# Filter Summary Report: CG,TIA,simple,Z1,Z3,ZL

Generated by MacAnalog-Symbolix

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## Contents

# 1 Examined $H(z)$ for CG TIA simple Z1 Z3 ZL: $\frac{Z_1 Z_3 Z_L g_m}{Z_1 Z_3 g_m + Z_1 Z_L g_m + Z_3 + Z_L}$

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

# 2 HP

# 3 BP

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

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

**Parameters:**

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

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

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

**Parameters:**

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

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

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

**Parameters:**

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_L + C_L L_L}} + C_L R_L \sqrt{\frac{1}{C_3 L_L + C_L L_L}}$
wo: $\sqrt{\frac{1}{C_3 L_L + C_L L_L}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_L + C_L L_L}}}{C_3 R_L \sqrt{\frac{1}{C_3 L_L + C_L L_L}} + C_L R_L \sqrt{\frac{1}{C_3 L_L + C_L L_L}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$

Qz: None
Wz: None

### 3.4 BP-4 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^2\left(C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_3\right) + s\left(L_LR_1g_m + L_L\right)}$$

**Parameters:**

Q: $C_3R_3\sqrt{\frac{1}{C_3L_L+C_LL_L}} + C_LR_3\sqrt{\frac{1}{C_3L_L+C_LL_L}}$
wo: $\sqrt{\frac{1}{C_3L_L+C_LL_L}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3L_L+C_LL_L}}}{C_3R_3\sqrt{\frac{1}{C_3L_L+C_LL_L}}+C_LR_3\sqrt{\frac{1}{C_3L_L+C_LL_L}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_3g_m}{R_1g_m+1}$
Qz: None
Wz: None

### 3.5 BP-5 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^2\left(C_3L_LR_1R_3R_Lg_m + C_3L_LR_3R_L + C_LL_LR_1R_3R_Lg_m + C_LL_LR_3R_L\right) + s\left(L_LR_1R_3g_m + L_LR_1R_Lg_m + L_LR_3 + L_LR_L\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_L\sqrt{\frac{1}{C_3L_L+C_LL_L}}+C_LR_3R_L\sqrt{\frac{1}{C_3L_L+C_LL_L}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_3L_L+C_LL_L}}$
bandwidth: $\frac{(R_3+R_L)\sqrt{\frac{1}{C_3L_L+C_LL_L}}}{C_3R_3R_L\sqrt{\frac{1}{C_3L_L+C_LL_L}}+C_LR_3R_L\sqrt{\frac{1}{C_3L_L+C_LL_L}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
Qz: None
Wz: None

### 3.6 BP-6 $Z(s) = \left(R_1,\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^2\left(C_3L_3R_1R_Lg_m + C_3L_3R_L\right) + s\left(L_3R_1g_m + L_3\right)}$$

**Parameters:**

Q: $C_3R_L\sqrt{\frac{1}{C_3L_3}}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{1}{C_3R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_Lg_m}{R_1g_m+1}$
Qz: None
Wz: None

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

$$H(s) = \frac{L_3 R_1 R_L g_m s}{R_1 R_L g_m + R_L + s^2 \left(C_3 L_3 R_1 R_L g_m + C_3 L_3 R_L + C_L L_3 R_1 R_L g_m + C_L L_3 R_L\right) + s \left(L_3 R_1 g_m + L_3\right)}$$

**Parameters:**

Q: $C_3 R_L \sqrt{\frac{1}{C_3 L_3 + C_L L_3}} + C_L R_L \sqrt{\frac{1}{C_3 L_3 + C_L L_3}}$
wo: $\sqrt{\frac{1}{C_3 L_3 + C_L L_3}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_3 + C_L L_3}}}{C_3 R_L \sqrt{\frac{1}{C_3 L_3 + C_L L_3}} + C_L R_L \sqrt{\frac{1}{C_3 L_3 + C_L L_3}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$
Qz: None
Wz: None

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

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

**Parameters:**

Q: $C_3 R_L \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + C_L R_L \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}}$
wo: $\sqrt{\frac{L_3 + L_L}{C_3 L_3 L_L + C_L L_3 L_L}}$
bandwidth: $\frac{\sqrt{\frac{L_3 + L_L}{C_3 L_3 L_L + C_L L_3 L_L}}}{C_3 R_L \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + C_L R_L \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1 R_L g_m \sqrt{\frac{1}{C_3 L_L + C_L L_L} + \frac{1}{C_3 L_3 + C_L L_3}}}{R_1 g_m \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}}}$
Qz: None
Wz: None

### 3.9 BP-9 $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_3 R_3 R_L \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 + R_L}{C_3 R_3 R_L}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$
Qz: None
Wz: None

### 3.10 BP-10 $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $C_3R_3\sqrt{\frac{1}{C_3L_3+C_LL_3}}+C_LR_3\sqrt{\frac{1}{C_3L_3+C_LL_3}}$
wo: $\sqrt{\frac{1}{C_3L_3+C_LL_3}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3L_3+C_LL_3}}}{C_3R_3\sqrt{\frac{1}{C_3L_3+C_LL_3}}+C_LR_3\sqrt{\frac{1}{C_3L_3+C_LL_3}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_3g_m}{R_1g_m+1}$
Qz: None
Wz: None

### 3.11 BP-11 $Z(s)=\left(R_1,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s)=\frac{L_3R_1R_3R_Lg_ms}{R_1R_3R_Lg_m+R_3R_L+s^2\left(C_3L_3R_1R_3R_Lg_m+C_3L_3R_3R_L+C_LL_3R_1R_3R_Lg_m+C_LL_3R_3R_L\right)+s\left(L_3R_1R_3g_m+L_3R_1R_Lg_m+L_3R_3+L_3R_L\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_L\sqrt{\frac{1}{C_3L_3+C_LL_3}}+C_LR_3R_L\sqrt{\frac{1}{C_3L_3+C_LL_3}}}{R_3+R_L}$
wo: $\sqrt{\frac{1}{C_3L_3+C_LL_3}}$
bandwidth: $\frac{(R_3+R_L)\sqrt{\frac{1}{C_3L_3+C_LL_3}}}{C_3R_3R_L\sqrt{\frac{1}{C_3L_3+C_LL_3}}+C_LR_3R_L\sqrt{\frac{1}{C_3L_3+C_LL_3}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
Qz: None
Wz: None

### 3.12 BP-12 $Z(s)=\left(R_1,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s)=\frac{L_3L_LR_1R_3g_ms}{L_3R_1R_3g_m+L_3R_3+L_LR_1R_3g_m+L_LR_3+s^2\left(C_3L_3L_LR_1R_3g_m+C_3L_3L_LR_3+C_LL_3L_LR_1R_3g_m+C_LL_3L_LR_3\right)+s\left(L_3L_LR_1g_m+L_3L_L\right)}$$

**Parameters:**

Q: $C_3R_3\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}+C_LR_3\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}$
wo: $\sqrt{\frac{L_3+L_L}{C_3L_3L_L+C_LL_3L_L}}$
bandwidth: $\frac{\sqrt{\frac{L_3+L_L}{C_3L_3L_L+C_LL_3L_L}}}{C_3R_3\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}+C_LR_3\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_1R_3g_m\sqrt{\frac{1}{C_3L_L+C_LL_L}+\frac{1}{C_3L_3+C_LL_3}}}{R_1g_m\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}+\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}}$
Qz: None
Wz: None

### 3.13 BP-13 $Z(s)=\left(R_1,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s)=\frac{L_3L_LR_1R_3R_Lg_ms}{L_3R_1R_3R_Lg_m+L_3R_3R_L+L_LR_1R_3R_Lg_m+L_LR_3R_L+s^2\left(C_3L_3L_LR_1R_3R_Lg_m+C_3L_3L_LR_3R_L+C_LL_3L_LR_1R_3R_Lg_m+C_LL_3L_LR_3R_L\right)+s\left(L_3L_LR_1R_3g_m+L_3L_LR_1R_Lg_m+L_3L_LR_3+L_3L_LR_L\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_L\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}+C_LR_3R_L\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}}{R_3+R_L}$
wo: $\sqrt{\frac{L_3+L_L}{C_3L_3L_L+C_LL_3L_L}}$
bandwidth: $\frac{\sqrt{\frac{L_3+L_L}{C_3L_3L_L+C_LL_3L_L}}(R_3+R_L)}{C_3R_3R_L\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}+C_LR_3R_L\sqrt{\frac{L_3}{C_3L_3L_L+C_LL_3L_L}+\frac{L_L}{C_3L_3L_L+C_LL_3L_L}}}$

K-LP: 0
K-HP: 0
K-BP: $\frac{R_1 R_3 R_L g_m \sqrt{\frac{1}{C_3 L_L + C_L L_L} + \frac{1}{C_3 L_3 + C_L L_3}}}{R_1 R_3 g_m \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + R_1 R_L g_m \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + R_3 \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}} + R_L \sqrt{\frac{L_3}{C_3 L_3 L_L + C_L L_3 L_L} + \frac{L_L}{C_3 L_3 L_L + C_L L_3 L_L}}}$
Qz: None
Wz: None

## 3.14 BP-14 $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $\frac{C_L L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m}}}{C_L R_3 + L_1 g_m}$
wo: $\sqrt{\frac{1}{C_L L_1 R_3 g_m}}$
bandwidth: $\frac{C_L R_3 + L_1 g_m}{C_L L_1 R_3 g_m}$
K-LP: 0
K-HP: 0
K-BP: $\frac{L_1 R_3 g_m}{C_L R_3 + L_1 g_m}$
Qz: None
Wz: None

## 3.15 BP-15 $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**Parameters:**

Q: $\frac{C_L L_1 R_3 R_L g_m \sqrt{\frac{1}{C_L L_1 R_L g_m} + \frac{1}{C_L L_1 R_3 g_m}}}{C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m}$
wo: $\sqrt{\frac{R_3 + R_L}{C_L L_1 R_3 R_L g_m}}$
bandwidth: $\frac{\sqrt{\frac{R_3 + R_L}{C_L L_1 R_3 R_L g_m}} \left(C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}{C_L L_1 R_3 R_L g_m \sqrt{\frac{1}{C_L L_1 R_L g_m} + \frac{1}{C_L L_1 R_3 g_m}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{L_1 R_3 R_L g_m}{C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m}$
Qz: None
Wz: None

## 3.16 BP-16 $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m}}}{C_3 R_L + L_1 g_m}$
wo: $\sqrt{\frac{1}{C_3 L_1 R_L g_m}}$
bandwidth: $\frac{C_3 R_L + L_1 g_m}{C_3 L_1 R_L g_m}$
K-LP: 0
K-HP: 0
K-BP: $\frac{L_1 R_L g_m}{C_3 R_L + L_1 g_m}$
Qz: None
Wz: None

### 3.17 BP-17 $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}} + C_L L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}}}{C_3 R_L + C_L R_L + L_1 g_m}$

wo: $\sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}}$

bandwidth: $\frac{\left(C_3 R_L + C_L R_L + L_1 g_m\right)\sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}}}{C_3 L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}} + C_L L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{L_1 R_L g_m}{C_3 R_L + C_L R_L + L_1 g_m}$

Qz: None

Wz: None

### 3.18 BP-18 $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_3 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m} + \frac{1}{C_3 L_1 R_3 g_m}}}{C_3 R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m}$

wo: $\sqrt{\frac{R_3 + R_L}{C_3 L_1 R_3 R_L g_m}}$

bandwidth: $\frac{\sqrt{\frac{R_3 + R_L}{C_3 L_1 R_3 R_L g_m}}\left(C_3 R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}{C_3 L_1 R_3 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m} + \frac{1}{C_3 L_1 R_3 g_m}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{L_1 R_3 R_L g_m}{C_3 R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m}$

Qz: None

Wz: None

### 3.19 BP-19 $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}} + C_L L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}}}{C_3 R_3 + C_L R_3 + L_1 g_m}$

wo: $\sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}}$

bandwidth: $\frac{\left(C_3 R_3 + C_L R_3 + L_1 g_m\right)\sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}}}{C_3 L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}} + C_L L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{L_1 R_3 g_m}{C_3 R_3 + C_L R_3 + L_1 g_m}$

Qz: None

Wz: None

### 3.20 BP-20 $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_3 R_L g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} + C_L L_1 R_3 R_L g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}}}{C_3 R_3 R_L + C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m}$

wo: $\sqrt{\frac{R_3 + R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}}$

bandwidth: $\frac{\sqrt{\frac{R_3 + R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} \left(C_3 R_3 R_L + C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}{C_3 L_1 R_3 R_L g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} + C_L L_1 R_3 R_L g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{L_1 R_3 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_L g_m + C_L L_1 R_L g_m} + \frac{1}{C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m}}}{C_3 R_3 R_L \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} + C_L R_3 R_L \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} + L_1 R_3 g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}} + L_1 R_L g_m \sqrt{\frac{R_3}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m} + \frac{R_L}{C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m}}}$

Qz: None

Wz: None

### 3.21 BP-21 $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_1 \sqrt{\frac{1}{C_1 L_1}}}{g_m}$

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

bandwidth: $\frac{g_m}{C_1}$

K-LP: 0

K-HP: 0

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

Qz: None

Wz: None

### 3.22 BP-22 $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_1 R_1 \sqrt{\frac{1}{C_1 L_1}}}{R_1 g_m + 1}$

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

bandwidth: $\frac{R_1 g_m + 1}{C_1 R_1}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$

Qz: None

Wz: None

# 4 LP

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

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

**Parameters:**

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

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

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

**Parameters:**

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

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

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

**Parameters:**

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

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

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

**Parameters:**

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

wo: $\sqrt{\frac{g_m}{C_1C_3R_L+C_1C_LR_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1C_3R_L+C_1C_LR_L}}(C_1+C_3R_Lg_m+C_LR_Lg_m)}{C_1C_3R_L\sqrt{\frac{g_m}{C_1C_3R_L+C_1C_LR_L}}+C_1C_LR_L\sqrt{\frac{g_m}{C_1C_3R_L+C_1C_LR_L}}}$

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

## 4.5 LP-5 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_3R_Lg_m}{C_1C_3R_3R_Ls^2 + R_3g_m + R_Lg_m + s\left(C_1R_3 + C_1R_L + C_3R_3R_Lg_m\right)}$$

**Parameters:**

Q: $\frac{C_1C_3R_3R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{g_m}{C_1C_3R_3}}}{C_1R_3+C_1R_L+C_3R_3R_Lg_m}$

wo: $\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_3R_3R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_3R_3R_L}}(C_1R_3+C_1R_L+C_3R_3R_Lg_m)}{C_1C_3R_3R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{g_m}{C_1C_3R_3}}}$

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

## 4.6 LP-6 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_3g_m}{g_m + s^2\left(C_1C_3R_3 + C_1C_LR_3\right) + s\left(C_1 + C_3R_3g_m + C_LR_3g_m\right)}$$

**Parameters:**

Q: $\frac{C_1C_3R_3\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}+C_1C_LR_3\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}}{C_1+C_3R_3g_m+C_LR_3g_m}$

wo: $\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}(C_1+C_3R_3g_m+C_LR_3g_m)}{C_1C_3R_3\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}+C_1C_LR_3\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_LR_3}}}$

K-LP: $R_3$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

## 4.7 LP-7 $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_3R_Lg_m}{R_3g_m + R_Lg_m + s^2\left(C_1C_3R_3R_L + C_1C_LR_3R_L\right) + s\left(C_1R_3 + C_1R_L + C_3R_3R_Lg_m + C_LR_3R_Lg_m\right)}$$

**Parameters:**

Q: $\frac{C_1C_3R_3R_L\sqrt{\frac{R_3g_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}+C_1C_LR_3R_L\sqrt{\frac{R_3g_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}}{C_1R_3+C_1R_L+C_3R_3R_Lg_m+C_LR_3R_Lg_m}$

wo: $\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}(C_1R_3+C_1R_L+C_3R_3R_Lg_m+C_LR_3R_Lg_m)}{C_1C_3R_3R_L\sqrt{\frac{R_3g_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}+C_1C_LR_3R_L\sqrt{\frac{R_3g_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_3R_3R_L+C_1C_LR_3R_L}}}$

K-LP: $\frac{R_3R_L}{R_3+R_L}$
K-HP: 0

K-BP: 0
Qz: None
Wz: None

### 4.8 LP-8 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1R_3g_m}{C_1C_LR_1R_3s^2 + R_1g_m + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**Parameters:**

Q: $\frac{C_1C_LR_1R_3\sqrt{\frac{g_m}{C_1C_LR_3}+\frac{1}{C_1C_LR_1R_3}}}{C_1R_1+C_LR_1R_3g_m+C_LR_3}$
wo: $\sqrt{\frac{R_1g_m+1}{C_1C_LR_1R_3}}$
bandwidth: $\frac{\sqrt{\frac{R_1g_m+1}{C_1C_LR_1R_3}}(C_1R_1+C_LR_1R_3g_m+C_LR_3)}{C_1C_LR_1R_3\sqrt{\frac{g_m}{C_1C_LR_3}+\frac{1}{C_1C_LR_1R_3}}}$
K-LP: $\frac{R_1R_3g_m}{R_1g_m+1}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

### 4.9 LP-9 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_1R_3R_Lg_m}{C_1C_LR_1R_3R_Ls^2 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s\left(C_1R_1R_3 + C_1R_1R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

**Parameters:**

Q: $\frac{C_1C_LR_1R_3R_L\sqrt{\frac{g_m}{C_1C_LR_L}+\frac{g_m}{C_1C_LR_3}+\frac{1}{C_1C_LR_1R_L}+\frac{1}{C_1C_LR_1R_3}}}{C_1R_1R_3+C_1R_1R_L+C_LR_1R_3R_Lg_m+C_LR_3R_L}$
wo: $\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_LR_1R_3R_L}}$
bandwidth: $\frac{\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_LR_1R_3R_L}}(C_1R_1R_3+C_1R_1R_L+C_LR_1R_3R_Lg_m+C_LR_3R_L)}{C_1C_LR_1R_3R_L\sqrt{\frac{g_m}{C_1C_LR_L}+\frac{g_m}{C_1C_LR_3}+\frac{1}{C_1C_LR_1R_L}+\frac{1}{C_1C_LR_1R_3}}}$
K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

### 4.10 LP-10 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_1R_Lg_m}{C_1C_3R_1R_Ls^2 + R_1g_m + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L\right) + 1}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{1}{C_1C_3R_1R_L}}}{C_1R_1+C_3R_1R_Lg_m+C_3R_L}$
wo: $\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_L}}$
bandwidth: $\frac{\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_L}}(C_1R_1+C_3R_1R_Lg_m+C_3R_L)}{C_1C_3R_1R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{1}{C_1C_3R_1R_L}}}$
K-LP: $\frac{R_1R_Lg_m}{R_1g_m+1}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

## 4.11 LP-11 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_1R_Lg_m}{R_1g_m + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_L+C_1C_LR_1R_L}+\frac{1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}+C_1C_LR_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_L+C_1C_LR_1R_L}+\frac{1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}}{C_1R_1+C_3R_1R_Lg_m+C_3R_L+C_LR_1R_Lg_m+C_LR_L}$

wo: $\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}\left(C_1R_1+C_3R_1R_Lg_m+C_3R_L+C_LR_1R_Lg_m+C_LR_L\right)}{C_1C_3R_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_L+C_1C_LR_1R_L}+\frac{1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}+C_1C_LR_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_L+C_1C_LR_1R_L}+\frac{1}{C_1C_3R_1R_L+C_1C_LR_1R_L}}}$

K-LP: $\frac{R_1R_Lg_m}{R_1g_m+1}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

## 4.12 LP-12 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_1R_3R_Lg_m}{C_1C_3R_1R_3R_Ls^2 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R_1R_3R_Lg_m + C_3R_3R_L\right)}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_3R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{g_m}{C_1C_3R_3}+\frac{1}{C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3}}}{C_1R_1R_3+C_1R_1R_L+C_3R_1R_3R_Lg_m+C_3R_3R_L}$

wo: $\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_3R_1R_3R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_3R_1R_3R_L}}\left(C_1R_1R_3+C_1R_1R_L+C_3R_1R_3R_Lg_m+C_3R_3R_L\right)}{C_1C_3R_1R_3R_L\sqrt{\frac{g_m}{C_1C_3R_L}+\frac{g_m}{C_1C_3R_3}+\frac{1}{C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3}}}$

K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

## 4.13 LP-13 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1R_3g_m}{R_1g_m + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_LR_1R_3}+\frac{1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}+C_1C_LR_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_LR_1R_3}+\frac{1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}}{C_1R_1+C_3R_1R_3g_m+C_3R_3+C_LR_1R_3g_m+C_LR_3}$

wo: $\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}$

bandwidth: $\frac{\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}\left(C_1R_1+C_3R_1R_3g_m+C_3R_3+C_LR_1R_3g_m+C_LR_3\right)}{C_1C_3R_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_LR_1R_3}+\frac{1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}+C_1C_LR_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_LR_1R_3}+\frac{1}{C_1C_3R_1R_3+C_1C_LR_1R_3}}}$

K-LP: $\frac{R_1R_3g_m}{R_1g_m+1}$
K-HP: 0
K-BP: 0
Qz: None
Wz: None

### 4.14 LP-14 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^2\left(C_1C_3R_1R_3R_L + C_1C_LR_1R_3R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R_1R_3R_Lg_m + C_3R_3R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_3R_L\sqrt{\frac{R_1R_3g_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_1R_Lg_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_3}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}+C_1C_LR_1R_3R_L\sqrt{\frac{R_1R_3g_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_1R_Lg_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_3}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}}{C_1R_1R_3+C_1R_1R_L+C_3R_1R_3R_Lg_m+C_3R_3R_L+C_LR_1R_3R_Lg_m+C_LR_3R_L}$

wo: $\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}\left(C_1R_1R_3+C_1R_1R_L+C_3R_1R_3R_Lg_m+C_3R_3R_L+C_LR_1R_3R_Lg_m+C_LR_3R_L\right)}{C_1C_3R_1R_3R_L\sqrt{\frac{R_1R_3g_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_1R_Lg_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_3}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}+C_1C_LR_1R_3R_L\sqrt{\frac{R_1R_3g_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_1R_Lg_m}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_3}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}+\frac{R_L}{C_1C_3R_1R_3R_L+C_1C_LR_1R_3R_L}}}$

K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

### 4.15 LP-15 $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1g_m}{C_3 + C_L + s^2\left(C_1C_3L_1 + C_1C_LL_1\right) + s\left(C_3L_1g_m + C_LL_1g_m\right)}$$

**Parameters:**

Q: $\frac{C_1\sqrt{\frac{1}{C_1L_1}}}{g_m}$

wo: $\sqrt{\frac{1}{C_1L_1}}$

bandwidth: $\frac{g_m}{C_1}$

K-LP: $\frac{L_1g_m}{C_3+C_L}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

### 4.16 LP-16 $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_1R_1g_m}{C_3R_1 + C_LR_1 + s^2\left(C_1C_3L_1R_1 + C_1C_LL_1R_1\right) + s\left(C_3L_1R_1g_m + C_3L_1 + C_LL_1R_1g_m + C_LL_1\right)}$$

**Parameters:**

Q: $\frac{C_1R_1\sqrt{\frac{1}{C_1L_1}}}{R_1g_m+1}$

wo: $\sqrt{\frac{1}{C_1L_1}}$

bandwidth: $\frac{R_1g_m+1}{C_1R_1}$

K-LP: $\frac{L_1g_m}{C_3+C_L}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

## 5 BS

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

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

**Parameters:**

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

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

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

**Parameters:**

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

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

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

**Parameters:**

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_L}{L_3}$
K-LP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$
K-HP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

### 5.4 BS-4 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L\right)}$$

**Parameters:**

Q: $\frac{L_3R_3\sqrt{\frac{1}{C_3L_3}}+L_3R_L\sqrt{\frac{1}{C_3L_3}}}{R_3R_L}$
wo: $\sqrt{\frac{1}{C_3L_3}}$
bandwidth: $\frac{R_3R_L\sqrt{\frac{1}{C_3L_3}}}{L_3R_3\sqrt{\frac{1}{C_3L_3}}+L_3R_L\sqrt{\frac{1}{C_3L_3}}}$
K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-HP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3L_3}}$

### 5.5 BS-5 $Z(s) = \left(L_1s + \frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_3R_Lg_ms^2 + R_3R_Lg_m}{R_3g_m + R_Lg_m + s^2\left(C_1L_1R_3g_m + C_1L_1R_Lg_m\right) + s\left(C_1R_3 + C_1R_L\right)}$$

**Parameters:**

Q: $L_1g_m\sqrt{\frac{1}{C_1L_1}}$
wo: $\sqrt{\frac{1}{C_1L_1}}$
bandwidth: $\frac{1}{L_1g_m}$
K-LP: $\frac{R_3R_L}{R_3+R_L}$
K-HP: $\frac{R_3R_L}{R_3+R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_1L_1}}$

### 5.6 BS-6 $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L\right)}$$

**Parameters:**

Q: $\frac{L_1R_1g_m\sqrt{\frac{1}{C_1L_1}}+L_1\sqrt{\frac{1}{C_1L_1}}}{R_1}$
wo: $\sqrt{\frac{1}{C_1L_1}}$
bandwidth: $\frac{R_1\sqrt{\frac{1}{C_1L_1}}}{L_1R_1g_m\sqrt{\frac{1}{C_1L_1}}+L_1\sqrt{\frac{1}{C_1L_1}}}$
K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-HP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_1L_1}}$

