R_L s^2 + C_1 C_4 L_1 L_4 R_4 s + C_1 C_4 L_1 L_4 R_L s + C_1 C_4 L_1 L_4 R_4 + C_1 C_4 L_1 L_4 R_L}$$

**10.537 INVALID-ORDER-537**  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 s^3 + C_1 C_4 L_1 L_4 R_L s^3 + C_1 C_4 L_1 L_4 R_4 s^2 + C_1 C_4 L_1 L_4 R_L s^2 + C_1 C_4 L_1 L_4 R_4 s + C_1 C_4 L_1 L_4 R_L s + C_1 C_4 L_1 L_4 R_4 + C_1 C_4 L_1 L_4 R_L}$$

10.538 INVALID-ORDER-538  $Z(s) = \left( L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 +$$

**10.539 INVALID-ORDER-539**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L (C_1 L_1 s^2 + 1) (-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4 R_4 s}{C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1}$$

**10.540 INVALID-ORDER-540**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + 1)(-C_4 L_4 R_4 g_m s^2 + C_4 L_4 s^2 + C_4}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_4 s^2 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 L_4 s^2 + C_1 C_L L_1 R_4 s + C_1 C_L L_4}.$$

**10.541 INVALID-ORDER-541**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_{2s+1}}, \infty, \infty, \infty, \frac{R_L}{C_L R_{Ls+1}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^4 + C_1 C_4 L_1 R_L s^4 + C_1 C_4 L_1 s^4 + C_1 C_4 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_4 s^4 + C_1 C_4 L_4 R_L s^4 + C_1 C_4 L_4 s^4 + C_1 C_4 R_4 R_L g_m s^4 + C_1 C_4 R_4 R_L s^4 + C_1 C_4 R_4 s^4 + C_1 C_4 R_L s^4 + C_1 C_4 s^4}{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_L g_m s^4 + C_1 C_4 C_L L_4 s^4 + 2C_1 C_4 C_L R_4 R_L g_m s^4 + C_1 C_4 C_L R_4 R_L s^4 + C_1 C_4 C_L R_4 s^4 + C_1 C_4 C_L R_L s^4 + C_1 C_4 C_L s^4 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L L_4 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_4 s^4 + C_1 C_4 C_L R_4 R_L g_m s^4 + C_1 C_4 C_L R_4 R_L s^4 + C_1 C_4 C_L R_4 s^4 + C_1 C_4 C_L R_L s^4 + C_1 C_4 C_L s^4 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L L_4 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_4 s^4 + C_1 C_4 C_L R_4 R_L g_m s^4 + C_1 C_4 C_L R_4 R_L s^4 + C_1 C_4 C_L R_4 s^4 + C_1 C_4 C_L R_L s^4 + C_1 C_4 C_L s^4}.$$

**10.542 INVALID-ORDER-542**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_4 R_L s^3}{1}$$

**10.543 INVALID-ORDER-543**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_Lq_ms^6 + C_1C_4C_LL_1L_4R_4q_ms^5 + C_1C_4C_LL_1L_4s^5 + 2C_1C_4C_LL_1L_LR_4q_ms^5 + C_1C_4C_LL_1R_4s^4 + C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_4R_4s^4 + C_1C_4C_LL_LR_4s^4 +$$

**10.544** INVALID-ORDER-544  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 L_L R_4 g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 L_L R_4 g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L s^4}$$

**10.545 INVALID-ORDER-545**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 L_R R_4 g_m s^4 + C_1 C_4 C_L L_1 L_R s^4 + C_1 C_4 C_L L_1 L_L R_4 s^4 + C_1 C_4 C_L L_1 L_L R_L s^4 + C_1 C_4 C_L L_1 L_L R_L R_4 g_m s^4 + C_1 C_4 C_L L_1 L_L R_L R_4 s^4 + C_1 C_4 C_L L_1 L_L R_L R_4 s^4}{(s^2 + \omega_{L_1}^2)(s^2 + \omega_{L_2}^2)(s^2 + \omega_{L_3}^2)(s^2 + \omega_{L_4}^2)(s^2 + \omega_{L_5}^2)(s^2 + \omega_{L_6}^2)}$$

10.546 INVALID-ORDER-546  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5}.$$

**10.547 INVALID-ORDER-547**  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2 C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2 C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}$$

10.548 INVALID-ORDER-548  $Z(s) = \left( L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5}$$

**10.549 INVALID-ORDER-549**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1)}{C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2L_1 g_m s + 1}$$

**10.550 INVALID-ORDER-550**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1)}{C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L R_4 R_L s + L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

**10.551 INVALID-ORDER-551**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_L L_1 R_4 g_m s^2 + 2 C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L R_4 s + C_L R_L s + 2 L_1 g_m s + 1}$$

**10.552 INVALID-ORDER-552**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + 2 C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L R_4 s + 2 L_1 g_m s + 1}$$

**10.553 INVALID-ORDER-553**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (R_4 g_m - 1)}{C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_L L_1 L_L R_4 g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s^2 + 2L_1 L_L g_m s^2 + L_1 R_4 g_m s + L_1 s + L_L s + R_4}$$

**10.554 INVALID-ORDER-554**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + 2 C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L L_L s^2 + C_L R_4 s + C_L R_L s + 2 L_1 g_m s + 1}$$

**10.555 INVALID-ORDER-555**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (R_4 g_m - 1)}{C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_4 R_L s^2 + C_L L_1 L_L R_4 R_L g_m s^3 + C_L L_1 L_L R_L s^3 + C_L L_L R_4 R_L s^2 + L_1 L_L R_4 g_m s^2 + 2 L_1 L_L R_L g_m s^2 + L_1 L_L s^2 +}$$

**10.556 INVALID-ORDER-556**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (R_4 g_m - 1) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_L L_1 L_L R_4 g_m s^3 + 2 C_L L_1 L_L R_L g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s^2 + C_L L_L R_L s^2 + 2 L_1 L_L g_m s^2 +}$$

**10.557 INVALID-ORDER-557**  $Z(s) = \left( L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{L_1 R_L s (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_L L_1 L_L R_4 g_m s^3 + 2 C_L L_1 L_L R_L g_m s^3 + C_L L_1 L_L s^3 + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 +}$$

**10.558 INVALID-ORDER-558**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 s + g_m)}{C_1 C_4 L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_L s + L_1 g_m s + 1}$$

**10.559 INVALID-ORDER-559**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 s + g_m)}{C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 R_L s^3 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_L s + C_L L_1 R_L g_m s^2 + C_L R_L s + L_1 g_m s + 1}$$

**10.560 INVALID-ORDER-560**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L R_L s + 1)}{C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.561 INVALID-ORDER-561**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L L_L s^2 + 1)}{C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.562 INVALID-ORDER-562**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (-C_4 s + g_m)}{C_1 C_4 L_1 L_L s^4 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_L s^4 + 2C_4 L_1 L_L g_m s^3 + C_4 L_1 s^2 + C_4 L_L s^2 + C_L L_1 L_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

**10.563 INVALID-ORDER-563**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 (C_4 s - g_m) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + 2C_4 C_L L_1 L_L g_m s^3 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_L s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.564 INVALID-ORDER-564**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_L s^2 (-C_4 s + g_m)}{C_1 C_4 L_1 L_L R_L s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_L R_L s^4 + 2C_4 L_1 L_L R_L g_m s^3 + C_4 L_1 L_L s^3 + C_4 L_1 R_L s^2 + C_4 L_L R_L s^2 + C_L L_1 L_L R_L g_m s^3 + C_L L_L s^2 + L_1 g_m s + 1}$$

**10.565 INVALID-ORDER-565**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_1 s (C_4 s - g_m) (C_L L_L R_L s^2 + L_L s + R_L)}{C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_L s^3 + 2 C_4 L_1 L_L g_m s^3 + 2 C_4 L_1 R_L g_m s^2}$$

**10.566 INVALID-ORDER-566**  $Z(s) = \left( L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{L_1 R_L s (C_4 s - g_m) (C_L L_L s^2 + 1)}{C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_L R_L s^3 + 2 C_4 L_1 R_L g_m s^2}$$

**10.567 INVALID-ORDER-567**  $Z(s) = \left( L_1 s, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + 2 C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_4 R_L s + L_1 R_4 g_m s + 2 L_1 R_L g_m s + L_1 s + R_4 + R_L}$$

**10.568 INVALID-ORDER-568**  $Z(s) = \left( L_1 s, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + C_4 C_L L_1 R_4 s^3 + 2 C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_4 s + 2 L_1 g_m s + 1}$$

**10.569 INVALID-ORDER-569**  $Z(s) = \left( L_1 s, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 C_L L_1 R_4 R_L s^3 + 2 C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_4 R_L s + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L R_4 R_L s}$$

**10.570 INVALID-ORDER-570**  $Z(s) = \left( L_1 s, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s (C_L R_L s + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^3 + C_4 C_L R_4 R_L s^2 + 2 C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + C_L L_1 R_4 s}$$



$$\mathbf{10.571 \quad INVALID-ORDER-571} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_L R_4 s^3 + 2 C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + 2 C_L L_1 R_4 s}$$

$$\mathbf{10.572 \quad INVALID-ORDER-572} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L s^2 (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_4 C_L L_1 L_L R_4 s^4 + 2 C_4 L_1 L_L R_4 g_m s^3 + C_4 L_1 R_4 s^2 + C_4 L_L R_4 s^2 + C_L L_1 L_L R_4 g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_4 s}$$

$$\mathbf{10.573 \quad INVALID-ORDER-573} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 s (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_L R_4 g_m s^4 + 2 C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_L R_4 s^2 + C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + 2 C_L L_1 R_4 s}$$

$$\mathbf{10.574 \quad INVALID-ORDER-574} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_L s^2 (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 L_L R_4 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_4 R_L s^4 + 2 C_4 L_1 L_L R_4 R_L g_m s^3 + C_4 L_1 L_L R_4 s^3 + C_4 L_1 R_4 R_L s^2 + C_4 R_4 s + 2 C_L L_1 R_4 s}$$

$$\mathbf{10.575 \quad INVALID-ORDER-575} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{L_1 s (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + 2 C_4 C_L L_1 L_L R_4 R_L g_m s^4 + 2 C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_L R_4 s^2 + C_4 L_1 R_4 g_m s^2 + C_4 R_4 s + 2 C_L L_1 R_4 s}$$

$$10.576 \quad \text{INVALID-ORDER-576} \quad Z(s) = \left( L_1 s, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + 2 C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^3 + C_4 C_L L_1 L_L R_L s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_L s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + L_1 g_m s + 1}{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + 2 C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_4 s^3 + C_4 C_L L_1 L_L R_L s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_L s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + L_1 g_m s + 1}$$

$$10.577 \quad \text{INVALID-ORDER-577} \quad Z(s) = \left( L_1 s, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 s^2 + C_4 L_1 R_4 g_m s^2 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_4 s + C_4 R_L s + L_1 g_m s + 1}$$

$$10.578 \quad \text{INVALID-ORDER-578} \quad Z(s) = \left( L_1 s, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

$$10.579 \quad \text{INVALID-ORDER-579} \quad Z(s) = \left( L_1 s, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_L s^3 + C_4 C_L R_4 R_L s^2 + C_4 L_1 R_4 g_m s^2 + 2 C_4 L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

$$10.580 \quad \text{INVALID-ORDER-580} \quad Z(s) = \left( L_1 s, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 R_4 g_m s^2 + 2 C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_4 s + C_4 C_L R_L s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

$$10.581 \quad \text{INVALID-ORDER-581} \quad Z(s) = \left( L_1 s, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + 2 C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_4 s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.582 INVALID-ORDER-582**  $Z(s) = \left( L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_4 s^3 + 2 C_4 L_1 L_L g_m s^3 + C_4 L_1 R_4 g_m s^2 + C_4}$$

**10.583 INVALID-ORDER-583**  $Z(s) = \left( L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + 2 C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + 2 C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_L s^2 + C_4 C_L R_L s + g_m}$$

10.584 INVALID-ORDER-584  $Z(s) = \left( L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_T s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_L R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_L s^4 -$$

**10.585 INVALID-ORDER-585**  $Z(s) = \left( L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_L L_R R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L$$

10.586 INVALID-ORDER-586  $Z(s) = \left( L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_4 s^4}{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_L R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_4 s^4}$$

$$10.587 \quad \text{INVALID-ORDER-587} \quad Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 s^2 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 R_L s + L_1 g_m s + 1}$$

$$10.588 \quad \text{INVALID-ORDER-588} \quad Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

$$10.589 \quad \text{INVALID-ORDER-589} \quad Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 R_L s^3 + C_4 C_L L_4 R_L s^3 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 R_L g_m s^2 + C_4}$$

$$10.590 \quad \text{INVALID-ORDER-590} \quad Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + 2 C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_L s + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s}$$

$$10.591 \quad \text{INVALID-ORDER-591} \quad Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + 2 C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L L_L s^2 + 2 C_4 L_1 g_m s + C_4 + C_L L_1 g_m s}$$

**10.592 INVALID-ORDER-592**  $Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_4 L_L s^4 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 L_L g_m s^3 + C_4 L_1 L_4 L_L g_m s^3}$$

**10.593 INVALID-ORDER-593**  $Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + 2 C_4 C_L L_1 L_L g_m s^3 + 2 C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L g_m s + g_m}$$

10.594 INVALID-ORDER-594  $Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_L R_L s^4 +$$

**10.595 INVALID-ORDER-595**  $Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{L_1 s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L g_m s^5 + 2 C_4 C_L L_1 L_L R_L g_m s^4 + C_4 C_L L_1 L_4 L_L g_m s^3 + C_4 C_L L_1 L_L R_L g_m s^2 + C_4 C_L L_1 L_4 L_L g_m s + C_4 C_L L_1 L_L R_L g_m}$$

10.596 INVALID-ORDER-596  $Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^4}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^4}$$

**10.597 INVALID-ORDER-597**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_L s^2 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_L s^2 + L_1 L_4 g_m s^2 + 2L_1 R_L g_m s + L_1 s + L_4 s + R_L}$$

**10.598 INVALID-ORDER-598**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 s^4 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^3 + C_L L_1 s^2 + C_L L_4 s^2 + 2L_1 g_m s + 1}$$

**10.599 INVALID-ORDER-599**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 R_L s^4 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_L s^2 + C_L L_1 L_4 R_L g_m s^3 + C_L L_1 R_L s^2 + C_L L_4 R_L s}$$

**10.600 INVALID-ORDER-600**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s (C_L R_L s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_L s^3 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 s}$$

**10.601 INVALID-ORDER-601**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s (C_L L_L s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + 2C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 L_L s^4 + 2C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 s}$$

**10.602 INVALID-ORDER-602**  $Z(s) = \left( \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 L_L s^4 + C_1 C_L L_1 L_4 L_L s^4 + C_1 L_1 L_4 s^2 + C_1 L_1 L_L s^2 + C_4 C_L L_1 L_4 L_L s^4 + 2C_4 L_1 L_4 L_L g_m s^3 + C_4 L_1 L_4 s^2 + C_4 L_4 L_L s^2 + C_L L_1 L_4 L_L g_m s^3 + C_L L_1 L_L s^2 + C_L L_4 L_L s}$$

$$\mathbf{10.603 \quad INVALID-ORDER-603} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{L_1 s (C_4 L_4 s^2 - L_4 g_m s)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L g_m s^5 + 2 C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 L_L s^3 + C_4 C_L L_1 L_4 R_L s^2 + C_4 C_L L_1 L_4 L_L s + C_4 C_L L_1 L_4 R_L s + C_4 C_L L_1 L_4 L_L}$$

$$\mathbf{10.604 \quad INVALID-ORDER-604} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_L s (-C_4 L_4 s^2 + C_4 L_4 g_m s)}{C_1 C_4 L_1 L_4 L_L R_L s^4 + C_1 C_L L_1 L_4 L_L R_L s^4 + C_1 L_1 L_4 L_L s^3 + C_1 L_1 L_4 R_L s^2 + C_1 L_1 L_L R_L s^2 + C_4 C_L L_1 L_4 L_L R_L s^4 + 2 C_4 L_1 L_4 L_L R_L g_m s^3 + C_4 L_1 L_4 L_L s^3 + C_4 L_1 L_4 R_L s^2 + C_4 C_L L_1 L_4 L_L s + C_4 C_L L_1 L_4 R_L s + C_4 C_L L_1 L_4 L_L}$$

$$\mathbf{10.605 \quad INVALID-ORDER-605} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = - \frac{L_1 L_L R_L s (C_4 L_4 s^2 - L_4 g_m s)}{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_L s^2 + 2 C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^3 + C_4 C_L L_1 L_4 R_L s^2 + C_4 C_L L_1 L_4 L_L s + C_4 C_L L_1 L_4 R_L s + C_4 C_L L_1 L_4 L_L}$$

$$\mathbf{10.606 \quad INVALID-ORDER-606} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{L_1 L_L R_L s (C_4 L_4 s^2 - L_4 g_m s)}{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_L s^2 + 2 C_4 C_L L_1 L_4 L_L R_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^3 + C_4 C_L L_1 L_4 R_L s^2 + C_4 C_L L_1 L_4 L_L s + C_4 C_L L_1 L_4 R_L s + C_4 C_L L_1 L_4 L_L}$$

$$\mathbf{10.607 \quad INVALID-ORDER-607} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 s^2 + C_4 L_1 L_4 g_m s^3 + C_4 L_1 R_4 g_m s^2 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 s^2 + C_4 R_4 s + C_4 R_L s + L_1 g_m s + 1}$$

**10.608 INVALID-ORDER-608**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.609 INVALID-ORDER-609**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 R_4 R_L g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.610 INVALID-ORDER-610**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.611 INVALID-ORDER-611**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.612 INVALID-ORDER-612**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s^2 (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_L R_4 g_m s^4 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$

**10.613 INVALID-ORDER-613**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 (C_L L_L s^2 + C_L R_L s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + 2C_4 C_L L_1 L_L g_m s^3 + C_4 C_L L_1 R_4 g_m s^2 + 2C_4 C_L L_1 R_L g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L L_4 s^2 + C_4 C_L R_4 s + 2C_4 L_1 g_m s + C_4 + C_L L_1 g_m s + C_L}$$



$$\mathbf{10.614 \quad INVALID-ORDER-614} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_4 s^3}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L s^4}$$

$$\mathbf{10.615 \quad INVALID-ORDER-615} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L s^4}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 L_L s^4}$$

$$\mathbf{10.616 \quad INVALID-ORDER-616} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L s^4}$$

$$\mathbf{10.617 \quad INVALID-ORDER-617} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 R_4 R_L s^2 + 2 C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + L_1 L_4 R_4 g_m s^2 + 2 L_1 L_4 R_L g_m s^2 + L_1 L_4 s^2 + 2 L_1 R_4 s^2 + 2 L_1 R_L s^2}$$

$$\mathbf{10.618 \quad INVALID-ORDER-618} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - R_4)}{C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + C_4 C_L L_1 L_4 R_4 s^4 + 2 C_4 L_1 L_4 R_4 g_m s^3 + C_4 L_4 R_4 s^2 + C_L L_1 L_4 R_4 g_m s^3 + C_L L_1 L_4 s^3 + C_L L_1 R_4 s^2 + C_L L_4 R_4 s^2}$$

**10.619 INVALID-ORDER-619**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_L s (-C_4 L_4 R_4 s^2 + L_4 I_4)}{C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_4 R_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 R_4 R_L s^2 + C_4 C_L L_1 L_4 R_4 R_L s^4 + 2C_4 L_1 L_4 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_4 R_L s^2 + C_L}$$

**10.620 INVALID-ORDER-620**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1}{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + 2C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4}.$$

**10.621 INVALID-ORDER-621**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 s}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + 2 C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 R_4 s^4 +}$$