# 6 GE

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

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

**Parameters:**

Q: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_3 + R_L}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{R_3 + R_L}{L_L}$
K-LP: $\frac{R_1 R_3 g_m}{R_1 g_m + 1}$
K-HP: $\frac{R_1 R_3 g_m}{R_1 g_m + 1}$
K-BP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$
Qz: $\frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L}$
Wz: $\sqrt{\frac{1}{C_L L_L}}$

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

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

**Parameters:**

Q: $C_L R_3 \sqrt{\frac{1}{C_L L_L}} + C_L R_L \sqrt{\frac{1}{C_L L_L}}$
wo: $\sqrt{\frac{1}{C_L L_L}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_L L_L}}}{C_L R_3 \sqrt{\frac{1}{C_L L_L}} + C_L R_L \sqrt{\frac{1}{C_L L_L}}}$
K-LP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$
K-HP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$
K-BP: $\frac{R_1 R_3 g_m}{R_1 g_m + 1}$
Qz: $C_L R_L \sqrt{\frac{1}{C_L L_L}}$
Wz: $\sqrt{\frac{1}{C_L L_L}}$

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

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

**Parameters:**

Q: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3 + R_L}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{R_3 + R_L}{L_3}$
K-LP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$
K-HP: $\frac{R_1 R_L g_m}{R_1 g_m + 1}$
K-BP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$
Qz: $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3}$
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

### 6.4 GE-4 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + L_3R_1R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(L_3R_1g_m + L_3\right)}$$

**Parameters:**

Q: $C_3R_3\sqrt{\frac{1}{C_3L_3}} + C_3R_L\sqrt{\frac{1}{C_3L_3}}$

wo: $\sqrt{\frac{1}{C_3L_3}}$

bandwidth: $\frac{\sqrt{\frac{1}{C_3L_3}}}{C_3R_3\sqrt{\frac{1}{C_3L_3}}+C_3R_L\sqrt{\frac{1}{C_3L_3}}}$

K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

K-HP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

K-BP: $\frac{R_1R_Lg_m}{R_1g_m+1}$

Qz: $C_3R_3\sqrt{\frac{1}{C_3L_3}}$

Wz: $\sqrt{\frac{1}{C_3L_3}}$

### 6.5 GE-5 $Z(s) = \left(L_1s + R_1 + \frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_3R_Lg_ms^2 + C_1R_1R_3R_Lg_ms + R_3R_Lg_m}{R_3g_m + R_Lg_m + s^2\left(C_1L_1R_3g_m + C_1L_1R_Lg_m\right) + s\left(C_1R_1R_3g_m + C_1R_1R_Lg_m + C_1R_3 + C_1R_L\right)}$$

**Parameters:**

Q: $\frac{L_1g_m\sqrt{\frac{1}{C_1L_1}}}{R_1g_m+1}$

wo: $\sqrt{\frac{1}{C_1L_1}}$

bandwidth: $\frac{R_1g_m+1}{L_1g_m}$

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

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

K-BP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

Qz: $\frac{L_1\sqrt{\frac{1}{C_1L_1}}}{R_1}$

Wz: $\sqrt{\frac{1}{C_1L_1}}$

### 6.6 GE-6 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + L_1R_3R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L\right) + s\left(L_1R_3g_m + L_1R_Lg_m\right)}$$

**Parameters:**

Q: $\frac{C_1R_1g_m\sqrt{\frac{1}{C_1L_1}}+C_1\sqrt{\frac{1}{C_1L_1}}}{g_m}$

wo: $\sqrt{\frac{1}{C_1L_1}}$

bandwidth: $\frac{g_m\sqrt{\frac{1}{C_1L_1}}}{C_1R_1g_m\sqrt{\frac{1}{C_1L_1}}+C_1\sqrt{\frac{1}{C_1L_1}}}$

K-LP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

K-HP: $\frac{R_1R_3R_Lg_m}{R_1R_3g_m+R_1R_Lg_m+R_3+R_L}$

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

Qz: $C_1R_1\sqrt{\frac{1}{C_1L_1}}$

Wz: $\sqrt{\frac{1}{C_1L_1}}$

# 7 AP

# 8 INVALID-NUMER

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

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

**Parameters:**

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

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

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

**Parameters:**

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

## 8.3 INVALID-NUMER-3 $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $\frac{C_L L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}} + C_L L_1 R_L g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}}}{C_L R_3 + C_L R_L + L_1 g_m}$
wo: $\sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}}$
bandwidth: $\frac{\left(C_L R_3 + C_L R_L + L_1 g_m\right) \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}}}{C_L L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}} + C_L L_1 R_L g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m}}}$
K-LP: 0
K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
K-BP: $\frac{L_1 R_3 g_m}{C_L R_3 + C_L R_L + L_1 g_m}$
Qz: None
Wz: None

## 8.4 INVALID-NUMER-4 $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $\frac{C_3 C_L L_1 R_L g_m \sqrt{\frac{1}{C_L L_1 R_L g_m} + \frac{1}{C_3 L_1 R_L g_m}}}{C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m}$
wo: $\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_L g_m}}$
bandwidth: $\frac{\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_L g_m}} \left(C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}{C_3 C_L L_1 R_L g_m \sqrt{\frac{1}{C_L L_1 R_L g_m} + \frac{1}{C_3 L_1 R_L g_m}}}$
K-LP: $\frac{L_1 g_m}{C_3 + C_L}$
K-HP: 0
K-BP: $\frac{C_L L_1 R_L g_m}{C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m}$
Qz: None
Wz: None

## 8.5 INVALID-NUMER-5 $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

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

**Parameters:**

Q: $\frac{C_3 L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}} + C_3 L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}}}{C_3 R_3 + C_3 R_L + L_1 g_m}$
wo: $\sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}}$
bandwidth: $\frac{\left(C_3 R_3 + C_3 R_L + L_1 g_m\right)\sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}}}{C_3 L_1 R_3 g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}} + C_3 L_1 R_L g_m \sqrt{\frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}}}$
K-LP: 0
K-HP: $\frac{R_3 R_L}{R_3 + R_L}$
K-BP: $\frac{L_1 R_L g_m}{C_3 R_3 + C_3 R_L + L_1 g_m}$
Qz: None
Wz: None

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

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

**Parameters:**

Q: $\frac{C_3 C_L L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m} + \frac{1}{C_3 L_1 R_3 g_m}}}{C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m}$
wo: $\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_3 g_m}}$
bandwidth: $\frac{\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_3 g_m}} \left(C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m\right)}{C_3 C_L L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m} + \frac{1}{C_3 L_1 R_3 g_m}}}$
K-LP: $\frac{L_1 g_m}{C_3 + C_L}$
K-HP: 0
K-BP: $\frac{C_3 L_1 R_3 g_m}{C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m}$
Qz: None
Wz: None

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

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

**Parameters:**

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

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

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_L R_3 + C_1 C_L R_L}} \left(C_1 + C_L R_3 g_m + C_L R_L g_m\right)}{C_1 C_L R_3 \sqrt{\frac{g_m}{C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_L \sqrt{\frac{g_m}{C_1 C_L R_3 + C_1 C_L R_L}}}$

K-LP: $R_3$

K-HP: 0

K-BP: $\frac{C_L R_3 R_L g_m}{C_1 + C_L R_3 g_m + C_L R_L g_m}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}}}{C_1 + C_3 R_3 g_m + C_3 R_L g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}} \left(C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}{C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_3 + C_1 C_3 R_L}}}$

K-LP: $R_L$

K-HP: 0

K-BP: $\frac{C_3 R_3 R_L g_m}{C_1 + C_3 R_3 g_m + C_3 R_L g_m}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_L R_1 R_3 \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_1 C_L R_1 R_L \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}}}{C_1 R_1 + C_L R_1 R_3 g_m + C_L R_1 R_L g_m + C_L R_3 + C_L R_L}$

wo: $\sqrt{\frac{R_1 g_m + 1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_1 g_m + 1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} \left(C_1 R_1 + C_L R_1 R_3 g_m + C_L R_1 R_L g_m + C_L R_3 + C_L R_L\right)}{C_1 C_L R_1 R_3 \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_1 C_L R_1 R_L \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}}}$

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

K-HP: 0

K-BP: $\frac{C_L R_1 R_3 R_L g_m \sqrt{\frac{g_m}{C_1 C_L R_3 + C_1 C_L R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}}}{C_1 R_1 \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_L R_1 R_3 g_m \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_L R_1 R_L g_m \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_L R_3 \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}} + C_L R_L \sqrt{\frac{R_1 g_m}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L} + \frac{1}{C_1 C_L R_1 R_3 + C_1 C_L R_1 R_L}}}$

Qz: None

Wz: None

## 8.10 INVALID-NUMER-10 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{R_1g_m + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right) + 1}$$

**Parameters:**

Q: $\frac{C_1C_3R_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_1C_3R_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}}{C_1R_1+C_3R_1R_3g_m+C_3R_1R_Lg_m+C_3R_3+C_3R_L}$

wo: $\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_1g_m+1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}\left(C_1R_1+C_3R_1R_3g_m+C_3R_1R_Lg_m+C_3R_3+C_3R_L\right)}{C_1C_3R_1R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_1C_3R_1R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}}$

K-LP: $\frac{R_1R_Lg_m}{R_1g_m+1}$

K-HP: 0

K-BP: $\frac{C_3R_1R_3R_Lg_m\sqrt{\frac{g_m}{C_1C_3R_3+C_1C_3R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}}{C_1R_1\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_3R_1R_3g_m\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_3R_1R_Lg_m\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_3R_3\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}+C_3R_L\sqrt{\frac{R_1g_m}{C_1C_3R_1R_3+C_1C_3R_1R_L}+\frac{1}{C_1C_3R_1R_3+C_1C_3R_1R_L}}}$

Qz: None

Wz: None

## 8.11 INVALID-NUMER-11 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1R_1R_3g_ms + R_3g_m}{g_m + s^2\left(C_1C_LR_1R_3g_m + C_1C_LR_3\right) + s\left(C_1R_1g_m + C_1 + C_LR_3g_m\right)}$$

**Parameters:**

Q: $\frac{C_1C_LR_1R_3g_m\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}+C_1C_LR_3\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}}{C_1R_1g_m+C_1+C_LR_3g_m}$

wo: $\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}\left(C_1R_1g_m+C_1+C_LR_3g_m\right)}{C_1C_LR_1R_3g_m\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}+C_1C_LR_3\sqrt{\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}}$

K-LP: $R_3$

K-HP: 0

K-BP: $\frac{C_1R_1R_3g_m}{C_1R_1g_m+C_1+C_LR_3g_m}$

Qz: None

Wz: None

## 8.12 INVALID-NUMER-12 $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1R_1R_3R_Lg_ms + R_3R_Lg_m}{R_3g_m + R_Lg_m + s^2\left(C_1C_LR_1R_3R_Lg_m + C_1C_LR_3R_L\right) + s\left(C_1R_1R_3g_m + C_1R_1R_Lg_m + C_1R_3 + C_1R_L + C_LR_3R_Lg_m\right)}$$

**Parameters:**

Q: $\frac{C_1C_LR_1R_3R_Lg_m\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_1C_LR_3R_L\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}}{C_1R_1R_3g_m+C_1R_1R_Lg_m+C_1R_3+C_1R_L+C_LR_3R_Lg_m}$

wo: $\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_3g_m+R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}\left(C_1R_1R_3g_m+C_1R_1R_Lg_m+C_1R_3+C_1R_L+C_LR_3R_Lg_m\right)}{C_1C_LR_1R_3R_Lg_m\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_1C_LR_3R_L\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}}$

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

K-HP: 0

K-BP: $\frac{C_1R_1R_3R_Lg_m\sqrt{\frac{g_m}{C_1C_LR_1R_Lg_m+C_1C_LR_L}+\frac{g_m}{C_1C_LR_1R_3g_m+C_1C_LR_3}}}{C_1R_1R_3g_m\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_1R_1R_Lg_m\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_1R_3\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_1R_L\sqrt{\frac{R_3g_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}+\frac{R_Lg_m}{C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L}}+C_LR_3R_Lg_m\sqrt{\frac{}{C_1C_LR_1}}}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}}}{C_1 R_1 g_m + C_1 + C_3 R_L g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}} \left(C_1 R_1 g_m + C_1 + C_3 R_L g_m\right)}{C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L}}}$

K-LP: $R_L$

K-HP: 0

K-BP: $\frac{C_1 R_1 R_L g_m}{C_1 R_1 g_m + C_1 + C_3 R_L g_m}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_L R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_L R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}}}{C_1 R_1 g_m + C_1 + C_3 R_L g_m + C_L R_L g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} \left(C_1 R_1 g_m + C_1 + C_3 R_L g_m + C_L R_L g_m\right)}{C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_L R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}} + C_1 C_L R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L}}}$

K-LP: $R_L$

K-HP: 0

K-BP: $\frac{C_1 R_1 R_L g_m}{C_1 R_1 g_m + C_1 + C_3 R_L g_m + C_L R_L g_m}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_3 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} + C_1 C_3 R_3 R_L \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}}}{C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m}$

wo: $\sqrt{\frac{R_3 g_m + R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_3 g_m + R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} \left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m\right)}{C_1 C_3 R_1 R_3 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} + C_1 C_3 R_3 R_L \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}}}$

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

K-HP: 0

K-BP: $\frac{C_1 R_1 R_3 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L} + \frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3}}}{C_1 R_1 R_3 g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}}} + C_1 R_1 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} + C_1 R_3 \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} + C_1 R_L \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}} + C_3 R_3 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L}}}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_L R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_L R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}}}{C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_L R_3 g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} \left(C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}{C_1 C_3 R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_L R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}} + C_1 C_L R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3}}}$

K-LP: $R_3$

K-HP: 0

K-BP: $\frac{C_1 R_1 R_3 g_m}{C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_L R_3 g_m}$

Qz: None

Wz: None

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_3 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 C_3 R_3 R_L \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 C_L R_1 R_3 R_L g_m \sqrt{\frac{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3}{C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m + C_L R_3 R_L g_m}}$

wo: $\sqrt{\frac{R_3 g_m + R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}}$

bandwidth: $\frac{\sqrt{\frac{R_3 g_m + R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} \left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1\right.}{C_1 C_3 R_1 R_3 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 C_3 R_3 R_L \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 C_L R_1 R_3 R_L g_m \sqrt{\frac{C_1 C_3 R_1 R_3}{}}$

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

K-HP: 0

K-BP: $\frac{C_1 R_1 R_3 g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 R_1 R_L g_m \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L} + \frac{R_L g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L}} + C_1 R_3 \sqrt{\frac{R_3 g_m}{C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1}}$

Qz: None

Wz: None

## 9 INVALID-WZ

### 9.1 INVALID-WZ-1 $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**Parameters:**

Q: $\frac{C_3 C_L L_1 R_3 g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}} + C_3 C_L L_1 R_L g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}}{C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m}$

wo: $\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}$

bandwidth: $\frac{\sqrt{\frac{C_3 + C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}} \left(C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}{C_3 C_L L_1 R_3 g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}} + C_3 C_L L_1 R_L g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}}$

K-LP: $\frac{L_1 g_m}{C_3 + C_L}$

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

K-BP: $\frac{C_3 L_1 R_3 g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m} + \frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}} + C_L L_1 R_L g_m \sqrt{\frac{1}{C_L L_1 R_3 g_m + C_L L_1 R_L g_m} + \frac{1}{C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m}}}{C_3 C_L R_3 \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}} + C_3 C_L R_L \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}} + C_3 L_1 g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}} + C_L L_1 g_m \sqrt{\frac{C_3}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m} + \frac{C_L}{C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m}}}$

Qz: None

Wz: $\sqrt{\frac{1}{C_3 C_L R_3 R_L}}$

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

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

**Parameters:**

Q: $\frac{C_1 C_L R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_3 \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_L \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}}}{C_1 R_1 g_m + C_1 + C_L R_3 g_m + C_L R_L g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}}\left(C_1 R_1 g_m + C_1 + C_L R_3 g_m + C_L R_L g_m\right)}{C_1 C_L R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_3 \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}} + C_1 C_L R_L \sqrt{\frac{g_m}{C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L}}}$

K-LP: $R_3$

K-HP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$

K-BP: $\frac{C_1 R_1 R_3 g_m + C_L R_3 R_L g_m}{C_1 R_1 g_m + C_1 + C_L R_3 g_m + C_L R_L g_m}$

Qz: None

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

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

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

**Parameters:**

Q: $\frac{C_1 C_3 R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}}}{C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_3 R_L g_m}$

wo: $\sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}}\left(C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}{C_1 C_3 R_1 R_3 g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_1 R_L g_m \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_3 \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}} + C_1 C_3 R_L \sqrt{\frac{g_m}{C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L}}}$

K-LP: $R_L$

K-HP: $\frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L}$

K-BP: $\frac{C_1 R_1 R_L g_m + C_3 R_3 R_L g_m}{C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_3 R_L g_m}$

Qz: None

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

## 10 INVALID-ORDER

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

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

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

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

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

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

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

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

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

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

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

$$H(s) = \frac{R_1 g_m}{s\left(C_3 R_1 g_m + C_3 + C_L R_1 g_m + C_L\right)}$$

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

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

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

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

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

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

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

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

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

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

**10.12 INVALID-ORDER-12** $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.13 INVALID-ORDER-13** $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

### 10.14 INVALID-ORDER-14 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L\right)}$$

### 10.15 INVALID-ORDER-15 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1R_3g_m}{R_1g_m + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

### 10.16 INVALID-ORDER-16 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

### 10.17 INVALID-ORDER-17 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1R_3g_ms^2 + R_1R_3g_m}{R_1g_m + s^3\left(C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_LL_LR_1g_m + C_LL_L\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

### 10.18 INVALID-ORDER-18 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{R_1g_m + s^3\left(C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

### 10.19 INVALID-ORDER-19 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + L_LR_1R_3g_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3 + C_LL_LR_L\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + L_LR_1g_m + L_L\right)}$$

### 10.20 INVALID-ORDER-20 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3 + C_LL_LR_L\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

### 10.21 INVALID-ORDER-21 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{R_1g_m + s\left(C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right) + 1}$$

### 10.22 INVALID-ORDER-22 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3R_1R_3g_ms + R_1g_m}{s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

### 10.23 INVALID-ORDER-23 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LR_1R_3R_Lg_ms^2 + R_1g_m + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

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

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

### 10.25 INVALID-ORDER-25 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

### 10.26 INVALID-ORDER-26 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

### 10.27 INVALID-ORDER-27 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

### 10.28 INVALID-ORDER-28 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

### 10.29 INVALID-ORDER-29 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

### 10.30 INVALID-ORDER-30 $Z(s) = \left(R_1,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

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

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

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

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

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

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

**10.34 INVALID-ORDER-34** $Z(s) = \left(R_1,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

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

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

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

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

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

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

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

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

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

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

**10.40 INVALID-ORDER-40** $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.41 INVALID-ORDER-41** $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.42 INVALID-ORDER-42** $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_3 L_L R_1 g_m s}{L_3 R_1 g_m + L_3 + L_L R_1 g_m + L_L + s^2 \left(C_3 L_3 L_L R_1 g_m + C_3 L_3 L_L + C_L L_3 L_L R_1 g_m + C_L L_3 L_L\right)}$$

### 10.43 INVALID-ORDER-43 $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

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

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

### 10.45 INVALID-ORDER-45 $Z(s) = \left(R_1,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

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

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

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

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

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

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

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

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

### 10.50 INVALID-ORDER-50 $Z(s) = \left(R_1,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

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

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

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

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

### 10.53 INVALID-ORDER-53 $Z(s) = \left(R_1,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### 10.61 INVALID-ORDER-61 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + L_3R_1R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L + C_LL_3R_1R_Lg_m + C_LL_3R_L\right) + s\left(C_LR_1R_3R_Lg_m + C_LR_3R_L + L_3R_1g_m + L_3\right)}$$

### 10.62 INVALID-ORDER-62 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_3R_Lg_ms^3 + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_3R_1R_Lg_m\right) + s\left(C_LR_1R_3R_Lg_m + L_3R_1g_m\right)}{R_1g_m + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + s\left(C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

### 10.63 INVALID-ORDER-63 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + C_LL_3L_LR_1g_ms^3 + L_3R_1g_ms + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_LR_1R_3g_m + C_LR_3\right) + 1}$$

### 10.64 INVALID-ORDER-64 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3g_ms^3 + L_3L_LR_1g_ms^2 + L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_3 + C_LL_LR_1R_3g_m + C_LL_LR_3\right) + s\left(L_3R_1g_m + L_3 + L_LR_1g_m + L_L\right)}$$

### 10.65 INVALID-ORDER-65 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + R_1R_3g_m + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_LL_3L_LR_1g_m\right) + s^2\left(C_3L_3R_1R_3g_m + C_LL_3R_1R_Lg_m + C_LL_LR_1R_3g_m\right) + s\left(C_LR_1R_3R_Lg_m + L_3R_1g_m\right)}{R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

### 10.66 INVALID-ORDER-66 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3R_Lg_ms^3 + L_3L_LR_1R_Lg_ms^2 + L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_1R_Lg_m + C_3L_3L_LR_3 + C_3L_3L_LR_L + C_LL_3L_LR_1R_Lg_m + C_LL_3L_LR_L\right) + s^2\left(C_3L_3R_1R_3R_Lg_m + C_3L_3R_3R_L + C_LL_LR_1R_3R_Lg_m + C_LL_LR_3R_L + L_3L_LR\right.}$$

### 10.67 INVALID-ORDER-67 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^3\left(C_3L_3L_LR_1R_3g_m + C_LL_3L_LR_1R_Lg_m\right) + s^2\left(C_3L_3R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m + L_3L_LR_1g_m\right) + s\left(L_3R_1R_Lg_m + L_LR_1R_3g_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L + C_LL_LR_1R_3g_m + C_LL\right.}$$

### 10.68 INVALID-ORDER-68 $Z(s) = \left(R_1,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3R_Lg_ms^4 + C_LL_3L_LR_1R_Lg_ms^3 + L_3R_1R_Lg_ms + R_1R_3R_Lg_m + s^2\left(C_3L_3R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L + C_LL_3R_1R_3\right.}$$

### 10.69 INVALID-ORDER-69 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_3R_1R_3g_ms^2 + R_1R_3g_m}{R_1g_m + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_3L_3R_1g_m + C_3L_3\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.70 INVALID-ORDER-70** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

**10.71 INVALID-ORDER-71** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_3R_Lg_ms^3 + C_3L_3R_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{R_1g_m + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

**10.72 INVALID-ORDER-72** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.73 INVALID-ORDER-73** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_3L_3L_LR_1g_m + C_3L_3L_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_3 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_3\right) + s\left(L_LR_1g_m + L_L\right)}$$

**10.74 INVALID-ORDER-74** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + C_3C_LL_3R_1R_3R_Lg_ms^3 + C_LR_1R_3R_Lg_ms + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_3R_1g_m + C_3L_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_3R_1R_3g_m + C_3R_3\right.$$

**10.75 INVALID-ORDER-75** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3R_Lg_ms^3 + L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_1R_Lg_m + C_3L_3L_LR_3 + C_3L_3L_LR_L\right) + s^2\left(C_3L_3R_1R_3R_Lg_m + C_3L_3R_3R_L + C_3L_LR_1R_3R_Lg_m + C_3L_LR_3R_L + C_LL_LR_1R_3R_Lg_m + C_LL_LR_3R_L\right) + s\left(L_LR\right.$$

**10.76 INVALID-ORDER-76** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3R_Lg_ms^4 + C_3L_3L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms + R_1R_3R_Lg_m + s^2\left(C_3L_3R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L + C_3L_3L_LR_1g_m + C_3L_3L_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L + C_3L_LR_1\right.$$

**10.77 INVALID-ORDER-77** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^2\left(C_3L_3R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right.$$

**10.78 INVALID-ORDER-78** $Z(s) = (L_1s,\ \infty,\ R_3,\ \infty,\ \infty,\ R_L)$

$$H(s) = \frac{L_1R_3R_Lg_ms}{R_3 + R_L + s\left(L_1R_3g_m + L_1R_Lg_m\right)}$$

**10.79 INVALID-ORDER-79** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.80 INVALID-ORDER-80** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_1 L_L R_3 g_m s^2}{C_L L_1 L_L R_3 g_m s^3 + R_3 + s^2 \left(C_L L_L R_3 + L_1 L_L g_m\right) + s \left(L_1 R_3 g_m + L_L\right)}$$

**10.81 INVALID-ORDER-81** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.82 INVALID-ORDER-82** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.83 INVALID-ORDER-83** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.84 INVALID-ORDER-84** $Z(s) = \left(L_1 s,\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.85 INVALID-ORDER-85** $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 g_m}{C_3 + C_L + s \left(C_3 L_1 g_m + C_L L_1 g_m\right)}$$

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

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

**10.87 INVALID-ORDER-87** $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

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

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

**10.89 INVALID-ORDER-89** $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.90 INVALID-ORDER-90** $Z(s) = \left(L_1 s,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

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

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

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

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

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

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

**10.94 INVALID-ORDER-94** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

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

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

**10.96 INVALID-ORDER-96** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

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

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

**10.98 INVALID-ORDER-98** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

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

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

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

**10.101 INVALID-ORDER-101** $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.102 INVALID-ORDER-102** $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.103 INVALID-ORDER-103** $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.104 INVALID-ORDER-104** $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.105 INVALID-ORDER-105** $Z(s) = \left(L_1 s,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

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

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

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

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

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

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

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

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

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

**10.111 INVALID-ORDER-111** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.112 INVALID-ORDER-112** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**10.122 INVALID-ORDER-122** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.123 INVALID-ORDER-123** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.124 INVALID-ORDER-124** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.125 INVALID-ORDER-125** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