**10.622 INVALID-ORDER-622**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_r)}{C_1 C_4 L_1 L_4 L_L R_4 s^4 + C_1 C_L L_1 L_4 L_L R_4 s^4 + C_1 L_1 L_4 L_L s^3 + C_1 L_1 L_4 R_4 s^2 + C_1 L_1 L_L R_4 s^2 + C_4 C_L L_1 L_4 L_L R_4 s^4 + 2 C_4 L_1 L_4 L_L R_4 g_m s^3 + C_4 L_1 L_4 R_4 s^2 + C_4 L_4 L_L R_4 s^2 + C_L L}$$

**10.623 INVALID-ORDER-623**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_4 R_4 s^3 + C_1 L_4 R_L s^3 + C_1 L_4 L_L R_4 s^3 + C_1 L_4 L_L R_L s^3 + C_1 L_L R_4 s^3 + C_1 L_L R_L s^3 + C_1 R_4 s^3 + C_1 R_L s^3 + C_1 L_L s^3 + C_1 L_4 s^3 + C_1 R_4 s^2 + C_1 R_L s^2 + C_1 L_L s^2 + C_1 L_4 s^2 + C_1 R_4 s + C_1 R_L s + C_1 L_L s + C_1 L_4 s + C_1 R_4 + C_1 R_L + C_1 L_L + C_1 L_4 + C_1}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_4 R_4 s^3 + C_1 L_4 R_L s^3 + C_1 L_4 L_L R_4 s^3 + C_1 L_4 L_L R_L s^3 + C_1 L_L R_4 s^3 + C_1 L_L R_L s^3 + C_1 R_4 s^3 + C_1 R_L s^3 + C_1 L_L s^3 + C_1 L_4 s^3 + C_1 R_4 s^2 + C_1 R_L s^2 + C_1 L_L s^2 + C_1 L_4 s^2 + C_1 R_4 s + C_1 R_L s + C_1 L_L s + C_1 L_4 s + C_1 R_4 + C_1 R_L + C_1 L_L + C_1 L_4 + C_1}.$$

$$10.624 \quad \text{INVALID-ORDER-624} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 L_1 L_4 L_L R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 R_L s^4 + C_1 L_1 L_4 L_L R_4 s^3 + C_1 L_1 L_4 L_L R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}{C_1 C_4 L_1 L_4 L_L R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 R_L s^4 + C_1 L_1 L_4 L_L R_4 s^3 + C_1 L_1 L_4 L_L R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}$$

$$10.625 \quad \text{INVALID-ORDER-625} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_4 L_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_4 L_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}$$

$$10.626 \quad \text{INVALID-ORDER-626} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 + C_1 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_4 s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 + C_1 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_4 R_4 R_L s^2 + C_1 L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}$$

$$10.627 \quad \text{INVALID-ORDER-627} \quad Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 L_1 L_4 R_4 g_m s^3 + 2 C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + L_1 L_4 g_m s^2 + L_1 L_4 R_4 s^2 + L_1 L_4 R_L s^2 + L_1 L_4 R_4 R_L s^2 + L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}{C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 L_1 L_4 R_4 g_m s^3 + 2 C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_4 s^2 + C_4 L_4 R_L s^2 + L_1 L_4 g_m s^2 + L_1 L_4 R_4 s^2 + L_1 L_4 R_L s^2 + L_1 L_4 R_4 R_L s^2 + L_1 L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}$$

$$10.628 \quad \text{INVALID-ORDER-628} \quad Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + L_4 g_m s + R_4 g_m - 1)}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_4 s^3 + 2 C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^2 + C_L L_1 L_4 R_4 s^2 + C_L L_1 L_4 R_L s^2 + C_L L_1 L_4 R_4 R_L s^2 + C_L L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_4 s^3 + 2 C_4 L_1 L_4 g_m s^3 + C_4 L_4 s^2 + C_L L_1 L_4 g_m s^2 + C_L L_1 L_4 R_4 s^2 + C_L L_1 L_4 R_L s^2 + C_L L_1 L_4 R_4 R_L s^2 + C_L L_L R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_4 R_L s^4 + 2 C_4 L_1 L_4 L_L R_4 R_L g_m}$$

**10.629 INVALID-ORDER-629**  $Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 L_4 s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 R_L s^4}$$

**10.630 INVALID-ORDER-630**  $Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 s (C_L R_L s + 1) (C_4 L_4 R_4 g_m s^2 + C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2 C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4)}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2 C_4 C_L L_1 L_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_4 s^4}.$$

**10.631 INVALID-ORDER-631**  $Z(s) = \left( \frac{1}{C_{1s}}, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, L_{Ls} + \frac{1}{C_{Ls}} \right)$

$$H(s) = \frac{L_1 s (C_L L_L s^2 + 1) (C_4 L_4 R_4 g_m s^2}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 L_L s^3 + C_4 C_L L_1 L_4 R_4 s^2 + C_4 C_L L_1 L_L s^2 + C_4 C_L L_1 R_4 s + C_4 L_1}$$

**10.632 INVALID-ORDER-632**  $Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 L_L R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_4 g_m s^5 + C_4 C_L L_1 L_4 L_L R_4 s^4}$$

**10.633 INVALID-ORDER-633**  $Z(s) = \left( \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L}$$

$$10.634 \quad \text{INVALID-ORDER-634} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_L s^5 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_4 L_L s^4 + C_1 L_1 L_4 R_L s^3 + C_1 L_1 L_4 s^2 + C_1 L_1 s + C_1}$$

$$10.635 \quad \text{INVALID-ORDER-635} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 L_4 s^2 + C_1 L_1 s + C_1}$$

$$10.636 \quad \text{INVALID-ORDER-636} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_4 s^4 + C_1 L_1 L_4 s^3 + C_1 L_1 L_4 s^2 + C_1 L_1 s + C_1}$$

$$10.637 \quad \text{INVALID-ORDER-637} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_L s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 L_1 L_4 R_4 g_m s^3 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4 s^3 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2 + C_4 L_1 s + C_1}$$

$$10.638 \quad \text{INVALID-ORDER-638} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 s (C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 - C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_1 R_4 s^3 + C_4 C_L L_4 R_4 s^3 + 2C_4 L_1 L_4 g_m s^3 + 2C_4 L_1 s^3 + C_1}$$

**10.639 INVALID-ORDER-639**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_1 L_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_4 C_L L_1 L_4 R_4 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_1 L_4 R_L s^4}$$

**10.640 INVALID-ORDER-640**  $Z(s) = \left( \frac{1}{C_{1s}}, L_2s + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L + \frac{1}{C_{Ls}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2 C_4 C_L L_1 L_4 R_4 s^4}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 R_4 g_m s^4 + 2 C_4 C_L L_1 L_4 R_4 s^4}$$

**10.641 INVALID-ORDER-641**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^4 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 s + C_4 C_L L_1 R_4}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3 + C_1 L_1 s^2 + 2 C_4 C_L L_1 L_4 L_L g_m s^5 + C_4 C_L L_1 L_4 L_L s^4 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 s + C_4 C_L L_1 R_4}$$

**10.642 INVALID-ORDER-642**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 L_1 L_L s^3 + C_1 L_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_{49m} s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 L_L s^5}{\dots}$$

**10.643 INVALID-ORDER-643**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 s^3}$$

10.644 INVALID-ORDER-644  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1}{\dots}$$

**10.645 INVALID-ORDER-645**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 L_L R_L s^3 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 L_L R_L s^3 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2 + C_1 C_4 L_1 L_L R_4 s^2 + C_1 C_4 L_1 L_L R_L s^2}$$

$$10.646 \quad \text{INVALID-ORDER-646} \quad Z(s) = \left( \frac{1}{C_{1s}}, L_2s + \frac{1}{C_{2s}}, \infty, \infty, \infty, \frac{R_L \left( L_Ls + \frac{1}{C_{Ls}} \right)}{L_Ls + R_L + \frac{1}{C_{Ls}}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_4}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_4}$$

**10.647 INVALID-ORDER-647**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + 2 C_1 L_1 g_m s^2 + 2 C_1 R_1 g_m s + C_1 s + C_L R_4 g_m s + C_L s + 2 g_m}$$

**10.648 INVALID-ORDER-648**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L(R_4 g_m - 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_4 R_L g_m s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 s + 1}$$

**10.649 INVALID-ORDER-649**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_L R_L s + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_L L_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + 2C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2 + 2C_1 L_1 g_m s^2 + 2C_1 R_1 g_m s + C_1 s + C_L}$$

**10.650 INVALID-ORDER-650**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_L L_L s^2 + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + 2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + 2C_1 L_1 g_m s^2 + 2C_1 R_1 g_m s + C_1 s + 2C_L}$$

**10.651 INVALID-ORDER-651**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (R_4 g_m - 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_L L_1 L_L R_4 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_1 R_4 g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + 2C_1 L_1 L_L g_m s^3 + C_1 L_1 R_4 g_m s^2 + C_1 L_1 s^2 + 2C_1 L_L R_1 g_m s^2 + C_1 L_L s^2 + C_1 R_1}$$

**10.652 INVALID-ORDER-652**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_L L_L s^2 + C_L R_L s + 1)}{2C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_L g_m s^3 + C_1 C_L L_1 s^3 + 2C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 + C_1 C_L R_1 R_4 g_m s^2 + 2C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2}$$

**10.653 INVALID-ORDER-653**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_1 R_4 R_L g_m s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_4 R_L s^3 + C_1 L_1 L_L R_4 g_m s^3 + 2C_1 L_1 L_L R_L g_m s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_4}$$



**10.654 INVALID-ORDER-654**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{(R_4 g_m - 1)}{C_1 C_L L_1 L_L R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_1 R_4 g_m s^3 + 2C_1 C_L L_L R_1 R_L g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + 2C_1 L_1 L_L g_m s^2 + C_1 L_1 L_L s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 L_1 s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 R_L s^2 + C_1 s^2 + C_4 g_m s + C_4 s + g_m}$$

**10.655 INVALID-ORDER-655**  $Z(s) = \left( \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{(R_4 g_m - 1)}{C_1 C_L L_1 L_L R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_1 R_4 g_m s^3 + 2C_1 C_L L_L R_1 R_L g_m s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_4 s^3 + C_1 C_L L_L R_L s^3 + 2C_1 L_1 L_L g_m s^2 + C_1 L_1 L_L s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 L_1 s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 R_L s^2 + C_1 s^2 + C_4 g_m s + C_4 s + g_m}$$

**10.656 INVALID-ORDER-656**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + 2C_4 R_L g_m s + C_4 s + g_m}$$

**10.657 INVALID-ORDER-657**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{s (C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 C_L s + 2C_4 g_m + C_L g_m)}$$

**10.658 INVALID-ORDER-658**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{R_L (C_4 s - g_m) (C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 C_L L_1 R_L g_m s^3 + C_1 C_L R_1 R_L g_m s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 R_L s^2 + C_1 s^2 + C_4 g_m s + C_4 s + g_m}$$

**10.659 INVALID-ORDER-659**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_L R_L s + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{s(2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s)}$$

**10.660 INVALID-ORDER-660**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_L L_L s^2 + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s)}$$

**10.661 INVALID-ORDER-661**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s(C_4 s - g_m)(C_1 L_1 s^2 + C_1 R_1 s + 1)}{C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_1 s^4 + 2C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 s^3 + 2C_1 C_4 L_L R_1 g_m s^3 + C_1 C_4 L_L s^3 + C_1 C_4 R_1 s^2 + C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L R_1 g_m s^3 + C_1 C_L L_L s^3 +}$$

**10.662 INVALID-ORDER-662**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 s - g_m)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_L L_L s^2 + 1)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s)}$$

**10.663 INVALID-ORDER-663**  $Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{1}{C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + 2C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_L s^3 + 2C_1 C_4 L_L R_1 R_L g_m s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_4 L_L R_L s^3 + C_1 C_4 R_1 R_L s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s}$$

$$10.664 \quad \text{INVALID-ORDER-664} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_1 L_L g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + 2C_1 C_4 L_1 R_L g_m s^2 + C_1 C_4 L_1 R_L s^2 + C_1 C_4 L_1 R_L s + C_1 C_4 L_1}{2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + 2C_1 C_4 L_1 L_L g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + 2C_1 C_4 L_1 R_L g_m s^2 + C_1 C_4 L_1 R_L s^2 + C_1 C_4 L_1 R_L s + C_1 C_4 L_1}$$

$$10.665 \quad \text{INVALID-ORDER-665} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 R_L s^2 + C_1 C_4 L_1 R_L s + C_1 C_4 L_1}{2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 R_L s^2 + C_1 C_4 L_1 R_L s + C_1 C_4 L_1}$$

$$10.666 \quad \text{INVALID-ORDER-666} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = -\frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 L_1 R_4 g_m s^2 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 R_1 R_4 g_m s + 2C_1 R_1 R_L g_m s + C_1 R_1 R_4 s + C_1 R_1 R_L s + C_1 R_1 s + C_1 R_1 + C_1}$$

$$10.667 \quad \text{INVALID-ORDER-667} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{(C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_4 s + C_1 C_L R_1 s + C_1 C_L s + C_1 C_L + C_1}$$

$$10.668 \quad \text{INVALID-ORDER-668} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_4 s + C_1 C_L R_1 s + C_1 C_L s + C_1 C_L + C_1}{C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_4 R_L s^2 + C_1 C_L L_1 R_4 R_L g_m s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_4 s + C_1 C_L R_1 s + C_1 C_L s + C_1 C_L + C_1}$$

$$10.669 \quad \text{INVALID-ORDER-669} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L R_4 s}{2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_L R_4 s}$$

$$10.670 \quad \text{INVALID-ORDER-670} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + 2C_1 C_L R_4 s}{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_4 s^2 + 2C_1 C_L R_4 s}$$

$$10.671 \quad \text{INVALID-ORDER-671} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_1 L_L R_4 g_m s^4 + C_1 C_L L_1 R_4 s}{C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 L_L R_4 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_1 L_L R_4 g_m s^4 + C_1 C_L L_1 R_4 s}$$

$$10.672 \quad \text{INVALID-ORDER-672} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 s^3}{2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_4 s^3}$$

$$10.673 \quad \text{INVALID-ORDER-673} \quad Z(s) = \left( \frac{1}{C_1 s}, \quad \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = - \frac{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + 2C_1 C_4 L_L R_1 R_4 R_L g_m s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_4 s^3}{C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_4 R_L s^3 + 2C_1 C_4 L_L R_1 R_4 R_L g_m s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_4 L_L R_4 s^3}$$

$$10.674 \quad \text{INVALID-ORDER-674} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + 2C_1 C_4 L_1 R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + 2C_1 C_4 L_1 R_L s^3 + 2C_1 C_4 L_1 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + 2C_1 C_4 L_1 L_L R_4 g_m s^4 + 2C_1 C_4 L_1 R_4 R_L g_m s^3 + 2C_1 C_4 L_1 R_4 R_L s^3 + 2C_1 C_4 L_1 R_4 s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + 2C_1 C_4 L_1 R_L s^3 + 2C_1 C_4 L_1 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}$$

$$10.675 \quad \text{INVALID-ORDER-675} \quad Z(s) = \left( \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 L_1 g_m s^3 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}{2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + 2C_1 C_4 C_L R_1 R_4 s^3 + 2C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 L_1 g_m s^3 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}$$

$$10.676 \quad \text{INVALID-ORDER-676} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}$$

$$10.677 \quad \text{INVALID-ORDER-677} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s + C_1 C_L s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s)}$$

$$10.678 \quad \text{INVALID-ORDER-678} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3 + C_1 C_4 L_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 R_4 g_m s + C_4 R_4 s + C_4 L_1 g_m s + C_4 L_1 s + C_4 R_1 g_m s + C_4 R_1 s + C_4 R_L g_m s + C_4 R_L s + C_4 s}$$

**10.679 INVALID-ORDER-679**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 R_4 g_m s - C_4 R_4)}{s(C_1 C_4 C_L L_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s + C_1 C_4 L_1)}$$

**10.680 INVALID-ORDER-680**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L L_L s^2 + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 R_4 g_m s - C_4 R_4 g_m)}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 L_L s^2 + C_1 C_4 L_L R_1 s + C_1 C_4 L_L R_4 + C_1 C_4 L_L g_m)}$$

**10.681 INVALID-ORDER-681**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + 2 C_1 C_4 L_L R_1}{C_1 C_4 C_L L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + C_1 C_4 L_1 s^3 + 2 C_1 C_4 L_L R_1}$$

**10.682 INVALID-ORDER-682**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + C_1 R_1}{s(2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L R_1 R_L g_m s^2 +$$

10.683 INVALID-ORDER-683  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 g_m s^4 + 2 C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L R_L s^4}{C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_L R_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 g_m s^4 + 2 C_1 C_4 L_1 L_L R_L g_m s^4 + C_1 C_4 L_1 L_L R_L s^4}$$

$$10.684 \quad \text{INVALID-ORDER-684} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L}{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L}$$

$$10.685 \quad \text{INVALID-ORDER-685} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L}{C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4 + C_1 C_4 C_L L_L}$$

$$10.686 \quad \text{INVALID-ORDER-686} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 - C_4 s + g_m}$$

$$10.687 \quad \text{INVALID-ORDER-687} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 L_1 g_m s^2 + 2C_1 C_4 R_1 g_m s + C_1 C_4 s + C_1 C_L L_1 g_m s^2 + C_1 C_L R_1 g_m s + C_1 C_L s^2 + C_1 C_L R_1 s + C_1 C_L)} \frac{1}{C_L s}$$

$$10.688 \quad \text{INVALID-ORDER-688} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 - C_4 s + g_m}{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + 2C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_L s^2 + C_1 L_1 g_m s^2 + C_1 R_1 g_m s + C_1 s + C_4 L_4 g_m s^2 - C_4 s + g_m}$$

**10.689 INVALID-ORDER-689**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 L_4 g_m s^2 - C_4 R_4)}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_L s^2 + 2C_1 C_4 L_1 g_m s^2}$$

**10.690 INVALID-ORDER-690**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L L_L s^2 + 1)(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 L_4 g_m s^2 - s(C_1 C_4 C_L L_1 L_4 g_m s^4 + 2C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L R_1 s^2 + 2C_1 C_4 L_1 g_m s^2$$

**10.691 INVALID-ORDER-691**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_L g_m s^4 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3}$$

**10.692 INVALID-ORDER-692**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + C_1 R_1)}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + 2C_1 C_4 C_L L_1 L_L g_m s^4 + 2C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3 + 2C_1 C_4 C_L R_1 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_1)}.$$

**10.693 INVALID-ORDER-693**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_L g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_L g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L s^4}$$



**10.694 INVALID-ORDER-694**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L s^4}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2C_1 C_4 C_L L_L R_1 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L s^4}$$

10.695 INVALID-ORDER-695  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L q_m s^6 + C_1 C_4 C_L L_1 L_4 R_L q_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L q_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 L_L R_1 q_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1}{C_1 C_4 C_L L_1 L_4 L_L q_m s^6 + C_1 C_4 C_L L_1 L_4 R_L q_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L q_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 L_L R_1 q_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1}$$

**10.696 INVALID-ORDER-696**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + 2C_1 L_1 R_L g_m s^2 + C_1 L_1 s^2 + C_1 L_4 R_1 g_m s^2 + C_1 L_4 s^2 + 2C_1 R_1}$$

**10.697 INVALID-ORDER-697**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^4 + C_1 C_L L_1 s^3 + C_1 C_L L_4 R_1 g_m s^3 + C_1 C_L L_4 s^3 + C_1 C_L R_1 s^2 + 2}$$

**10.698 INVALID-ORDER-698**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1 L_4 R_L g_m s^4 + C_1 C_L L_1 R_1 s^4}{C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_L L_1 L_4 R_L g_m s^4 + C_1 C_L L_1 R_1 s^4}$$

**10.699 INVALID-ORDER-699**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1}{2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_L s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1}$$

**10.700 INVALID-ORDER-700**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1}$$

**10.701 INVALID-ORDER-701**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 s^5 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_1 L_4 L_L g_m s^5 + C_1 C_L L_1 L_L}{C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 s^5 + 2C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_4 L_L R_1 g_m s^4 + C_1 C_4 L_4 L_L s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_1 L_4 L_L g_m s^5 + C_1 C_L L_1 L_L}$$

**10.702 INVALID-ORDER-702**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 L_L}{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 L_L}$$

**10.703 INVALID-ORDER-703**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + 2C_1 C_4 L_4 L_L R_1 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 L_L}{C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_L s^4 + 2C_1 C_4 L_4 L_L R_1 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_4 L_4 L_L}$$

**10.704 INVALID-ORDER-704**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_Lg_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_4L_LR_Lg_ms^5 + C_1C_4C_LL_4L_LR_Ls^5 + C_1C_4C_LL_4L_LR_Ls^5 + 2C_1C_4L_1L_4L_LR_Lg_ms^5 + 2C_1C_4L_1L_4R_Lg_ms^4 + \dots}{\dots}$$

10.705 INVALID-ORDER-705  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_1 s^4}{(s^2 + \omega_{L_1}^2)(s^2 + \omega_{L_4}^2)(s^2 + \omega_{L_L}^2)(s^2 + \omega_{R_1}^2)(s^2 + \omega_{R_L}^2)}$$

**10.706 INVALID-ORDER-706**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + C_1 R_1 s + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 L_4 g_m s^4 + C_1 C_4 L_1 R_4 g_m s^3 + 2 C_1 C_4 L_1 R_L g_m s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + 2 C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 g_m s + C_1 g_m}$$

**10.707 INVALID-ORDER-707**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 s^2 + C_1 R_1 s + 1)(C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L R_4 s^2 + 2C_1 C_4 L_1 g_m s^2 +$$

**10.708 INVALID-ORDER-708**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3}{C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L g_m s^3 + C_1 C_4 C_L R_1 R_L s^3 + C_1 C_4 C_L R_4 R_L s^3}$$

**10.709 INVALID-ORDER-709**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1) (C_1 L_1 s + 1)}{s (C_1 C_4 C_L L_1 L_4 g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 R_4 g_m s^2 + 2 C_1 C_4 C_L R_1 R_L g_m s^2 + C_1 C_4 C_L R_1 s^2 + C_1 C_4 C_L s^2 + C_1 C_4 s^2 + C_1 s^2)}$$

**10.710 INVALID-ORDER-710**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L L_L s^2 + 1)(C_1 L_1}{s(C_1 C_4 C_L L_1 L_4 q_m s^4 + 2C_1 C_4 C_L L_1 L_L q_m s^4 + C_1 C_4 C_L L_1 R_4 q_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 q_m s^3 + C_1 C_4 C_L L_4 s^3 + 2C_1 C_4 C_L L_L R_1 q_m s^3 + C_1 C_4 C_L L_L s^3 + C_1 C_4 C_L L_L s^3)}$$

**10.711 INVALID-ORDER-711**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + C_1 C_4 C_L L_L R_1 s^4 + C_1 C_4 C_L L_L R_4 s^4}.$$

**10.712 INVALID-ORDER-712**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2 C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3}{s(C_1 C_4 C_L L_1 L_4 g_m s^4 + 2 C_1 C_4 C_L L_1 L_L g_m s^4 + C_1 C_4 C_L L_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_L g_m s^3 + C_1 C_4 C_L L_1 s^3 + C_1 C_4 C_L L_4 R_1 g_m s^3 + C_1 C_4 C_L L_4 s^3 + 2 C_1 C_4 C_L L_L R_1 g_m s^3 + C_1 C_4 C_L L_L s^3)}$$

**10.713 INVALID-ORDER-713**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 I}{C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_L R_1 I}$$

**10.714 INVALID-ORDER-714**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_4 s^4}$$

**10.715 INVALID-ORDER-715**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_L g_m s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L$$

**10.716 INVALID-ORDER-716**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L}{2C_1C_4L_1L_4R_4R_Lg_ms^4 + C_1C_4L_1L_4R_4s^4 + 2C_1C_4L_4R_1R_4R_Lg_ms^3 + C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_4R_Ls^3 + C_1L_1L_4R_4g_ms^3 + 2C_1L_1L_4R_Lg_ms^3 + C_1L_1L_4s^3 + 2C_1L_1R_4I}$$

**10.717 INVALID-ORDER-717**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_1 L_4 R_4 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_4 R_1}{C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_L L_1 L_4 R_4 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_4 R_1}$$

**10.718 INVALID-ORDER-718**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + 2C_1 C_4 L_4 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_1 L_4 R_1 R_4 s^2 + C_1 C_L L_1 L_4 R_4 R_L s^2 + C_1 C_L L_1 L_4 R_1 s^2 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_4 s^2 + C_1 C_L L_1 R_1 R_4 s^2 + C_1 C_L L_1 R_4 R_L s^2 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_4 s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 C R_1 R_4 s^2 + C_1 C R_4 R_L s^2 + C_1 C R_1 s^2 + C_1 C R_4 s^2 + C_1 C s^2 + C_1 R_1 R_4 s^2 + C_1 R_4 R_L s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 s^2}{C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 L_4 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + 2C_1 C_4 L_4 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_4 R_L s^3 + C_1 C_L L_1 L_4 R_1 R_4 s^2 + C_1 C_L L_1 L_4 R_4 R_L s^2 + C_1 C_L L_1 L_4 R_1 s^2 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_4 s^2 + C_1 C_L L_1 R_1 R_4 s^2 + C_1 C_L L_1 R_4 R_L s^2 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_4 s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 C R_1 R_4 s^2 + C_1 C R_4 R_L s^2 + C_1 C R_1 s^2 + C_1 C R_4 s^2 + C_1 C s^2 + C_1 R_1 R_4 s^2 + C_1 R_4 R_L s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 s^2}$$

**10.719 INVALID-ORDER-719**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_4R_1R_4R_Lg_ms^4 + C_1C_4C_LL_4R_1R_4s^4 + C_1C_4C_LL_4R_4R_Ls^4 + 2C_1C_4L_1L_4R_4g_ms^4 + 2C_1C_4L_4R_1R_4g_ms^3 + C_1C_4L_4R_4R_Lg_ms^2 + C_1C_4L_4R_4s^2 + C_1C_4L_1L_4R_4g_ms + C_1C_4L_1L_4s + C_1C_4L_4R_1R_4 + C_1C_4L_4R_4R_L + C_1C_4L_4R_4}{2C_1C_4C_LL_1L_4R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_4R_1R_4R_Lg_ms^4 + C_1C_4C_LL_4R_1R_4s^4 + C_1C_4C_LL_4R_4R_Ls^4 + 2C_1C_4L_1L_4R_4g_ms^4 + 2C_1C_4L_4R_1R_4g_ms^3 + C_1C_4L_4R_4R_Lg_ms^2 + C_1C_4L_4R_4s^2 + C_1C_4L_1L_4R_4g_ms + C_1C_4L_1L_4s + C_1C_4L_4R_1R_4 + C_1C_4L_4R_4R_L + C_1C_4L_4R_4}.$$

**10.720 INVALID-ORDER-720**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_4g_ms^6 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_4L_LR_1R_4g_ms^5 + C_1C_4C_LL_4L_LR_4s^5 + C_1C_4C_LL_4R_1R_4s^4 + 2C_1C_4L_1L_4R_4g_ms^4 + 2C_1C_4L_4R_1R_4g_ms^3 + C_1C_4L_4R_1R_4s^3 + 2C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^3}{2C_1C_4C_LL_1L_4L_LR_4g_ms^6 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_4L_LR_1R_4g_ms^5 + C_1C_4C_LL_4L_LR_4s^5 + C_1C_4C_LL_4R_1R_4s^4 + 2C_1C_4L_1L_4R_4g_ms^4 + 2C_1C_4L_4R_1R_4g_ms^3 + C_1C_4L_4R_1R_4s^3 + 2C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^3}.$$

**10.721 INVALID-ORDER-721**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + 2 C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_1 L_4 L_L}{C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 R_4 s^4 + 2 C_1 C_4 L_4 L_L R_1 R_4 g_m s^4 + C_1 C_4 L_4 L_L R_4 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_1 L_4 L_L}$$

**10.722 INVALID-ORDER-722**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4}{...}$$

**10.723 INVALID-ORDER-723**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + 2C_1 C_4 L_4 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_4 L_L R_1}$$

**10.724 INVALID-ORDER-724**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + 2C_1C_4C_LL_4L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + C_1C_4C_LL_4L_LR_4R_Ls^5 + 2C_1C_4L_1L_4L_LR_4g_ms^5 + 2C_1C_4L_1L_4L_LR_4s^5 + 2C_1C_4L_1L_4L_LR_4g_ms^4 + 2C_1C_4L_1L_4L_LR_4s^4 + 2C_1C_4L_1L_4L_LR_4g_ms^3 + 2C_1C_4L_1L_4L_LR_4s^3 + 2C_1C_4L_1L_4L_LR_4g_ms^2 + 2C_1C_4L_1L_4L_LR_4s^2 + 2C_1C_4L_1L_4L_LR_4g_ms + 2C_1C_4L_1L_4L_LR_4s + 2C_1C_4L_1L_4L_LR_4}{2C_1C_4C_LL_1L_4L_LR_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + 2C_1C_4C_LL_4L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + C_1C_4C_LL_4L_LR_4R_Ls^5 + 2C_1C_4L_1L_4L_LR_4g_ms^5 + 2C_1C_4L_1L_4L_LR_4s^5 + 2C_1C_4L_1L_4L_LR_4g_ms^4 + 2C_1C_4L_1L_4L_LR_4s^4 + 2C_1C_4L_1L_4L_LR_4g_ms^3 + 2C_1C_4L_1L_4L_LR_4s^3 + 2C_1C_4L_1L_4L_LR_4g_ms^2 + 2C_1C_4L_1L_4L_LR_4s^2 + 2C_1C_4L_1L_4L_LR_4g_ms + 2C_1C_4L_1L_4L_LR_4s + 2C_1C_4L_1L_4L_LR_4}.$$

10.725 INVALID-ORDER-725  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_4R_Ls^5 + 2C_1C_4C_LL_4L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + C_1C_4C_LL_4L_LR_4R_Ls^5 + C_1C_4C$$

**10.726 INVALID-ORDER-726**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 s^2 + C_1 R_1 s - C_1 L_1)}{C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 L_1 L_4 g_m s^3 + C_1 L_1 R_4 s^3 + C_1 L_1 R_L s^3}$$

**10.727 INVALID-ORDER-727**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 C_4 C_L L_1 L_4 R_{4g_m} s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_1 R_{4g_m} s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^2 + C_1 C_L L_1 L_4 s^2 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_4 s^2 + C_1 C_L L_1 R_4 g_m s + C_1 C_L L_1 R_4 s + C_1 C_L L_1 R_4 g_m)}{C_1 C_4 C_L L_1 L_4 R_{4g_m} s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_1 R_{4g_m} s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + 2C_1 C_4 L_1 L_4 g_m s^4 + 2C_1 C_4 L_4 R_1 g_m s^3 + C_1 C_4 L_4 s^3 + C_1 C_L L_1 L_4 g_m s^2 + C_1 C_L L_1 L_4 s^2 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_4 s^2 + C_1 C_L L_1 R_4 g_m s + C_1 C_L L_1 R_4 s + C_1 C_L L_1 R_4 g_m}$$

**10.728 INVALID-ORDER-728**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4}$$

**10.729 INVALID-ORDER-729**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L s^4}$$

**10.730 INVALID-ORDER-730**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2 C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4}{2 C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4}$$

**10.731 INVALID-ORDER-731**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L g_m s^5 + C_1 C_4 L_1 L_4 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4}$$

**10.732 INVALID-ORDER-732**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2 C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4}{2 C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 g_m s^5 + C_1 C_4 C_L L_4 L_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4}$$

**10.733 INVALID-ORDER-733**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2 C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + 2 C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_4 s^4}$$



$$10.734 \quad \text{INVALID-ORDER-734} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}$$

$$10.735 \quad \text{INVALID-ORDER-735} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_L s^5}$$

$$10.736 \quad \text{INVALID-ORDER-736} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L \right)$$

$$H(s) = -\frac{C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3}{C_1 C_4 L_1 L_4 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_L s^3}$$

$$10.737 \quad \text{INVALID-ORDER-737} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2 C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 s^4}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L R_1 R_4 s^3 + 2 C_1 C_4 L_1 L_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 s^4}$$

$$10.738 \quad \text{INVALID-ORDER-738} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 s^3}$$

**10.739 INVALID-ORDER-739**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_L g_m s^4 + C_1 C_4 C_L L_4 s^4 + 2C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_4 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^4 + C_1 C_4 C_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 s^4 + C_1 C_4 C_L R_L g_m s^4 + C_1 C_4 C_L R_L s^4 + C_1 C_4 C_L s^4 + C_1 C_4 R_1 R_4 g_m s^4 + C_1 C_4 R_1 R_4 s^4 + C_1 C_4 R_1 s^4 + C_1 C_4 R_L g_m s^4 + C_1 C_4 R_L s^4 + C_1 C_4 s^4 + C_1 C_L R_1 R_4 g_m s^4 + C_1 C_L R_1 R_4 s^4 + C_1 C_L R_1 s^4 + C_1 C_L R_L g_m s^4 + C_1 C_L R_L s^4 + C_1 C_L s^4 + C_1 R_1 R_4 g_m s^4 + C_1 R_1 R_4 s^4 + C_1 R_1 s^4 + C_1 R_L g_m s^4 + C_1 R_L s^4 + C_1 s^4 + C_4 C_L R_1 R_4 g_m s^4 + C_4 C_L R_1 R_4 s^4 + C_4 C_L R_1 s^4 + C_4 C_L R_L g_m s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_L R_1 s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_R_1 R_4 g_m s^4 + C_4 C_R_1 R_4 s^4 + C_4 C_R_1 s^4 + C_4 C_R_L g_m s^4 + C_4 C_R_L s^4 + C_4 C_R s^4 + C_4 C_L R_1 R_4 s^4 + C_4 C_L R_L g_m s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_R_1 R_4 s^4 + C_4 C_R_L g_m s^4 + C_4 C_R_L s^4 + C_4 C_R s^4 + C_4 R_1 R_4 g_m s^4 + C_4 R_1 R_4 s^4 + C_4 R_1 s^4 + C_4 R_L g_m s^4 + C_4 R_L s^4 + C_4 s^4}{C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 R_1 R_L g_m s^4 + C_1 C_4 C_L L_4 R_1 s^4 + 2C_1 C_4 C_L L_4 R_L g_m s^4 + C_1 C_4 C_L L_4 s^4 + 2C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L g_m s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L L_4 R_4 s^4 + C_1 C_4 C_L L_4 R_L g_m s^4 + C_1 C_4 C_L L_4 R_L s^4 + C_1 C_4 C_L L_4 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^4 + C_1 C_4 C_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 s^4 + C_1 C_4 C_L R_L g_m s^4 + C_1 C_4 C_L R_L s^4 + C_1 C_4 C_L s^4 + C_1 C_4 R_1 R_4 g_m s^4 + C_1 C_4 R_1 R_4 s^4 + C_1 C_4 R_1 s^4 + C_1 C_4 R_L g_m s^4 + C_1 C_4 R_L s^4 + C_1 C_4 s^4 + C_4 C_L R_1 R_4 g_m s^4 + C_4 C_L R_1 R_4 s^4 + C_4 C_L R_1 s^4 + C_4 C_L R_L g_m s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_L R_1 s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_R_1 R_4 g_m s^4 + C_4 C_R_1 R_4 s^4 + C_4 C_R_1 s^4 + C_4 C_R_L g_m s^4 + C_4 C_R_L s^4 + C_4 C_R s^4 + C_4 C_L R_1 R_4 s^4 + C_4 C_L R_L g_m s^4 + C_4 C_L R_L s^4 + C_4 C_L s^4 + C_4 C_R_1 R_4 s^4 + C_4 C_R_L g_m s^4 + C_4 C_R_L s^4 + C_4 C_R s^4 + C_4 R_1 R_4 g_m s^4 + C_4 R_1 R_4 s^4 + C_4 R_1 s^4 + C_4 R_L g_m s^4 + C_4 R_L s^4 + C_4 s^4}.$$

**10.740 INVALID-ORDER-740**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_Lq_ms^6 + C_1C_4C_LL_1L_4R_4q_ms^5 + C_1C_4C_LL_1L_4s^5 + 2C_1C_4C_LL_1L_LR_4q_ms^5 + C_1C_4C_LL_1R_4s^4 + 2C_1C_4C_LL_4L_LR_1q_ms^5 + C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_4}{2C_1C_4C_LL_1L_4L_LR_1q_ms^5 + C_1C_4C_LL_1L_4R_4q_ms^5 + C_1C_4C_LL_1L_4s^5 + 2C_1C_4C_LL_1L_LR_4q_ms^5 + C_1C_4C_LL_1R_4s^4 + 2C_1C_4C_LL_4L_LR_1q_ms^5 + C_1C_4C_LL_4L_Ls^5 + C_1C_4C_LL_4}$$

**10.741 INVALID-ORDER-741**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2 C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^3 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^3 + C_1 C_4 C_L L_1 L_L R_4 s^3 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 C_L L_4 L_L R_1 s^3 + C_1 C_4 C_L L_4 L_L R_4 s^3 + C_1 C_4 C_L L_L R_1 R_4 s^2 + 2 C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^2 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^2 + C_1 C_4 C_L L_1 L_L R_4 s^2 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^2 + C_1 C_4 C_L L_4 L_L R_1 s^2 + C_1 C_4 C_L L_4 L_L R_4 s^2 + C_1 C_4 C_L L_L R_1 R_4 s}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2 C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^3 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^3 + C_1 C_4 C_L L_1 L_L R_4 s^3 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^3 + C_1 C_4 C_L L_4 L_L R_1 s^3 + C_1 C_4 C_L L_4 L_L R_4 s^3 + C_1 C_4 C_L L_L R_1 R_4 s^2 + 2 C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^2 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^2 + C_1 C_4 C_L L_1 L_L R_4 s^2 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^2 + C_1 C_4 C_L L_4 L_L R_1 s^2 + C_1 C_4 C_L L_4 L_L R_4 s^2 + C_1 C_4 C_L L_L R_1 R_4 s}$$

**10.742 INVALID-ORDER-742**  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 s^5 + 2C_1 C_4 C_L L_1 L_L R_4 g_m s^5 + 2C_1 C_4 C_L L_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_4 s^4 + 2C_1$$