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

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

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

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

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

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

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

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

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

**10.131 INVALID-ORDER-131** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

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

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

**10.133 INVALID-ORDER-133** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.134 INVALID-ORDER-134** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.135 INVALID-ORDER-135** $Z(s) = \left(L_1 s,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m s^5 + C_3 C_L L_1 L_L R_3 R_L g_m s^4 + C_3 L_1 R_3 R_L g_m s^2 + L_1 R_L g_m s + s^3 \left(C_3 L_1 L_3 R_L g_m + C_L L_1 L_L R_L g_m\right)}{C_3 C_L L_1 L_3 L_L g_m s^5 + s^4 \left(C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_L + C_3 C_L L_L R_3 + C_3 C_L L_L R_L + C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_3 + C_L L_1 R_L g_{m}\right.$$

**10.136 INVALID-ORDER-136** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L\right)$

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

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

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

**10.138 INVALID-ORDER-138** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**10.139 INVALID-ORDER-139** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.140 INVALID-ORDER-140** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.141 INVALID-ORDER-141** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.142 INVALID-ORDER-142** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.143 INVALID-ORDER-143** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.144 INVALID-ORDER-144** $Z(s) = \left(L_1 s,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**10.152 INVALID-ORDER-152** $Z(s) = \left(L_1 s,\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.153 INVALID-ORDER-153** $Z(s) = \left(L_1 s,\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.154 INVALID-ORDER-154** $Z(s) = \left(L_1 s,\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.155 INVALID-ORDER-155** $Z(s) = \left(L_1 s,\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.156 INVALID-ORDER-156** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

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

**10.157 INVALID-ORDER-157** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.158 INVALID-ORDER-158** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

**10.159 INVALID-ORDER-159** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.160 INVALID-ORDER-160** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.161 INVALID-ORDER-161** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.162 INVALID-ORDER-162** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.163 INVALID-ORDER-163** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.164 INVALID-ORDER-164** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.165 INVALID-ORDER-165** $Z(s) = \left(L_1 s,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

**10.166 INVALID-ORDER-166** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{R_3 R_L g_m}{R_3 g_m + R_L g_m + s\left(C_1 R_3 + C_1 R_L\right)}$$

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

$$H(s) = \frac{C_L L_L R_3 g_m s^2 + R_3 g_m}{C_1 C_L L_L s^3 + g_m + s^2\left(C_1 C_L R_3 + C_L L_L g_m\right) + s\left(C_1 + C_L R_3 g_m\right)}$$

**10.168 INVALID-ORDER-168** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_L R_3 g_m s}{C_1 C_L L_L R_3 s^3 + R_3 g_m + s^2\left(C_1 L_L + C_L L_L R_3 g_m\right) + s\left(C_1 R_3 + L_L g_m\right)}$$

**10.169 INVALID-ORDER-169** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.170 INVALID-ORDER-170** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.171 INVALID-ORDER-171** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.172 INVALID-ORDER-172** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

$$H(s) = \frac{g_m}{s^2\left(C_1 C_3 + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

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

$$H(s) = \frac{C_L R_L g_m s + g_m}{C_1 C_3 C_L R_L s^3 + s^2\left(C_1 C_3 + C_1 C_L + C_3 C_L R_L g_m\right) + s\left(C_3 g_m + C_L g_m\right)}$$

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

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

**10.176 INVALID-ORDER-176** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

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

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

**10.178 INVALID-ORDER-178** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

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

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

**10.180 INVALID-ORDER-180** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

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

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

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

**10.183 INVALID-ORDER-183** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

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

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

**10.185 INVALID-ORDER-185** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.186 INVALID-ORDER-186** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.187 INVALID-ORDER-187** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

$$H(s) = \frac{C_3 R_3 g_m s + g_m}{C_1 C_3 C_L R_3 s^3 + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

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

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

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

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

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

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

**10.192 INVALID-ORDER-192** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.193 INVALID-ORDER-193** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.194 INVALID-ORDER-194** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.195 INVALID-ORDER-195** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.196 INVALID-ORDER-196** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.197 INVALID-ORDER-197** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_3 R_L g_m s^2 + R_L g_m}{C_1 C_3 L_3 s^3 + g_m + s^2 \left(C_1 C_3 R_L + C_3 L_3 g_m\right) + s \left(C_1 + C_3 R_L g_m\right)}$$

**10.198 INVALID-ORDER-198** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.199 INVALID-ORDER-199** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**10.200 INVALID-ORDER-200** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.201 INVALID-ORDER-201** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.202 INVALID-ORDER-202** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.203 INVALID-ORDER-203** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.204 INVALID-ORDER-204** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.205 INVALID-ORDER-205** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.206 INVALID-ORDER-206** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.207 INVALID-ORDER-207** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_3 R_L g_m s}{C_1 C_3 L_3 R_L s^3 + R_L g_m + s^2 \left(C_1 L_3 + C_3 L_3 R_L g_m\right) + s \left(C_1 R_L + L_3 g_m\right)}$$

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

$$H(s) = \frac{L_3 g_m s}{C_1 s + g_m + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_3\right) + s^2 \left(C_3 L_3 g_m + C_L L_3 g_m\right)}$$

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

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

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

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

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

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

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

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

**10.213 INVALID-ORDER-213** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.214 INVALID-ORDER-214** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.215 INVALID-ORDER-215** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.216 INVALID-ORDER-216** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

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

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

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

**10.219 INVALID-ORDER-219** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

**10.220 INVALID-ORDER-220** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.221 INVALID-ORDER-221** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.222 INVALID-ORDER-222** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.223 INVALID-ORDER-223** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.224 INVALID-ORDER-224** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.225 INVALID-ORDER-225** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.226 INVALID-ORDER-226** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.227 INVALID-ORDER-227** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L\right)$

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

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

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

**10.229 INVALID-ORDER-229** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**10.230 INVALID-ORDER-230** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.231 INVALID-ORDER-231** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.232 INVALID-ORDER-232** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.233 INVALID-ORDER-233** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

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

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

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

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

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

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

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

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

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

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

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

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

**10.240 INVALID-ORDER-240** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.241 INVALID-ORDER-241** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.242 INVALID-ORDER-242** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.243 INVALID-ORDER-243** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

### 10.244 INVALID-ORDER-244

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

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

### 10.245 INVALID-ORDER-245

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

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

### 10.246 INVALID-ORDER-246

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

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

### 10.247 INVALID-ORDER-247

$$Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L\right)$$

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

### 10.248 INVALID-ORDER-248

$$Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$$

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

### 10.249 INVALID-ORDER-249

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

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

### 10.250 INVALID-ORDER-250

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

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

### 10.251 INVALID-ORDER-251

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

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

### 10.252 INVALID-ORDER-252

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

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

**10.253 INVALID-ORDER-253** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.254 INVALID-ORDER-254** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.255 INVALID-ORDER-255** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

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

**10.256 INVALID-ORDER-256** $Z(s) = \left(\frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

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

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

$$H(s) = \frac{R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L + s\left(C_1 R_1 R_3 + C_1 R_1 R_L\right)}$$

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

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

**10.259 INVALID-ORDER-259** $Z(s) = \left(\frac{R_1}{C_1 R_1 s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

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

**10.260 INVALID-ORDER-260** $Z(s) = \left(\frac{R_1}{C_1 R_1 s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.261 INVALID-ORDER-261** $Z(s) = \left(\frac{R_1}{C_1 R_1 s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

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

**10.262 INVALID-ORDER-262** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + L_LR_1R_3g_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L\right) + s^2\left(C_1L_LR_1 + C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3 + C_LL_LR_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + L_LR_1g_m + L_L\right)}$$

**10.263 INVALID-ORDER-263** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L\right) + s^2\left(C_1C_LR_1R_3R_L + C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3 + C_LL_LR_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

**10.264 INVALID-ORDER-264** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1g_m}{s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.265 INVALID-ORDER-265** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LR_1R_Lg_ms + R_1g_m}{C_1C_3C_LR_1R_Ls^3 + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.266 INVALID-ORDER-266** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1g_ms^2 + R_1g_m}{C_1C_3C_LL_LR_1s^4 + s^3\left(C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.267 INVALID-ORDER-267** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_LR_1g_ms}{C_1R_1s + R_1g_m + s^3\left(C_1C_3L_LR_1 + C_1C_LL_LR_1\right) + s^2\left(C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + 1}$$

**10.268 INVALID-ORDER-268** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1g_ms^2 + C_LR_1R_Lg_ms + R_1g_m}{C_1C_3C_LL_LR_1s^4 + s^3\left(C_1C_3C_LR_1R_L + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.269 INVALID-ORDER-269** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{L_LR_1R_Lg_ms}{R_1R_Lg_m + R_L + s^3\left(C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L\right) + s^2\left(C_1L_LR_1 + C_3L_LR_1R_Lg_m + C_3L_LR_L + C_LL_LR_1R_Lg_m + C_LL_LR_L\right) + s\left(C_1R_1R_L + L_LR_1g_m + L_L\right)}$$

**10.270 INVALID-ORDER-270** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_Lg_ms^2 + L_LR_1g_ms + R_1R_Lg_m}{C_1C_3C_LL_LR_1R_Ls^4 + R_1g_m + s^3\left(C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_L + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L\right) + 1}$$

**10.271 INVALID-ORDER-271** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_Lg_ms^2 + R_1R_Lg_m}{C_1C_3C_LL_LR_1R_Ls^4 + R_1g_m + s^3\left(C_1C_LL_LR_1 + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**10.272 INVALID-ORDER-272** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LR_1R_3R_Lg_ms + R_1R_3g_m}{C_1C_3C_LR_1R_3R_Ls^3 + R_1g_m + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

**10.273 INVALID-ORDER-273** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1R_3g_ms^2 + R_1R_3g_m}{C_1C_3C_LL_LR_1R_3s^4 + R_1g_m + s^3\left(C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.274 INVALID-ORDER-274** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^3\left(C_1C_3L_LR_1R_3 + C_1C_LL_LR_1R_3\right) + s^2\left(C_1L_LR_1 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_3\right) + s\left(C_1R_1R_3 + L_LR_1g_m + L_L\right)}$$

**10.275 INVALID-ORDER-275** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_LR_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{C_1C_3C_LL_LR_1R_3s^4 + R_1g_m + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR\right.}$$

**10.276 INVALID-ORDER-276** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^3\left(C_1C_3L_LR_1R_3R_L + C_1C_LL_LR_1R_3R_L\right) + s^2\left(C_1L_LR_1R_3 + C_1L_LR_1R_L + C_3L_LR_1R_3R_Lg_m + C_3L_LR_3R_L + C_LL_LR_1R_3R_Lg_m + C_LL_LR_3R_L\right) + s\left(C_1R_1R_3R_L + L_LR_1R_3g_m + L_LR_1R_Lg_m + L_LR_3 + L_LR_L\right)}$$

**10.277 INVALID-ORDER-277** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + L_LR_1R_3g_ms + R_1R_3R_Lg_m}{C_1C_3C_LL_LR_1R_3R_Ls^4 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_LR_1R_3 + C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1L_LR_1 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3\right.}$$

**10.278 INVALID-ORDER-278** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_LR_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{C_1C_3C_LL_LR_1R_3R_Ls^4 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1C_LR_1R_3R_L + C_LL_LR_1R_3g_m + C_LL_LR_1R_Lg_m + C_LL_LR_3 + C_LL_LR_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L +\right.}$$

**10.279 INVALID-ORDER-279** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3R_1R_3g_ms + R_1g_m}{C_1C_3C_LR_1R_3s^3 + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.280 INVALID-ORDER-280** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{C_1C_3C_LR_1R_3R_Ls^3 + R_1g_m + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**10.281 INVALID-ORDER-281** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LR_1R_3R_Lg_ms^2 + R_1g_m + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.282 INVALID-ORDER-282** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_LR_1R_3g_ms^3 + C_3R_1R_3g_ms + C_LL_LR_1g_ms^2 + R_1g_m}{C_1C_3C_LL_LR_1s^4 + s^3\left(C_1C_3C_LR_1R_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.283 INVALID-ORDER-283** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_LR_1R_3g_ms^2 + L_LR_1g_ms}{C_1C_3C_LL_LR_1R_3s^4 + R_1g_m + s^3\left(C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3\right) + 1}$$

**10.284 INVALID-ORDER-284** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_LR_1R_3g_ms^3 + R_1g_m + s^2\left(C_3C_LR_1R_3R_Lg_m + C_LL_LR_1g_m\right) + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{C_1C_3C_LL_LR_1s^4 + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.285 INVALID-ORDER-285** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_LR_1R_3R_Lg_ms^2 + L_LR_1R_Lg_ms}{C_1C_3C_LL_LR_1R_3R_Ls^4 + R_1R_Lg_m + R_L + s^3\left(C_1C_3L_LR_1R_3 + C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1L_LR_1 + C_3L_LR_1R_3g_m + C_3L_LR_1R_Lg_m + C_3L_LR_3 + C_3L_LR_L + C_LL_LR_1R_Lg_m + C_LL_LR_L\right) + s$$

**10.286 INVALID-ORDER-286** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_LR_1R_3R_Lg_ms^3 + R_1R_Lg_m + s^2\left(C_3L_LR_1R_3g_m + C_LL_LR_1R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + L_LR_1g_m\right)}{R_1g_m + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L\right) + s^3\left(C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_3 + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3\right.$$

**10.287 INVALID-ORDER-287** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_LR_1R_3R_Lg_ms^3 + C_3R_1R_3R_Lg_ms + C_LL_LR_1R_Lg_ms^2 + R_1R_Lg_m}{R_1g_m + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_3 + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_LL_LR_1g_m + C_L\right.$$

**10.288 INVALID-ORDER-288** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_Lg_ms^2 + R_1R_Lg_m}{C_1C_3L_3R_1s^3 + R_1g_m + s^2\left(C_1C_3R_1R_L + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L\right) + 1}$$

**10.289 INVALID-ORDER-289** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_3R_1g_ms^2 + R_1g_m}{C_1C_3C_LL_3R_1s^4 + s^3\left(C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.290 INVALID-ORDER-290** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_Lg_ms^2 + R_1R_Lg_m}{C_1C_3C_LL_3R_1R_Ls^4 + R_1g_m + s^3\left(C_1C_3L_3R_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**10.291 INVALID-ORDER-291** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_Lg_ms^3 + C_3L_3R_1g_ms^2 + C_LR_1R_Lg_ms + R_1g_m}{C_1C_3C_LL_3R_1s^4 + s^3\left(C_1C_3C_LR_1R_L + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.292 INVALID-ORDER-292** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1g_ms^4 + R_1g_m + s^2\left(C_3L_3R_1g_m + C_LL_LR_1g_m\right)}{s^4\left(C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.293 INVALID-ORDER-293** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1g_ms^3 + L_LR_1g_ms}{C_1C_3C_LL_3L_LR_1s^5 + C_1R_1s + R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_3L_LR_1 + C_1C_LL_LR_1\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + 1}$$

**10.294 INVALID-ORDER-294** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1g_ms^4 + C_3C_LL_3R_1R_Lg_ms^3 + C_LR_1R_Lg_ms + R_1g_m + s^2\left(C_3L_3R_1g_m + C_LL_LR_1g_m\right)}{s^4\left(C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_L + C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.295 INVALID-ORDER-295** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_Lg_ms^3 + L_LR_1R_Lg_ms}{C_1C_3C_LL_3L_LR_1R_Ls^5 + R_1R_Lg_m + R_L + s^4\left(C_1C_3L_3L_LR_1 + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L + C_3L_3L_LR_1g_m + C_3L_3L_L\right) + s^2\left(C_1L_LR_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L + C_3L_LR_1R_Lg_m + C_3L_LR_L + C\right.}$$

**10.296 INVALID-ORDER-296** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_Lg_ms^4 + C_3L_3L_LR_1g_ms^3 + L_LR_1g_ms + R_1R_Lg_m + s^2\left(C_3L_3R_1R_Lg_m + C_LL_LR_1R_Lg_m\right)}{C_1C_3C_LL_3L_LR_1R_Ls^5 + R_1g_m + s^4\left(C_1C_3C_LL_LR_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L + C_3L_3R_1g_m + C_3\right.}$$

**10.297 INVALID-ORDER-297** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_Lg_ms^4 + R_1R_Lg_m + s^2\left(C_3L_3R_1R_Lg_m + C_LL_LR_1R_Lg_m\right)}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3C_LL_LR_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L + C_3L_3R_1g_m + C_3L\right.}$$

**10.298 INVALID-ORDER-298** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_3R_1R_Lg_ms}{C_1C_3L_3R_1R_Ls^3 + R_1R_Lg_m + R_L + s^2\left(C_1L_3R_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L\right) + s\left(C_1R_1R_L + L_3R_1g_m + L_3\right)}$$

**10.299 INVALID-ORDER-299** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_3R_1g_ms}{C_1R_1s + R_1g_m + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + 1}$$

**10.300 INVALID-ORDER-300** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^3\left(C_1C_3L_3R_1R_L + C_1C_LL_3R_1R_L\right) + s^2\left(C_1L_3R_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L + C_LL_3R_1R_Lg_m + C_LL_3R_L\right) + s\left(C_1R_1R_L + L_3R_1g_m + L_3\right)}$$

**10.301 INVALID-ORDER-301** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3R_1R_Lg_ms^2 + L_3R_1g_ms}{C_1C_3C_LL_3R_1R_Ls^4 + R_1g_m + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_LR_1R_L + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + s\left(C_1R_1 + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**10.302 INVALID-ORDER-302** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3L_LR_1g_ms^3 + L_3R_1g_ms}{C_1C_3C_LL_3L_LR_1s^5 + C_1R_1s + R_1g_m + s^4\left(C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_1C_LL_LR_1\right) + s^2\left(C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3 + C_LL_LR_1g_m + C_LL_L\right) + 1}$$

**10.303 INVALID-ORDER-303** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_3L_LR_1g_ms}{L_3R_1g_m + L_3 + L_LR_1g_m + L_L + s^3\left(C_1C_3L_3L_LR_1 + C_1C_LL_3L_LR_1\right) + s^2\left(C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s\left(C_1L_3R_1 + C_1L_LR_1\right)}$$

**10.304 INVALID-ORDER-304** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3L_LR_1g_ms^3 + C_LL_3R_1R_Lg_ms^2 + L_3R_1g_ms}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_LR_1R_L + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C\right.}$$

**10.305 INVALID-ORDER-305** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{L_3L_LR_1R_Lg_ms}{L_3R_1R_Lg_m + L_3R_L + L_LR_1R_Lg_m + L_LR_L + s^3\left(C_1C_3L_3L_LR_1R_L + C_1C_LL_3L_LR_1R_L\right) + s^2\left(C_1L_3L_LR_1 + C_3L_3L_LR_1R_Lg_m + C_3L_3L_LR_L + C_LL_3L_LR_1R_Lg_m + C_LL_3L_LR_L\right) + s\left(C_1L_3R_1R_L + C_1L_LR_1R_L + L_3L_LR_1g_m + L_3L_L\right)}$$

**10.306 INVALID-ORDER-306** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_Lg_ms^3 + L_3L_LR_1g_ms^2 + L_3R_1R_Lg_ms}{C_1C_3C_LL_3L_LR_1R_Ls^5 + R_1R_Lg_m + R_L + s^4\left(C_1C_3L_3L_LR_1 + C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1C_LL_LR_1R_L + C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_1L_3R_1 + C_1L_LR_1 + C_3L_3R_1R_Lg_m + C_\right.}$$

**10.307 INVALID-ORDER-307** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_Lg_ms^3 + L_3R_1R_Lg_ms}{C_1C_3C_LL_3L_LR_1R_Ls^5 + R_1R_Lg_m + R_L + s^4\left(C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1C_LL_3R_1R_L + C_1C_LL_LR_1R_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_1L_3R_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L + C_LL_3R_1R_Lg_m + C_LL_3R_L + \right.}$$

**10.308 INVALID-ORDER-308** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_Lg_ms^2 + C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{C_1C_3L_3R_1s^3 + R_1g_m + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right) + 1}$$

**10.309 INVALID-ORDER-309** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_3R_1g_ms^2 + C_3R_1R_3g_ms + R_1g_m}{C_1C_3C_LL_3R_1s^4 + s^3\left(C_1C_3C_LR_1R_3 + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.310 INVALID-ORDER-310** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_Lg_ms^2 + C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{C_1C_3C_LL_3R_1R_Ls^4 + R_1g_m + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_3R_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right.}$$

**10.311 INVALID-ORDER-311** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_Lg_ms^3 + R_1g_m + s^2\left(C_3C_LR_1R_3R_Lg_m + C_3L_3R_1g_m\right) + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{C_1C_3C_LL_3R_1s^4 + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.312 INVALID-ORDER-312** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1g_ms^4 + C_3C_LL_LR_1R_3g_ms^3 + C_3R_1R_3g_ms + R_1g_m + s^2\left(C_3L_3R_1g_m + C_LL_LR_1g_m\right)}{s^4\left(C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_3 + C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.313 INVALID-ORDER-313** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1g_ms^3 + C_3L_LR_1R_3g_ms^2 + L_LR_1g_ms}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_LR_1R_3 + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_3L_3R_1g_m + C_3L_3 + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1\right.}$$

**10.314 INVALID-ORDER-314** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1g_ms^4 + R_1g_m + s^3\left(C_3C_LL_3R_1R_Lg_m + C_3C_LL_LR_1R_3g_m\right) + s^2\left(C_3C_LR_1R_3R_Lg_m + C_3L_3R_1g_m + C_LL_LR_1g_m\right) + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{s^4\left(C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L + C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.315 INVALID-ORDER-315** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_Lg_ms^3 + C_3L_LR_1R_3R_Lg_ms^2 + L_LR_1R_{\cdots}}{C_1C_3C_LL_3L_LR_1R_Ls^5 + R_1R_Lg_m + R_L + s^4\left(C_1C_3C_LL_LR_1R_3R_L + C_1C_3L_3L_LR_1 + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1C_3L_LR_1R_3 + C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L + C_3L_3L_LR_1g_m + C_3L_{\cdots}\right.}$$

**10.316 INVALID-ORDER-316** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_Lg_ms^4 + R_1R_Lg_m + s^3\left(C_3C_LL_LR_1R_3R_Lg_m + C_3L_3L_LR_1g_m\right) + s^2\left(C_3L_3R_1R_Lg_m + C_3L_LR_1R_3g_m + C_LL_LR_1R_Lg_m\right) + s\left(C_3R_1R_3R_Lg\right.}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_3L_LR_1R_3 + C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L + C_3C_LL_LR_1R_3R_Lg_m + C_3C_LL_LR_3R_L + C_3L_3L_LR_1g_m + C_3L_{\cdots}\right.}$$

**10.317 INVALID-ORDER-317** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_Lg_ms^4 + C_3C_LL_LR_1R_3R_Lg_ms^3 + C_3R_1R_3R_Lg_ms + R_{1\cdots}}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_1R_Lg_m + C_3C_L\right.}$$

**10.318 INVALID-ORDER-318** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_3R_1R_3R_Lg_ms}{C_1C_3L_3R_1R_3R_Ls^3 + R_1R_3R_Lg_m + R_3R_L + s^2\left(C_1L_3R_1R_3 + C_1L_3R_1R_L + C_3L_3R_1R_3R_Lg_m + C_3L_3R_3R_L\right) + s\left(C_1R_1R_3R_L + L_3R_1R_3g_m + L_3R_1R_Lg_m + L_3R_3 + L_3R_L\right)}$$

**10.319 INVALID-ORDER-319** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{L_3R_1R_3g_ms}{R_1R_3g_m + R_3 + s^3\left(C_1C_3L_3R_1R_3 + C_1C_LL_3R_1R_3\right) + s^2\left(C_1L_3R_1 + C_3L_3R_1R_3g_m + C_3L_3R_3 + C_LL_3R_1R_3g_m + C_LL_3R_3\right) + s\left(C_1R_1R_3 + L_3R_1g_m + L_3\right)}$$

**10.320 INVALID-ORDER-320** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{L_3R_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^3\left(C_1C_3L_3R_1R_3R_L + C_1C_LL_3R_1R_3R_L\right) + s^2\left(C_1L_3R_1R_3 + C_1L_3R_1R_L + C_3L_3R_1R_3R_Lg_m + C_3L_3R_3R_L + C_LL_3R_1R_3R_Lg_m + C_LL_3R_3R_L\right) + s\left(C_1R_1R_3R_L + L_3R_1R_3g_m + L_3R_1R_Lg_m + L_3R_3 + L_3R_L\right)}$$

### 10.321 INVALID-ORDER-321 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3R_1R_3R_Lg_ms^2 + L_3R_1R_3g_ms}{C_1C_3C_LL_3R_1R_3R_Ls^4 + R_1R_3g_m + R_3 + s^3\left(C_1C_3L_3R_1R_3 + C_1C_LL_3R_1R_3 + C_1C_LL_3R_1R_L + C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L\right) + s^2\left(C_1C_LR_1R_3R_L + C_1L_3R_1 + C_3L_3R_1R_3g_m + C_3L_3R_3 + C_LL_3R_1R_3g_m + C_LL_3R_1R_Lg_m + C_LL_3R_3 + C_LL_3R_L\right) + s\left(C_1R\right.}$$

### 10.322 INVALID-ORDER-322 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_3g_ms^3 + L_3R_1R_3g_ms}{C_1C_3C_LL_3L_LR_1R_3s^5 + R_1R_3g_m + R_3 + s^4\left(C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_LL_3R_1R_3 + C_1C_LL_LR_1R_3 + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_1L_3R_1 + C_3L_3R_1R_3g_m + C_3L_3R_3 + C_LL_3R_1R_3g_m + C_LL_3R_3 + C_LL\right.}$$