10.743 INVALID-ORDER-743  $Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5}.$$

$$10.744 \quad \text{INVALID-ORDER-744} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^4 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^3 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^2 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s + 2C_1 C_4 C_L L_4 L_L R_1 R_4}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^4 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^4 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^3 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s^2 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s^2 + 2C_1 C_4 C_L L_4 L_L R_1 R_4 g_m s + 2C_1 C_4 C_L L_4 L_L R_1 R_4 s + 2C_1 C_4 C_L L_4 L_L R_1 R_4}$$

$$10.745 \quad \text{INVALID-ORDER-745} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^4 + 2C_1 C_4 C_L L_1 L_L R_4 s^4 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^3 + 2C_1 C_4 C_L L_1 L_L R_4 s^3 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^2 + 2C_1 C_4 C_L L_1 L_L R_4 s^2 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s + 2C_1 C_4 C_L L_1 L_L R_4 s + 2C_1 C_4 C_L L_1 L_L R_4 R_L}{C_1 C_4 C_L L_1 L_4 L_L R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^4 + 2C_1 C_4 C_L L_1 L_L R_4 s^4 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^3 + 2C_1 C_4 C_L L_1 L_L R_4 s^3 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s^2 + 2C_1 C_4 C_L L_1 L_L R_4 s^2 + 2C_1 C_4 C_L L_1 L_L R_4 R_L g_m s + 2C_1 C_4 C_L L_1 L_L R_4 s + 2C_1 C_4 C_L L_1 L_L R_4 R_L}$$

$$10.746 \quad \text{INVALID-ORDER-746} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (R_4 g_m - 1)}{C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_L L_1 R_1 R_4 g_m s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_4 s^2 + C_L R_1 R_4 s + 2L_1 R_1 g_m s + L_1 s + R_1}$$

$$10.747 \quad \text{INVALID-ORDER-747} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (R_4 g_m - 1)}{C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_L L_1 R_1 R_4 R_L g_m s^2 + C_L L_1 R_1 R_L s^2 + C_L L_1 R_4 R_L s^2 + C_L R_1 R_4 R_L s + L_1 R_1 R_4 g_m s + 2L_1 R_1 R_L g_m s + L_1 R_1 s + L_1 R_1}$$

$$10.748 \quad \text{INVALID-ORDER-748} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (R_4 g_m - 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_L L_1 R_1 R_4 g_m s^2 + 2C_L L_1 R_1 R_L g_m s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_4 s^2 + C_L L_1 R_L s^2 + C_L R_1 R_4 s + C_L R_1 R_L s + 2L_1 R_1 g_m s + L_1 s + R_1}$$

$$\mathbf{10.749 \quad INVALID-ORDER-749} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (R_4 g_m - 1) (C_L L_L s^2 + 1)}{C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2 C_L L_1 L_L R_1 g_m s^3 + C_L L_1 L_L s^3 + C_L L_1 R_1 R_4 g_m s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_4 s^2 + C_L L_L R_1 s^2 + C_L R_1 R_4 s + 2 L_1 R_1 g_m s + L_1}$$

$$\mathbf{10.750 \quad INVALID-ORDER-750} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (R_4 g_m - 1)}{C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_L L_1 L_L R_1 R_4 g_m s^3 + C_L L_1 L_L R_1 s^3 + C_L L_1 L_L R_4 s^3 + C_L L_L R_1 R_4 s^2 + 2 L_1 L_L R_1 g_m s^2 + L_1 L_L s^2 + L_1 R_1 R_4 g_m s + L_1}$$

$$\mathbf{10.751 \quad INVALID-ORDER-751} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_L L_1 L_L R_1 g_m s^3 + C_L L_1 L_L s^3 + C_L L_1 R_1 R_4 g_m s^2 + 2 C_L L_1 R_1 R_L g_m s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_4 s^2 + L_1}$$

$$\mathbf{10.752 \quad INVALID-ORDER-752} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{L_1 L_L R_1 R_L s^2 (R_4 g_m - 1)}{C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_L R_1 R_4 s^3 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1 R_1 R_4 R_L s^2 + C_L L_1 L_L R_1 R_4 R_L g_m s^3 + C_L L_1 L_L R_1 R_L s^3 + C_L L_1 L_L R_4 R_L s^3 + C_L L_L R_1 R_4 R_L s^2 + L_1 L_L R_1 R_4 g_m s + L_1}$$

$$\mathbf{10.753 \quad INVALID-ORDER-753} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{L_1 R_1 s (R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_L L_1 L_L R_1 R_4 g_m s^3 + 2 C_L L_1 L_L R_1 R_L g_m s^3 + C_L L_1 L_L R_1 s^3 + C_L L_1 L_L R_4 s^3 + L_1}$$

$$10.754 \quad \text{INVALID-ORDER-754} \quad Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{L_1}{C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_L L_1 L_L R_1 R_4 g_m s^3 + 2 C_L L_1 L_L R_1 R_L g_m s^3 + C_L L_1 L_L R_1 s^3 + C_L L_1 L_L R_1 s^2 + C_L L_1 L_L R_1 s + C_L L_1 L_L R_1}$$

$$10.755 \quad \text{INVALID-ORDER-755} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 s + g_m)}{C_1 C_4 L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 L_1 R_1 R_L g_m s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s + R_1}$$

$$10.756 \quad \text{INVALID-ORDER-756} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 s + g_m)}{C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_L s^3 + 2 C_4 L_1 R_1 R_L g_m s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_L s + C_L L_1 R_1 R_L g_m s^2 + C_L L_1 R_L s^2 + C_L R_1 R_L s + C_L L_1 R_1 R_L}$$

$$10.757 \quad \text{INVALID-ORDER-757} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 R_1 (C_4 s - g_m) (C_L R_L s + 1)}{C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + 2 C_4 C_L L_1 R_1 R_L g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_L s^2 + C_4 C_L R_1 R_L s + 2 C_4 L_1 R_1 g_m s + C_4 L_1 s + C_4 R_1 + C_L L_1 R_1 g_m s + C_L L_1 R_1 s + C_L R_1}$$

$$10.758 \quad \text{INVALID-ORDER-758} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = -\frac{L_1 R_1 (C_4 s - g_m) (C_L L_L s^2 + 1)}{C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_L R_1 s^2 + 2 C_4 L_1 R_1 g_m s + C_4 L_1 s + C_4 R_1 + C_L L_1 R_1 g_m s + C_L L_1 R_1 s + C_L R_1}$$

$$10.759 \quad \text{INVALID-ORDER-759} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{L_1 L_L R_1 s^2 (-C_4 s + g_m)}{C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 s^4 + 2 C_4 L_1 L_L R_1 g_m s^3 + C_4 L_1 L_L s^3 + C_4 L_1 R_1 s^2 + C_4 L_L R_1 s^2 + C_L L_1 L_L R_1 g_m s^3 + C_L L_1 L_L s^3 + C_L L_L R_1 s^2 + C_L L_L R_1 s + C_L R_1}$$

**10.760 INVALID-ORDER-760**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 (C_4 s - g_m) (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3 + 2 C_4 C_L L_1 R_1 R_L g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_L s^2}.$$

**10.761 INVALID-ORDER-761**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_1 R_L s^2 (-C_4 s + g_m)}{C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_L R_1 R_L s^4 + 2C_4 L_1 L_L R_1 R_L g_m s^3 + C_4 L_1 L_L R_1 s^3 + C_4 L_1 L_L R_L s^3 + C_4 L_1 R_1 R_L s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 s^2 + C_4 s^2}$$

**10.762 INVALID-ORDER-762**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{L_1 R_1 s(C_4 s + C_5)}{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + 2C_4 C_L L_1 L_L R_1 R_L g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_L s^4 + C_4 C_L L_L R_1 s^4}$$

**10.763 INVALID-ORDER-763**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{L}{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2C_4 C_L L_1 L_L R_1 R_L g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_L s^4 + C_4 C_L L_1 L_L s^4}$$

**10.764 INVALID-ORDER-764**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2 C_4 L_1 R_1 R_4 R_L g_m s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_4 R_L s^2 + C_4 R_1 R_4 R_L s + L_1 R_1 R_4 g_m s + 2 L_1 R_1 R_L g_m s + L_1 R_1 s + L_1 R_4}$$

**10.765 INVALID-ORDER-765**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_4 s^3 + 2C_4 L_1 R_1 R_4 g_m s^2 + C_4 L_1 R_4 s^2 + C_4 R_1 R_4 s + C_L L_1 R_1 R_4 g_m s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_4 s^2 + C_L R_1 R_4 s}$$

**10.766 INVALID-ORDER-766**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 R_1 R_4 R_L s^3 + 2C_4 L_1 R_1 R_4 R_L g_m s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_4 R_L s^2 + C_4 R_1 R_4 R_L s + C_L L_1 R_1 R_4 R_L s^2 + C_L L_1 R_1 R_4 s^2 + C_L R_1 R_4 R_L s}$$

**10.767 INVALID-ORDER-767**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 s (C_L R_L s + 1)}{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2C_4 C_L L_1 R_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_1 R_4 s^3 + C_4 C_L L_1 R_4 R_L s^3 + C_4 C_L R_1 R_4 s^3}$$

**10.768 INVALID-ORDER-768**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 s (C_L L_L s + 1)}{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_1 R_1 R_4 s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L L_L R_1 R_4 s^3}$$

**10.769 INVALID-ORDER-769**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_1 s^2 (-C_4 R_4 s + R_4 g_m - 1)}{C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_L R_1 R_4 s^4 + 2C_4 L_1 L_L R_1 R_4 g_m s^3 + C_4 L_1 L_L R_4 s^3 + C_4 L_1 R_1 R_4 s^2 + C_4 L_L R_1 R_4 s^2 + C_L L_1 R_1 R_4 s^2 + C_L R_1 R_4 s^2}$$

**10.770 INVALID-ORDER-770**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 s (C_L L_L s + 1)}{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + C_4 C_L L_1 L_L R_1 R_4 s^4 + C_4 C_L L_1 R_1 R_4 s^3 + C_4 C_L L_L R_1 R_4 s^3 + C_4 C_L R_1 R_4 s^3}$$

$$10.771 \quad \text{INVALID-ORDER-771} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 L_1 L_L R_1 R_4 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_L R_1 R_4 s^3 + C_1 L_1 L_L R_1 R_L s^3 + C_1 L_1 R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^4 + 2C_4 L_1 L_L R_1 R_4 R_L g_m s^3 + C_4 L_1 L_L R_1 R_4 R_L s^2}{C_1 C_4 L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}$$

$$10.772 \quad \text{INVALID-ORDER-772} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}$$

$$10.773 \quad \text{INVALID-ORDER-773} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L s^2 + C_4 L_1 R_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}$$

$$10.774 \quad \text{INVALID-ORDER-774} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 L_1 R_1 R_4 g_m s^2 + 2C_4 L_1 R_1 R_L g_m s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 R_1 R_4 s + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}$$

$$10.775 \quad \text{INVALID-ORDER-775} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_4 g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^2 + C_4 C_L R_1 R_4 s + 2C_4 L_1 R_1 g_m s + C_4 L_1 s + C_4 R_1 + C_L L_1 R_1 g_m s + L_1 s}$$



**10.776 INVALID-ORDER-776**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_1 R_L s (C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_1 R_L s^3 + C_4 C_L L_1 R_4 R_L s^3 + C_4 C_L R_1 R_4 s^3)}{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_4 R_L g_m s^3 + C_4 C_L L_1 R_1 R_L s^3 + C_4 C_L L_1 R_4 R_L s^3 + C_4 C_L R_1 R_4 s^3}$$

**10.777 INVALID-ORDER-777**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L R_L s + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_1 R_4 g_m s^2 + 2 C_4 C_L L_1 R_1 R_L g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_L s^2 + C_4 C_L R_1 R_4 s^2}$$

**10.778 INVALID-ORDER-778**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L L_L s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_1 R_4 g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_L s^2}$$

**10.779 INVALID-ORDER-779**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_1 s^2 (C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_L R_1 R_4 s^4)}{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_L R_1 R_4 s^4}$$

**10.780 INVALID-ORDER-780**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L L_L s^2 + C_L R_L s + 1)}{C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_1 R_4 g_m s^2 + 2 C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_L s^2}$$

**10.781 INVALID-ORDER-781**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_L R_1 R_4 s^4}{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^4 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_1 L_L R_4 s^4 + C_4 C_L L_L R_1 R_4 s^4}$$

**10.782 INVALID-ORDER-782**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_1 R_4 s^4}{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + 2 C_4 C_L L_1 L_L R_1 R_4 s^4}$$

**10.783 INVALID-ORDER-783**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 s^5}{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_L R_1 R_4 s^5}$$

**10.784 INVALID-ORDER-784**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_L s (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 L_1 L_4 R_1 g_m s^3 + C_4 L_1 L_4 s^3 + 2 C_4 L_1 R_1 R_L g_m s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 R_L s^2 + C_4 L_4 R_1 s^2 + C_4 R_1 R_L s + L_1 R_1 g_m s + L_1 s}$$

**10.785 INVALID-ORDER-785**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_4 R_1 s^2 + 2C_4 L_1 R_1 g_m s + C_4 L_1 s + C_4 R_1 + C_L L_1 R_1 g_m s +}$$

**10.786 INVALID-ORDER-786**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_1 R_L s (C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_1 R_1 R_L s^3 + C_4 C_L L_4 R_1 R_L s^3)}{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_1 R_1 R_L s^3 + C_4 C_L L_4 R_1 R_L s^3}$$

**10.787 INVALID-ORDER-787**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L + \frac{1}{C_{Ls}} \right)$

$$H(s) = \frac{L_1 R_1 (C_L R_L s + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 R_1 R_L g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_L s^2 + C_4}$$

**10.788 INVALID-ORDER-788**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_L s^2}$$

**10.789 INVALID-ORDER-789**  $Z(s) = \left( R_1 + \frac{1}{C_{1s}}, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_1 s^2 (C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_4 L_L R_1 s^4)}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_L R_1 s^4 + C_4 C_L L_4 L_L R_1 s^4}$$

**10.790 INVALID-ORDER-790**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L L_L s^2 + C_L R_L s + C_L L_L R_1)}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3}$$

10.791 INVALID-ORDER-791  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 L_L R_1 R_L g_m s}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 L_L R_1 R_L g_m s}$$

**10.792 INVALID-ORDER-792**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}$$

**10.793 INVALID-ORDER-793**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}$$

**10.794 INVALID-ORDER-794**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_L s^2 + 2C_4 L_1 L_4 R_1 R_L g_m s^3 + C_4 L_1 L_4 R_1 s^3 + C_4 L_1 L_4 R_L s^3 + C_4 L_4 R_1 R_L s^2 + L_1 L_4 R_1 g_m s^2 + L_1 L_4 s^2 + 2L_1 R_1 R_L g_m s + L_1 R_1}$$

**10.795 INVALID-ORDER-795**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 s^4 + 2C_4 L_1 L_4 R_1 g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_4 R_1 s^2 + C_L L_1 L_4 R_1 g_m s^3 + C_L L_1 L_4 s^3 + C_L L_1 R_1 s^2 + C_L L_4 R_1 s^2}$$

**10.796 INVALID-ORDER-796**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_L s^4 + 2C_4 L_1 L_4 R_1 R_L g_m s^3 + C_4 L_1 L_4 R_1 s^3 + C_4 L_1 L_4 R_L s^3 + C_4 L_4 R_1 R_L s^2 + C_L L_1 L_4 R_1 g_m s^3 + C_L L_1 L_4 s^3 + C_L L_1 R_1 s^2 + C_L L_4 R_1 s^2}$$

**10.797 INVALID-ORDER-797**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 s (C_L R_L s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_4 R_1 s^4)}{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_L s^4 + C_4 C_L L_4 R_1 s^4}$$

**10.798 INVALID-ORDER-798**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 R_1 s (C_L L_L s^5 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 L_L s^4)}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L s^5 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 L_L s^4}$$

**10.799 INVALID-ORDER-799**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_1 L_L R_1 s (-C_4 L_4 s^2 + L_4 g_m s - 1)}{C_1 C_4 L_1 L_4 L_L R_1 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^4 + C_1 L_1 L_4 R_1 s^2 + C_1 L_1 L_L R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 s^4 + 2 C_4 L_1 L_4 L_L R_1 g_m s^3 + C_4 L_1 L_4 L_L s^3 + C_4 L_1 L_4 R_1 s^2 + C_4 L_4 L_L R_1 s^2 + C_L L_4 R_1 s^2}$$

**10.800 INVALID-ORDER-800**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{L_1 L_L R_1 s (C_L R_L s^5 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 R_1 s^4)}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 R_1 s^4}$$

**10.801 INVALID-ORDER-801**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{L_1 L_L R_1 s (C_L R_L s^5 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 R_1 s^4)}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_4 R_1 s^4}$$

**10.802 INVALID-ORDER-802**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L}$$

**10.803 INVALID-ORDER-803**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_4 L_L R_1 R_L g}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_L s^2 + 2C_4 C_L L_1 L_4 L_L R_1 R_L g}$$

**10.804 INVALID-ORDER-804**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_L s (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 L_1 L_4 R_1 g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_1 R_1 R_4 g_m s^2 + 2 C_4 L_1 R_1 R_L g_m s^2 + C_4 L_1 R_1 s^2 + C_4 L_1 R_4 s^2 + C_4 L_1}$$

**10.805 INVALID-ORDER-805**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_4 L_4 g_m s^2 + C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + C_4 C_L L_1 R_1 R_4 g_m s^2 + C_4 C_L L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^2 + C_4 C_L L_1 R_4 s + C_4 C_L L_1 g_m}$$

**10.806 INVALID-ORDER-806**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_1 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_4 C_L L_1 L_4 R_1 R_L s^4}$$

**10.807 INVALID-ORDER-807**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L R_L s + 1) (C_4 L_4 g_m s}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + C_4 C_L L_1 R_1 R_4 g_m s^2 + 2 C_4 C_L L_1 R_1 R_4 s + C_4 C_L L_1 R_1 R_4}$$

**10.808 INVALID-ORDER-808**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 (C_L L_L s^2 + 1) (C_4 L_4 g_m}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 L_L R_1 g_m s^3 + C_4 C_L L_1 L_L s^3}$$

**10.809 INVALID-ORDER-809**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 L_L R_1 s^3 + C_4 C_L L_1 L_4 L_L R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 s}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1 L_4 L_L R_1 s^4 + C_4 C_L L_1 L_4 L_L R_1 s^3 + C_4 C_L L_1 L_4 L_L R_1 s^2 + C_4 C_L L_1 L_4 L_L R_1 s}$$

**10.810 INVALID-ORDER-810**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 L_L R_1}{C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_L R_1 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^3 + C_1 C_4 C_L L_1 R_1 R_L s^3 + C_1 C_4 L_1 R_1 s^2 + C_1 C_L L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 g_m s^3 + C_4 C_L L_1 L_4 s^3 + 2 C_4 C_L L_1 L_L R_1}$$

10.811 INVALID-ORDER-811  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L$$

$$10.812 \quad \text{INVALID-ORDER-812} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 R_4 s^4 + C_1 L_1 L_4 R_1 R_L s^4 + C_1 L_1 R_1 R_4 R_L s^4 + C_1 L_1 R_1 R_4 s^4 + C_1 L_1 R_1 R_L s^4 + C_1 L_1 R_1 s^4 + C_1 L_1 s^4 + C_1 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 R_4 s^4 + C_1 L_1 L_4 R_1 R_L s^4 + C_1 L_1 R_1 R_4 R_L s^4 + C_1 L_1 R_1 R_4 s^4 + C_1 L_1 R_1 R_L s^4 + C_1 L_1 R_1 s^4 + C_1 L_1 s^4 + C_1 s^4}$$

$$10.813 \quad \text{INVALID-ORDER-813} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 R_4 s^4 + C_1 L_1 L_4 R_1 R_L s^4 + C_1 L_1 R_1 R_4 R_L s^4 + C_1 L_1 R_1 R_4 s^4 + C_1 L_1 R_1 R_L s^4 + C_1 L_1 R_1 s^4 + C_1 L_1 s^4 + C_1 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 R_4 s^4 + C_1 L_1 L_4 R_1 R_L s^4 + C_1 L_1 R_1 R_4 R_L s^4 + C_1 L_1 R_1 R_4 s^4 + C_1 L_1 R_1 R_L s^4 + C_1 L_1 R_1 s^4 + C_1 L_1 s^4 + C_1 s^4}$$

$$10.814 \quad \text{INVALID-ORDER-814} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s)}{C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 s^3 + C_1 L_1 L_4 R_1 R_L s^3 + C_1 L_1 R_1 R_4 R_L s^2 + 2C_4 L_1 L_4 R_1 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_1 R_4 s^3 + C_4 L_1 L_4 R_4 R_L s^3 + C_4 L_4 R_1 R_4 R_L s^2 + L_1 L_4 R_1 R_4 s^2 + L_1 L_4 R_1 R_L s^2 + L_1 L_4 R_1 s^2 + L_1 s^2 + s^2}$$

$$10.815 \quad \text{INVALID-ORDER-815} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s (-C_4 L_4 R_4 s^2 + L_4 R_4 g_m s - L_4 s - \frac{1}{C_L s})}{C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_4 R_1 R_4 s^4 + 2C_4 L_1 L_4 R_1 R_4 g_m s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_4 R_1 R_4 s^2 + C_L L_1 L_4 R_1 R_4 g_m s^3 + C_L L_1 L_4 R_1 R_4 s^3 + C_L L_1 L_4 R_1 s^3 + C_L L_1 s^3 + C_L s^3 + s^3}$$

$$10.816 \quad \text{INVALID-ORDER-816} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \quad \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 s^3 + C_1 L_1 L_4 R_1 R_L s^3 + C_1 L_1 R_1 R_4 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 R_L s^4 + 2C_4 L_1 L_4 R_1 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_1 R_4 s^3 + C_4 L_1 L_4 R_4 R_L s^3 + C_4 L_4 R_1 R_4 R_L s^2 + L_1 L_4 R_1 R_4 s^2 + L_1 L_4 R_1 R_L s^2 + L_1 L_4 R_1 s^2 + L_1 s^2 + s^2}{C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 s^3 + C_1 L_1 L_4 R_1 R_L s^3 + C_1 L_1 R_1 R_4 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 R_L s^4 + 2C_4 L_1 L_4 R_1 R_4 R_L g_m s^3 + C_4 L_1 L_4 R_1 R_4 s^3 + C_4 L_1 L_4 R_4 R_L s^3 + C_4 L_4 R_1 R_4 R_L s^2 + L_1 L_4 R_1 R_4 s^2 + L_1 L_4 R_1 R_L s^2 + L_1 L_4 R_1 s^2 + L_1 s^2 + s^2}$$