### 10.323 INVALID-ORDER-323 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{L_3L_LR_1R_3g_ms}{L_3R_1R_3g_m + L_3R_3 + L_LR_1R_3g_m + L_LR_3 + s^3\left(C_1C_3L_3L_LR_1R_3 + C_1C_LL_3L_LR_1R_3\right) + s^2\left(C_1L_3L_LR_1 + C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_3 + C_LL_3L_LR_1R_3g_m + C_LL_3L_LR_3\right) + s\left(C_1L_3R_1R_3 + C_1L_LR_1R_3 + L_3L_LR_1g_m + L_3L_L\right)}$$

### 10.324 INVALID-ORDER-324 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_3g_ms^3 + C_LL_3R_1R_3R_Lg_ms^2 + L_3R_1R_3g_}{C_1C_3C_LL_3L_LR_1R_3s^5 + R_1R_3g_m + R_3 + s^4\left(C_1C_3C_LL_3R_1R_3R_L + C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_LL_3R_1R_3 + C_1C_LL_3R_1R_L + C_1C_LL_LR_1R_3 + C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L + C_LL_3L_LR_1g_m + C_LL_3L\right.}$$

### 10.325 INVALID-ORDER-325 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{L_3L_LR_1R_3R_Lg_ms}{L_3R_1R_3R_Lg_m + L_3R_3R_L + L_LR_1R_3R_Lg_m + L_LR_3R_L + s^3\left(C_1C_3L_3L_LR_1R_3R_L + C_1C_LL_3L_LR_1R_3R_L\right) + s^2\left(C_1L_3L_LR_1R_3 + C_1L_3L_LR_1R_L + C_3L_3L_LR_1R_3R_Lg_m + C_3L_3L_LR_3R_L + C_LL_3L_LR_1R_3R_Lg_m + C_LL_3L_LR_3R_L\right) + s\left(C_1L_3R_1R_3R_L + C_1L_LR_1R_3R_L + \right.}$$

### 10.326 INVALID-ORDER-326 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_3R_Lg_}{C_1C_3C_LL_3L_LR_1R_3R_Ls^5 + R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_3L_LR_1R_3 + C_1C_LL_3L_LR_1R_3 + C_1C_LL_3L_LR_1R_L + C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_1C_3L_3R_1R_3R_L + C_1C_LL_LR_1R_3R_L + C_1L_3L_LR_1 + C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_3 + C_LL_3L_L\right.}$$

### 10.327 INVALID-ORDER-327 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_3L_LR_1R_3R_Lg_ms^3 + L_3R_1R_3R_Lg_ms}{C_1C_3C_LL_3L_LR_1R_3R_Ls^5 + R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_LL_3L_LR_1R_3 + C_1C_LL_3L_LR_1R_L + C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_1C_3L_3R_1R_3R_L + C_1C_LL_3R_1R_3R_L + C_1C_LL_LR_1R_3R_L + C_LL_3L_LR_1R_3g_m + C_LL_3L_LR_1R_Lg_m + C_LL_3L_LR_3 + C\right.}$$

### 10.328 INVALID-ORDER-328 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + L_3R_1R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L\right) + s^2\left(C_1L_3R_1 + C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + L_3R_1g_m + L_3\right)}$$

### 10.329 INVALID-ORDER-329 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_3R_1R_3g_ms^2 + L_3R_1g_ms + R_1R_3g_m}{C_1C_3C_LL_3R_1R_3s^4 + R_1g_m + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_1C_LR_1R_3 + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

### 10.330 INVALID-ORDER-330 $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + L_3R_1R_Lg_ms + R_1R_3R_Lg_m}{C_1C_3C_LL_3R_1R_3R_Ls^4 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_1C_LL_3R_1R_L + C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L\right) + s^2\left(C_1C_LR_1R_3R_L + C_1L_3R_1 + C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L + C_LL_3R_1R_Lg_m + C\right.}$$

**10.331 INVALID-ORDER-331** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_3R_Lg_ms^3 + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_3R_1R_Lg_m\right) + s\left(C_LR_1R_3R_Lg_m + L_3R_1g_m\right)}{R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_1C_LR_1R_3 + C_1C_LR_1R_L + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_1\right.}$$

**10.332 INVALID-ORDER-332** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + C_LL_3L_LR_1g_ms^3 + L_3R_1g_ms + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_1C_LR_1R_3 + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1\right.}$$

**10.333 INVALID-ORDER-333** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3g_ms^3 + L_3L_LR_1g_ms^2 + L_LR_1R_3g_ms}{C_1C_3C_LL_3L_LR_1R_3s^5 + R_1R_3g_m + R_3 + s^4\left(C_1C_3L_3L_LR_1 + C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_LL_LR_1R_3 + C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_LL_3L_L\right) + s^2\left(C_1L_3R_1 + C_1L_LR_1 + C_3L_3R_1R_3g_m + C_3L_\right.}$$

**10.334 INVALID-ORDER-334** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + R_1R_3g_m + s^3\left(C_3C_LL_3R_1R_3R_Lg_m + C_LL_3L_LR_1g_m\right) + s^2\left(C_3L_3R_1R_3g_m + C_LL_3R_1R_Lg_m + C_LL_LR_1R_3g_m\right) + s\left(C_LR_1R_3R_Lg_\right.}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_1C_LR_1R_3 + C_1C_LR_1R_L + C_3L_3\right.}$$

**10.335 INVALID-ORDER-335** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3R_Lg_\right.}{C_1C_3C_LL_3L_LR_1R_3R_Ls^5 + R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_3L_LR_1R_3 + C_1C_3L_3L_LR_1R_L + C_1C_LL_3L_LR_1R_L + C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_1C_3L_3R_1R_3R_L + C_1C_LL_LR_1R_3R_L + C_1L_3L_LR_1 + C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_1R_Lg_m + C_3\right.}$$

**10.336 INVALID-ORDER-336** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^3\left(C_3L_3L_LR_1R_3g_m + C_LL_3L_LR_1R_Lg_m\right.}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L\right) + s^4\left(C_1C_3L_3L_LR_1 + C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_1C_LL_LR_1R_3 + C_1C\right.}$$

**10.337 INVALID-ORDER-337** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R\right.}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_3R_L + C_1C_LL_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_1C_LL_3R_1R_L + \right.}$$

**10.338 INVALID-ORDER-338** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R_1R_3R_Lg_m + C_3R_3R_L\right)}$$

**10.339 INVALID-ORDER-339** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_3R_1R_3g_ms^2 + R_1R_3g_m}{C_1C_3C_LL_3R_1R_3s^4 + R_1g_m + s^3\left(C_1C_3L_3R_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.340 INVALID-ORDER-340** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_3R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{C_1C_3C_LL_3R_1R_3R_Ls^4 + R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_3C_LL_3R_1R_3R_Lg_m + C_3C_LL_3R_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1C_LR_1R_3R_L + C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3 + C_3L_3R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R\right.}$$

**10.341 INVALID-ORDER-341** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3R_1R_3R_Lg_ms^3 + C_3L_3R_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_3R_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_1C_LR_1R_L + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_3R_1g_m + C_3L_3\right) +}$$

**10.342 INVALID-ORDER-342** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + R_1R_3g_m + s^2\left(C_3L_3R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_LR_1R_3 + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_3L_3R_1g_m + C_3L_3 +\right.}$$

**10.343 INVALID-ORDER-343** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms}{C_1C_3C_LL_3L_LR_1R_3s^5 + R_1R_3g_m + R_3 + s^4\left(C_1C_3L_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_3\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_LR_1R_3 + C_1C_LL_LR_1R_3 + C_3L_3L_LR_1g_m + C_3L_3L_L\right) + s^2\left(C_1L_LR_1 + C_3L_3R_1R_3g_m + C_3L_3R_3 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL\right.}$$

**10.344 INVALID-ORDER-344** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R_3g_ms^4 + C_3C_LL_3R_1R_3R_Lg_ms^3 + C_LR_1R_3R_Lg_ms + R_1R}{C_1C_3C_LL_3L_LR_1s^5 + R_1g_m + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L + C_1C_3C_LL_LR_1R_3 + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_3R_1 + C_1C_LL_LR_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_3 + C_3C_LL_3R_L + C_3C_LL_LR_1R\right.}$$

**10.345 INVALID-ORDER-345** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_3L_3L_LR_1R_3R_Lg_ms^3 + L_LR_1R_3R_Lg_ms}{C_1C_3C_LL_3L_LR_1R_3R_Ls^5 + R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_3L_LR_1R_3 + C_1C_3L_3L_LR_1R_L + C_3C_LL_3L_LR_1R_3R_Lg_m + C_3C_LL_3L_LR_3R_L\right) + s^3\left(C_1C_3L_3R_1R_3R_L + C_1C_3L_LR_1R_3R_L + C_1C_LL_LR_1R_3R_L + C_3L_3L_LR_1R_3g_m + C_3L_3L_LR_1R_Lg_m + C_3L_3L_LR_3 + C_3\right.}$$

**10.346 INVALID-ORDER-346** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_3L_LR_1R}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L\right) + s^4\left(C_1C_3C_LL_LR_1R_3R_L + C_1C_3L_3L_LR_1 + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_1C_3L_LR_1R_3 +\right.}$$

**10.347 INVALID-ORDER-347** $Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_3R_L + C_1C_3C_LL_LR_1R_3R_L + C_3C_LL_3L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_Lg_m + C_3C_LL_3L_LR_3 + C_3C_LL_3L_LR_L\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L + C_1C_LL_L\right.}$$

**10.348 INVALID-ORDER-348** $Z(s) = \left(R_1 + \frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1R_1R_3R_Lg_ms + R_3R_Lg_m}{R_3g_m + R_Lg_m + s\left(C_1R_1R_3g_m + C_1R_1R_Lg_m + C_1R_3 + C_1R_L\right)}$$

**10.349 INVALID-ORDER-349** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.350 INVALID-ORDER-350** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.351 INVALID-ORDER-351** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.352 INVALID-ORDER-352** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.353 INVALID-ORDER-353** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.354 INVALID-ORDER-354** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.355 INVALID-ORDER-355** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.356 INVALID-ORDER-356** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.357 INVALID-ORDER-357** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.358 INVALID-ORDER-358** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.359 INVALID-ORDER-359** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.360 INVALID-ORDER-360** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.361 INVALID-ORDER-361** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.362 INVALID-ORDER-362** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.363 INVALID-ORDER-363** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.364 INVALID-ORDER-364** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.365 INVALID-ORDER-365** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.366 INVALID-ORDER-366** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.367 INVALID-ORDER-367** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

### 10.368 INVALID-ORDER-368 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

### 10.369 INVALID-ORDER-369 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

### 10.370 INVALID-ORDER-370 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

### 10.371 INVALID-ORDER-371 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

### 10.372 INVALID-ORDER-372 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

### 10.373 INVALID-ORDER-373 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

### 10.374 INVALID-ORDER-374 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

### 10.375 INVALID-ORDER-375 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

### 10.376 INVALID-ORDER-376 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.377 INVALID-ORDER-377** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.378 INVALID-ORDER-378** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.379 INVALID-ORDER-379** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

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

**10.380 INVALID-ORDER-380** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.381 INVALID-ORDER-381** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**10.382 INVALID-ORDER-382** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.383 INVALID-ORDER-383** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.384 INVALID-ORDER-384** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

**10.385 INVALID-ORDER-385** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

**10.386 INVALID-ORDER-386** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

**10.387 INVALID-ORDER-387** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

**10.388 INVALID-ORDER-388** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

**10.389 INVALID-ORDER-389** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

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

**10.390 INVALID-ORDER-390** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.391 INVALID-ORDER-391** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

**10.392 INVALID-ORDER-392** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

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

**10.393 INVALID-ORDER-393** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

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

**10.394 INVALID-ORDER-394** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

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

### 10.395 INVALID-ORDER-395 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

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

### 10.396 INVALID-ORDER-396 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

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

### 10.397 INVALID-ORDER-397 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

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

### 10.398 INVALID-ORDER-398 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

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

### 10.399 INVALID-ORDER-399 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

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

### 10.400 INVALID-ORDER-400 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

### 10.401 INVALID-ORDER-401 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

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

### 10.402 INVALID-ORDER-402 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_3 C_L R_3 R_L g_m + C_3 L_3 g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m + C_L R_L g_m\right)}{s^4 \left(C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

### 10.403 INVALID-ORDER-403 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_3 L_3 g_m + C_L L_L g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m\right)}{s^4 \left(C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_3 + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

### 10.404 INVALID-ORDER-404 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 g_m s^4 + L_L g_m s + s^3 \left(C_1 C_3 L_L R_1 R_3 g_m + C_3 L_3 L_L g_m\right) + s^2 \left(C_1 L_L R_1 g_m + C_3 L_L R_3 g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_3 L_3 g_m + C_3\right.$$

### 10.405 INVALID-ORDER-405 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_L R_1 R_3 g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_3 R_L g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_3 C_L R_3 R_L g_m + C_3 L_3 g_m + C\right.}{s^4 \left(C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L\right.}$$

### 10.406 INVALID-ORDER-406 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_L g_m s^4 + L_L R_L g_m s + s^3 \left(C_1 C_3 L_L R_1 R_3 R_L g_m + C_3 L\right.}{R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_L + C_1 C_3 L_L R_1 R_3 g_m + C_1 C_3 L_L R_1 R_L g_m + C_1 C_3 L_L R_3 + C_1 C_3 L\right.}$$

### 10.407 INVALID-ORDER-407 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 L_3 L_L R_1 g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_L R_1 R_3 g_m + C_1 C_L L_L R_1 R_L g_m + C_3 C_L L_L R_3 R_L g_m + C_3 L_3 L_L g_m\right) + s^2 \left(C_1 C_3 R_1 R\right.}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m + C_3 C\right.}$$

### 10.408 INVALID-ORDER-408 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C\right.}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3\right.}$$

### 10.409 INVALID-ORDER-409 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L\right)$

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

### 10.410 INVALID-ORDER-410 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_3 R_1 R_3 g_m s^2 + L_3 R_3 g_m s}{R_3 g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_3\right) + s^2 \left(C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_L L_3 R_3 g_m\right) + s \left(C_1 R_1 R_3 g_m + C_1 R_3 + L_3 g_m\right)}$$

### 10.411 INVALID-ORDER-411 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

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

### 10.412 INVALID-ORDER-412 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_3 R_1 R_3 R_L g_m s^3 + L_3 R_3 g_m s + s^2 \left(C_1 L_3 R_1 R_3 g_m + C_L L_3 R_3 R_L g_m\right)}{R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_3 R_3 + C_1 C_L L_3 R_L + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_L\right.}$$

### 10.413 INVALID-ORDER-413 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_3 L_L R_1 R_3 g_m s^4 + C_1 L_3 R_1 R_3 g_m s^2 + C_L L_3 L_L R_3 g_m s^3 + L_3 R_3 g_m s}{R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3\right) + s^4 \left(C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_3 + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_3 + C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_3 R_1 g_m + C_1 L_3 + \right.}$$

### 10.414 INVALID-ORDER-414 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 L_3 L_L R_1 R_3 g_m s^2 + L_3 L_L R_3 g_m s}{L_3 R_3 g_m + L_L R_3 g_m + s^3 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_3\right) + s^2 \left(C_1 L_3 L_L R_1 g_m + C_1 L_3 L_L + C_3 L_3 L_L R_3 g_m + C_L L_3 L_L R_3 g_m\right) + s \left(C_1 L_3 R_1 R_3 g_m + C_1 L_3 R_3 + C_1 L_L R_1 R_3 g_m + C_1 L_L R_3 + L_3 L_L g_m\right)}$$

### 10.415 INVALID-ORDER-415 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_3 L_L R_1 R_3 g_m s^4 + L_3 R_3 g_m s + s^3 \left(C_1 C_L L_3 R_1 R_3 R_L g_m + C_L L_3\right.}{R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_3 R_3 + C_1 C_L L_3 \right.}$$

### 10.416 INVALID-ORDER-416 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 L_3 L_L R_1 R_3 R_L g_m s^2 + L_3 L_L R_3 R_L g_m s}{L_3 R_3 R_L g_m + L_L R_3 R_L g_m + s^3 \left(C_1 C_3 L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_3 L_L R_3 R_L + C_1 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_L L_3 L_L R_3 R_L\right) + s^2 \left(C_1 L_3 L_L R_1 R_3 g_m + C_1 L_3 L_L R_1 R_L g_m + C_1 L_3 L_L R_3 + C_1 L_3 L_L R_L + C_3 L_3 L_L R_3 R_L g_m + C_L L_3 L_L R_3 R_L g_m\right) + s \left(C_1 L_3 R_1 R_3 R_L g_m + C\right.}$$

### 10.417 INVALID-ORDER-417 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_L L_3 L_L R_1 R_3 R_L g_m s^4 + L_3 R_3 R}{R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_1 R_L g_m + C_1 C_L L_3 L_L R_3 + C_1 C_L L_3 L_L R_L + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 C\right.}$$

### 10.418 INVALID-ORDER-418 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_L L_3 L_L R_1 R_3 R_L g_m s^4 + C_1 L_3 R_1 R_3 R_L g_m s^2 + C_L L}{R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_1 R_L g_m + C_1 C_L L_3 L_L R_3 + C_1 C_L L_3 L_L R_L + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 C_L L_3 R_1 R_3 R_L g_m + C_1 C_L L_3 R_3 R_L + C_1 C\right.}$$

### 10.419 INVALID-ORDER-419 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

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

### 10.420 INVALID-ORDER-420 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

### 10.421 INVALID-ORDER-421 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_3 R_1 R_3 R_L g_m s^3 + R_3 R_L g_m + s^2 \left(C_1 L_3 R_1 R_L g_m + C_3 L_3 R_3 R_L g_m\right) + s \left(C_1 R_1 R_3 R_L g_m + L_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_3 R_L + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_3\right.}$$

**10.422 INVALID-ORDER-422** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m s^4 + R_3 g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_L g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3 R_L g_m + C_1 L_3 R_1 g_m + C_3 L_3 R_3 g_m + C_L L_3 R_L g_m\right) + s \left(C_1 R_1 R_3 g_m + C_L R_3 R_L g_m + L_3 g_m\right)}{g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3 + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L + C_3 L_3 g_m + C_L L_3\right.}$$

**10.423 INVALID-ORDER-423** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m s^5 + R_3 g_m + s^4 \left(C_1 C_L L_3 L_L R_1 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_L R_1 R_3 g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_3 R_1 g_m + C_3 L_3 R_3 g_m + C_L L_L R_3 g_m\right) + s \left(C_1 R_1 R_3 g_m + L_3 g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3 + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m\right) + s^2 \left(C_1 C_L R_1 R_3 g_m + C_1 C_L R_3 + C_3 L_3 g_m + C_L\right.}$$

**10.424 INVALID-ORDER-424** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_3 g_m s^4 + L_L R_3 g_m s + s^3 \left(C_1 L_3 L_L R_1 g_m + C_3 L_3 L_L R_3 g_m\right) + s^2 \left(C_1 L_L R_1 R_3 g_m + L_3 L_L g_m\right)}{R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_3 + C_3 L_3 L_L g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_3 R_1\right.}$$

**10.425 INVALID-ORDER-425** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_L L_3 L_L R_1 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_L R_1 R_3 g_m + C_3 C_L L_3 R_3 R_L g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3\right.}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3 + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m + C_3 C_L\right.}$$

**10.426 INVALID-ORDER-426** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_3 R_L g_m s^4 + L_L R_3 g_m s + s^3 \left(C_1 L_3 L_L R_1 R_L g_m + C_3 L_3 L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_L R_1 R_3 g_m + L_3 L_L R_L g_m\right)}{R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_1 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3 L_L R_L + C_1 C_L L_3 L_L R_1 R_L g_m + C_1 C_L L_3 L_L R_L + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 C\right.}$$

**10.427 INVALID-ORDER-427** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m s^5 + R_3 R_L g_m + s^4 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_1 R_L g_m + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_L L_L\right.}{R_3 g_m + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L\right.}$$

**10.428 INVALID-ORDER-428** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m s^5 + R_3 R_L g_m + s^4 \left(C_1 C_L L_3 L_L R_1\right.}{R_3 g_m + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C\right.}$$

**10.429 INVALID-ORDER-429** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L\right)$

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

**10.430 INVALID-ORDER-430** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

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

**10.431 INVALID-ORDER-431** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 L_3 R_1 R_3 R_L g_m s^3 + C_1 R_1 R_3 R_L g_m s + C_3 L_3 R_3 R_L g_m s^2 + R_3 R_L g_m}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s$$

**10.432 INVALID-ORDER-432** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 R_1 R_3 R_L g_m s^4 + R_3 g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_3 R_L g_m + C_3 L_3 R_3 g_m\right) + s \left(C_1 R_1 R_3 g_m + C_L R_3 R_L g_m\right)}{g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m +\right.$$

**10.433 INVALID-ORDER-433** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m s^5 + C_1 R_1 R_3 g_m s + C_3 C_L L_3 L_L R_3 g_m s^4 + R_3 g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_L R_1 R_3 g_m\right) + s^2 \left(C_3 L_3 R_3 g_m + C_L L_L R_3 g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m\right.$$

**10.434 INVALID-ORDER-434** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_3 g_m s^4 + C_1 L_L R_1 R_3 g_m s^2 + C_3 L_3 L_L R_3 g_m s^3 + L_L R_3 g_m s}{R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_L R_1 R_3 g_m + C_1 C_3 L_L R_3 + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_3 + C_3 L_3 L_L g_m\right) + s^2 \left(C_1 L_L R_1 g_m + C_1 L_L +\right.$$

**10.435 INVALID-ORDER-435** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_3 R_L g_m + C_1 C_L L_3 R_1 R_3 + C_1 C_L L_3 R_1 R_L + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_L R_3 R_L g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m + C_L L_L R_3 g_m\right) + s \left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_L R_3 R_L g_m\right)}$$

**10.436 INVALID-ORDER-436** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_3 L_L R_1 R_3 R_L g_m s^4 + C_1 L_L R_1 R_3 R_L g_m s^2 + C_3 L_3 L_L R_3 R_L g_m s^3 + L_L R_3 R_L g_m s}{R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_1 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3 L_L R_L + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 C_L L_3 R_1 R_3 R_L g_m + C_1 C_L L_3 R_3 R_L + C_1 C_L\right.$$

**10.437 INVALID-ORDER-437** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m s^5 + R_3 R_L g_m + s^4 \left(C_1 C_3 L_3 L_L R_1\right.}{R_3 g_m + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_3 C_L L_3 L_L R_3 g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3\right.$$

**10.438 INVALID-ORDER-438** $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m s^5 +}{R_3 g_m + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_3 C_L L_3 L_L R_3 g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3\right.$$

**10.439 INVALID-ORDER-439** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 R_3 g_m s^2 + R_3 g_m}{C_1 C_L L_1 R_3 g_m s^3 + g_m + s^2 \left(C_1 C_L R_3 + C_1 L_1 g_m\right) + s \left(C_1 + C_L R_3 g_m\right)}$$

**10.440 INVALID-ORDER-440** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 R_3 R_L g_m s^2 + R_3 R_L g_m}{C_1 C_L L_1 R_3 R_L g_m s^3 + R_3 g_m + R_L g_m + s^2 \left(C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + C_L R_3 R_L g_m\right)}$$

**10.441 INVALID-ORDER-441** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_3 R_L g_m s^3 + C_1 L_1 R_3 g_m s^2 + C_L R_3 R_L g_m s + R_3 g_m}{g_m + s^3 \left(C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m\right) + s \left(C_1 + C_L R_3 g_m + C_L R_L g_m\right)}$$

**10.442 INVALID-ORDER-442** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_L L_1 L_L g_m s^4 + g_m + s^3 \left(C_1 C_L L_1 R_3 g_m + C_1 C_L L_L\right) + s^2 \left(C_1 C_L R_3 + C_1 L_1 g_m + C_L L_L g_m\right) + s \left(C_1 + C_L R_3 g_m\right)}$$

**10.443 INVALID-ORDER-443** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 g_m s^3 + L_L R_3 g_m s}{C_1 C_L L_1 L_L R_3 g_m s^4 + R_3 g_m + s^3 \left(C_1 C_L L_L R_3 + C_1 L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_L + C_L L_L R_3 g_m\right) + s \left(C_1 R_3 + L_L g_m\right)}$$

**10.444 INVALID-ORDER-444** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + C_1 C_L L_1 R_3 R_L g_m s^3 + C_L R_3 R_L g_m s + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_L L_1 L_L g_m s^4 + g_m + s^3 \left(C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L\right) + s^2 \left(C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m + C_L L_L g_m\right) + s \left(C_1 + C_L R_3 g_m + C_L R_L g_m\right)}$$

**10.445 INVALID-ORDER-445** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 R_L g_m s^3 + L_L R_3 R_L g_m s}{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + R_3 R_L g_m + s^3 \left(C_1 C_L L_L R_3 R_L + C_1 L_1 L_L R_3 g_m + C_1 L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L g_m + C_1 L_L R_3 + C_1 L_L R_L + C_L L_L R_3 R_L g_m\right) + s \left(C_1 R_3 R_L + L_L R_3 g_m + L_L R_L g_m\right)}$$