**10.817 INVALID-ORDER-817**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + 2C_4 C_L L_1 L_4 R_1 R_4 R_L g_m}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + 2C_4 C_L L_1 L_4 R_1 R_4 R_L g_m}$$

**10.818 INVALID-ORDER-818**  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m}.$$

**10.819 INVALID-ORDER-819**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 L_1 L_4 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^4 + C_1 L_1 L_4 L_L R_1 s^3 + C_1 L_1 L_4 R_1 R_4 s^2 + C_1 L_1 L_L R_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_1 R_4 s^4 + 2 C_4 L_1 L_4 L_L R_1 R_4 g_m s^3 + C_4 L_1 L_4 L_L R_4 s^3}{C_1 C_4 L_1 L_4 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^4 + C_1 L_1 L_4 L_L R_1 s^3 + C_1 L_1 L_4 R_1 R_4 s^2 + C_1 L_1 L_L R_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_1 R_4 s^4 + 2 C_4 L_1 L_4 L_L R_1 R_4 g_m s^3 + C_4 L_1 L_4 L_L R_4 s^3}$$

**10.820 INVALID-ORDER-820**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L}$$

10.821 INVALID-ORDER-821  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 L_1 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 L_L R_1 R_4 s^3 + C_1 L_1 L_4 L_L R_1 R_L s^3 + C_1 L_1 L_4 R_1 R_4 R_L s^2 + C_1 L_1 L_L R_1 R_4 R_L s^2 + C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^4 + 2}$$

$$10.822 \quad \text{INVALID-ORDER-822} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_L s^5 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 L_L R_1 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_L s^5 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 L_L R_1 s^4}$$

$$10.823 \quad \text{INVALID-ORDER-823} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_L s^5 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_L s^5 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 s^3}$$

$$10.824 \quad \text{INVALID-ORDER-824} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$$

$$H(s) = \frac{L_1 R_1 R_L s \left( C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + C_4 L_4 R_4 s \right) + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 L_1 L_4 R_1 R_4 g_m s^3 + 2 C_4 L_1 L_4 R_1 R_L g_m s^3 + C_4 L_1 L_4 R_1 s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_1 L_4 R_4 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3}$$

$$10.825 \quad \text{INVALID-ORDER-825} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$$

$$H(s) = \frac{L_1 R_1 s \left( C_4 L_4 R_4 g_m s^2 - C_4 L_4 s^2 + C_4 L_4 R_4 s \right) + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3}$$

$$10.826 \quad \text{INVALID-ORDER-826} \quad Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_4 R_1 R_4 s^3}$$

**10.827 INVALID-ORDER-827**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + 2 C_4 C_L L_1}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + 2 C_4 C_L L_1}$$

**10.828 INVALID-ORDER-828**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 L_L R_1 g_m s^5 + C_4 C_L L_1}$$

**10.829 INVALID-ORDER-829**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_1}$$

10.830 INVALID-ORDER-830  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_1 s + C_1 C_L L_1 s^2 + C_1 C_L L_1 s + C_1 C_L s^2 + C_1 C_L s + C_1 C s^2 + C_1 C s + C_1 s^2 + C_1 s}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_1 s^2 + C_1 C_L L_1 R_1 s + C_1 C_L L_1 s^2 + C_1 C_L L_1 s + C_1 C_L s^2 + C_1 C_L s + C_1 C s^2 + C_1 C s + C_1 s^2 + C_1 s}.$$

**10.831 INVALID-ORDER-831**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_L s^5 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_4 L_L R_1 s^4 +$$

**10.832 INVALID-ORDER-832**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1}$$

**10.833 INVALID-ORDER-833**  $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1}$$

**10.834 INVALID-ORDER-834**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{L_1 R_1 R_L s (C_4 L_4 s^4 + C_4 L_4 R_1 R_L s^3 + C_4 L_4 R_1 R_L s^2 + C_4 L_4 R_1 R_L s + C_4 L_4 R_1 R_L)}{C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 L_1 L_4 R_1 R_4 g_m s^3 + 2 C_4 L_1 L_4 R_1 R_L g_m s^3 + C_4 L_1 L_4 R_1 s^3 + C_4 L_1 L_4 R_4 s^3 + C_4 L_1 L_4 R_1 R_L s^2 + C_4 L_1 L_4 R_1 R_L s + C_4 L_1 L_4 R_1 R_L}$$

**10.835 INVALID-ORDER-835**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 s (C_4 L_4 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_1 R_1 R_4 s^3)}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_4 C_L L_1 L_4 R_1 s^4 + C_4 C_L L_1 L_4 R_4 s^4 + C_4 C_L L_1 R_1 R_4 s^3}$$

**10.836 INVALID-ORDER-836**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_L L_1 R_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 s^2 + C_1 L_1 R_1 R_L s^2 + C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^4}$$

**10.837**   **INVALID-ORDER-837**    $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 s^5}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 L_4 R_1 R_4 s^5}$$

**10.838 INVALID-ORDER-838**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^2 + 2 C_4 C_L L_1 L_4 R_1 R_4 s^3}$$

**10.839 INVALID-ORDER-839**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_L R_1 R_4 s^4 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 R_1 R_4 s^2 + C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^5}.$$

**10.840 INVALID-ORDER-840**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_4 R_1 R_4 s^2 + C_1 C_L L_1 L_4 R_1 s^2 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_4 R_L s^2 + C_1 C_L L_1 R_1 R_4 s^2 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_4 R_L s^2 + C_1 C_L L_4 R_1 R_4 s^2 + C_1 C_L L_4 R_1 R_L s^2 + C_1 C_L L_4 R_4 R_L s^2 + C_1 C_L R_1 R_4 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + C_1 C s^2 + C_1 s^2}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_L L_1 L_4 R_1 R_4 s^2 + C_1 C_L L_1 L_4 R_1 s^2 + C_1 C_L L_1 L_4 R_4 s^2 + C_1 C_L L_1 L_4 R_L s^2 + C_1 C_L L_1 R_1 R_4 s^2 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_4 R_L s^2 + C_1 C_L L_4 R_1 R_4 s^2 + C_1 C_L L_4 R_1 R_L s^2 + C_1 C_L L_4 R_4 R_L s^2 + C_1 C_L R_1 R_4 R_L s^2 + C_1 C_L R_4 R_L s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + C_1 C s^2 + C_1 s^2}$$

10.841 INVALID-ORDER-841  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_4 R_L s^4 + C_1 C_L L_1 L_L R_1 R_4 R_L s^4 + C_1 L_1 L_L R_1 R_4 s^3 +$$

**10.842 INVALID-ORDER-842**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_1 R_L s^4 + C_1 C_4 L_1 L_L R_4 R_L s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_4 s^4 + C_1 C_4 L_1 s^4 + C_1 C_4 R_1 R_4 s^4 + C_1 C_4 R_1 R_L s^4 + C_1 C_4 R_4 R_L s^4 + C_1 C_4 R_4 s^4 + C_1 C_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L s^5 + C_1 C_4 C_L R_1 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 s^4 + C_1 C_4 C_L R_1 s^4 + C_1 C_4 C_L R_4 R_L s^4 + C_1 C_4 C_L R_4 s^4 + C_1 C_4 C_L s^4 + C_1 C_4 C_R R_1 R_4 R_L s^4 + C_1 C_4 C_R R_1 R_4 s^4 + C_1 C_4 C_R R_1 s^4 + C_1 C_4 C_R R_4 R_L s^4 + C_1 C_4 C_R R_4 s^4 + C_1 C_4 C_R s^4 + C_1 C_4 s^4}.$$

10.843 INVALID-ORDER-843  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^4}$$

**10.844 INVALID-ORDER-844**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + 2 C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + C_L R_1 R_4 g_m s + C_L R_1 s + C_L R_4 s + 2 L_1 g_m s + 2 R_1 g_m + 1}$$

**10.845 INVALID-ORDER-845**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_L (R_4 g_m - 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + 2 C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_L L_1 R_4 R_L g_m s^2 + C_L L_1 R_L s^2}$$

**10.846 INVALID-ORDER-846**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1)(C_L R_L s + 1)(C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_L L_1 R_4 g_m s^2 + 2C_L L_1 R_L g_m s^2 + C_L L_1 s^2 + C_L R_1 s + R_1}$$

**10.847 INVALID-ORDER-847**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_L L_L s^2 + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{2C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + 2C_L L_1 L_L g_m s^3 + C_L L_1 R_4 g_m s^2 + C_L L_1 s^2 + 2C_L L_1 L_L s^3}$$

**10.848 INVALID-ORDER-848**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L s (R_4 g_m - 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + 2C_1 L_1 L_L R_1 g_m s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_L L_1 L_L R_4 g_m s^3 + C_L L_1 L_L s^3}$$

**10.849 INVALID-ORDER-849**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(R_4 g_m - 1) (C_L L_L s^2 + C_L R_L s + 1)}{2C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + 2C_L L_1 L_L s^3}$$

**10.850 INVALID-ORDER-850**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 L_1 L_L R_1 R_4 g_m s^3 + 2C_1 L_1 L_L R_1 R_L g_m s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 s^2 + 2C_L L_1 L_L s^3}$$

**10.851 INVALID-ORDER-851**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + 2C_1 L_1 L_L R_1 g_m s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + 2C_1 L_1 R_1 s^2 + 2C_L L_1 L_L s^3}$$

10.852 INVALID-ORDER-852  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + 2 C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 +$$

**10.853 INVALID-ORDER-853**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L(C_4s - g_m)(C_1L_1R_1s^2 + L_1s + R_1)}{2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3 + C_1L_1R_1g_ms^2 + C_1L_1s^2 + 2C_4L_1R_Lg_ms^2 + C_4L_1s^2 + 2C_4R_1R_Lg_ms + C_4R_1s + C_4R_Ls + L_1g_ms + R_1g_m + 1}$$

**10.854 INVALID-ORDER-854**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4s - g_m)(C_1L_1R_1s^2 + L_1s + R_1)}{s(C_1C_4C_LL_1R_1s^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2 + C_4C_LL_1s^2 + C_4C_LR_1s + 2C_4L_1g_ms + 2C_4R_1g_m + C_4 + C_LL_1g_ms + C_LR_1g_m + C)}$$

**10.855 INVALID-ORDER-855**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{R_L(C_4s - g_m)(C_1L_1R_1s^2 + L_1s + R_1)}{C_1C_4C_LL_1R_1R_Ls^4 + 2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3 + C_1C_LL_1R_1R_Lg_ms^3 + C_1C_LL_1R_Ls^3 + C_1L_1R_1g_ms^2 + C_1L_1s^2 + C_4C_LL_1R_Ls^3 + C_4C_LL_1R_1s^2}$$

**10.856 INVALID-ORDER-856**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4s - g_m)(C_LR_Ls + 1)(C_1L_1R_1s^2 + L_1s + R_1)}{s(2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2 + 2C_4C_LL_1R_Lg_ms^2 + C_4C_LL_1s^2 + 2C_4C_LL_1R_Ls + C_4C_LL_1R_1)}.$$



**10.857** INVALID-ORDER-857  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4s - g_m)(C_LLs^2 + 1)(C_1L_1R_1s^2 + L_1s + R_1)}{s(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1s^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2 + 2C_4C_LL_1L_Lg_ms^3 + C_4C_LL_1s^2 + 2C_4L_1R_1g_ms + C_4L_1R_1s + C_4R_1)}$$

**10.858 INVALID-ORDER-858**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L s (C_4 s - g_m) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_4 C_L L_1 L_L R_1 s^5 + 2C_1 C_4 L_1 L_L R_1 g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_1 s^3 + C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 C_L L_1 L_L s^4 + C_4 C_L L_L R_1 s^3}$$

**10.859 INVALID-ORDER-859**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4s - g_m)(C_L}{s(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_L$$

10.860 INVALID-ORDER-860  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_1 g_m s^3}{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 L_1 L_L R_1 g_m s^3}.$$

**10.861 INVALID-ORDER-861**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_Ls^5 + 2C_1C_4L_1L_LR_1g_ms^4 + C_1C_4L_1L_Ls^4 + 2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3 + C_1C_4L_1R_Lg_ms^2 + C_1C_4L_1R_Ls^2 + C_1C_4L_1R_Lg_ms + C_1C_4L_1R_Ls + C_1C_4L_1R_L}{2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_Ls^5 + 2C_1C_4L_1L_LR_1g_ms^4 + C_1C_4L_1L_Ls^4 + 2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3 + C_1C_4L_1R_Lg_ms^2 + C_1C_4L_1R_Ls^2 + C_1C_4L_1R_Lg_ms + C_1C_4L_1R_Ls + C_1C_4L_1R_L}.$$

**10.862 INVALID-ORDER-862**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L R_1 g_m s^4}{2C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 L_L R_1 g_m s^4}$$

**10.863 INVALID-ORDER-863**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L (C_4 R_4 s - R_4 g_m + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + 2C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + 2C_4 L_1 R_4 R_L g_m s^2 + C_4 L_1 R_4 s^2}$$

**10.864 INVALID-ORDER-864**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 R_4 s - R_4 g_m + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_4 C_L L_1 R_1 R_4 s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 C_L L_1 R_4 s^3 + C_4 C_L R_1 R_4 s^3}$$

**10.865 INVALID-ORDER-865**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^3 + C_4 C_L R_1 R_4 s^3}{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 s^2 + C_4 C_L L_1 R_4 s^3 + C_4 C_L R_1 R_4 s^3}$$

**10.866 INVALID-ORDER-866**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3}{2C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3}$$

**10.867 INVALID-ORDER-867**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + C_1C_4C_LL_1R_1R_4s^4 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + 2C_1C_LL_1L_LR_1g_ms^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1R_1R_4g_ms^3}{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + C_1C_4C_LL_1R_1R_4s^4 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + 2C_1C_LL_1L_LR_1g_ms^4 + C_1C_LL_1L_Ls^4 + C_1C_LL_1R_1R_4g_ms^3}$$

**10.868 INVALID-ORDER-868**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = -\frac{C_1C_4C_LL_1L_LR_1R_4s^5 + 2C_1C_4L_1L_LR_1R_4g_ms^4 + C_1C_4L_1L_LR_4s^4 + C_1C_4L_1R_1R_4s^3 + C_1C_LL_1L_LR_1R_4g_ms^4 + C_1C_LL_1L_LR_1s^4 + C_1C_LL_1L_LR_4s^4 + 2C_1L_1L_LR_1g_ms^3}{C_1C_4C_LL_1L_LR_1R_4s^5 + 2C_1C_4L_1L_LR_1R_4g_ms^4 + C_1C_4L_1L_LR_4s^4 + C_1C_4L_1R_1R_4s^3 + C_1C_LL_1L_LR_1R_4g_ms^4 + C_1C_LL_1L_LR_1s^4 + C_1C_LL_1L_LR_4s^4 + 2C_1L_1L_LR_1g_ms^3}$$

**10.869 INVALID-ORDER-869**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + 2C_1C_LL_1L_LR_1R_4g_ms^4 + C_1C_LL_1L_LR_1s^4 + C_1C_LL_1L_LR_4s^4 + 2C_1L_1L_LR_1g_ms^3}{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + 2C_1C_LL_1L_LR_1R_4g_ms^4 + C_1C_LL_1L_LR_1s^4 + C_1C_LL_1L_LR_4s^4 + 2C_1L_1L_LR_1g_ms^3}$$

**10.870 INVALID-ORDER-870**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = -\frac{C_1C_4C_LL_1L_LR_1R_4R_Ls^5 + 2C_1C_4L_1L_LR_1R_4R_Lg_ms^4 + C_1C_4L_1L_LR_1R_4s^4 + C_1C_4L_1L_LR_4R_Ls^4 + C_1C_4L_1R_1R_4R_Ls^3 + C_1C_LL_1L_LR_1R_4R_Lg_ms^4 + C_1C_LL_1L_LR_1R_Ls^4}{C_1C_4C_LL_1L_LR_1R_4R_Ls^5 + 2C_1C_4L_1L_LR_1R_4R_Lg_ms^4 + C_1C_4L_1L_LR_1R_4s^4 + C_1C_4L_1L_LR_4R_Ls^4 + C_1C_4L_1R_1R_4R_Ls^3 + C_1C_LL_1L_LR_1R_4R_Lg_ms^4 + C_1C_LL_1L_LR_1R_Ls^4}$$

**10.871 INVALID-ORDER-871**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1R_4s^5 + C_1C_4C_LL_1L_LR_4R_Ls^5 + 2C_1C_4L_1L_LR_1R_4g_ms^4 + C_1C_4L_1L_LR_4s^4 + 2C_1C_4L_1R_1R_4R_Lg_ms^3 + C_1C_4L_1R_1R_4s^3 + 2C_1C_LL_1L_LR_1R_4R_Lg_ms^4 + C_1C_LL_1L_LR_1R_Ls^4 + C_1C_LL_1L_LR_4R_Ls^4 + 2C_1L_1L_LR_1g_ms^3}{2C_1C_4C_LL_1L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1R_4s^5 + C_1C_4C_LL_1L_LR_4R_Ls^5 + 2C_1C_4L_1L_LR_1R_4g_ms^4 + C_1C_4L_1L_LR_4s^4 + 2C_1C_4L_1R_1R_4R_Lg_ms^3 + C_1C_4L_1R_1R_4s^3 + 2C_1C_LL_1L_LR_1R_4R_Lg_ms^4 + C_1C_LL_1L_LR_1R_Ls^4 + C_1C_LL_1L_LR_4R_Ls^4 + 2C_1L_1L_LR_1g_ms^3}$$

$$10.872 \quad \text{INVALID-ORDER-872} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = - \frac{2C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 +$$

$$10.873 \quad \text{INVALID-ORDER-873} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_L (C_1 L_1 R_1 s^2 + L_1 s + R_1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 L_1 R_4 g_m s^2 + 2C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 R_1 R_4 s^2 +$$

$$10.874 \quad \text{INVALID-ORDER-874} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_1 L_1 R_1 s^2 + L_1 s + R_1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 R_4 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_1 R_4 s^2 +$$

$$10.875 \quad \text{INVALID-ORDER-875} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_L R_L s + 1} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 R_1 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_1 R_4 s^2 +$$

$$10.876 \quad \text{INVALID-ORDER-876} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad L_2 s + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{(C_L R_L s + 1) (C_1 L_1 R_1 s^2 + L_1 s + R_1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 R_1 g_m s^2 + C_4 C_L L_1 s^2 + C_4 C_L R_1 R_4 s^2 +$$

**10.877 INVALID-ORDER-877**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_1L_1s^2 + 1)}{s(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2)}$$

**10.878 INVALID-ORDER-878**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{1}{C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_4s^5 + 2C_1C_4L_1L_LR_1g_ms^4 + C_1C_4L_1L_Ls^4 + C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_4s^3 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2}$$