**10.446 INVALID-ORDER-446** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + C_1 L_1 L_L R_3 g_m s^3 + L_L R_3 g_m s + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_L L_L R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_L L_L R_3 + C_1 C_L L_L R_L + C_1 L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_1 L_L + C_L L_L R_3 g_m + C_L L_L R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + L_L g_m\right)}$$

**10.447 INVALID-ORDER-447** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_L L_L R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_L R_3 + C_1 C_L L_L R_L\right) + s^2 \left(C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_L L_L R_3 g_m + C_L L_L R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + C_L R_3 R_L g_m\right)}$$

**10.448 INVALID-ORDER-448** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 R_L g_m s^2 + R_L g_m}{C_1 C_3 L_1 R_L g_m s^3 + g_m + s^2 \left(C_1 C_3 R_L + C_1 L_1 g_m\right) + s \left(C_1 + C_3 R_L g_m\right)}$$

**10.449 INVALID-ORDER-449** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 g_m s^2 + g_m}{s^3 \left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.450 INVALID-ORDER-450** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 R_L g_m s^2 + R_L g_m}{g_m + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_L + C_1 C_L R_L + C_1 L_1 g_m\right) + s \left(C_1 + C_3 R_L g_m + C_L R_L g_m\right)}$$

**10.451 INVALID-ORDER-451** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_L g_m s^3 + C_1 L_1 g_m s^2 + C_L R_L g_m s + g_m}{C_1 C_3 C_L L_1 R_L g_m s^4 + s^3 \left(C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.452 INVALID-ORDER-452** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L g_m s^4 + g_m + s^2 \left(C_1 L_1 g_m + C_L L_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + C_1 C_3 C_L L_L s^4 + s^3 \left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.453 INVALID-ORDER-453** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_L g_m s^3 + L_L g_m s}{C_1 s + g_m + s^4 \left(C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_L + C_1 C_L L_L\right) + s^2 \left(C_1 L_1 g_m + C_3 L_L g_m + C_L L_L g_m\right)}$$

**10.454 INVALID-ORDER-454** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_1 R_L g_m s^3 + C_L R_L g_m s + g_m + s^2 \left(C_1 L_1 g_m + C_L L_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.455 INVALID-ORDER-455** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_L g_m s^3 + L_L R_L g_m s}{R_L g_m + s^4 \left(C_1 C_3 L_1 L_L R_L g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_L R_L + C_1 C_L L_L R_L + C_1 L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_1 L_L + C_3 L_L R_L g_m + C_L L_L R_L g_m\right) + s \left(C_1 R_L + L_L g_m\right)}$$

**10.456 INVALID-ORDER-456** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_L g_m s^4 + C_1 L_1 L_L g_m s^3 + L_L g_m s + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_L L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_L + C_1 C_L L_L + C_3 C_L L_L R_L g_m\right) + s^2 \left(C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_L g_m + C_L L_L g_m\right) + s \left(C_1 + C_3 R_L g_m\right)}$$

**10.457 INVALID-ORDER-457** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_L g_m s^4 + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_L L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_L + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L + C_3 C_L L_L R_L g_m\right) + s^2 \left(C_1 C_3 R_L + C_1 C_L R_L + C_1 L_1 g_m + C_L L_L g_m\right) + s \left(C_1 + C_3 R_L g_m + C_L R_L g_m\right)}$$

**10.458 INVALID-ORDER-458** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 R_3 R_L g_m s^2 + R_3 R_L g_m}{C_1 C_3 L_1 R_3 R_L g_m s^3 + R_3 g_m + R_L g_m + s^2 \left(C_1 C_3 R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m\right)}$$

**10.459 INVALID-ORDER-459** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 R_3 g_m s^2 + R_3 g_m}{g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 L_1 g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}$$

**10.460 INVALID-ORDER-460** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 R_3 R_L g_m s^2 + R_3 R_L g_m}{R_3 g_m + R_L g_m + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_L L_1 R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 R_L + C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m + C_L R_3 R_L g_m\right)}$$

**10.461 INVALID-ORDER-461** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_3 R_L g_m s^3 + C_1 L_1 R_3 g_m s^2 + C_L R_3 R_L g_m s + R_3 g_m}{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_L R_3 g_m + C_L R_L g_m\right)}$$

**10.462 INVALID-ORDER-462** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_3 + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 L_1 g_m + C_L L_L g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}$$

**10.463 INVALID-ORDER-463** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 g_m s^3 + L_L R_3 g_m s}{R_3 g_m + s^4 \left(C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_L R_3 + C_1 C_L L_L R_3 + C_1 L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_L + C_3 L_L R_3 g_m + C_L L_L R_3 g_m\right) + s \left(C_1 R_3 + L_L g_m\right)}$$

**10.464 INVALID-ORDER-464** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + C_1 C_L L_1 R_3 R_L g_m s^3 + C_L R_3 R_L g_m s + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m + C_{\text{L}}\right.}$$

**10.465 INVALID-ORDER-465** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 R_L g_m s^3 + L_L R_3 R_L g_m s}{R_3 R_L g_m + s^4 \left(C_1 C_3 L_1 L_L R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_L R_3 R_L + C_1 C_L L_L R_3 R_L + C_1 L_1 L_L R_3 g_m + C_1 L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L g_m + C_1 L_L R_3 + C_1 L_L R_L + C_3 L_L R_3 R_L g_m + C_L L_L R_3 R_L g_m\right) + s \left(C_1 R_3 R_L + L_L R_3 g_m + L_L R_L g_m\right)}$$

**10.466 INVALID-ORDER-466** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + C_1 L_1 L_L R_3 g_m s^3 + L_L R_3 g_m s + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_L L_L R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_L R_3 + C_1 C_L L_L R_3 + C_1 C_L L_L R_L + C_1 L_1 L_L g_m + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 R_L + C_1 L_1 R_3 g_m + \right.}$$

**10.467 INVALID-ORDER-467** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_L L_L R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_3 R_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_L R_3 + C_1 C_L L_L R_L + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 R_L + C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right.}$$

**10.468 INVALID-ORDER-468** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 R_L g_m s^3 + C_1 L_1 R_L g_m s^2 + C_3 R_3 R_L g_m s + R_L g_m}{g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_3 R_L + C_1 L_1 g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}$$

**10.469 INVALID-ORDER-469** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 g_m s^3 + C_1 L_1 g_m s^2 + C_3 R_3 g_m s + g_m}{C_1 C_3 C_L L_1 R_3 g_m s^4 + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.470 INVALID-ORDER-470** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 R_L g_m s^3 + C_1 L_1 R_L g_m s^2 + C_3 R_3 R_L g_m s + R_L g_m}{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_3 R_L + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_3 R_L g_m + C_L R_L g_m\right)}$$

**10.471 INVALID-ORDER-471** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s \left(C_3 R_3 g_m + C_L R_L g_m\right)}{s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.472 INVALID-ORDER-472** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + C_1 C_L L_1 L_L g_m s^4 + C_3 R_3 g_m s + g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 L_1 g_m + C_L L_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.473 INVALID-ORDER-473** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 g_m s^4 + C_1 L_1 L_L g_m s^3 + C_3 L_L R_3 g_m s^2 + L_L g_m s}{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_L + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 L_1 g_m + C_3 L_L g_m + C_L L_L g_m\right) + s \left(C_1 + C_3 R_3 g_m\right)}$$

**10.474 INVALID-ORDER-474** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 C_L R_3 R_L g_m + C_L L_L g_m\right) + s \left(C_3 R_3 g_m + C_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.475 INVALID-ORDER-475** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 R_L g_m s^4 + C_1 L_1 L_L R_L g_m s^3 + C_3 L_L R_3 R_L g_m s^2 + L_L R_L g_m s}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_L R_3 + C_1 C_3 L_L R_L + C_1 C_L L_L R_L + C_1 L_1 L_L g_m + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 R_L + C_1 L_1 R_L g_m + C_1 L_L\right.}$$

**10.476 INVALID-ORDER-476** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 L_1 L_L g_m + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_3 L_L R_3 g_m + C_L L_L R_L g_m\right) + s \left(C_3 R_3 R_L g_m + L_L g_m\right.}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_L + C_1 C_L L_L + C_3 C_L L_L R_3 g_m + C_3 C_L L_L R_L g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_3 R_L + C_1 L_1 g_m + C\right.}$$

**10.477 INVALID-ORDER-477** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + C_1 C_L L_1 L_L R_L g_m s^4 + C_3 R_3 R_L g_m s + R_L g_m + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_L L_L R_L g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m + C_3 C_L L_L R_L g_m\right) + s^2 \left(C_1 C_3\right.}$$

**10.478 INVALID-ORDER-478** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3\right) + s^2 \left(C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 + C_3 R_L g_m\right)}$$

**10.479 INVALID-ORDER-479** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + C_1 C_3 C_L L_3 s^4 + s^3 \left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.480 INVALID-ORDER-480** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_L + C_1 C_L R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 + C_3 R_L g_m + C_L R_L g_m\right)}$$

**10.481 INVALID-ORDER-481** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + C_1 C_3 L_1 L_3 g_m s^4 + C_L R_L g_m s + g_m + s^3 \left(C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.482 INVALID-ORDER-482** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_L g_m\right)}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.483 INVALID-ORDER-483** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L g_m s^5 + L_L g_m s + s^3 \left(C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + C_1 C_3 C_L L_3 L_L s^5 + C_1 s + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_3 L_L + C_1 C_L L_L\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_3 L_L g_m + C_L L_L g_m\right)}$$

**10.484 INVALID-ORDER-484** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + C_L R_L g_m s + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_L g_m\right)}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.485 INVALID-ORDER-485** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_L g_m s^5 + L_L R_L g_m s + s^3 \left(C_1 L_1 L_L R_L g_m + C_3 L_3 L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_L + C_1 C_3 L_L R_L + C_1 C_L L_L R_L + C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right) + s^2 \left(C_1 L\right.}$$

**10.486 INVALID-ORDER-486** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + C_1 C_3 L_1 L_3 L_L g_m s^5 + L_L g_m s + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m + C_L L_L R_L g_m\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 + C_1 C_3 L_L + C_1 C_L L_L + C_3 C_L L_L R_L g_m\right) + s^2 \left(C_1 C_3 R_L + C_1 L_1 g_m +\right.}$$

**10.487 INVALID-ORDER-487** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m + C_L L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_1 C_L L_L + C_3 C_L L_3 R_L g_m\right.}$$

**10.488 INVALID-ORDER-488** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_L g_m s^3 + L_3 R_L g_m s}{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^3 \left(C_1 C_3 L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_1 L_3 + C_3 L_3 R_L g_m\right) + s \left(C_1 R_L + L_3 g_m\right)}$$

**10.489 INVALID-ORDER-489** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 L_3 g_m s^3 + L_3 g_m s}{C_1 s + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_3\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g_m\right)}$$

**10.490 INVALID-ORDER-490** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_L g_m s^3 + L_3 R_L g_m s}{R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_L + C_1 C_L L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_1 L_3 + C_3 L_3 R_L g_m + C_L L_3 R_L g_m\right) + s \left(C_1 R_L + L_3 g_m\right)}$$

**10.491 INVALID-ORDER-491** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 R_L g_m s^4 + C_1 L_1 L_3 g_m s^3 + C_L L_3 R_L g_m s^2 + L_3 g_m s}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_L R_L + C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g_m\right) + s \left(C_1 + C_L R_L g_m\right)}$$

**10.492 INVALID-ORDER-492** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L g_m s^5 + L_3 g_m s + s^3 \left(C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + C_1 C_3 C_L L_3 L_L s^5 + C_1 s + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_3 + C_1 C_L L_L\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g_m + C_L L_L g_m\right)}$$

**10.493 INVALID-ORDER-493** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L g_m s^3 + L_3 L_L g_m s}{L_3 g_m + L_L g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 L_L + C_1 C_L L_3 L_L\right) + s^2 \left(C_1 L_1 L_3 g_m + C_1 L_1 L_L g_m + C_3 L_3 L_L g_m + C_L L_3 L_L g_m\right) + s \left(C_1 L_3 + C_1 L_L\right)}$$

**10.494 INVALID-ORDER-494** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L g_m s^5 + C_1 C_L L_1 L_3 R_L g_m s^4 + C_L L_3 R_L g_m s^2 + L_3 g_m s + s^3 \left(C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 + C_1 C_L L_L + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_L R_L + C_1 L_1 g_m + \right.}$$

**10.495 INVALID-ORDER-495** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_L g_m s^3 + L_3 L_L R_L g_m s}{L_3 R_L g_m + L_L R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L R_L g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 L_L R_L + C_1 C_L L_3 L_L R_L + C_1 L_1 L_3 L_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_L g_m + C_1 L_1 L_L R_L g_m + C_1 L_3 L_L + C_3 L_3 L_L R_L g_m + C_L L_3 L_L R_L g_m\right) + s \left(C_1 L_3 R_L + C_1 L_L R_L + L_3 L_L g_m\right)}$$

**10.496 INVALID-ORDER-496** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_L g_m s^5 + C_1 L_1 L_3 L_L g_m s^4 + L_3 L_L g_m s^2 + L_3 R_L g_m s + s^3 \left(C_1 L_1 L_3 R_L g_m + C_L L_3 L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_L + C_1 C_L L_L R_L + C_1 L_1 L_3 g_m + C_1 L_1 L_L g_m + C_3 L_3 L_L\right.}$$

**10.497 INVALID-ORDER-497** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_L g_m s^5 + L_3 R_L g_m s + s^3 \left(C_1 L_1 L_3 R_L g_m + C_L L_3 L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_L + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_L + C_1 C_L L_3 R_L + C_1 C_L L_L R_L + C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1\right.}$$

**10.498 INVALID-ORDER-498** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + C_1 C_3 L_1 R_3 R_L g_m s^3 + C_3 R_3 R_L g_m s + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}$$

**10.499 INVALID-ORDER-499** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 g_m s^4 + C_1 C_3 L_1 R_3 g_m s^3 + C_3 R_3 g_m s + g_m + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.500 INVALID-ORDER-500** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + C_1 C_3 L_1 R_3 R_L g_m s^3 + C_3 R_3 R_L g_m s + R_L g_m + s^2 \left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 C_3 R_L + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m + C_3 L\right.}$$

**10.501 INVALID-ORDER-501** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 C_L R_3 R_L g_m + C_3 L_3 g_m\right) + s \left(C_3 R_3 g_m + C_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.502 INVALID-ORDER-502** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + C_3 R_3 g_m s + g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_L g_m\right)}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.503 INVALID-ORDER-503** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L g_m s^5 + C_1 C_3 L_1 L_L R_3 g_m s^4 + C_3 L_L R_3 g_m s^2 + L_L g_m s + s^3 \left(C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 + C_1 C_3 L_L + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_3 + C_1 L_1 g_m + C\right.}$$

**10.504 INVALID-ORDER-504** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 L_1 g_m + C_3 C_L R_3 R_L g_m +\right.}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 + C_1 C_L + C_3 C_L R_3 g_m + C_3 C\right.}$$

**10.505 INVALID-ORDER-505** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_L g_m s^5 + C_1 C_3 L_1 L_L R_3 R_L g_m s^4 + C_3 L_L R_3 R_L g_m s^2 -}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L\right.}$$

**10.506 INVALID-ORDER-506** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 L_1 L_L g_m + C_3 C_L L_L R_3 R\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 + C_1 C_3 L_L +\right.}$$

**10.507 INVALID-ORDER-507** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + C_3 R_3 R_L g_m s + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 C_L\right.}$$

**10.508 INVALID-ORDER-508** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 R_L g_m s^3 + L_3 R_3 R_L g_m s}{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^3 \left(C_1 C_3 L_3 R_3 R_L + C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L g_m + C_1 L_3 R_3 + C_1 L_3 R_L + C_3 L_3 R_3 R_L g_m\right) + s \left(C_1 R_3 R_L + L_3 R_3 g_m + L_3 R_L g_m\right)}$$

**10.509 INVALID-ORDER-509** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 g_m s^3 + L_3 R_3 g_m s}{R_3 g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_3 + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_L L_3 R_3 g_m\right) + s \left(C_1 R_3 + L_3 g_m\right)}$$

**10.510 INVALID-ORDER-510** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 R_L g_m s^3 + L_3 R_3 R_L g_m s}{R_3 R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_3 R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 R_L + C_1 C_L L_3 R_3 R_L + C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L g_m + C_1 L_3 R_3 + C_1 L_3 R_L + C_3 L_3 R_3 R_L g_m + C_L L_3 R_3 R_L g_m\right) + s \left(C_1 R_3 R_L + L_3 R_3 g_m + L_3 R_L g_m\right)}$$

**10.511 INVALID-ORDER-511** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 R_3 R_L g_m s^4 + C_1 L_1 L_3 R_3 g_m s^3 + C_L L_3 R_3 R_L g_m s^2 + L_3 R_3 g_m s}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_3 + C_1 C_L L_3 R_L + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_3 + C_3\right.$$

**10.512 INVALID-ORDER-512** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_3 g_m s^5 + L_3 R_3 g_m s + s^3 \left(C_1 L_1 L_3 R_3 g_m + C_L L_3 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_3 + C_1 C_L L_L R_3 + C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_1 R\right.$$

**10.513 INVALID-ORDER-513** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_3 g_m s^3 + L_3 L_L R_3 g_m s}{L_3 R_3 g_m + L_L R_3 g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 L_L R_3 + C_1 C_L L_3 L_L R_3 + C_1 L_1 L_3 L_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_L R_3 g_m + C_1 L_3 L_L + C_3 L_3 L_L R_3 g_m + C_L L_3 L_L R_3 g_m\right) + s \left(C_1 L_3 R_3 + C_1 L_L R_3 + L_3 L_L g_m\right)}$$

**10.514 INVALID-ORDER-514** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_3 g_m s^5 + C_1 C_L L_1 L_3 R_3 R_L g_m s^4 + C_L L_3 R_3 R_L g_m s^2 +}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1\right.$$

**10.515 INVALID-ORDER-515** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_3 R_L g_m s^3 + L_3 L_L R_3 R_L g_m s}{L_3 R_3 R_L g_m + L_L R_3 R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L R_3 R_L g_m + C_1 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 L_L R_3 R_L + C_1 C_L L_3 L_L R_3 R_L + C_1 L_1 L_3 L_L R_3 g_m + C_1 L_1 L_3 L_L R_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_3 R_L g_m + C_1 L_1 L_L R_3 R_L g_m + C_1 L_3 L_L R_3 + C_1 L_3 L_L R_L + C_3 L_3 L_L R_3 R_L g_m + C\right.$$

**10.516 INVALID-ORDER-516** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_3 R_L g_m s^5 + C_1 L_1 L}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_L L_1 L_1 R_3 R_L g_m + C_1 C_L L_3 L_L R_3 + C_1 C_L L_3 L_L R_L + C_1 L_1 L_3 L_L g_m + C_3 C_L L_3\right.$$

**10.517 INVALID-ORDER-517** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_3 R_L g_m s^5 + L_3 R_3 R_L g_m s + s^3 \left(C_1 L_1 L_3\right.}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_L L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L g_m + C_1 C_L L_3 L_L R_3 + C_1 C_L L_3 L_L R_L + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 R_L\right.$$

### 10.518 INVALID-ORDER-518 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + C_1 L_1 L_3 R_L g_m s^3 + L_3 R_L g_m s + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_3 + C_1 R_L + L_3 g_m\right)}$$

### 10.519 INVALID-ORDER-519 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m s^4 + C_1 L_1 L_3 g_m s^3 + L_3 g_m s + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_3 + C_3 C_L L_3 R_3 g_m\right) + s^2 \left(C_1 C_L R_3 + C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g_m\right) + s \left(C_1 + C_L R_3 g_m\right)}$$

### 10.520 INVALID-ORDER-520 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + C_1 L_1 L_3 R_L g_m s^3 + L_3 R_L g_m s + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_L + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C\right.$$

### 10.521 INVALID-ORDER-521 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L g_m + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m + C_L L_3 R_L g_m\right) + s \left(C_L R_3 R_L g_m + L_3 g_m\right)}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m + C_3\right.$$

### 10.522 INVALID-ORDER-522 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + C_1 C_L L_1 L_3 L_L g_m s^5 + L_3 g_m s + R_3 g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_3 + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m\right) + s^2 \left(C_1 C_L R_3 + C_1 L_1 g_m + C\right.$$

### 10.523 INVALID-ORDER-523 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 g_m s^5 + C_1 L_1 L_3 L_L g_m s^4 + L_3 L_L g_m s^2 + L_L R_3 g_m s + s^3 \left(C_1 L_1 L_L R_3 g_m + C_3 L_3 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_L L_L R_3 + C_1 L_1 L_3 g_m + C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right.$$

### 10.524 INVALID-ORDER-524 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L g_m + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R\right.$$
$$C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 +\right.$$

### 10.525 INVALID-ORDER-525 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 R_L g_m s^5 + C_1 L_1 L_3 R_L g_m s^4 + L_3 R_L g_m s^2 + R_3 R_L g_m s + s^3 \left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_3 L_1 L_3 L_L R_L g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3 L_L R_L + C_1 C_L L_1 L_L R_3 R_L g_m + C_1 C_L L_3 L_L R_L + C_1 L_1 L_3 L_L g_m + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_L + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2 \left(C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C\right.$$

### 10.526 INVALID-ORDER-526 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L g_m + C_1 L_1 L_3 L_L\right.$$
$$R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L_L\right.$$

### 10.527 INVALID-ORDER-527 $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + C_1 C_L L_1 L_3 L_L R_L g_m s^5 + L_3}{R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L\right.$$

**10.528 INVALID-ORDER-528** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^2\left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L\right) + s^2\left(C_1 C_3 R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s\left(C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m\right)}$$

**10.529 INVALID-ORDER-529** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m s^4 + R_3 g_m + s^2\left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m\right) + s^3\left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_3 C_L L_3 R_3 g_m\right) + s^2\left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 L_1 g_m + C_3 L_3 g_m\right) + s\left(C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}$$

**10.530 INVALID-ORDER-530** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^2\left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4\left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2\left(C_1 C_3 R_3 R_L + C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C\right.}$$

**10.531 INVALID-ORDER-531** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + C_1 C_3 L_1 L_3 R_3 g_m s^4 + C_L R_3 R_L g_m s + R_3 g_m + s^3\left(C_1 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s^2\left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m\right)}{g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m\right) + s^4\left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3\left(C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2\left(C_1 C_3 R_3\right.}$$

**10.532 INVALID-ORDER-532** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^2\left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4\left(C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_L + C_3 C_L L_3 R_3 g_m + C_3 C_L L_3 R_L g_m\right) + s^2\left(C_1 C_3 R_3 + C_1 C_L R_3 + C_1 L_1 g_m + C_3 L_3 g_m + C_L L_L g_m\right) + s\left(C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}$$

**10.533 INVALID-ORDER-533** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 g_m s^5 + L_L R_3 g_m s + s^3\left(C_1 L_1 L_L R_3 g_m + C_3 L_3 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3\left(C_1 C_3 L_3 R_3 + C_1 C_3 L_L R_3 + C_1 C_L L_L R_3 + C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right) + s^2\left(C_1 L_1 R\right.}$$

**10.534 INVALID-ORDER-534** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + C_L R_3 R_L g_m s + R_3 g_m + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4\left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 C_L R\right.}$$

**10.535 INVALID-ORDER-535** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 R_L g_m s^5 + L_L R_3 R_L g_m s + s^3\left(C_1 L_1 L\right.}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_3 L_1 L_3 L_L R_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_1 L_L R_3 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3 L_L R_L + C_1 C_L L_1 L_L R_3 R_L g_m + C_3 C_L L_3 L_L R_3 R_L g_m\right) + s^3\left(C_1 C_3 L_3 R_3 R_L\right.}$$

**10.536 INVALID-ORDER-536** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + C_1 C_3 L_1 L_3 L_L R_3 g_m s^5 + L_L\right.}{R_3 g_m + R_L g_m + s^6\left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5\left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_3 L_L + C_1 C\right.}$$

**10.537 INVALID-ORDER-537** $Z(s) = \left(L_1 s + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^$$
$$R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_L$$

**10.538 INVALID-ORDER-538** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 R_3 g_m s}{C_1 C_L L_1 R_3 s^3 + s^2 \left(C_1 L_1 + C_L L_1 R_3 g_m\right) + s \left(C_L R_3 + L_1 g_m\right) + 1}$$

**10.539 INVALID-ORDER-539** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 R_3 R_L g_m s}{C_1 C_L L_1 R_3 R_L s^3 + R_3 + R_L + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_L L_1 R_3 R_L g_m\right) + s \left(C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.540 INVALID-ORDER-540** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 R_3 R_L g_m s^2 + L_1 R_3 g_m s}{s^3 \left(C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L\right) + s^2 \left(C_1 L_1 + C_L L_1 R_3 g_m + C_L L_1 R_L g_m\right) + s \left(C_L R_3 + C_L R_L + L_1 g_m\right) + 1}$$

**10.541 INVALID-ORDER-541** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 g_m s^3 + L_1 R_3 g_m s}{C_1 C_L L_1 L_L s^4 + s^3 \left(C_1 C_L L_1 R_3 + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_L L_1 R_3 g_m + C_L L_L\right) + s \left(C_L R_3 + L_1 g_m\right) + 1}$$

**10.542 INVALID-ORDER-542** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_L R_3 g_m s^2}{C_1 C_L L_1 L_L R_3 s^4 + R_3 + s^3 \left(C_1 L_1 L_L + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 R_3 + C_L L_L R_3 + L_1 L_L g_m\right) + s \left(L_1 R_3 g_m + L_L\right)}$$

**10.543 INVALID-ORDER-543** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 g_m s^3 + C_L L_1 R_3 R_L g_m s^2 + L_1 R_3 g_m s}{C_1 C_L L_1 L_L s^4 + s^3 \left(C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_L L_1 R_3 g_m + C_L L_1 R_L g_m + C_L L_L\right) + s \left(C_L R_3 + C_L R_L + L_1 g_m\right) + 1}$$

**10.544 INVALID-ORDER-544** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_L R_3 R_L g_m s^2}{C_1 C_L L_1 L_L R_3 R_L s^4 + R_3 R_L + s^3 \left(C_1 L_1 L_L R_3 + C_1 L_1 L_L R_L + C_L L_1 L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L + C_L L_L R_3 R_L + L_1 L_L R_3 g_m + L_1 L_L R_L g_m\right) + s \left(L_1 R_3 R_L g_m + L_L R_3 + L_L R_L\right)}$$

**10.545 INVALID-ORDER-545** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 R_L g_m s^3 + L_1 L_L R_3 g_m s^2 + L_1 R_3 R_L g_m s}{R_3 + R_L + s^4 \left(C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L\right) + s^3 \left(C_1 L_1 L_L + C_L L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_L L_L R_3 + C_L L_L R_L + L_1 L_L g_m\right) + s \left(L_1 R_3 g_m + L_1 R_L g_m + L_L\right)}$$

**10.546 INVALID-ORDER-546** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 R_L g_m s^3 + L_1 R_3 R_L g_m s}{R_3 + R_L + s^4\left(C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L\right) + s^3\left(C_1 C_L L_1 R_3 R_L + C_L L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2\left(C_1 L_1 R_3 + C_1 L_1 R_L + C_L L_1 R_3 R_L g_m + C_L L_L R_3 + C_L L_L R_L\right) + s\left(C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.547 INVALID-ORDER-547** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 R_L g_m s}{C_1 C_3 L_1 R_L s^3 + s^2\left(C_1 L_1 + C_3 L_1 R_L g_m\right) + s\left(C_3 R_L + L_1 g_m\right) + 1}$$

**10.548 INVALID-ORDER-548** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 R_L g_m s}{s^3\left(C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L\right) + s^2\left(C_1 L_1 + C_3 L_1 R_L g_m + C_L L_1 R_L g_m\right) + s\left(C_3 R_L + C_L R_L + L_1 g_m\right) + 1}$$

**10.549 INVALID-ORDER-549** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 R_L g_m s + L_1 g_m}{C_1 C_3 C_L L_1 R_L s^3 + C_3 + C_L + s^2\left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_L g_m\right) + s\left(C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.550 INVALID-ORDER-550** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L g_m s^2 + L_1 g_m}{C_1 C_3 C_L L_1 L_L s^4 + C_3 C_L L_1 L_L g_m s^3 + C_3 + C_L + s^2\left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_L\right) + s\left(C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.551 INVALID-ORDER-551** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_L g_m s^2}{L_1 g_m s + s^4\left(C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L\right) + s^3\left(C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2\left(C_1 L_1 + C_3 L_L + C_L L_L\right) + 1}$$

**10.552 INVALID-ORDER-552** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L g_m s^2 + C_L L_1 R_L g_m s + L_1 g_m}{C_1 C_3 C_L L_1 L_L s^4 + C_3 + C_L + s^3\left(C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_L g_m\right) + s^2\left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_L g_m + C_3 C_L L_L\right) + s\left(C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.553 INVALID-ORDER-553** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_L R_L g_m s^2}{R_L + s^4\left(C_1 C_3 L_1 L_L R_L + C_1 C_L L_1 L_L R_L\right) + s^3\left(C_1 L_1 L_L + C_3 L_1 L_L R_L g_m + C_L L_1 L_L R_L g_m\right) + s^2\left(C_1 L_1 R_L + C_3 L_L R_L + C_L L_L R_L + L_1 L_L g_m\right) + s\left(L_1 R_L g_m + L_L\right)}$$

**10.554 INVALID-ORDER-554** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_L g_m s^3 + L_1 L_L g_m s^2 + L_1 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_L s^5 + s^4\left(C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_L + C_3 C_L L_L R_L + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2\left(C_1 L_1 + C_3 L_1 R_L g_m + C_3 L_L + C_L L_L\right) + s\left(C_3 R_L + L_1 g_m\right) + 1}$$

**10.555 INVALID-ORDER-555** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_L g_m s^3 + L_1 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_L s^5 + s^4\left(C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_L R_L + C_L L_1 L_L g_m\right) + s^2\left(C_1 L_1 + C_3 L_1 R_L g_m + C_L L_1 R_L g_m + C_L L_L\right) + s\left(C_3 R_L + C_L R_L + L_1 g_m\right) + 1}$$

**10.556 INVALID-ORDER-556** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 R_3 R_L g_m s}{C_1 C_3 L_1 R_3 R_L s^3 + R_3 + R_L + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m\right) + s \left(C_3 R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.557 INVALID-ORDER-557** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 R_3 g_m s}{s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m\right) + s \left(C_3 R_3 + C_L R_3 + L_1 g_m\right) + 1}$$

**10.558 INVALID-ORDER-558** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 R_3 R_L g_m s}{R_3 + R_L + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 C_L L_1 R_3 R_L\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m\right) + s \left(C_3 R_3 R_L + C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.559 INVALID-ORDER-559** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 R_3 R_L g_m s^2 + L_1 R_3 g_m s}{C_1 C_3 C_L L_1 R_3 R_L s^4 + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m + C_L L_1 R_L g_m\right) + s \left(C_3 R_3 + C_L R_3 + C_L R_L + L_1 g_m\right) + 1}$$

**10.560 INVALID-ORDER-560** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 g_m s^3 + L_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_L R_3 s^5 + s^4 \left(C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_3 C_L L_L R_3 + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m + C_L L_L\right) + s \left(C_3 R_3 + C_L R_3 + L_1 g_m\right) + 1}$$

**10.561 INVALID-ORDER-561** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_L R_3 g_m s^2}{R_3 + s^4 \left(C_1 C_3 L_1 L_L R_3 + C_1 C_L L_1 L_L R_3\right) + s^3 \left(C_1 L_1 L_L + C_3 L_1 L_L R_3 g_m + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 R_3 + C_3 L_L R_3 + C_L L_L R_3 + L_1 L_L g_m\right) + s \left(L_1 R_3 g_m + L_L\right)}$$

**10.562 INVALID-ORDER-562** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 g_m s^3 + C_L L_1 R_3 R_L g_m s^2 + L_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_L R_3 s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_L R_3 + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_L L_1 R_3 g_m + C_L L_1 R_L g_m + C_L L_L\right) + s \left(C_3 R_3\right.$$

**10.563 INVALID-ORDER-563** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_L R_3 R_L g_m s^2}{R_3 R_L + s^4 \left(C_1 C_3 L_1 L_L R_3 R_L + C_1 C_L L_1 L_L R_3 R_L\right) + s^3 \left(C_1 L_1 L_L R_3 + C_1 L_1 L_L R_L + C_3 L_1 L_L R_3 R_L g_m + C_L L_1 L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L + C_3 L_L R_3 R_L + C_L L_L R_3 R_L + L_1 L_L R_3 g_m + L_1 L_L R_L g_m\right) + s \left(L_1 R_3 R_L g_m + L_L R_3 + L_L R_L\right)}$$

**10.564 INVALID-ORDER-564** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 R_L g_m s^3 + L_1 L_L R_3 g_m s^2 + L_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_L R_3 + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 L_1 L_L + C_3 C_L L_L R_3 R_L + C_3 L_1 L_L R_3 g_m + C_L L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_3$$

**10.565 INVALID-ORDER-565** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_3 R_L g_m s^3 + L_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + R_3 + R_L + s^4 \left(C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 C_L L_1 R_3 R_L + C_3 C_L L_L R_3 R_L + C_L L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_L L_1 R_3 R_L g_m + C_L L_L R_3 + C$$

**10.566 INVALID-ORDER-566** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 R_3 R_L g_m s^2 + L_1 R_L g_m s}{s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m\right) + s \left(C_3 R_3 + C_3 R_L + L_1 g_m\right) + 1}$$

**10.567 INVALID-ORDER-567** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 R_3 g_m s + L_1 g_m}{C_1 C_3 C_L L_1 R_3 s^3 + C_3 + C_L + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m\right) + s \left(C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.568 INVALID-ORDER-568** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 L_1 R_3 R_L g_m s^2 + L_1 R_L g_m s}{C_1 C_3 C_L L_1 R_3 R_L s^4 + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_L L_1 R_L g_m\right) + s \left(C_3 R_3 + C_3 R_L + C_L R_L + L_1 g_m\right) + 1}$$

**10.569 INVALID-ORDER-569** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 R_3 R_L g_m s^2 + L_1 g_m + s \left(C_3 L_1 R_3 g_m + C_L L_1 R_L g_m\right)}{C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m\right) + s \left(C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.570 INVALID-ORDER-570** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 g_m s^3 + C_3 L_1 R_3 g_m s + C_L L_1 L_L g_m s^2 + L_1 g_m}{C_1 C_3 C_L L_1 L_L s^4 + C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_L\right) + s \left(C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.571 INVALID-ORDER-571** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 L_1 L_L R_3 g_m s^3 + L_1 L_L g_m s^2}{C_1 C_3 C_L L_1 L_L R_3 s^5 + s^4 \left(C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_3 C_L L_L R_3 + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_L + C_L L_L\right) + s \left(C_3 R_3 + L_1 g_m\right) + 1}$$

**10.572 INVALID-ORDER-572** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 g_m s^3 + L_1 g_m + s^2 \left(C_3 C_L L_1 R_3 R_L g_m + C_L L_1 L_L g_m\right) + s \left(C_3 L_1 R_3 g_m + C_L L_1 R_L g_m\right)}{C_1 C_3 C_L L_1 L_L s^4 + C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m + C_3 C_L L_L\right) + s \left(C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.573 INVALID-ORDER-573** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_L R_3 R_L g_m s^3 + L_1 L_L R_L g_m s^2}{C_1 C_3 C_L L_1 L_L R_3 R_L s^5 + R_L + s^4 \left(C_1 C_3 L_1 L_L R_3 + C_1 C_3 L_1 L_L R_L + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_L R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 L_1 L_L + C_3 C_L L_L R_3 R_L + C_3 L_1 L_L R_3 g_m + C_3 L_1 L_L R_L g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_3 L_L R_3 + C_3 L_L R\right.}$$

**10.574 INVALID-ORDER-574** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 R_L g_m s^4 + L_1 R_L g_m s + s^3 \left(C_3 L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_3 L_1 R_3 R_L g_m + L_1 L_L g_m\right)}{s^5 \left(C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_3 C_L L_L R_3 + C_3 C_L L_L R_L + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_L + C_L L_L\right)}$$

**10.575 INVALID-ORDER-575** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_3 R_L g_m s^4 + C_3 L_1 R_3 R_L g_m s^2 + C_L L_1 L_L R_L g_m s^3 + L_1 R_L g_m s}{s^5 \left(C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_L R_3 + C_3 C_L L_L R_L + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3\right.}$$

**10.576 INVALID-ORDER-576** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_L g_m s^3 + L_1 R_L g_m s}{C_1 C_3 L_1 L_3 s^4 + s^3 \left(C_1 C_3 L_1 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_L g_m + C_3 L_3\right) + s \left(C_3 R_L + L_1 g_m\right) + 1}$$

**10.577 INVALID-ORDER-577** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 g_m s^2 + L_1 g_m}{C_1 C_3 C_L L_1 L_3 s^4 + C_3 C_L L_1 L_3 g_m s^3 + C_3 + C_L + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_3\right) + s \left(C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.578 INVALID-ORDER-578** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_L g_m s^3 + L_1 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_L s^5 + s^4 \left(C_1 C_3 L_1 L_3 + C_3 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_L g_m + C_3 L_3 + C_L L_1 R_L g_m\right) + s \left(C_3 R_L + C_L R_L + L_1 g_m\right) + 1}$$

**10.579 INVALID-ORDER-579** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_L g_m s^3 + C_3 L_1 L_3 g_m s^2 + C_L L_1 R_L g_m s + L_1 g_m}{C_1 C_3 C_L L_1 L_3 s^4 + C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_3 g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_L g_m + C_3 C_L L_3\right) + s \left(C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.580 INVALID-ORDER-580** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m s^4 + L_1 g_m + s^2 \left(C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right)}{C_3 + C_L + s^4 \left(C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L\right) + s^3 \left(C_3 C_L L_1 L_3 g_m + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_3 + C_3 C_L L_L\right) + s \left(C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.581 INVALID-ORDER-581** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L g_m s^4 + L_1 L_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_3 C_L L_1 L_3 L_L g_m s^5 + L_1 g_m s + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_3 L_L\right) + s^3 \left(C_3 L_1 L_3 g_m + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_3 L_L + C_L L_L\right) + 1}$$

**10.582 INVALID-ORDER-582** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m s^4 + C_3 C_L L_1 L_3 R_L g_m s^3 + C_L L_1 R_L g_m s + L_1 g_m + s^2 \left(C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right)}{C_3 + C_L + s^4 \left(C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L\right) + s^3 \left(C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_3 g_m + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_L g_m + C_3 C_L L_3 + C_3 C_L L_L\right) + s \left(C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.583 INVALID-ORDER-583** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_L g_m s^4 + L_1 L_L R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L + C_1 C_3 L_1 L_L R_L + C_1 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_L + C_3 L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_L + C_3 L_1 L_3 R_L g_m + C_3 L_1 L_L R_L g_m + C_3 L_3 L_L + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_1 L_1 R_L + C_3 L\right.}$$

**10.584 INVALID-ORDER-584** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m s^5 + C_3 L_1 L_3 L_L g_m s^4 + L_1 L_L g_m s^2 + L_1 R_L g_m s + s^3 \left(C_3 L_1 L_3 R_L g_m + C_L L_1 L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_L R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_L + C_3 C_L L_L R_L + C_3 L_1 L_3 g_m + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_L g_m + C_3 L_3 + C_3 L_L\right.}$$

**10.585 INVALID-ORDER-585** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m s^5 + L_1 R_L g_m s + s^3 \left(C_3 L_1 L_3 R_L g_m + C_L L_1 L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L + C_1 C_3 C_L L_1 L_L R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_3 R_L + C_3 C_L L_L R_L + C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right) +}$$

**10.586 INVALID-ORDER-586** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 L_3 R_L g_m s^2}{C_1 C_3 L_1 L_3 R_L s^4 + R_L + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_L + C_3 L_3 R_L + L_1 L_3 g_m\right) + s \left(L_1 R_L g_m + L_3\right)}$$

**10.587 INVALID-ORDER-587** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 L_3 g_m s^2}{L_1 g_m s + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3\right) + s^3 \left(C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_3\right) + 1}$$

**10.588 INVALID-ORDER-588** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 L_3 R_L g_m s^2}{R_L + s^4 \left(C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_3 R_L\right) + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_L g_m + C_L L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_L + C_3 L_3 R_L + C_L L_3 R_L + L_1 L_3 g_m\right) + s \left(L_1 R_L g_m + L_3\right)}$$

**10.589 INVALID-ORDER-589** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 R_L g_m s^3 + L_1 L_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 R_L s^5 + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_3 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_L + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_1 R_L g_m + C_L L_3\right) + s \left(C_L R_L + L_1 g_m\right) + 1}$$

**10.590 INVALID-ORDER-590** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L g_m s^4 + L_1 L_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L s^6 + C_3 C_L L_1 L_3 L_L g_m s^5 + L_1 g_m s + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_3 L_L\right) + s^3 \left(C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_3 + C_L L_L\right) + 1}$$

**10.591 INVALID-ORDER-591** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_3 L_L g_m s^2}{L_3 + L_L + s^4 \left(C_1 C_3 L_1 L_3 L_L + C_1 C_L L_1 L_3 L_L\right) + s^3 \left(C_3 L_1 L_3 L_L g_m + C_L L_1 L_3 L_L g_m\right) + s^2 \left(C_1 L_1 L_3 + C_1 L_1 L_L + C_3 L_3 L_L + C_L L_3 L_L\right) + s \left(L_1 L_3 g_m + L_1 L_L g_m\right)}$$

**10.592 INVALID-ORDER-592** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L g_m s^4 + C_L L_1 L_3 R_L g_m s^3 + L_1 L_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_L L_1 R_L + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_1 R_L g_m + C_L L_3\right.$$

**10.593 INVALID-ORDER-593** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_L g_m s^2}{L_3 R_L + L_L R_L + s^4 \left(C_1 C_3 L_1 L_3 L_L R_L + C_1 C_L L_1 L_3 L_L R_L\right) + s^3 \left(C_1 L_1 L_3 L_L + C_3 L_1 L_3 L_L R_L g_m + C_L L_1 L_3 L_L R_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_L + C_1 L_1 L_L R_L + C_3 L_3 L_L R_L + C_L L_3 L_L R_L + L_1 L_3 L_L g_m\right) + s \left(L_1 L_3 R_L g_m + L_1 L_L R_L g_m + L_3 L_L\right)}$$

**10.594 INVALID-ORDER-594** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_L g_m s^4 + L_1 L_3 L_L g_m s^3 + L_1 L_3 R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L + C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_L + C_3 L_1 L_3 L_L g_m + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_3 + C_1 L_1 L_L + C_3 L_1 L_3 R_L g_m + C_3 L_3 L_L + C_L L_1 L_L R_L g_m + C_L L_3 L_L\right)$$

**10.595 INVALID-ORDER-595** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_L g_m s^4 + L_1 L_3 R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + R_L + s^5 \left(C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_3 R_L + C_1 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_L + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_L g_m + C_L L_1 L_3 R_L g_m + C_L L_1 L_L R_L g_m + C_L L_3 L_L\right) + s^2 \left(C_1 L_1 R_L + C_3$$

**10.596 INVALID-ORDER-596** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_L g_m s^3 + C_3 L_1 R_3 R_L g_m s^2 + L_1 R_L g_m s}{C_1 C_3 L_1 L_3 s^4 + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_3\right) + s \left(C_3 R_3 + C_3 R_L + L_1 g_m\right) + 1}$$

**10.597 INVALID-ORDER-597** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 g_m s^2 + C_3 L_1 R_3 g_m s + L_1 g_m}{C_1 C_3 C_L L_1 L_3 s^4 + C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_3 C_L L_1 L_3 g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_3\right) + s \left(C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.598 INVALID-ORDER-598** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_L g_m s^3 + C_3 L_1 R_3 R_L g_m s^2 + L_1 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_L s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_3 L_1 L_3 + C_3 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_3 + C_L L_1 R_L g_m\right) + s \left(C_3 R_3 -$$

**10.599 INVALID-ORDER-599** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_L g_m s^3 + L_1 g_m + s^2 \left(C_3 C_L L_1 R_3 R_L g_m + C_3 L_1 L_3 g_m\right) + s \left(C_3 L_1 R_3 g_m + C_L L_1 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 s^4 + C_3 + C_L + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_3 g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m + C_3 C_L L_3\right) + s \left(C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.600 INVALID-ORDER-600** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m s^4 + C_3 C_L L_1 L_L R_3 g_m s^3 + C_3 L_1 R_3 g_m s + L_1 g_m + s^2 \left(C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right)}{C_3 + C_L + s^4 \left(C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L\right) + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_3 C_L L_1 L_3 g_m + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_3 + C_3 C_L L_L\right) + s \left(C_3 C_L R_3 + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.601 INVALID-ORDER-601** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L g_m s^4 + C_3 L_1 L_L R_3 g_m s^3 + L_1 L_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_3 C_L L_L R_3 + C_3 L_1 L_3 g_m + C_3 L_1 L_L g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_3 + C_3 L_L +$$

**10.602 INVALID-ORDER-602** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L g_m s^4 + L_1 g_m + s^3 \left(C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_3 C_L L_1 R_3 R_L g_m + C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s \left(C_3 L_1 R_3 g_m + C_L L_1 R_L g_m\right)}{C_3 + C_L + s^4 \left(C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L\right) + s^3 \left(C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L + C_3 C_L L_1 L_3 g_m + C_3 C_L L_1 L_L g_m\right) + s^2 \left(C_1 C_3 L_1 + C_1 C_L L_1 + C_3 C_L L_1 R_3 g_m + C_3 C_L L_1 R_L g_m + C_3 C_L L_3 + C_3 C_L L_L\right) + s \left(C_3 C_L R_3 + C_3 C_L R_L + C_3 L_1 g_m + C_L L_1 g_m\right)}$$

**10.603 INVALID-ORDER-603** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_L g_m s^4 + C_3 L_1 L_L R_3 R_L g_m s^3 + L_1 L_L R_L}{C_1 C_3 C_L L_1 L_3 L_L R_L s^6 + R_L + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L + C_1 C_3 L_1 L_L R_3 + C_1 C_3 L_1 L_L R_L + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_L R_3 R_L g_m + C_3 C_L L_3 L_L R_L + C_3 L_1 L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 L_1 L_L + C_3$$

**10.604 INVALID-ORDER-604** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m s^5 + L_1 R_L g_m s + s^4 \left(C_3 C_L L_1 L_L R_3 R_L g_m + C_3 L_1 L_3 L_L g_m\right) + s^3 \left(C_3 L_1 L_3 R_L g_m + C_3 L_1 L_L R_3 g_m + C_L L_1 L_L R_L g_m\right) + s^2 \left(C_3 L_1 R_3 R_L$$
$$C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L + C_1 C_L L_1 L_L + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_3 + C_L L_1 R_L g_m\right) + s \left(C_3 R_3 -$$

**10.605 INVALID-ORDER-605** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_L g_m s^5 + C_3 C_L L_1 L_L R_3 R_L g_m s^4 + C_3 L_1 R_3 R_L g_m s^2 + L_1$$
$$C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L + C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_3 L_1 R_L + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_L + C_3 C_L L_L R_3 + C_3 C_L L_L R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1 R_3 g_m + C_3 L_1 R_L g_m + C_3 L_3 + C_L L_1 R_L g_m\right) + s \left(C_3 R_3 -$$

**10.606 INVALID-ORDER-606** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 L_3 R_3 R_L g_m s^2}{C_1 C_3 L_1 L_3 R_3 R_L s^4 + R_3 R_L + s^3 \left(C_1 L_1 L_3 R_3 + C_1 L_1 L_3 R_L + C_3 L_1 L_3 R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L + C_3 L_3 R_3 R_L + L_1 L_3 R_3 g_m + L_1 L_3 R_L g_m\right) + s \left(L_1 R_3 R_L g_m + L_3 R_3 + L_3 R_L\right)}$$

**10.607 INVALID-ORDER-607** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 L_3 R_3 g_m s^2}{R_3 + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_3\right) + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_3 g_m + C_L L_1 L_3 R_3 g_m\right) + s^2 \left(C_1 L_1 R_3 + C_3 L_3 R_3 + C_L L_3 R_3 + L_1 L_3 g_m\right) + s \left(L_1 R_3 g_m + L_3\right)}$$

**10.608 INVALID-ORDER-608** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 L_3 R_3 R_L g_m s^2}{R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1 L_3 R_3 R_L\right) + s^3 \left(C_1 L_1 L_3 R_3 + C_1 L_1 L_3 R_L + C_3 L_1 L_3 R_3 R_L g_m + C_L L_1 L_3 R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L + C_3 L_3 R_3 R_L + C_L L_3 R_3 R_L + L_1 L_3 R_3 g_m + L_1 L_3 R_L g_m\right) + s \left(L_1 R_3 R_L g_m + L_3 R_3 + L_3 R_L\right)}$$

**10.609 INVALID-ORDER-609** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 R_3 R_L g_m s^3 + L_1 L_3 R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + R_3 + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_L + C_3 C_L L_1 L_3 R_3 R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L + C_1 L_1 L_3 + C_3 C_L L_3 R_3 R_L + C_3 L_1 L_3 R_3 g_m + C_L L_1 L_3 R_3 g_m + C_L L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_3 L_3 R_3 + C_L L_1 R_3 R_L g_m + C_L L_3 R_3 + \right.$$

**10.610 INVALID-ORDER-610** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_3 g_m s^4 + L_1 L_3 R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + R_3 + s^5 \left(C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_3 + C_1 C_L L_1 L_L R_3 + C_3 C_L L_3 L_L R_3 + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_3 g_m + C_L L_1 L_3 R_3 g_m + C_L L_1 L_L R_3 g_m + C_L L_3 L_L\right) + s^2 \left(C_1 L_1 R_3 + C_3 L_3 R_3 \right.$$

**10.611 INVALID-ORDER-611** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_3 g_m s^2}{L_3 R_3 + L_L R_3 + s^4 \left(C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_3\right) + s^3 \left(C_1 L_1 L_3 L_L + C_3 L_1 L_3 L_L R_3 g_m + C_L L_1 L_3 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 L_3 R_3 + C_1 L_1 L_L R_3 + C_3 L_3 L_L R_3 + C_L L_3 L_L R_3 + L_1 L_3 L_L g_m\right) + s \left(L_1 L_3 R_3 g_m + L_1 L_L R_3 g_m + L_3 L_L\right)}$$

**10.612 INVALID-ORDER-612** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_3 g_m s^4 + C_L L_1 L_3 R_3 R_L g_m s^3 + L_1 L_3 R_3 g_m}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + R_3 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L + C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_L + C_1 C_L L_1 L_L R_3 + C_3 C_L L_1 L_3 R_3 R_L g_m + C_3 C_L L_3 L_L R_3 + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L + C_1 L_1 L_3 + C_3 C_L \right.$$