**10.879 INVALID-ORDER-879**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{1}{s(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2)}$$

**10.880 INVALID-ORDER-880**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{1}{C_1C_4C_LL_1L_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1R_Ls^5 + C_1C_4C_LL_1L_LR_4R_Ls^5 + C_1C_4L_1L_LR_1R_4g_ms^4 + 2C_1C_4L_1L_LR_1R_Lg_ms^4 + C_1C_4L_1L_LR_1s^4 + C_1C_4L_1L_LR_4s^4 + C_1C_LL_1R_1R_4g_ms^3 + C_1C_LL_1R_1s^3 + C_1C_LL_1R_4s^3 + C_1C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2}$$

**10.881 INVALID-ORDER-881**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{1}{C_1C_4C_LL_1L_LR_1R_4g_ms^5 + 2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_4s^5 + C_1C_4C_LL_1L_LR_Ls^5 + 2C_1C_4L_1L_LR_1g_ms^4 + C_1C_4L_1L_Ls^4 + C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_4s^3 + C_1C_LL_1R_1R_4g_ms^2 + C_1C_LL_1R_1s^2 + C_1C_LL_1R_4s^2 + C_1C_LL_1R_Ls^2 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2}$$

10.882 INVALID-ORDER-882  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 +$$

**10.883 INVALID-ORDER-883**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 R_1 s^2 + L_1 s + R_1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 L_1 L_4 g_m s^3 + 2 C_4 L_1 R_L g_m s^2 + C_4 L_1 s^2 + C_4 L_4 R_1 g}$$

**10.884 INVALID-ORDER-884**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 R_1 s^2 + L_1 s + R_1)(C_4 L_4 g_m s^2 - C_4 s + g_m)}{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_4 C_L L_1 L_4 g_m s^3 + C_4 C_L L_1 s^2 + C_4 C_L L_4 R_1 s + C_4 R_1)}$$

**10.885 INVALID-ORDER-885**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_L s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + C_1 R_1 R_L s^2 + C_1 R_L s^2 + C_1 s^2}{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^2 + C_1 C_L L_1 R_L s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_L s^2 + C_1 C_L s^2 + C_1 R_1 R_L s^2 + C_1 R_L s^2 + C_1 s^2}.$$

**10.886 INVALID-ORDER-886**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_L R_L s + 1)(C_1 L_1 I)}{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_L s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2)}$$

**10.887 INVALID-ORDER-887**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_1L_1s^2 + R_1s + \frac{1}{C_1})}{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + 2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1s^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2)}$$

**10.888 INVALID-ORDER-888**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} \right)$

$$H(s) = \frac{(C_LL_Ls^2 + 1)(C_1L_1s^2 + R_1s + \frac{1}{C_1})}{C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + 2C_1C_4L_1L_LR_1g_ms^4 + C_1C_4L_1L_Ls^4 + C_1C_4L_1R_1s^3 + C_1C_LL_1R_1g_ms^2 + C_1C_LL_1s^2}$$

**10.889 INVALID-ORDER-889**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls} \right)$

$$H(s) = \frac{(C_1L_1s^2 + R_1s + \frac{1}{C_1})(C_LL_Ls^2 + 1)}{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + 2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2)}$$

**10.890 INVALID-ORDER-890**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right)$

$$H(s) = \frac{(C_1L_1s^2 + R_1s + \frac{1}{C_1})(C_LL_Ls^2 + 1)}{C_1C_4C_LL_1L_4L_LR_1R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_Ls^6 + C_1C_4C_LL_1L_LR_1R_Ls^5 + C_1C_4L_1L_4L_LR_1g_ms^5 + C_1C_4L_1L_4L_Ls^5 + C_1C_4L_1L_4R_1R_Lg_ms^4 + C_1C_4L_1L_4R_Ls^4 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2}$$

**10.891 INVALID-ORDER-891**  $Z(s) = \left( L_1s + \frac{1}{C_1s}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L \right)$

$$H(s) = \frac{(C_1L_1s^2 + R_1s + \frac{1}{C_1})(C_LL_Ls^2 + 1)(C_LL_Ls^2 + 1)}{C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_Ls^5 + C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + 2C_1C_4L_1R_1g_ms^2 + C_1C_4L_1s^2}$$

$$\mathbf{10.892} \quad \mathbf{INVALID-ORDER-892} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \quad L_2 s + R_2 + \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 +$$

**10.893 INVALID-ORDER-893**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L (C_4 L_4 s^2 - L_4 g_m s + 1) (C_1 L_1 R_1 s^2 + L_1 s + 1)}{2C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 s^3 + 2C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_L s^2 + 2C_4 L_1 L_4 R_L g_m s^3 + C_4 L_1 L_4}$$

**10.894 INVALID-ORDER-894**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{(C_4 L_4 s^2 - L_4 g_m s + 1)(C_1 L_1 R_1 s^2 + L_1 s + R_1)}{C_1 C_4 C_L L_1 L_4 R_1 s^5 + 2C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 s^3 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 C_L L_1 L_4 s^4 + C_4 C_L L_4 R_1 s^3}$$

**10.895 INVALID-ORDER-895**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + 2C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_L g_m s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_1 R_L s^3 + C_1 L_1 L_4 R_1 g_m s^3 +$$

**10.896 INVALID-ORDER-896**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_LL_1L_4R_1g_ms^4 + C_1C_LL_1L_4s^4 + 2C_1C_LL_1R_1R_Lg_ms^3 -$$



**10.897 INVALID-ORDER-897**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1s^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_LL_1L_4R_1g_ms^4 + C_1C_LL_1L_4s^4 + 2C_1C_LL_1L_LR_1g_ms^4 +$$

**10.898 INVALID-ORDER-898**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 L_L R_1 g_m s^5 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 L_L s^3 + C_1 L_1 L_L R_1 s^2 + C_1 L_1 L_L s^2 + C_1 L_1 R_1 s + C_1 R_1}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 L_L R_1 g_m s^5 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_1 s^4 + C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 L_L s^3 + C_1 L_1 L_L R_1 s^2 + C_1 L_1 L_L s^2 + C_1 L_1 R_1 s + C_1 R_1}$$

**10.899 INVALID-ORDER-899**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_LL_1L_4s^4}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_LL_1L_4s^4}.$$

10.900 INVALID-ORDER-900  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_L g_m s^5 + C_1 C_L L_1 L_4 L_L R_L s^5 +$$

**10.901 INVALID-ORDER-901**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + \dots}{\dots}$$

**10.902 INVALID-ORDER-902**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_1s^6 + C_1C_4C_LL_1L_4L_LR_Ls^6 + C_1C_4C_LL_1L_4R_1R_Ls^5 + 2C_1C_4L_1L_4R_1R_Lg_ms^4 + C_1C_4L_1L_4R_1s^4 + C_1C_4L_1L_4R_Ls^4 + C_1C_4L_1L_4R_Lg_ms^3 + C_1C_4L_1L_4R_Ls^3 + C_1C_4L_1L_4R_Lg_ms^2 + C_1C_4L_1L_4R_Ls^2 + C_1C_4L_1L_4R_Lg_ms + C_1C_4L_1L_4R_Ls + C_1C_4L_1L_4R_L}{2C_1C_4C_LL_1L_4L_LR_1R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_1s^6 + C_1C_4C_LL_1L_4L_LR_Ls^6 + C_1C_4C_LL_1L_4R_1R_Ls^5 + 2C_1C_4L_1L_4R_1R_Lg_ms^4 + C_1C_4L_1L_4R_1s^4 + C_1C_4L_1L_4R_Ls^4 + C_1C_4L_1L_4R_Lg_ms^3 + C_1C_4L_1L_4R_Ls^3 + C_1C_4L_1L_4R_Lg_ms^2 + C_1C_4L_1L_4R_Ls^2 + C_1C_4L_1L_4R_Lg_ms + C_1C_4L_1L_4R_Ls + C_1C_4L_1L_4R_L}.$$

**10.903 INVALID-ORDER-903**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_L (C_1 L_1 R_1 s^2 + L_1 s + R_1) (C_4 L_4 g_m s^2 + C_4 L_4 s + R_4)}{C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_4 L_1 L_4 g_m s^3 + C_4 L_1 L_4 s^3 + C_4 L_1 R_1 s^2 + C_4 L_1 R_4 s^2 + C_4 L_1 R_L s^2 + C_4 L_1 s^2 + R_1 R_4 g_m s^2 + R_1 R_4 s^2 + R_1 R_L s^2 + R_1 s^2 + R_4 R_L s^2 + R_4 s^2 + R_L s^2 + s^2 + 1}$$

10.904 INVALID-ORDER-904  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{(C_1 L_1 R_1 s^2 + L_1 s + R_1)}{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2}$$

**10.905 INVALID-ORDER-905**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_1 R_4}{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_1 R_4}$$

**10.906 INVALID-ORDER-906**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_1R_Ls^3 + 2C_1C_4L_1R_1g_ms^2 -$$

$$\mathbf{10.907 \quad INVALID-ORDER-907} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{1}{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 +$$

$$\mathbf{10.908 \quad INVALID-ORDER-908} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 L_L R_1$$

$$\mathbf{10.909 \quad INVALID-ORDER-909} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$$

$$H(s) = \frac{1}{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 +$$

$$\mathbf{10.910 \quad INVALID-ORDER-910} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 +$$

$$\mathbf{10.911 \quad INVALID-ORDER-911} \quad Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = \frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 +$$

**10.912 INVALID-ORDER-912**  $Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5}$$

**10.913 INVALID-ORDER-913**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 g_m s^3 + 2C_1 L_1 L_4 R_1 R_L g_m s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + 2C_1 L_1}{2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 L_1 L_4 R_1 R_4 g_m s^3 + 2C_1 L_1 L_4 R_1 R_L g_m s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 L_4 R_L s^3 + 2C_1 L_1}$$

**10.914 INVALID-ORDER-914**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + 2C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^3 + C_1 L_1 R_4 s^3 + C_1 L_1 s^3 + C_1 R_1 R_4 s^3 + C_1 R_1 s^3 + C_1 R_4 s^3 + C_1 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + 2C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 R_1 s^3 + C_1 L_1 L_4 R_4 s^3 + C_1 L_1 R_1 R_4 s^3 + C_1 L_1 R_1 s^3 + C_1 L_1 R_4 s^3 + C_1 L_1 s^3 + C_1 R_1 R_4 s^3 + C_1 R_1 s^3 + C_1 R_4 s^3 + C_1 s^3}.$$

**10.915 INVALID-ORDER-915**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 + C_1 C_L L_1 L_4 R_4 R_L s^4 +$$

**10.916 INVALID-ORDER-916**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_LL_1L_4R_1R_4g_ms^4 + 2C_1C_LL_1L_4R_1R_Lg_m}{2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_LL_1L_4R_1R_4g_ms^4 + 2C_1C_LL_1L_4R_1R_Lg_m}$$

**10.917 INVALID-ORDER-917**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_1R_4s^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + 2C_1C_LL_1L_4L_LR_1g_ms^5 + C_1C_LL_1L_4L_Ls^5 + C_1C_LL_1L_4L_LR_1s^5 + C_1C_LL_1L_4L_LR_4s^5 + C_1C_LL_1L_4L_LR_4g_ms^4 + C_1C_LL_1L_4L_LR_4s^4 + C_1C_LL_1L_4L_LR_4g_ms^3 + C_1C_LL_1L_4L_LR_4s^3 + C_1C_LL_1L_4L_LR_4g_ms^2 + C_1C_LL_1L_4L_LR_4s^2 + C_1C_LL_1L_4L_LR_4g_ms + C_1C_LL_1L_4L_LR_4s + C_1C_LL_1L_4L_LR_4}{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_1R_4s^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + 2C_1C_LL_1L_4L_LR_1g_ms^5 + C_1C_LL_1L_4L_Ls^5 + C_1C_LL_1L_4L_LR_1s^5 + C_1C_LL_1L_4L_LR_4s^5 + C_1C_LL_1L_4L_LR_4g_ms^4 + C_1C_LL_1L_4L_LR_4s^4 + C_1C_LL_1L_4L_LR_4g_ms^3 + C_1C_LL_1L_4L_LR_4s^3 + C_1C_LL_1L_4L_LR_4g_ms^2 + C_1C_LL_1L_4L_LR_4s^2 + C_1C_LL_1L_4L_LR_4g_ms + C_1C_LL_1L_4L_LR_4s + C_1C_LL_1L_4L_LR_4}$$

**10.918 INVALID-ORDER-918**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 L_L R_4 s^5 +$$

**10.919 INVALID-ORDER-919**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + 2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1$$

**10.920 INVALID-ORDER-920**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_L L_1 L_4 L_L R_1 R_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_L L_1 L_4 L_L R_1 R_4 R_L s^4}$$

**10.921 INVALID-ORDER-921**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4}{(s^2 + \omega_{L_1}^2)(s^2 + \omega_{L_4}^2)(s^2 + \omega_{L_L}^2)(s^2 + \omega_{R_1}^2)(s^2 + \omega_{R_4}^2)(s^2 + \omega_{R_L}^2)}.$$

**10.922 INVALID-ORDER-922**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1$$

**10.923 INVALID-ORDER-923**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 s^3 + C_1 L_1 R_1 R_4 g_m s^2 + 2 C_1 L_1 R_1 R_L g_m}$$

**10.924 INVALID-ORDER-924**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 g_m s^2 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 R_1 R_4 g_m s + C_1 R_1 R_4 s + C_1 R_1 s + C_1 R_4 g_m s + C_1 R_4 s + C_1 s}{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 R_4 s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 g_m s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 s^3 + C_1 C_L R_1 R_4 g_m s^2 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 g_m s^2 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 R_1 R_4 g_m s + C_1 R_1 R_4 s + C_1 R_1 s + C_1 R_4 g_m s + C_1 R_4 s + C_1 s}$$

**10.925 INVALID-ORDER-925**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 s^4}.$$

**10.926 INVALID-ORDER-926**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 s^4}$$

**10.927 INVALID-ORDER-927**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + 2C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_L L_1 L_4 R_1}{\dots}$$

**10.928 INVALID-ORDER-928**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4$$

**10.929 INVALID-ORDER-929**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2C_1 C_4 C_L L_1 L_4 L_L R_{1g_m} s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_{4g_m} s^5 + 2C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2C_1 C_4 C_L L_1 L_4 R_L g_m s^5}{(s^2 + R_1 g_m)(s^2 + R_4 g_m)(s^2 + R_L g_m)}.$$

10.930 INVALID-ORDER-930  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5}$$

**10.931 INVALID-ORDER-931**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5}$$

**10.932 INVALID-ORDER-932**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4$$

**10.933 INVALID-ORDER-933**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 R_L g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L g_m s^2 + C_1 C_4 s^2 + C_1 L_1 L_4 R_1 R_4 g_m s + C_1 L_1 L_4 R_1 R_L g_m s + C_1 L_1 L_4 R_1 s + C_1 L_1 L_4 R_4 s + C_1 L_1 L_4 R_L s + C_1 L_1 R_1 R_4 R_L g_m + C_1 L_1 R_1 R_4 s + C_1 L_1 R_1 R_L g_m + C_1 L_1 R_1 s + C_1 L_1 R_4 R_L g_m + C_1 L_1 R_4 s + C_1 L_1 R_L g_m + C_1 L_1 s + C_1 L_4 R_1 R_4 g_m + C_1 L_4 R_1 R_L g_m + C_1 L_4 R_1 s + C_1 L_4 R_4 s + C_1 L_4 R_L s + C_1 L_4 s + C_1 R_1 R_4 R_L g_m + C_1 R_1 R_4 s + C_1 R_1 R_L g_m + C_1 R_1 s + C_1 R_4 R_L g_m + C_1 R_4 s + C_1 R_L g_m + C_1 s}{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + 2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 L_4 R_1 R_4 g_m s^3 + C_1 C_4 L_4 R_1 R_L g_m s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 L_4 R_4 s^3 + C_1 C_4 L_4 R_L s^3 + C_1 C_4 L_4 s^3 + C_1 C_4 R_1 R_4 R_L g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 R_L g_m s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L g_m s^2 + C_1 C_4 s^2 + C_1 L_1 L_4 R_1 R_4 g_m s + C_1 L_1 L_4 R_1 R_L g_m s + C_1 L_1 L_4 R_1 s + C_1 L_1 L_4 R_4 s + C_1 L_1 L_4 R_L s + C_1 L_1 R_1 R_4 R_L g_m + C_1 L_1 R_1 R_4 s + C_1 L_1 R_1 R_L g_m + C_1 L_1 R_1 s + C_1 L_1 R_4 R_L g_m + C_1 L_1 R_4 s + C_1 L_1 R_L g_m + C_1 L_1 s + C_1 L_4 R_1 R_4 g_m + C_1 L_4 R_1 R_L g_m + C_1 L_4 R_1 s + C_1 L_4 R_4 s + C_1 L_4 R_L s + C_1 L_4 s + C_1 R_1 R_4 R_L g_m + C_1 R_1 R_4 s + C_1 R_1 R_L g_m + C_1 R_1 s + C_1 R_4 R_L g_m + C_1 R_4 s + C_1 R_L g_m + C_1 s}.$$

**10.934 INVALID-ORDER-934**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + 2C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 s^2}{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + 2C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 s^2}.$$

**10.935 INVALID-ORDER-935**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4}$$

**10.936 INVALID-ORDER-936**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4}{...}$$



**10.937 INVALID-ORDER-937**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 +$$

**10.938 INVALID-ORDER-938**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4}$$

**10.939 INVALID-ORDER-939**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_1L_4R_Ls^5 +$$

10.940 INVALID-ORDER-940  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5}$$

**10.941 INVALID-ORDER-941**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 L_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^7 + 2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^7 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_L s^7 + 2C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L s^6}.$$

10.942 INVALID-ORDER-942  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_1 s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 C_4 C_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_4 s^2 + C_1 R_1 R_4 g_m s + C_1 R_1 R_4 s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + C_1 s}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_1 s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 C_4 C_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_4 s^2 + C_1 R_1 R_4 g_m s + C_1 R_1 R_4 s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + C_1 s}$$

**10.943 INVALID-ORDER-943**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1(R_4 g_m - 1)(C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_1 R_4 q_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L R_1 R_4 s^2 + 2C_1 L_1 R_1 q_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_L R_1 R_4 q_m s + C_L R_1 s + C_L R_4 s + 2R_1 q_m + 1}$$

**10.944 INVALID-ORDER-944**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{R_1 R_L (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 C_L R_1 R_4 R_L s^2 + C_1 L_1 R_1 R_4 g_m s^2 + 2 C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 R_1 R_4 s}$$

**10.945 INVALID-ORDER-945**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{C_1 C_L L_1 R_1 R_4 g_m s^3 + 2 C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + 2 C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_L R_1 R_4}$$

**10.946 INVALID-ORDER-946**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{2C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + 2C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + 2C_L L_L}$$

**10.947 INVALID-ORDER-947**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{L_L R_1 s (R_4 g_m - 1) (C_1 L_1 s^2 + 1)}{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_L R_1 R_4 s^3 + 2C_1 L_1 L_L R_1 g_m s^3 + C_1 L_1 L_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_4 s^2}$$

**10.948 INVALID-ORDER-948**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (R_4 g_m - 1) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{2C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_4 s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L R_L s^2}$$

**10.949 INVALID-ORDER-949**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_4 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 R_L s^4 + C_1 C_L L_1 L_L R_4 R_L s^4 + C_1 C_L L_L R_1 R_4 R_L s^3 + C_1 L_1 L_L R_1 R_4 g_m s^3 + 2C_1 L_1 L_L R_1 R_L g_m s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 L_L R_1 R_4 g_m s^2 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2}$$

**10.950 INVALID-ORDER-950**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_L R_1 R_4 s^3 + C_1 C_L L_L R_1 R_L s^3 + 2C_1 L_1 L_L R_1 g_m s^3 + C_1 L_1 L_L R_1 s^3 + C_1 L_1 L_L R_4 s^3 + C_1 L_1 L_L R_L s^3 + C_1 L_1 R_1 R_4 g_m s^2 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 L_L R_1 R_4 g_m s^2 + C_1 L_L R_1 R_L s^2 + C_1 L_L R_1 s^2 + C_1 L_L R_4 s^2 + C_1 L_L R_L s^2}$$

**10.951 INVALID-ORDER-951**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L (L_L s + \frac{1}{C_L s})}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + 2C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_L R_1 R_4 g_m s^2 + C_1 C_L L_L R_1 R_L s^2 + C_1 C_L L_L R_1 s^2 + C_1 C_L L_L R_4 s^2 + C_1 C_L L_L R_L s^2 + C_1 C_L L_L R_1 s^2 + C_1 C_L L_L R_4 s^2 + C_1 C_L L_L R_L s^2}$$

**10.952 INVALID-ORDER-952**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_1 R_L (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 R_1 R_L s^2 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**10.953 INVALID-ORDER-953**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{s (C_1 C_4 C_L L_1 R_1 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 R_1 s + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 s + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.954 INVALID-ORDER-954**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{R_1 R_L (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 R_1 R_L s^4 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 R_1 R_L s^2 + C_1 C_L L_1 R_1 R_L g_m s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_L s^2 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**10.955 INVALID-ORDER-955**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{s (2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 C_L R_1 R_L s^2 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 R_1 s + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 s + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.956 INVALID-ORDER-956**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_4 s - g_m) (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{s (2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 R_1 s + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 s + C_4 C_L R_1 s + 2C_4 R_1 g_m + C_4 + C_L R_1 g_m + C_L)}$$

**10.957 INVALID-ORDER-957**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{L_L R_1 s (C_4 s - g_m) (C_1 L_1 s^2 + 1)}{C_1 C_4 C_L L_1 L_L R_1 s^5 + 2C_1 C_4 L_1 L_L R_1 g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_L R_1 s^3 + C_1 C_L L_1 L_L R_1 g_m s^4 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_L R_1 s^3 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + 2C_4 R_1 R_L g_m s + C_4 R_1 s + C_4 R_L s + R_1 g_m + 1}$$

**10.958 INVALID-ORDER-958**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1(C_4 s - g_m)(C_1 L}{s(2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + 2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_L s^2 + 2C_1 C_4 L_1 R_1 g_m s^2 +$$

10.959 INVALID-ORDER-959  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_4 L_L R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4}{C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4 + C_1 C_4 L_1 L_L R_L s^4 + C_1 C_4 L_1 R_1 R_L s^3 + C_1 C_4 L_L R_1 R_L s^3 + C_1 C_L L_1 L_L R_1 R_L g_m s^4 + C_1 C_L L_1 L_L R_L s^4}$$

**10.960 INVALID-ORDER-960**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_LL_LR_1R_Lg_ms^5 + C_1C_4C_LL_LL_Rs^5 + C_1C_4C_LL_LR_Ls^5 + C_1C_4C_LL_RR_Ls^4 + 2C_1C_4L_LL_R1g_ms^4 + C_1C_4L_LLs^4 + 2C_1C_4L_1R_LR_Lg_ms^3 + C_1C_4L_1R_1s^3}{2C_1C_4C_LL_LL_LR_1R_Lg_ms^5 + C_1C_4C_LL_LL_Rs^5 + C_1C_4C_LL_LR_Ls^5 + C_1C_4C_LL_RR_Ls^4 + 2C_1C_4L_LL_R1g_ms^4 + C_1C_4L_LLs^4 + 2C_1C_4L_1R_LR_Lg_ms^3 + C_1C_4L_1R_1s^3}.$$

10.961 INVALID-ORDER-961  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_Ls^5 + C_1C_4C_LL_1R_1R_Ls^4 + C_1C_4C_LL_R_1R_Ls^4 + 2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3}{2C_1C_4C_LL_1L_LR_1R_Lg_ms^5 + C_1C_4C_LL_1L_LR_1s^5 + C_1C_4C_LL_1L_LR_Ls^5 + C_1C_4C_LL_1R_1R_Ls^4 + C_1C_4C_LL_R_1R_Ls^4 + 2C_1C_4L_1R_1R_Lg_ms^3 + C_1C_4L_1R_1s^3 + C_1C_4L_1R_Ls^3}$$

**10.962 INVALID-ORDER-962**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_1 R_L (C_1 L_1 s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{2C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 L_1 R_1 R_4 g_m s^2 + 2C_1 L_1 R_1 R_L g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s^2 + C_1 L_1 R_L s^2 + C_1 R_1 R_4}$$

**10.963 INVALID-ORDER-963**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_1 L_1 s^2 + 1) (C_4 R_4 s - R_4 g_m + 1)}{C_1 C_4 C_L L_1 R_1 R_4 s^4 + 2 C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_4 s^3 + C_1 C_L R_1 R_4 s^2 + 2 C_1 L_1 R_1 g_m s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_4 s + C_1 R_1}$$

**10.964 INVALID-ORDER-964**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + 2 C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3}{C_1 C_4 C_L L_1 R_1 R_4 R_L s^4 + 2 C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 R_1 R_4 R_L s^2 + C_1 C_L L_1 R_1 R_4 R_L g_m s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_4 R_L s^3}.$$

**10.965 INVALID-ORDER-965**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + C_1C_4C_LR_1R_4R_Ls^3 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + C_1C_4R_1R_4s^2 + C_1C_LL_1R_1R_4g_ms^3}{2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + C_1C_4C_LR_1R_4R_Ls^3 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + C_1C_4R_1R_4s^2 + C_1C_LL_1R_1R_4g_ms^3}.$$

**10.966 INVALID-ORDER-966**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_LR_1R_4s^4 + 2C_1C_4L_1R_1R_4g_ms^3 + C_1C_4L_1R_4s^3 + C_1C_4R_1R_4s^2 + 2C_1C_LL_1L_LR_1g_ms^4}{\dots}$$

**10.967 INVALID-ORDER-967**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^4 + C_1 C_4 L_1 L_L R_4 s^4 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_L R_1 R_4 s^3 + C_1 C_L L_1 L_L R_1 R_4 g_m s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_4 s^4 +$$

**10.968 INVALID-ORDER-968**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + C_1C_4C_LL_LR_1R_4s^4 + C_1C_4C_LR_1R_4R_Ls^3 + 2C_1C_4C_LR_1R_4R_Ls^2 + C_1C_4C_LR_1R_4R_Ls + C_1C_4C_LR_1R_4R_L}{2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4 + C_1C_4C_LL_1R_4R_Ls^4 + C_1C_4C_LL_LR_1R_4s^4 + C_1C_4C_LR_1R_4R_Ls^3 + 2C_1C_4C_LR_1R_4R_Ls^2 + C_1C_4C_LR_1R_4R_Ls + C_1C_4C_LR_1R_4R_L}.$$

10.969 INVALID-ORDER-969  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + 2 C_1 C_4 L_1 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_4 L_L R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 R_L g_m s^4}{C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + 2 C_1 C_4 L_1 L_L R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 R_4 s^4 + C_1 C_4 L_1 L_L R_4 R_L s^4 + C_1 C_4 L_1 R_1 R_4 R_L s^3 + C_1 C_4 L_L R_1 R_4 R_L s^3 + C_1 C_L L_1 L_L R_1 R_4 R_L g_m s^4}$$

**10.970 INVALID-ORDER-970**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1C_4C_LL_LL_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_LL_LR_1R_4s^5 + C_1C_4C_LL_LL_LR_4R_Ls^5 + C_1C_4C_LL_LR_1R_4R_Ls^4 + 2C_1C_4L_1L_LR_1R_4g_ms^4 + C_1C_4L_1L_LR_4s^4 + 2C_1C_4L_1R_1R_4R_L}{\dots}$$

10.971 INVALID-ORDER-971  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_LL_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_LL_LR_1R_4s^5 + C_1C_4C_LL_LL_LR_4R_Ls^5 + C_1C_4C_LL_1R_1R_4R_Ls^4 + C_1C_4C_LL_LR_1R_4R_Ls^4 + 2C_1C_4L_1R_1R_4R_Lg_ms^3 + C_1C_4L_1R_1R_4R_Ls^3}{2C_1C_4C_LL_LL_LR_1R_4R_Lg_ms^5 + C_1C_4C_LL_LL_LR_1R_4s^5 + C_1C_4C_LL_LL_LR_4R_Ls^5 + C_1C_4C_LL_1R_1R_4R_Ls^4 + C_1C_4C_LL_LR_1R_4R_Ls^4 + 2C_1C_4L_1R_1R_4R_Lg_ms^3 + C_1C_4L_1R_1R_4R_Ls^3}.$$

**10.972 INVALID-ORDER-972**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_4 R_1 R_4 g_m}$$

**10.973 INVALID-ORDER-973**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_4 R_4 g_m s - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + 2 C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 R_1 s + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 s}$$

**10.974 INVALID-ORDER-974**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 s^3}{C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_1 s^3}$$

**10.975 INVALID-ORDER-975**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_L R_L s + 1)}{s (C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + 2 C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 C_L R_1 R_4 s^2 + C_1 C_4 C_L R_1 R_L s^2 + 2 C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 R_1 s^2 + C_1 C_4 L_1 R_4 s^2 + C_1 C_4 L_1 R_L s^2 + C_1 C_4 R_1 R_4 s + C_1 C_4 R_1 R_L s + C_1 C_4 R_1 s + C_1 C_4 R_4 s + C_1 C_4 R_L s + C_1 C_4 s + C_1 L_1 R_1 s + C_1 L_1 R_4 s + C_1 L_1 R_L s + C_1 L_1 s + C_1 R_1 s + C_1 R_4 s + C_1 R_L s + C_1 s + C_4 L_1 R_1 s + C_4 L_1 R_4 s + C_4 L_1 R_L s + C_4 L_1 s + C_4 R_1 s + C_4 R_4 s + C_4 R_L s + C_4 s + L_1 R_1 s + L_1 R_4 s + L_1 R_L s + L_1 s + R_1 s + R_4 s + R_L s + s + g_m s + 1)}$$

**10.976 INVALID-ORDER-976**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{s (2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_L R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 R_1 s^2 + C_1 C_4 L_1 R_4 s^2 + C_1 C_4 L_L R_1 s^2 + C_1 C_4 L_L R_4 s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 s^2 + C_1 C_L L_1 s^2 + C_1 C_L L_L s^2 + C_1 C_L R_1 s^2 + C_1 C_L R_4 s^2 + C_1 C_L s^2 + C_1 L_1 s^2 + C_1 L_L s^2 + C_1 R_1 s^2 + C_1 R_4 s^2 + C_1 s^2 + 1)}$$

**10.977 INVALID-ORDER-977**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_1 L_L R_1 g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 R_1 R_4 s^3}{C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + 2C_1 C_4 L_1 L_L R_1 g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 R_1 R_4 s^3}.$$

**10.978 INVALID-ORDER-978**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{s(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_1R_Ls^3 + C_1C_4C_LL_1R_1s^3)}{s^2(2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_1R_Ls^3 + C_1C_4C_LL_1R_1s^3)}$$



**10.979 INVALID-ORDER-979**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_L R_1 R_L s^5 + C_1 C_4 C_L L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4}{C_1 C_4 C_L L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_L R_1 R_L s^5 + C_1 C_4 C_L L_L R_4 R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_L R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_L R_1 R_L g_m s^4 + C_1 C_4 L_1 L_L R_1 s^4}$$

**10.980 INVALID-ORDER-980**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_L R_1 R_4 g_m s^5 + 2C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 C_L L_L R_1 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_L s^4 + 2C_1 C_4 C_L L_L R_1 R_L s^4}{\dots}$$

10.981 INVALID-ORDER-981  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 +$$

10.982 INVALID-ORDER-982  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{R_1 R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_L s^2 + C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_4 L_4 R_1 g_m}$$

10.983 INVALID-ORDER-983  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 - C_4 s + g_m)}{s (C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_4 R_1 s^3 + 2 C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 s^2 + C_1 C_4 R_1 s + C_1 C_L L_1 R_1 g_m s^2 + C_1 C_L L_1 s^2 + C_1 C_L R_1 s}$$

10.984 INVALID-ORDER-984  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_1 s^3 + C_1 C_4 R_L s^3 + C_1 C_4 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 s^3 + C_1 C_4 R_1 s^3 + C_1 C_4 R_L s^3 + C_1 C_4 s^3}.$$

10.985 INVALID-ORDER-985  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1(C_L L_1 s^2 + 1)(C_L R_L}{s(C_1 C_4 C_L L_1 L_4 R_1 q_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2C_1 C_4 C_L L_1 R_1 R_L q_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_L s^3 + C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L R_1 R_L s^2 + 2C_1 C_4 L_1 R_1 q_m s^2 + C_1 C_4$$

10.986 INVALID-ORDER-986  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1)}{s (C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2 C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_L R_1 s^3 + 2 C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 R_1 s^2 + C_1 C_4 L_L R_1 s^2 + C_1 C_4 L_L s^2 + C_1 C_4 s^2 + C_1 C_4)}.$$

10.987 INVALID-ORDER-987  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2 C_1 C_4 L_1 L_L R_1 g_m s^4 + C_1 C_4 L_1 L_L s^4 + C_1$$

10.988 INVALID-ORDER-988  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + 2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_Ls^3 + C_1C_4C_LL_4R_1s^3}$$

10.989 INVALID-ORDER-989  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 +$$

**10.990 INVALID-ORDER-990**  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_1 L_L R_1 R_L s^4 + C_1 C_4 C_L L_1 L_L R_1 R_L s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_L s^4 + C_1 C_4 C_L L_1 L_L R_1 R_L s^4 + C_1 C_4 C_L L_1 L_L R_1 R_L s^4}$$

10.991 INVALID-ORDER-991  $Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 +$$

**10.992 INVALID-ORDER-992**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{R_L R_L (C_1 L_1 s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{2C_1 C_4 L_1 L_4 R_L R_L g_m s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_4 R_L R_L s^3 + C_1 L_1 L_4 R_L g_m s^3 + C_1 L_1 L_4 s^3 + 2C_1 L_1 R_L R_L g_m s^2 + C_1 L_1 R_L s^2 + C_1 L_1 R_L s^2 + C_1 L_4 R_L s}$$

**10.993 INVALID-ORDER-993**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{R_1 (C_1 L_1 s^2 + 1) (C_4 L_4 s^2 - L_4 g_m s + 1)}{C_1 C_4 C_L L_1 L_4 R_1 s^5 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_4 R_1 s^3 + 2 C_1 L_1 R_1 g_m s^2 + C_1 L_1 s^2}$$

**10.994 INVALID-ORDER-994**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + 2C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 C_L L_1 L_4 R_1 R_L g_m s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 R_1 R_L s^3 +$$

**10.995 INVALID-ORDER-995**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + C_1C_4C_LL_4R_1R_Ls^4 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_4L_4R_1s^3 + C_1C_LL_1L_4R_1g_ms^4 +$$

**10.996 INVALID-ORDER-996**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_4L_LR_1s^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_4L_4R_1s^3 + C_1C_LL_1L_4R_1g_ms^4 + C_1C_LL_1L_4s^4 + C_1C_LL_4R_1s^3 + C_1C_LL_4s^3 + C_1C_LL_1L_4R_1g_ms^3 + C_1C_LL_1L_4s^3 + C_1C_LL_4R_1s^2 + C_1C_LL_4s^2 + C_1C_LL_1L_4R_1g_ms^2 + C_1C_LL_1L_4s^2 + C_1C_LL_4R_1s + C_1C_LL_4s + C_1C_LL_1L_4R_1g_ms + C_1C_LL_1L_4s + C_1C_LL_4R_1 + C_1C_LL_4}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_4L_LR_1s^5 + 2C_1C_4L_1L_4R_1g_ms^4 + C_1C_4L_1L_4s^4 + C_1C_4L_4R_1s^3 + C_1C_LL_1L_4R_1g_ms^4 + C_1C_LL_1L_4s^4 + C_1C_LL_4R_1s^3 + C_1C_LL_4s^3 + C_1C_LL_1L_4R_1g_ms^3 + C_1C_LL_1L_4s^3 + C_1C_LL_4R_1s^2 + C_1C_LL_4s^2 + C_1C_LL_1L_4R_1g_ms^2 + C_1C_LL_1L_4s^2 + C_1C_LL_4R_1s + C_1C_LL_4s + C_1C_LL_1L_4R_1g_ms + C_1C_LL_1L_4s + C_1C_LL_4R_1 + C_1C_LL_4}.$$

**10.997 INVALID-ORDER-997**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_L L_1 L_4 L_L R_1 g_m s^5 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L g_m s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 L_L R_1 s^2 + C_1 C_L L_1 L_L g_m s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 L_L R_1 s + C_1 C_L L_1 L_L g_m s + C_1 C_L L_1 L_L s + C_1 C_L L_1 L_L R_1 + C_1 C_L L_1 L_L g_m + C_1 C_L L_1 L_L}{C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_4 L_L R_1 s^4 + C_1 C_L L_1 L_4 L_L R_1 g_m s^5 + C_1 C_L L_1 L_4 L_L s^5 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L g_m s^3 + C_1 C_L L_1 L_L s^3 + C_1 C_L L_1 L_L R_1 s^2 + C_1 C_L L_1 L_L g_m s^2 + C_1 C_L L_1 L_L s^2 + C_1 C_L L_1 L_L R_1 s + C_1 C_L L_1 L_L g_m s + C_1 C_L L_1 L_L s + C_1 C_L L_1 L_L R_1 + C_1 C_L L_1 L_L g_m + C_1 C_L L_1 L_L}$$

**10.998 INVALID-ORDER-998**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + C_1C_4C_LL_4L_LR_1s^5 + C_1C_4C_LL_4R_1R_Ls^4 + 2C_1C_4C_LL_4R_1R_Ls^3 + 2C_1C_4C_LL_4R_1R_Ls^2 + 2C_1C_4C_LL_4R_1R_Ls + 2C_1C_4C_LL_4R_1R_L}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_Ls^5 + C_1C_4C_LL_4L_LR_1s^5 + C_1C_4C_LL_4R_1R_Ls^4 + 2C_1C_4C_LL_4R_1R_Ls^3 + 2C_1C_4C_LL_4R_1R_Ls^2 + 2C_1C_4C_LL_4R_1R_Ls + 2C_1C_4C_LL_4R_1R_L}.$$

$$\mathbf{10.999 \quad INVALID-ORDER-999} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 s^5 + C_1 C_4 L_1 L_4 L_L R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_L s^4 + C_1 C_L L_1 L_4 L_L R_1 R_L g_m s^5 + \dots}{\dots}$$

$$\mathbf{10.1000 \quad INVALID-ORDER-1000} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_L g_m s^5 + \dots}{\dots}$$

$$\mathbf{10.1001 \quad INVALID-ORDER-1001} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad R_2, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_L s^4 + \dots}{\dots}$$

$$\mathbf{10.1002 \quad INVALID-ORDER-1002} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L \right)$$

$$H(s) = \frac{R_1 R_L (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s + \dots)}{C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 L_1 R_1 R_L g_m s^3 + C_1 C_4 L_1 R_1 s^3 + C_1 C_4 L_1 R_4 s^3 + C_1 C_4 L_1 R_L s^3 + C_1 C_4 L_4 R_1 s^3 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 R_L s^2 + \dots}$$

$$\mathbf{10.1003 \quad INVALID-ORDER-1003} \quad Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \quad \frac{1}{C_2 s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{1}{C_L s} \right)$$

$$H(s) = \frac{R_1 (C_1 L_1 s^2 + 1) (C_4 L_4 g_m s^2 + C_4 R_4 g_m s + \dots)}{s (C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1 R_4 s^3 + C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L R_1 R_4 s^2 + 2C_1 C_4 L_1 R_1 g_m s^2 + C_1 C_4 L_1 R_1 R_4 s^2 + \dots)}$$