**10.613 INVALID-ORDER-613** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_3 R_L g_m s^2}{L_3 R_3 R_L + L_L R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 L_L R_3 R_L + C_1 C_L L_1 L_3 L_L R_3 R_L\right) + s^3 \left(C_1 L_1 L_3 L_L R_3 + C_1 L_1 L_3 L_L R_L + C_3 L_1 L_3 L_L R_3 R_L g_m + C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_3 R_L + C_1 L_1 L_L R_3 R_L + C_3 L_3 L_L R_3 R_L + C_L L_3 L_L R_3 R_L + L_1 L_3 L_L R_3 g_m + L_1 L_3 L_L R_L g_m\right) - \right.$$

**10.614 INVALID-ORDER-614** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_3 R_L g_m}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + R_3 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_L + C_3 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1 L_L R_3 R_L + C_1 L_1 L_3 L_L + C_3 C_L L_3 L_L R_3 R_L + C_3 L_1 L_3 L_L R_3 g_m + C_L L_1 L_3 L_L R_3 g_m + C_L L_1 L_3 L_L R_L g_m\right) - \right.$$

**10.615 INVALID-ORDER-615** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_3 R_L g_m s^4 + L_1 L_3 R_3 R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + R_3 R_L + s^5 \left(C_1 C_L L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_L + C_3 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1 L_3 R_3 R_L + C_1 C_L L_1 L_L R_3 R_L + C_3 C_L L_3 L_L R_3 R_L + C_L L_1 L_3 L_L R_3 g_m + C_L L_1 L_3 L_L R_L g_m\right) + s^3 \left(C_1 L_1 L_3 R_3 + C_1 L_1 L_3 R_L + \right.$$

**10.616 INVALID-ORDER-616** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 R_L g_m s^3 + L_1 L_3 R_L g_m s^2 + L_1 R_3 R_L g_m s}{R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L\right) + s^3 \left(C_1 L_1 L_3 + C_3 L_1 L_3 R_3 g_m + C_3 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_3 R_3 + C_3 L_3 R_L + L_1 L_3 g_m\right) + s \left(L_1 R_3 g_m + L_1 R_L g_m + L_3\right)}$$

**10.617 INVALID-ORDER-617** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 g_m s^3 + L_1 L_3 g_m s^2 + L_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_3 R_3 s^5 + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_3 C_L L_1 L_3 R_3 g_m\right) + s^3 \left(C_1 C_L L_1 R_3 + C_3 C_L L_3 R_3 + C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_1 R_3 g_m + C_L L_3\right) + s \left(C_L R_3 + L_1 g_m\right) + 1}$$

**10.618 INVALID-ORDER-618** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 R_L g_m s^3 + L_1 L_3 R_L g_m s^2 + L_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_3 R_L + C_3 C_L L_1 L_3 R_3 R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 R_L + C_1 L_1 L_3 + C_3 C_L L_3 R_3 R_L + C_3 L_1 L_3 R_3 g_m + C_3 L_1 L_3 R_L g_m + C_L L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_3 R_3 + C_3 L_3 R_L +\right.}$$

**10.619 INVALID-ORDER-619** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_3 R_L g_m s^4 + L_1 R_3 g_m s + s^3 \left(C_3 L_1 L_3 R_3 g_m + C_L L_1 L_3 R_L g_m\right) + s^2 \left(C_L L_1 R_3 R_L g_m + L_1 L_3 g_m\right)}{s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_1 C_3 C_L L_1 L_3 R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_3 C_L L_3 R_3 + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_1 R_3 g_m + C_L L_1 R_L g_m + C_L L_3\right) +$$

**10.620 INVALID-ORDER-620** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m s^5 + C_L L_1 L_3 L_L g_m s^4 + L_1 L_3 g_m s^2 + L_1 R_3 g_m s + s^3 \left(C_3 L_1 L_3 R_3 g_m + C_L L_1 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_L L_1 R_3 + C_3 C_L L_3 R_3 + C_3 L_1 L_3 g_m + C_L L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 + C_3 L_3 + C_L L_1 R_3 g_m + C_L L_3 +\right.}$$

**10.621 INVALID-ORDER-621** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_3 g_m s^4 + L_1 L_3 L_L g_m s^3 + L_1 L_L R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + R_3 + s^5 \left(C_1 C_3 L_1 L_3 L_L + C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_L R_3 + C_3 C_L L_3 L_L R_3 + C_3 L_1 L_3 L_L g_m + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_3 + C_1 L_1 L_L + C_3 L_1 L_3 R_3 g_m + C_3 L_3 L_L + C_L L_1 L_L R_3 g_m + C_L L_3 L_L\right) +$$

**10.622 INVALID-ORDER-622** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m s^5 + L_1 R_3 g_m s + s^4 \left(C_3 C_L L_1 L_3 R_3 R_L g_m + C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_3 L_1 L_3 R_3 g_m + C_L L_1 L_3 R_L g_m + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_L L_1 R_3 R_L s\right.}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_1 C_3 C_L L_1 L_3 R_L + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_3 C_L L_3 R_3 + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m + C_L\right.}$$

**10.623 INVALID-ORDER-623** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_3 R_L g_m}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + R_3 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L R_L + C_1 C_L L_1 L_3 L_L R_L + C_3 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1 L_L R_3 R_L + C_1 L_1 L_3 L_L + C_3 C_L L_3 L_L R_3 R_L + C_3 L_1 L_3 L_L R_3 g_m + C_3 L_1 L_3 L_L R_L g_m + C_L L_1 L_3 L_L R_L g_m\right) +$$

**10.624 INVALID-ORDER-624** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^5 + L_1 R_3 R_L g_m s + s^4 \left(C_3 L_1 L_3 L_L R_3 g_m + C_L L_1 L_3 L_L R_L g_m\right.}{R_3 + R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 + C_1 C_3 C_L L_1 L_3 L_L R_L\right) + s^5 \left(C_1 C_3 L_1 L_3 L_L + C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_3 + C_3 C_L L_3 L_L R_L + C_3 L_1 L_3 L_L g\right.}$$

**10.625 INVALID-ORDER-625** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3}{R_3 + R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 + C_1 C_3 C_L L_1 L_3 L_L R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L + C_1 C_L L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L + C_1 C_L L_1 L_3 R_L + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_3 R_3 R_L g_m + C\right.}$$

**10.626 INVALID-ORDER-626** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 R_L g_m s^3 + L_1 R_3 R_L g_m s}{R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_3 L_1 L_3 R_3 g_m + C_3 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_3 L_3 R_3 + C_3 L_3 R_L\right) + s \left(C_3 R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.627 INVALID-ORDER-627** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 g_m s^3 + L_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_3 R_3 s^5 + s^4 \left(C_1 C_3 L_1 L_3 + C_3 C_L L_1 L_3 R_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_3 C_L L_3 R_3 + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 L_1 R_3 g_m + C_3 L_3 + C_L L_1 R_3 g_m\right) + s \left(C_3 R_3 + C_L R_3 + L_1 g_m\right) + 1}$$

**10.628 INVALID-ORDER-628** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_3 R_L g_m s^3 + L_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_3 R_L s^5 + R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L + C_3 C_L L_1 L_3 R_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L + C_1 C_L L_1 R_3 R_L + C_3 C_L L_3 R_3 R_L + C_3 L_1 L_3 R_3 g_m + C_3 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 + C_1 L_1 R_L + C_3 L_1 R_3 R_L g_m + C_3 L_3 R_3 + C_3 L_3 R_L + C_L L_1 R_3 R_L\right.$$

**10.629 INVALID-ORDER-629** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_3 R_L g_m s^4 + C_3 L_1 L_3 R_3 g_m s^3 + C_L L_1 R_3 R_L g_m s^2 + L_1 R_3 g_m s}{s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_1 C_3 C_L L_1 L_3 R_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_3 L_1 L_3 + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_3 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_3 + C_3 C_L L_3 R_L + C_3 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 + C_3 C_L R_3 R_L + C_3 L_1\right.$$

**10.630 INVALID-ORDER-630** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m s^5 + L_1 R_3 g_m s + s^3 \left(C_3 L_1 L_3 R_3 g_m + C_L L_1 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_1 C_3 C_L L_1 L_L R_3 + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 + C_3 C_L L_3 R_3 + C_3 C_L L_L R_3 + C_3 L_1 L_3 g_m + C_L L_1 L_L g_m\right) + s^2$$

**10.631 INVALID-ORDER-631** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_3 g_m s^4 + L_1 L_L R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 s^6 + R_3 + s^5 \left(C_1 C_3 L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_L R_3 + C_1 C_L L_1 L_L R_3 + C_3 C_L L_3 L_L R_3 + C_3 L_1 L_3 L_L g_m\right) + s^3 \left(C_1 L_1 L_L + C_3 L_1 L_3 R_3 g_m + C_3 L_1 L_L R_3 g_m + C_3 L_3 L_L + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 R_3 + C_3 L_3 R_3\right.$$

**10.632 INVALID-ORDER-632** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3 g_m s^5 + C_3 C_L L_1 L_3 R_3 R_L g_m s^4 + C_L L_1 R_3 R_L g_m s^2 + L_1 R}{C_1 C_3 C_L L_1 L_3 L_L s^6 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 + C_1 C_3 C_L L_1 L_3 R_L + C_1 C_3 C_L L_1 L_L R_3 + C_3 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L + C_1 C_3 L_1 L_3 + C_1 C_L L_1 L_L + C_3 C_L L_1 L_3 R_3 g_m + C_3 C_L L_1 L_3 R_L g_m + C_3 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L\right) + s^3 \left(C_1 C_3 L_1 R_3 + C_1 C_L L_1 R_3 +\right.$$

**10.633 INVALID-ORDER-633** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_3 R_L g_m s^4 + L_1 L_L R_3 R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L s^6 + R_3 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L R_L + C_3 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_3 L_1 L_L R_3 R_L + C_1 C_L L_1 L_L R_3 R_L + C_3 C_L L_3 L_L R_3 R_L + C_3 L_1 L_3 L_L R_3 g_m + C_3 L_1 L_3 L_L R_L g_m\right) + s^3 \left(C_1 L_1 L_L R_3 + C_1 L_1 L_L R_L + C\right.$$

**10.634 INVALID-ORDER-634** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_3}{R_3 + R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 + C_1 C_3 C_L L_1 L_3 L_L R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L + C_3 C_L L_1 L_3 L_L R_3 g_m + C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L + C_1 C_3 L_1 L_L R_3 + C_1 C_L L_1 L_L R_3 + C_1 C_L L_1 L_L R_L + C_3 C_L L_1 L_L R_3 R_L g_m + C\right.$$

**10.635 INVALID-ORDER-635** $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_3}{R_3+R_L+s^6\left(C_1C_3C_LL_1L_3L_LR_3+C_1C_3C_LL_1L_3L_LR_L\right)+s^5\left(C_1C_3C_LL_1L_3R_3R_L+C_1C_3C_LL_1L_LR_3R_L+C_3C_LL_1L_3L_LR_3g_m+C_3C_LL_1L_3L_LR_Lg_m\right)+s^4\left(C_1C_3L_1L_3R_3+C_1C_3L_1L_3R_L+C_1C_LL_1L_LR_3+C_1C_LL_1L_LR_L+C_3C_LL_1L_3R_3R_Lg_m+C_3C_LL_1L_L\right.}$$

**10.636 INVALID-ORDER-636** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1L_1R_3g_ms^2+C_1R_1R_3g_ms+R_3g_m}{C_1C_LL_1R_3g_ms^3+g_m+s^2\left(C_1C_LR_1R_3g_m+C_1C_LR_3+C_1L_1g_m\right)+s\left(C_1R_1g_m+C_1+C_LR_3g_m\right)}$$

**10.637 INVALID-ORDER-637** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1L_1R_3R_Lg_ms^2+C_1R_1R_3R_Lg_ms+R_3R_Lg_m}{C_1C_LL_1R_3R_Lg_ms^3+R_3g_m+R_Lg_m+s^2\left(C_1C_LR_1R_3R_Lg_m+C_1C_LR_3R_L+C_1L_1R_3g_m+C_1L_1R_Lg_m\right)+s\left(C_1R_1R_3g_m+C_1R_1R_Lg_m+C_1R_3+C_1R_L+C_LR_3R_Lg_m\right)}$$

**10.638 INVALID-ORDER-638** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1C_LL_1R_3R_Lg_ms^3+R_3g_m+s^2\left(C_1C_LR_1R_3R_Lg_m+C_1L_1R_3g_m\right)+s\left(C_1R_1R_3g_m+C_LR_3R_Lg_m\right)}{g_m+s^3\left(C_1C_LL_1R_3g_m+C_1C_LL_1R_Lg_m\right)+s^2\left(C_1C_LR_1R_3g_m+C_1C_LR_1R_Lg_m+C_1C_LR_3+C_1C_LR_L+C_1L_1g_m\right)+s\left(C_1R_1g_m+C_1+C_LR_3g_m+C_LR_Lg_m\right)}$$

**10.639 INVALID-ORDER-639** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_3g_ms^4+C_1C_LL_LR_1R_3g_ms^3+C_1R_1R_3g_ms+R_3g_m+s^2\left(C_1L_1R_3g_m+C_LL_LR_3g_m\right)}{C_1C_LL_1L_Lg_ms^4+g_m+s^3\left(C_1C_LL_1R_3g_m+C_1C_LL_LR_1g_m+C_1C_LL_L\right)+s^2\left(C_1C_LR_1R_3g_m+C_1C_LR_3+C_1L_1g_m+C_LL_Lg_m\right)+s\left(C_1R_1g_m+C_1+C_LR_3g_m\right)}$$

**10.640 INVALID-ORDER-640** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_3g_ms^3+C_1L_LR_1R_3g_ms^2+L_LR_3g_ms}{C_1C_LL_1L_LR_3g_ms^4+R_3g_m+s^3\left(C_1C_LL_LR_1R_3g_m+C_1C_LL_LR_3+C_1L_1L_Lg_m\right)+s^2\left(C_1L_1R_3g_m+C_1L_LR_1g_m+C_1L_L+C_LL_LR_3g_m\right)+s\left(C_1R_1R_3g_m+C_1R_3+L_Lg_m\right)}$$

**10.641 INVALID-ORDER-641** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_3g_ms^4+R_3g_m+s^3\left(C_1C_LL_1R_3R_Lg_m+C_1C_LL_LR_1R_3g_m\right)+s^2\left(C_1C_LR_1R_3R_Lg_m+C_1L_1R_3g_m+C_LL_LR_3g_m\right)+s\left(C_1R_1R_3g_m+C_LR_3R_Lg_m\right)}{C_1C_LL_1L_Lg_ms^4+g_m+s^3\left(C_1C_LL_1R_3g_m+C_1C_LL_1R_Lg_m+C_1C_LL_LR_1g_m+C_1C_LL_L\right)+s^2\left(C_1C_LR_1R_3g_m+C_1C_LR_1R_Lg_m+C_1C_LR_3+C_1C_LR_L+C_1L_1g_m+C_LL_Lg_m\right)+s\left(C_1R_1g_m+C_1+C_LR_3g_m+C_LR_Lg_m\right)}$$

**10.642 INVALID-ORDER-642** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_3R_Lg_ms^3+C_1L_LR_1R_3R_Lg_ms^2+L_LR_3R_Lg_ms}{C_1C_LL_1L_LR_3R_Lg_ms^4+R_3R_Lg_m+s^3\left(C_1C_LL_LR_1R_3R_Lg_m+C_1C_LL_LR_3R_L+C_1L_1L_LR_3g_m+C_1L_1L_LR_Lg_m\right)+s^2\left(C_1L_1R_3R_Lg_m+C_1L_LR_1R_3g_m+C_1L_LR_1R_Lg_m+C_1L_LR_3+C_1L_LR_L+C_LL_LR_3R_Lg_m\right)+s\left(C_1R_1R_3R_Lg_m+C_1R_3R_L+L_LR_3g_m+L_LR_L\right.}$$

**10.643 INVALID-ORDER-643** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_3R_Lg_ms^4+R_3R_Lg_m+s^3\left(C_1C_LL_LR_1R_3R_Lg_m+C_1L_1L_LR_3g_m\right)+s^2\left(C_1L_1R_3R_Lg_m+C_1L_LR_1R_3g_m+C_LL_LR_3R_Lg_m\right)+s\left(C_1R_1R_3R_Lg_m+L_LR_3g_m\right)}{R_3g_m+R_Lg_m+s^4\left(C_1C_LL_1L_LR_3g_m+C_1C_LL_1L_LR_Lg_m\right)+s^3\left(C_1C_LL_LR_1R_3g_m+C_1C_LL_LR_1R_Lg_m+C_1C_LL_LR_3+C_1C_LL_LR_L+C_1L_1L_Lg_m\right)+s^2\left(C_1L_1R_3g_m+C_1L_1R_Lg_m+C_1L_LR_1g_m+C_1L_L+C_LL_LR_3g_m+C_LL_LR_Lg_m\right)+s\left(C_1R_1R_3g_m+C_1R_1R_Lg_m\right.}$$

**10.644 INVALID-ORDER-644** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + C_1 C_L L_L R_1 R_3 R_L g_m s^3 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m + s^2\left(C_1 L_1 R_3 R_L g_m + C_L L_L R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4\left(C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_1 R_L g_m + C_1 C_L L_L R_3 + C_1 C_L L_L R_L\right) + s^2\left(C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_L L_L R_3 g_m + C_L L_L R_L g_m\right) + s\left(C_1 R_1}$$

**10.645 INVALID-ORDER-645** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 R_L g_m s^2 + C_1 R_1 R_L g_m s + R_L g_m}{C_1 C_3 L_1 R_L g_m s^3 + g_m + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 L_1 g_m\right) + s\left(C_1 R_1 g_m + C_1 + C_3 R_L g_m\right)}$$

**10.646 INVALID-ORDER-646** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 g_m s^2 + C_1 R_1 g_m s + g_m}{s^3\left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.647 INVALID-ORDER-647** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 R_L g_m s^2 + C_1 R_1 R_L g_m s + R_L g_m}{g_m + s^3\left(C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L + C_1 L_1 g_m\right) + s\left(C_1 R_1 g_m + C_1 + C_3 R_L g_m + C_L R_L g_m\right)}$$

**10.648 INVALID-ORDER-648** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_L g_m s^3 + g_m + s^2\left(C_1 C_L R_1 R_L g_m + C_1 L_1 g_m\right) + s\left(C_1 R_1 g_m + C_L R_L g_m\right)}{C_1 C_3 C_L L_1 R_L g_m s^4 + s^3\left(C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_L g_m\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.649 INVALID-ORDER-649** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L g_m s^4 + C_1 C_L L_L R_1 g_m s^3 + C_1 R_1 g_m s + g_m + s^2\left(C_1 L_1 g_m + C_L L_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4\left(C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3\left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.650 INVALID-ORDER-650** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_L g_m s^3 + C_1 L_L R_1 g_m s^2 + L_L g_m s}{g_m + s^4\left(C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L\right) + s^2\left(C_1 L_1 g_m + C_3 L_L g_m + C_L L_L g_m\right) + s\left(C_1 R_1 g_m + C_1\right)}$$

**10.651 INVALID-ORDER-651** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L g_m s^4 + g_m + s^3\left(C_1 C_L L_1 R_L g_m + C_1 C_L L_L R_1 g_m\right) + s^2\left(C_1 C_L R_1 R_L g_m + C_1 L_1 g_m + C_L L_L g_m\right) + s\left(C_1 R_1 g_m + C_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4\left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3\left(C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_L g_m\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.652 INVALID-ORDER-652** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_L g_m s^3 + C_1 L_L R_1 R_L g_m s^2 + L_L R_L g_m s}{R_L g_m + s^4\left(C_1 C_3 L_1 L_L R_L g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_L R_1 R_L g_m + C_1 C_3 L_L R_L + C_1 C_L L_L R_1 R_L g_m + C_1 C_L L_L R_L + C_1 L_1 L_L g_m\right) + s^2\left(C_1 L_1 R_L g_m + C_1 L_L R_1 g_m + C_1 L_L + C_3 L_L R_L g_m + C_L L_L R_L g_m\right) + s\left(C_1 R_1 R_L g_m + C_1 R_L + L_L g_m\right)}$$

**10.653 INVALID-ORDER-653** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_L g_m s^4 + R_L g_m + s^3\left(C_1 C_L L_L R_1 R_L g_m + C_1 L_1 L_L g_m\right) + s^2\left(C_1 L_1 R_L g_m + C_1 L_L R_1 g_m + C_L L_L R_L g_m\right) + s\left(C_1 R_1 R_L g_m + L_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_L g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_L g_m + C\right.}$$

**10.654 INVALID-ORDER-654** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_L g_m s^4 + C_1 C_L L_L R_1 R_L g_m s^3 + C_1 R_1 R_L g_m s + R_L g_m + s^2\left(C_1 L_1 R_L g_m + C_L L_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_L g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_L + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L + C_1 L_1 g_m + C_L L_L g_m\right) +$$

**10.655 INVALID-ORDER-655** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 R_3 R_L g_m s^2 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m}{C_1 C_3 L_1 R_3 R_L g_m s^3 + R_3 g_m + R_L g_m + s^2\left(C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right) + s\left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m\right)}$$

**10.656 INVALID-ORDER-656** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 R_3 g_m s^2 + C_1 R_1 R_3 g_m s + R_3 g_m}{g_m + s^3\left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m\right) + s^2\left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3 + C_1 L_1 g_m\right) + s\left(C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_L R_3 g_m\right)}$$

**10.657 INVALID-ORDER-657** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 R_3 R_L g_m s^2 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m}{R_3 g_m + R_L g_m + s^3\left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_L L_1 R_3 R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 C_L R_1 R_3 R_L g_m + C_1 C_L R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m\right) + s\left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1 R_3 + C_1 R_L + C_3 R_3 R_L g_m + C_L R_3 R_L g_m\right)}$$

**10.658 INVALID-ORDER-658** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_3 R_L g_m s^3 + R_3 g_m + s^2\left(C_1 C_L R_1 R_3 R_L g_m + C_1 L_1 R_3 g_m\right) + s\left(C_1 R_1 R_3 g_m + C_L R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3\left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s\left(C_1 R_1 g_m + C_1\right.$$

**10.659 INVALID-ORDER-659** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + C_1 C_L L_L R_1 R_3 g_m s^3 + C_1 R_1 R_3 g_m s + R_3 g_m + s^2\left(C_1 L_1 R_3 g_m + C_L L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2\left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3 + C_1 L_1 g_m + C_L L_L g_m\right) + s\left(\right.$$

**10.660 INVALID-ORDER-660** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 g_m s^3 + C_1 L_L R_1 R_3 g_m s^2 + L_L R_3 g_m s}{R_3 g_m + s^4\left(C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_3 g_m\right) + s^3\left(C_1 C_3 L_L R_1 R_3 g_m + C_1 C_3 L_L R_3 + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_3 + C_1 L_1 L_L g_m\right) + s^2\left(C_1 L_1 R_3 g_m + C_1 L_L R_1 g_m + C_1 L_L + C_3 L_L R_3 g_m + C_L L_L R_3 g_m\right) + s\left(C_1 R_1 R_3 g_m + C_1 R_3 + L_L g_m\right)}$$

**10.661 INVALID-ORDER-661** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 g_m s^4 + R_3 g_m + s^3\left(C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_L R_1 R_3 g_m\right) + s^2\left(C_1 C_L R_1 R_3 R_L g_m + C_1 L_1 R_3 g_m + C_L L_L R_3\right.$$
$$C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2\left(C\right.$$

**10.662 INVALID-ORDER-662** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_3 R_L g_m s^3 + C_1 L_L R_1 R_3 R_L g_m s^2 + L_L R_3 R_L g_m s}{R_3 R_L g_m + s^4\left(C_1 C_3 L_1 L_L R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L g_m\right) + s^3\left(C_1 C_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_L R_3 R_L + C_1 C_L L_L R_1 R_3 R_L g_m + C_1 C_L L_L R_3 R_L + C_1 L_1 L_L R_3 g_m + C_1 L_1 L_L R_L g_m\right) + s^2\left(C_1 L_1 R_3 R_L g_m + C_1 L_L R_1 R_3 g_m + C_1 L_L R_1 R_L g_m + C_1 L_L R_3 + C_1 L_L R_L + C_3\right.$$

**10.663 INVALID-ORDER-663** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + R_3 R_L g_m + s^3\left(C_1 C_L L_L R_1 R_3 R_L g_m + C_1 L_1 L_L R_3 g_m\right) + s^2\left(\right.$$
$$C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_L R_3 + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_1 R_L g_m\right.$$

**10.664 INVALID-ORDER-664** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_3 R_L g_m s^4 + C_1 C_L L_L R_1 R_3 R_L g_m s^3 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m + s}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_L R_1 R_3 g_m + C_1 C_L L_L R_1 R_L g_m + C_1 C_L L_L R_3 + C_1 C_L L_L R_L + C_3 C_L L_L R_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L + C_1 C_L R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 C_L R_3 + C_1 C_L R_L + C_3 C_L R_3 R_L g_m\right) + s \left(C_1 R_1 g_m + C_1 R_1 R_L g_m + C_3 R_3 R_L g_m\right)}$$

**10.665 INVALID-ORDER-665** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 R_L g_m s^3 + R_L g_m + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 L_1 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_3 R_3 R_L g_m\right)}{g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L + C_1 L_1 g_m\right) + s \left(C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}$$

**10.666 INVALID-ORDER-666** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 g_m s^3 + g_m + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 L_1 g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 R_3 g_m s^4 + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.667 INVALID-ORDER-667** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 R_3 R_L g_m s^3 + R_L g_m + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 L_1 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_3 R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s \left(C_1 R_1 g_m + C_1\right.}$$