**10.1004 INVALID-ORDER-1004**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 R_L s^2 + C_1 C_4 C_L R_1 R_4 R_L s + C_1 C_4 C_L R_1 R_4 R_L}{C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 R_1 R_4 R_L g_m s^4 + C_1 C_4 C_L L_1 R_1 R_L s^4 + C_1 C_4 C_L L_1 R_4 R_L s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + C_1 C_4 C_L R_1 R_4 R_L s^3 + C_1 C_4 C_L R_1 R_4 R_L s^2 + C_1 C_4 C_L R_1 R_4 R_L s + C_1 C_4 C_L R_1 R_4 R_L}$$

**10.1005 INVALID-ORDER-1005**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{1}{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + 2C_1C_4C_LL_1R_1R_Lg_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_1R_Ls^3 + C_1C_4C_LL_4R_1s^3 +$$

**10.1006 INVALID-ORDER-1006**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{s(C_1C_4C_LL_1L_4R_1g_ms^4 + C_1C_4C_LL_1L_4s^4 + 2C_1C_4C_LL_1L_LR_1g_ms^4 + C_1C_4C_LL_1L_Ls^4 + C_1C_4C_LL_1R_1R_4g_ms^3 + C_1C_4C_LL_1R_1s^3 + C_1C_4C_LL_1R_4s^3 + C_1C_4C_LL_4R_1s^3 +$$

**10.1007 INVALID-ORDER-1007**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^{2+1}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 s^5 + C_1 C_4 C_L L_L R_1 R_4 s^4 + C_1 C_4 L$$

**10.1008 INVALID-ORDER-1008**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{s(C_1 C_4 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_4 C_L L_1 L_4 s^4 + 2C_1 C_4 C_L L_1 L_L R_1 g_m s^4 + C_1 C_4 C_L L_1 L_L s^4 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^3 + 2C_1 C_4 C_L L_1 R_1 R_L g_m s^3 + C_1 C_4 C_L L_1 R_1 s^3 + C_1 C_4 C_L L_1$$

**10.1009 INVALID-ORDER-1009**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_L s^5 + C_1 C_4 C_L L$$

**10.1010 INVALID-ORDER-1010**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 s^5 + C_1 C_4 C_L L_1 L_L R_4 s^5 + C_1 C_4 C_L L_1 L_L R_L s^5 +$$

10.1011 INVALID-ORDER-1011  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 C_L L_1 L_L R_1 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5}$$

**10.1012 INVALID-ORDER-1012**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{2C_1C_4L_1L_4R_1R_4R_Lg_ms^4 + C_1C_4L_1L_4R_1R_4s^4 + C_1C_4L_1L_4R_4R_Ls^4 + C_1C_4L_4R_1R_4R_Ls^3 + C_1L_1L_4R_1R_4g_ms^3 + 2C_1L_1L_4R_1R_Lg_ms^3 + C_1L_1L_4R_1s^3 + C_1L_1L_4R_4s^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Lg_ms^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Ls^3}{2C_1C_4L_1L_4R_1R_4R_Lg_ms^4 + C_1C_4L_1L_4R_1R_4s^4 + C_1C_4L_1L_4R_4R_Ls^4 + C_1C_4L_4R_1R_4R_Ls^3 + C_1L_1L_4R_1R_4g_ms^3 + 2C_1L_1L_4R_1R_Lg_ms^3 + C_1L_1L_4R_1s^3 + C_1L_1L_4R_4s^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Lg_ms^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Ls^3 + C_1L_1L_4R_4R_Ls^3}$$

**10.1013 INVALID-ORDER-1013**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_L L_1 L_4 R_1 R_4 g_m s^4 + C_1 C_L L_1 L_4 R_1 s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 R_1 R_4 s^3 + C$$

**10.1014 INVALID-ORDER-1014**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_1 L_4 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 R_L s^3 + C_1 C_L L_1 L_4 R_1 R_4 R_L g_m s^4 + C_1 C_L L_1 L_4 R_1 R_L s^4 +$$

**10.1015 INVALID-ORDER-1015**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_4R_1R_4R_Ls^4 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^2 + C_1C_4L_4R_1R_4s + C_1C_4L_4R_1R_4}{2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_4R_1R_4R_Ls^4 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_1R_4s^3 + C_1C_4L_4R_1R_4s^2 + C_1C_4L_4R_1R_4s + C_1C_4L_4R_1R_4}.$$

**10.1016 INVALID-ORDER-1016**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_1R_4s^3 + 2C_1C_4L_4R_4s^2 + 2C_1C_4L_1L_4R_1R_4s + 2C_1C_4L_1L_4R_4}{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + 2C_1C_4L_1L_4R_1R_4g_ms^4 + C_1C_4L_1L_4R_4s^4 + C_1C_4L_4R_1R_4s^3 + 2C_1C_4L_4R_4s^2 + 2C_1C_4L_1L_4R_1R_4s + 2C_1C_4L_1L_4R_4}$$

**10.1017 INVALID-ORDER-1017**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + C_1 C_4 L_1 L_4 R_1 R_4 s^4 + C_1 C_4 L_4 L_L R_1 R_4 s^4 + C_1 C_L L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_L L_1 L_4 L_L R_1 s^5 + C_1 C_L L_1 L_4 L_L R_1 R_4 s^4}.$$

**10.1018 INVALID-ORDER-1018**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + 2C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_4s^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + C_1C_4C_L$$



**10.1019 INVALID-ORDER-1019**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_L L_1 R_1 R_4 s^4 + C_1 C_L L_1 R_4 R_L s^4 + C_1 C_L L_1 R_4 s^4 + C_1 C_L L_1 R_L s^4 + C_1 C_L L_1 s^4 + C_1 C_L R_1 R_4 R_L s^4 + C_1 C_L R_1 R_4 s^4 + C_1 C_L R_4 R_L s^4 + C_1 C_L R_4 s^4 + C_1 C_L R_L s^4 + C_1 C_L s^4 + C_1 C R_1 R_4 R_L s^4 + C_1 C R_1 R_4 s^4 + C_1 C R_4 R_L s^4 + C_1 C R_4 s^4 + C_1 C R_L s^4 + C_1 C s^4 + C_1 R_1 R_4 R_L s^4 + C_1 R_1 R_4 s^4 + C_1 R_4 R_L s^4 + C_1 R_4 s^4 + C_1 R_L s^4 + C_1 s^4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L s^6 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 s^5 + C_1 C_4 L_1 L_4 L_L R_4 R_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_4 L_L R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_L L_1 L_4 R_4 R_L s^4 + C_1 C_L L_1 L_4 R_4 s^4 + C_1 C_L L_1 L_4 R_L s^4 + C_1 C_L L_1 L_4 s^4 + C_1 C_L L_1 R_1 R_4 R_L s^4 + C_1 C_L L_1 R_1 R_4 s^4 + C_1 C_L L_1 R_4 R_L s^4 + C_1 C_L L_1 R_4 s^4 + C_1 C_L L_1 R_L s^4 + C_1 C_L L_1 s^4 + C_1 C_L R_1 R_4 R_L s^4 + C_1 C_L R_1 R_4 s^4 + C_1 C_L R_4 R_L s^4 + C_1 C_L R_4 s^4 + C_1 C_L R_L s^4 + C_1 C_L s^4 + C_1 C R_1 R_4 R_L s^4 + C_1 C R_1 R_4 s^4 + C_1 C R_4 R_L s^4 + C_1 C R_4 s^4 + C_1 C R_L s^4 + C_1 C s^4 + C_1 R_1 R_4 R_L s^4 + C_1 R_1 R_4 s^4 + C_1 R_4 R_L s^4 + C_1 R_4 s^4 + C_1 R_L s^4 + C_1 s^4}.$$

**10.1020 INVALID-ORDER-1020**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + 2C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + C_1 C_4 L_1 L_4 L_L R_4 s^5 + 2C$$

**10.1021 INVALID-ORDER-1021**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1R_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_1R_4s^6 + C_1C_4C_LL_1L_4L_LR_4R_Ls^6 + C_1C_4C_LL_1L_4R_1R_4R_Ls^5 + C_1C_4C_LL_4L_LR_1R_4R_Ls^5 + 2C_1C_4L_1L_4R_1R_4R_Lg_ms^5}{2C_1C_4C_LL_1L_4L_LR_1R_4R_Lg_ms^6 + C_1C_4C_LL_1L_4L_LR_1R_4s^6 + C_1C_4C_LL_1L_4L_LR_4R_Ls^6 + C_1C_4C_LL_1L_4R_1R_4R_Ls^5 + C_1C_4C_LL_4L_LR_1R_4R_Ls^5 + 2C_1C_4L_1L_4R_1R_4R_Lg_ms^5}$$

**10.1022 INVALID-ORDER-1022**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L \right)$

$$H(s) = \frac{1}{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^3 + C_1 C_4 L_4 R_1 R_L s^3 + C_1 L_1 L_4 R_1 g_m s^3 + C_1 L_1 L_4 s^2}$$

**10.1023 INVALID-ORDER-1023**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 R_1 s^3}{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2 C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + C_1 C_4 L_4 R_1 s^3 + C_1 C_L L_1 L_4 R_1 g_m s^4 + C_1 C_L L_1 L_4 R_1 s^3}$$

**10.1024 INVALID-ORDER-1024**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^4 + C_1 C_4 L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_4 R_L s^4 + C_1 C_4 R_1 R_4 R_L s^4}{C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 R_L s^4 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 R_1 R_4 s^4 + C_1 C_4 L_1 R_1 R_L s^4 + C_1 C_4 L_1 R_4 R_L s^4 + C_1 C_4 L_4 R_1 R_4 s^4 + C_1 C_4 L_4 R_1 R_L s^4 + C_1 C_4 L_4 R_4 R_L s^4 + C_1 C_4 R_1 R_4 R_L s^4}.$$

**10.1025 INVALID-ORDER-1025**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 q_m s^5 + 2 C_1 C_4 C_L L_1 L_4 R_1 R_L q_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_L s^4 + 2 C_1 C_4 C_L L_4 R_1 R_4 s^4}{\dots}$$

**10.1026 INVALID-ORDER-1026**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_4L_LR_1s^5 + C_1C_4C_LL_4R_1R_4s^4 + 2C_1C_4L_1L_4L_LR_1R_4s^4 + 2C_1C_4L_1L_4L_LR_1R_4s^3 + 2C_1C_4L_1L_4L_LR_1R_4s^2 + 2C_1C_4L_1L_4L_LR_1R_4s + 2C_1C_4L_1L_4L_LR_1R_4}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_4L_LR_1s^5 + C_1C_4C_LL_4R_1R_4s^4 + 2C_1C_4L_1L_4L_LR_1R_4s^4 + 2C_1C_4L_1L_4L_LR_1R_4s^3 + 2C_1C_4L_1L_4L_LR_1R_4s^2 + 2C_1C_4L_1L_4L_LR_1R_4s + 2C_1C_4L_1L_4L_LR_1R_4}.$$

**10.1027 INVALID-ORDER-1027**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + 2 C_1 C_4 L_1 L_4 L_L R_1 g_m s^5 + C_1 C_4 L_1 L_4 L_L s^5 + C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 +$$

**10.1028 INVALID-ORDER-1028**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{2C_1 C_4 C_L L_1 L_4 L_L R_1 q_m s^6 + C_1 C_4 C_L L_1 L_4 L_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 q_m s^5 + 2C_1 C_4 C_L L_1 L_4 R_1 R_L q_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + c}{\dots}$$

10.1029 INVALID-ORDER-1029  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5 + 2 C_1 C_4 L_1 L_4 L_L R_1 R_L g_m s^5 +$$

**10.1030 INVALID-ORDER-1030**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^3 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^2 + C_1 C_4 C_L L_4 L_L R_1 R_4 s + C_1 C_4 C_L L_4 L_L R_1 R_4}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^4 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^3 + C_1 C_4 C_L L_4 L_L R_1 R_4 s^2 + C_1 C_4 C_L L_4 L_L R_1 R_4 s + C_1 C_4 C_L L_4 L_L R_1 R_4}$$

**10.1031 INVALID-ORDER-1031**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = \frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_1 s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^3 + C_1 C_4 C_L L_4 R_1 R_4 s^3 + C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_4 R_4 s^3 + C_1 C_4 C_L L_4 R_L s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 C_4 C_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 C_L R_4 R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_4 s^2 + C_1 C_4 g_m s + C_1 C_4 s}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 L_4 R_L s^5 + C_1 C_4 C_L L_1 L_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 g_m s^4 + C_1 C_4 C_L L_1 L_4 R_1 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_1 s^4 + C_1 C_4 C_L L_1 L_4 R_4 s^4 + C_1 C_4 C_L L_1 L_4 R_L s^4 + C_1 C_4 C_L L_1 L_4 s^4 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_1 R_1 s^4 + C_1 C_4 C_L L_1 R_4 s^4 + C_1 C_4 C_L L_1 R_L s^4 + C_1 C_4 C_L L_1 s^4 + C_1 C_4 C_L R_1 R_4 g_m s^3 + C_1 C_4 C_L L_4 R_1 R_4 s^3 + C_1 C_4 C_L L_4 R_1 s^3 + C_1 C_4 C_L L_4 R_4 s^3 + C_1 C_4 C_L L_4 R_L s^3 + C_1 C_4 C_L L_4 s^3 + C_1 C_4 C_L R_1 R_4 s^3 + C_1 C_4 C_L R_1 s^3 + C_1 C_4 C_L R_4 s^3 + C_1 C_4 C_L R_L s^3 + C_1 C_4 C_L s^3 + C_1 C_4 R_1 R_4 g_m s^2 + C_1 C_4 C_L R_4 R_1 s^2 + C_1 C_4 C_L R_4 s^2 + C_1 C_4 C_L R_L s^2 + C_1 C_4 C_L s^2 + C_1 C_4 R_1 R_4 s^2 + C_1 C_4 R_1 s^2 + C_1 C_4 R_4 s^2 + C_1 C_4 R_L s^2 + C_1 C_4 s^2 + C_1 C_4 g_m s + C_1 C_4 s}$$

**10.1032 INVALID-ORDER-1032**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_{1s}}, L_2 s + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L \right)$

$$H(s) = -\frac{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + 2 C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 R_4 s^3}{C_1 C_4 L_1 L_4 R_1 R_4 g_m s^4 + 2 C_1 C_4 L_1 L_4 R_1 R_L g_m s^4 + C_1 C_4 L_1 L_4 R_1 s^4 + C_1 C_4 L_1 L_4 R_4 s^4 + C_1 C_4 L_1 L_4 R_L s^4 + 2 C_1 C_4 L_1 R_1 R_4 R_L g_m s^3 + C_1 C_4 L_1 R_1 R_4 s^3 + C_1 C_4 L_1 R_4 R_L s^3 + C_1 C_4 L_1 R_4 s^3}.$$

**10.1033 INVALID-ORDER-1033**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 R_1 R_4 g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 s^5 + C_1 C_4 C_L L_1 L_4 R_4 s^5 + C_1 C_4 C_L L_1 R_1 R_4 s^4 + C_1 C_4 C_L L_4 R_1 R_4 s^4 + 2C_1 C_4 L_1 L_4 R_1 g_m s^4 + C_1 C_4 L_1 L_4 s^4 + 2C_1 C_4 L_1 R_1 R_4 g_m$$

$$\mathbf{10.1034 \quad INVALID-ORDER-1034} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_L}{C_LR_Ls+1} \right)$$

$$H(s) = -\frac{C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_Ls^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_1R_1R_4R_Ls^4 + C_1C_4C_LL_4R_1R_4R_Ls^4 + C_1C_4L_1L_4R_1R_4g_ms^4 + 2C_1C_4L_1L_4R_1R_4s^4}{C_1C_4C_LL_1L_4R_1R_4R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1R_Ls^5 + C_1C_4C_LL_1L_4R_4R_Ls^5 + C_1C_4C_LL_1R_1R_4R_Ls^4 + C_1C_4C_LL_4R_1R_4R_Ls^4 + C_1C_4L_1L_4R_1R_4g_ms^4 + 2C_1C_4L_1L_4R_1R_4s^4}$$

$$\mathbf{10.1035 \quad INVALID-ORDER-1035} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = -\frac{C_1C_4C_LL_1L_4R_1R_4g_ms^5 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_1L_4R_Ls^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4}{C_1C_4C_LL_1L_4R_1R_4g_ms^5 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_1L_4R_Ls^5 + 2C_1C_4C_LL_1R_1R_4R_Lg_ms^4 + C_1C_4C_LL_1R_1R_4s^4}$$

$$\mathbf{10.1036 \quad INVALID-ORDER-1036} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad L_Ls + \frac{1}{C_Ls} \right)$$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + 2C_1C_4C_LL_1L_LR_1R_4g_ms^5 + C_1C_4C_LL_1L_LR_4s^5}$$

$$\mathbf{10.1037 \quad INVALID-ORDER-1037} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{L_Ls}{C_LL_Ls^2+1} \right)$$

$$H(s) = -\frac{C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_1s^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_LR_1R_4s^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + 2C_1C_4L_1L_4L_LR_1g_ms^5 + C_1C_4L_1L_4L_Ls^5}{C_1C_4C_LL_1L_4L_LR_1R_4g_ms^6 + C_1C_4C_LL_1L_4L_LR_1s^6 + C_1C_4C_LL_1L_4L_LR_4s^6 + C_1C_4C_LL_1L_LR_1R_4s^5 + C_1C_4C_LL_4L_LR_1R_4s^5 + 2C_1C_4L_1L_4L_LR_1g_ms^5 + C_1C_4L_1L_4L_Ls^5}$$

$$\mathbf{10.1038 \quad INVALID-ORDER-1038} \quad Z(s) = \left( L_1s + R_1 + \frac{1}{C_1s}, \quad L_2s + \frac{1}{C_2s}, \quad \infty, \quad \infty, \quad \infty, \quad L_Ls + R_L + \frac{1}{C_Ls} \right)$$

$$H(s) = -\frac{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_1L_4R_Ls^5}{2C_1C_4C_LL_1L_4L_LR_1g_ms^6 + C_1C_4C_LL_1L_4L_Ls^6 + C_1C_4C_LL_1L_4R_1R_4g_ms^5 + 2C_1C_4C_LL_1L_4R_1R_Lg_ms^5 + C_1C_4C_LL_1L_4R_1s^5 + C_1C_4C_LL_1L_4R_4s^5 + C_1C_4C_LL_1L_4R_Ls^5}$$

**10.1039** INVALID-ORDER-1039  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L + \frac{1}{L_L s}}} \right)$

$$H(s) = -\frac{1}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 R_L s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 R_L s^5 + C_1 C_4 C_L L_4 L_L R_1 R_4 R_L s^5 + C_1 C_4 L_1 L_4 L_L R_1 R_4 g_m s^5}.$$

**10.1040 INVALID-ORDER-1040**  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + 2C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^5 + C_1 C_4 C_L L_1 L_L R_1 R_L s^5 + C_1 C_4 C_L L_1 L_L R_4 R_L s^5 + C_1 C_4 C_L L_1 L_L R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^7 + 2C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^7 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_L s^7 + 2C_1 C_4 C_L L_1 L_L R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_L R_1 R_4 s^6 + C_1 C_4 C_L L_1 L_L R_1 R_L s^6 + C_1 C_4 C_L L_1 L_L R_4 R_L s^6 + C_1 C_4 C_L L_1 L_L R_L s^6}.$$

10.1041 INVALID-ORDER-1041  $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)$

$$H(s) = -\frac{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^6 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^6 + C_1 C_4 C_L L_1 L_4 L_L R_L s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^5 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^5}{C_1 C_4 C_L L_1 L_4 L_L R_1 R_4 g_m s^7 + 2 C_1 C_4 C_L L_1 L_4 L_L R_1 R_L g_m s^7 + C_1 C_4 C_L L_1 L_4 L_L R_1 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_4 s^7 + C_1 C_4 C_L L_1 L_4 L_L R_L s^7 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L g_m s^6 + C_1 C_4 C_L L_1 L_4 R_1 R_4 R_L s^6}$$