**10.668 INVALID-ORDER-668** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 R_3 R_L g_m s^4 + g_m + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m + C_L R_L g_m\right)}{s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m + C_3 C_L R_L g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.669 INVALID-ORDER-669** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 L_1 g_m + C_L L_L g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.670 INVALID-ORDER-670** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 g_m s^4 + L_L g_m s + s^3 \left(C_1 C_3 L_L R_1 R_3 g_m + C_1 L_1 L_L g_m\right) + s^2 \left(C_1 L_L R_1 g_m + C_3 L_L R_3 g_m\right)}{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 L_1 g_m + C_3 L_L g_m + C_L\right.}$$

**10.671 INVALID-ORDER-671** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m +\right.}{C_1 C_3 C_L L_1 L_L g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right.}$$

**10.672 INVALID-ORDER-672** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_L R_3 R_L g_m s^4 + L_L R_L g_m s + s^3 \left(C_1 C_3 L_L R_1 R_3 R_L g_m + C_1 L_1 L_L R_L g_m\right) + s}{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_L R_1 R_3 g_m + C_1 C_3 L_L R_1 R_L g_m + C_1 C_3 L_L R_3 + C_1 C_3 L_L R_L + C_1 C_L L_L R_1 R_L g_m + C_1\right.}$$

**10.673 INVALID-ORDER-673** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_L g_m + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_L R_1 R_3 g_m + C_1 C_L L_L R_1 R_L g_m + C_1 L_1 L_L g_m + C_3 C_L L_L R_3 R_L g_m\right) +}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C\right.}$$

**10.674 INVALID-ORDER-674** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_L R_3 R_L g_m s^5 + R_L g_m + s^4\left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_L L_1 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_L L}{g_m + s^5\left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m\right) + s^4\left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_L L_1 L_L g_m\right) + s^3\left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C\right.}$$

**10.675 INVALID-ORDER-675** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + C_1 C_3 L_3 R_1 R_L g_m s^3 + C_1 R_1 R_L g_m s + R_L g_m + s^2\left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^3\left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3\right) + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s\left(C_1 R_1 g_m + C_1 + C_3 R_L g_m\right)}$$

**10.676 INVALID-ORDER-676** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 g_m s^4 + C_1 C_3 L_3 R_1 g_m s^3 + C_1 R_1 g_m s + g_m + s^2\left(C_1 L_1 g_m + C_3 L_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4\left(C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3\right) + s^3\left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.677 INVALID-ORDER-677** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + C_1 C_3 L_3 R_1 R_L g_m s^3 + C_1 R_1 R_L g_m s + R_L g_m + s^2\left(C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3\left(C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2\left(C_1 C_3 R_1 R_L g_m + C_1 C_3 R_L + C_1 C_L R_1 R_L g_m + C_1 C_L R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s\left(\right.}$$

**10.678 INVALID-ORDER-678** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4\left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 L_1 L_3 g_m\right) + s^3\left(C_1 C_3 L_3 R_1 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2\left(C_1 C_L R_1 R_L g_m + C_1 L_1 g_m + C_3 L_3 g_m\right) + s\left(C_1 R_1 g_m + C_L R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4\left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3\right) + s^3\left(C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.679 INVALID-ORDER-679** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + C_1 C_3 C_L L_3 L_L R_1 g_m s^5 + C_1 R_1 g_m s + g_m + s^4\left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 g_m + C_1 C_L L_L R_1 g_m\right) + s^2\left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_L g_m\right)}{s^5\left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4\left(C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3\left(C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right) + s\left(C_3 g_m + C_L g_m\right)}$$

**10.680 INVALID-ORDER-680** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L g_m s^5 + C_1 C_3 L_3 L_L R_1 g_m s^4 + C_1 L_L R_1 g_m s^2 + L_L g_m s + s^3\left(C_1 L_1 L_L g_m + C_3 L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4\left(C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L\right) + s^2\left(C_1 L_1 g_m + C_3 L_3 g_m + C\right.}$$

**10.681 INVALID-ORDER-681** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m\right) + s^4\left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_3 R_L g_m\right) + s^2\left(C_1 C_L R_1 R_L g_m + C_1 L_1 g_m\right.}{s^5\left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4\left(C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3\left(C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2\left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C\right.}$$

**10.682 INVALID-ORDER-682** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_L g_m s^5 + C_1 C_3 L_3 L_L R_1 R_L g_m s^4 + C_1 L_L R_1 R_L g_m s^2 + L_L R_L g_m s +}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_L + \right.}$$

**10.683 INVALID-ORDER-683** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L_3 L_L R_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_L L_L R_1 R_L g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4\left(C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_3 L_L R_1 g_m + C_1 C_3 L_L + C_1 C_L L_L R_1 g_m + C_1 C_L L_L\right) + s^2\left(C_1 L_1 g_m + C_3 L_3 g_m + C\right.}$$

**10.684 INVALID-ORDER-684** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + C_1 C_3 C_L L_3 L_L R_1 R_L g_m s^5 + C_1 R_1 R_L g_m s + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1\right.}$$

**10.685 INVALID-ORDER-685** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_L g_m s^3 + C_1 L_3 R_1 R_L g_m s^2 + L_3 R_L g_m s}{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_1 R_L + L_3 g_m\right)}$$

**10.686 INVALID-ORDER-686** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 L_3 g_m s^3 + C_1 L_3 R_1 g_m s^2 + L_3 g_m s}{g_m + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g_m\right) + s \left(C_1 R_1 g_m + C_1\right)}$$

**10.687 INVALID-ORDER-687** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_L g_m s^3 + C_1 L_3 R_1 R_L g_m s^2 + L_3 R_L g_m s}{R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_L + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_L g_m + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_L g_m + C_L L_3 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_1 R_L + L_3 g_m\right)}$$

**10.688 INVALID-ORDER-688** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 R_L g_m s^4 + L_3 g_m s + s^3 \left(C_1 C_L L_3 R_1 R_L g_m + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_3 R_1 g_m + C_L L_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3 + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_L R_1 R_L g_m + C_1 C_L R_L + C_1 L_1 g_m + C_3 L_3 g_m + C_L\right.}$$

**10.689 INVALID-ORDER-689** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L g_m s^5 + C_1 C_L L_3 L_L R_1 g_m s^4 + C_1 L_3 R_1 g_m s^2 + L_3 g_m s + s^3 \left(C_1 L_1 L_3 g_m + C_L L_3 L_L g_m\right)}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3 + C_1 C_L L_L R_1 g_m + C_1 C_L L_L\right) + s^2 \left(C_1 L_1 g_m + C_3 L_3 g_m + C\right.}$$

**10.690 INVALID-ORDER-690** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L g_m s^3 + C_1 L_3 L_L R_1 g_m s^2 + L_3 L_L g_m s}{L_3 g_m + L_L g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L\right) + s^2 \left(C_1 L_1 L_3 g_m + C_1 L_1 L_L g_m + C_3 L_3 L_L g_m + C_L L_3 L_L g_m\right) + s \left(C_1 L_3 R_1 g_m + C_1 L_3 + C_1 L_L R_1 g_m + C_1 L_L\right)}$$

**10.691 INVALID-ORDER-691** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L g_m s^5 + L_3 g_m s + s^4 \left(C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_3 L_L R_1 g_m\right) + s^3 \left(C_1 C_L L_3 R_1 R_L g_m + C_1 L_1 L_3 g_m + C_L L_3 L_L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L\right.}$$

**10.692 INVALID-ORDER-692** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_L g_m s^3 + C_1 L_3 L_L R_1 R_L g_m s^2 + L_3 L_L R_L g_m s}{L_3 R_L g_m + L_L R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 L_L R_L g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 L_L R_1 R_L g_m + C_1 C_3 L_3 L_L R_L + C_1 C_L L_3 L_L R_1 R_L g_m + C_1 C_L L_3 L_L R_L + C_1 L_1 L_3 L_L g_m\right) + s^2 \left(C_1 L_1 L_3 R_L g_m + C_1 L_1 L_L R_L g_m + C_1 L_3 L_L R_1 g_m + C_1 L_3 L_L + C_3 L_3 L_L R_L g_m + C_L L\right.}$$

**10.693 INVALID-ORDER-693** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_L g_m s^5 + L_3 R_L g_m s + s^4 \left(C_1 C_L L_3 L_L R_1 R_L g_m + C_1 L_1 L_3 L_L g_m\right) + s^3 \left(\right.}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(\right.}$$

**10.694 INVALID-ORDER-694** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_L g_m s^5 + C_1 C_L L_3 L_L R_1 R_L g_m s^4 + C_1 L_3 R_1 R_L g_m s^2 + L_3 R_L g_m s +}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_L + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_L g_m + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_L + \right.}$$

**10.695 INVALID-ORDER-695** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_3 R_3 R_L g_m\right)}{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_1 R_L g_m + C_1 C_3 R_3 + C_1 C_3 R_L + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 R_1 g_m + C_1 + C_3 R_3 g_m + C_3 R_L g_m\right)}$$

**10.696 INVALID-ORDER-696** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 g_m s^4 + g_m + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 R_1 g_m + C_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L + C_3 C_L R_3 g_m\right) + s \left(C_3 g_m + C_L g_m\right)}$$

**10.697 INVALID-ORDER-697** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_L g_m s^4 + R_L g_m + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 L_1 R_L g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_L g_m + C_3 R_3 R_L g_m\right)}{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_1 R_L g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C\right.}$$

**10.698 INVALID-ORDER-698** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_L g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_L L_1 R_L g_m + C_3 C_L L_3 R_L g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_L R_1 R_L g_m + C_1 L_1 g_m + C_3 C_L R_3 R_L g_m + C\right.}{C_1 C_3 C_L L_1 L_3 g_m s^5 + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 + C_1 C_3 C_L R_L + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L R_1 g_m + C_1 C_L\right.}$$

**10.699 INVALID-ORDER-699** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_L L_L R_1 g_m + C_3 C_L L_L R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 L_1 g_m + \right.}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_3 + C_1 C_3 L_1 g_m + C_1 C_L L_1 g_m + C_3 C_L L_3 g_m + C_3 C_L L_L g_m\right) + s^2 \left(C_1 C_3 R_1 g_m + C_1 C_3 + C_1 C_L\right.}$$

**10.700 INVALID-ORDER-700** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L g_m s^5 + L_L g_m s + s^4 \left(C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_3 L_L R_1 g_m\right) + s^3 \left(C_1 C_3 L_L R_1 R_3 g_m + C_1 L_1 L_L g_m + C_3 L_3 L_L g\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_3\right.}$$

**10.701 INVALID-ORDER-701** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 L_1\right.}{s^5 \left(C_1 C_3 C_L L_1 L_3 g_m + C_1 C_3 C_L L_1 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 g_m + C_1 C_3 C_L L_1 R_L g_m + C_1 C_3 C_L L_3 R_1 g_m + C_1 C_3 C_L L_3 + C_1 C_3 C_L L_L R_1 g_m + C_1 C_3 C_L L_L\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 g_m + C_1 C_3 C_L R_1 R_L g_m + C_1 C_3 C_L R_3 +\right.}$$

**10.702 INVALID-ORDER-702** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C}{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_1 L_L R_L g_m + C_1 C_3 L_3 L_L R_1 g_m + C\right.}$$

**10.703 INVALID-ORDER-703** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_L L_1 L_L R_L g_m + C_3 C_L L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 C_L L_L R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_3 L_1 L_L g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L\right.}$$

**10.704 INVALID-ORDER-704** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_L g_m s^6 + R_L g_m + s^5\left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L \right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_1 L_L R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4\left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_1 R_L g_m + C_1 C_3 C_L\right.}$$

**10.705 INVALID-ORDER-705** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 R_L g_m s^3 + C_1 L_3 R_1 R_3 R_L g_m s^2 + L_3 R_3 R_L g_m s}{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^3\left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_3 R_L g_m\right) + s^2\left(C_1 L_1 R_3 R_L g_m + C_1 L_3 R_1 R_3 g_m + C_1 L_3 R_1 R_L g_m + C_1 L_3 R_3 + C_1 L_3 R_L + C_3 L_3 R_3 R_L g_m\right) + s\left(C_1 R_1 R_3 R_L g_m + C_1 R_3 R_L + L_3 R_3 g_m + L_3 R_L g_m\right)}$$

**10.706 INVALID-ORDER-706** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 g_m s^3 + C_1 L_3 R_1 R_3 g_m s^2 + L_3 R_3 g_m s}{R_3 g_m + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_3 + C_1 L_1 L_3 g_m\right) + s^2\left(C_1 L_1 R_3 g_m + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_L L_3 R_3 g_m\right) + s\left(C_1 R_1 R_3 g_m + C_1 R_3 + L_3 g_m\right)}$$

**10.707 INVALID-ORDER-707** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 R_3 R_L g_m s^3 + C_1 L_3 R_1 R_3 R_L g_m s^2 + L_3 R_3 R_L g_m s}{R_3 R_L g_m + s^4\left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_3 R_3 R_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_3 R_3 R_L + C_1 C_L L_3 R_1 R_3 R_L g_m + C_1 C_L L_3 R_3 R_L + C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_3 R_L g_m\right) + s^2\left(C_1 L_1 R_3 R_L g_m + C_1 L_3 R_1 R_3 g_m + C_1 L_3 R_1 R_L g_m + C_1 L_3 R_3 + C_1 L_3 R_L + C_3 L_3 R\right.}$$

**10.708 INVALID-ORDER-708** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 R_3 R_L g_m s^4 + L_3 R_3 g_m s + s^3\left(C_1 C_L L_3 R_1 R_3 R_L g_m + C_1 L_1 L_3 R_3 g_m\right) + s^2\left(C\right.}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + s^4\left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_1 R_3 g_m + C_1 C_L L_3 R_1 R_L g_m + C_1 C_L L_3 R_3 + C_1 C_L\right.}$$

**10.709 INVALID-ORDER-709** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 L_L R_3 g_m s^5 + C_1 C_L L_3 L_L R_1 R_3 g_m s^4 + C_1 L_3 R_1 R_3 g_m s^2 + L_3 R_3 g_m s + s^3\left(C\right.}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3\left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1\right.}$$

**10.710 INVALID-ORDER-710** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_3 g_m s^3 + C_1 L_3 L_L R_1 R_3 g_m s^2 + L_3 L_L R_3 g_m s}{L_3 R_3 g_m + L_L R_3 g_m + s^4\left(C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_3 g_m\right) + s^3\left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_3 + C_1 L_1 L_3 L_L g_m\right) + s^2\left(C_1 L_1 L_3 R_3 g_m + C_1 L_1 L_L R_3 g_m + C_1 L_3 L_L R_1 g_m + C_1 L_3 L_L + C_3 L_3 L_L R_3 g_m + C_L L_3 L_L\right.}$$

**10.711 INVALID-ORDER-711** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5\left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L g_m\right) + s^4\left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C\right.}$$

**10.712 INVALID-ORDER-712** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_3 R_L g_m s^3 + C_1 L_3 L_L R_1 R_3 R_L g_m s^2 + L_3 L_L R_3 R_L g_m s}{L_3 R_3 R_L g_m + L_L R_3 R_L g_m + s^4\left(C_1 C_3 L_1 L_3 L_L R_3 R_L g_m + C_1 C_L L_1 L_3 L_L R_3 R_L g_m\right) + s^3\left(C_1 C_3 L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_3 L_L R_3 R_L + C_1 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_L L_3 L_L R_3 R_L + C_1 L_1 L_3 L_L R_3 g_m + C_1 L_1 L_3 L_L R_L g_m\right) + s^2\left(C_1 L_1 L_3 R_3 R_L g_m + C_1 L_1 L_L R_3 R_L g_m + \right.}$$

**10.713 INVALID-ORDER-713** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5\left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4\left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_L L_1 L_L R_3 R_L g_m + C_1 C_L L_3\right.}$$

**10.714 INVALID-ORDER-714** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_L L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_3 R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L g_m + C_1 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_3 L_L R_1 R_L g_m + C\right.}{}$$

**10.715 INVALID-ORDER-715** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 L_1 L_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_3 R_L g_m + C_1 L_3 R_1 R_L g_m + C_3 L_3 R_3 R_L g_m\right) + s \left(C_1 R_1 R_3 R_L g_m + L_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_1 L_3 R_1 g_m + C_1 L_3 + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_3 g_m + C_1 R_1 R_L g_m + C_1\right.}$$

**10.716 INVALID-ORDER-716** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m s^4 + R_3 g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 L_1 L_3 g_m\right) + s^2 \left(C_1 L_1 R_3 g_m + C_1 L_3 R_1 g_m + C_3 L_3 R_3 g_m\right) + s \left(C_1 R_1 R_3 g_m + L_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_3 R_3 g_m + C_3 C_L L_3 R_3 g_m\right) + s^2 \left(C_1 C_L R_1 R_3 g_m + C_1 C_L R_3 + C_1 L_1 g_m + C_3 L_3 g_m + C_L L_3 g\right.}$$

**10.717 INVALID-ORDER-717** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + R_3 R_L g_m + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L g_m + C_1 L_1 L_3 R_L g_m\right) + s^2 \left(C_1\right.}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_1 R_L g_m\right.}$$

**10.718 INVALID-ORDER-718** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_1 R_3 R_L g_m + C_1 C_L L_3 R_1 R_L g_m + C_1 L_1 L_3 g_m + C_3 C_L L_3 R_3 R_L g_m\right) + s\right.}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L L_1 R_L g_m + C_1 C_L L_3 R_1 g_m + C_1 C_L L_3\right.}$$

**10.719 INVALID-ORDER-719** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L R_1 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_L R_1 R\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_1 C_L\right.}$$

**10.720 INVALID-ORDER-720** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 g_m s^5 + L_L R_3 g_m s + s^4 \left(C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 L_1 L_3 L_L g_m\right) + s^3 \left(C_1\right.}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L R_1 g_m + C_1 C_L L_3 L_L + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1\right.}$$

**10.721 INVALID-ORDER-721** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_3 R_L g_m + C_1 C_L L_1 L_L R_3 g_m + C_1 C_L L_3 L_L R_1 g_m + C_3 C_L L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L\right.}$$

**10.722 INVALID-ORDER-722** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_3 L_1 L_3 L_L R_L g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_1 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3\right.}{}$$

**10.723 INVALID-ORDER-723** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_L L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1\right.}{R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m + C_1 C_3 L_3 L_L\right.}$$

**10.724 INVALID-ORDER-724** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{}{R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_L L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L\right.$$

**10.725 INVALID-ORDER-725** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m s^3 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m + s^2 \left(C_1 L_1 R_3 R_L g_m + C_3 L_3 R_3 R_L g_m\right)}{R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L\right) + s^2 \left(C_1 C_3 R_1 R_3 R_L g_m + C_1 C_3 R_3 R_L + C_1 L_1 R_3 g_m + C_1 L_1 R_L g_m + C_3 L_3 R_3 g_m + C_3 L_3 R_L g_m\right) + s \left(C_1 R_1 R_3 g_m +\right.$$

**10.726 INVALID-ORDER-726** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 g_m s^4 + C_1 C_3 L_3 R_1 R_3 g_m s^3 + C_1 R_1 R_3 g_m s + R_3 g_m + s^2 \left(C_1 L_1 R_3 g_m + C_3 L_3 R_3 g_m\right)}{C_1 C_3 C_L L_1 L_3 R_3 g_m s^5 + g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L_3 + C_1 C_L L_1 R_3 g_m + C_3 C_L L_3 R_3 g_m\right) + s^2 \left(C_1 C_3 R_1 R_3 g_m + C_1 C_3 R_3 + C_1 C_L R_1 R_3 g_m + C_1 C_L R_3 + C_1 L_1 g_m + C_3 L_3 g_m\right) + s \left(C_1 R\right.$$

**10.727 INVALID-ORDER-727** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_3 R_L g_m s^4 + C_1 C_3 L_3 R_1 R_3 R_L g_m s^3 + C_1 R_1 R_3 R_L g_m s + R_3 R_L g_m + s^2 \left(C\right.}{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + R_L g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 R_L + C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_3 R_L g_m\right) + s^3 \left(C_1 C_3 L_1 R_3 R_L g_m + C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_1 R_L g_m + C_1 C_3 L_3 R_3 + C_1 C_3 L_3 R_L + C_1 C_L L_1 R_3 R_L g_m + C_3 C_L L_3 R_3 R_L g_m\right.$$

**10.728 INVALID-ORDER-728** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_3 R_L g_m s^5 + R_3 g_m + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_L L_1 R_3\right.}{g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 L_1 L_3 g_m\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 R_L g_m + C_1 C_3 C_L R_3 R_L + C_1 C_3 L_1 R_3 g_m + C_1 C_3 L_3 R_1 g_m + C_1 C_3 L\right.$$

**10.729 INVALID-ORDER-729** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m s^5 + C_1 R_1 R_3 g_m s + R_3 g_m + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_L L_1 L_L R_3 g_m\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_L R_1 R_3 g_m + C_1 C_3 C_L L_L R_3 + C_1 C_3 L_1 L_3 g_m + C_1 C_L L_1 L_L g_m + C_3 C_L L_3 L_L g_m\right) + s^3 \left(C_1 C_3\right.$$

**10.730 INVALID-ORDER-730** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_3 g_m s^5 + C_1 C_3 L_3 L_L R_1 R_3 g_m s^4 + C_1 L_L R_1 R_3 g_m s^2 + L_L R_3 g_m s + s^3 \left(\right.}{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 g_m + C_1 C_3 L_1 L_L R_3 g_m + C_1 C_3 L_3 L_L R_1 g_m + C_1 C_3 L_3 L_L + C_1 C_L L_1 L_L R_3 g_m + C_3 C_L L_3 L_L R_3 g_m\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 g_m + C_1 C_3 L_3 R_3 + C_1 C\right.$$

**10.731 INVALID-ORDER-731** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_3 g_m s^6 + R_3 g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L\right.}{C_1 C_3 C_L L_1 L_3 L_L g_m s^6 + g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 g_m + C_1 C_3 C_L L_1 L_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 g_m + C_1 C_3 C_L L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_1 R_3 g_m + C_1 C_3 C_L L_3 R_1 R_L g_m + C_1 C_3 C_L L_3 R_3 + C_1 C_3 C_L L_3 R_L + C_1 C_3 C_L L_L R_1\right.$$

**10.732 INVALID-ORDER-732** $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_3 R_L g_m s^6 + R_3 R_L g_m + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 R_L + C_1 C_3 L_1 L_3 L_L R_3 g_m + C_1 C_3 L_1 L_3 L_L R_L g_m\right) + s^4 \left(C_1 C_3 L_1 L_3 R_3 R_L g_m + C_1 C_3 L_1 L_L R_3 R_L g_m + C_1 C_3 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_3 L_L R_1 R_L g_m + C_1 C_3 L_3 L_L R_3 + C_1 C_3 L_3\right.$$

**10.733 INVALID-ORDER-733** $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L + C_1 C_3 L_1 L_3 L_L g_m\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_L R_3 R_L + \right.$$

**10.734 INVALID-ORDER-734** $Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1} \right)$

$$H(s) = \frac{R_3 g_m + R_L g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_L g_m\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 R_L g_m + C_1 C_3 C_L L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_3 L_L R_3 + C_1 C_3 C_L L_3 L_L R_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_3 R_3 \right.$$

**10.735 INVALID-ORDER-735** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s} \right)$

$$H(s) = \frac{L_1 R_1 R_3 g_m s}{C_1 C_L L_1 R_1 R_3 s^3 + R_1 + s^2 \left(C_1 L_1 R_1 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_3\right) + s \left(C_L R_1 R_3 + L_1 R_1 g_m + L_1\right)}$$

**10.736 INVALID-ORDER-736** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1} \right)$

$$H(s) = \frac{L_1 R_1 R_3 R_L g_m s}{C_1 C_L L_1 R_1 R_3 R_L s^3 + R_1 R_3 + R_1 R_L + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_L L_1 R_1 R_3 R_L g_m + C_L L_1 R_3 R_L\right) + s \left(C_L R_1 R_3 R_L + L_1 R_1 R_3 g_m + L_1 R_1 R_L g_m + L_1 R_3 + L_1 R_L\right)}$$

**10.737 INVALID-ORDER-737** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_L L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_3 g_m s}{R_1 + s^3 \left(C_1 C_L L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_L\right) + s^2 \left(C_1 L_1 R_1 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_1 R_L g_m + C_L L_1 R_3 + C_L L_1 R_L\right) + s \left(C_L R_1 R_3 + C_L R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.738 INVALID-ORDER-738** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 g_m s^3 + L_1 R_1 R_3 g_m s}{C_1 C_L L_1 L_L R_1 s^4 + R_1 + s^3 \left(C_1 C_L L_1 R_1 R_3 + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_3 + C_L L_L R_1\right) + s \left(C_L R_1 R_3 + L_1 R_1 g_m + L_1\right)}$$

**10.739 INVALID-ORDER-739** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{L_1 L_L R_1 R_3 g_m s^2}{C_1 C_L L_1 L_L R_1 R_3 s^4 + R_1 R_3 + s^3 \left(C_1 L_1 L_L R_1 + C_L L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_3\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_L L_L R_1 R_3 + L_1 L_L R_1 g_m + L_1 L_L\right) + s \left(L_1 R_1 R_3 g_m + L_1 R_3 + L_L R_1\right)}$$

**10.740 INVALID-ORDER-740** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 g_m s^3 + C_L L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_3 g_m s}{C_1 C_L L_1 L_L R_1 s^4 + R_1 + s^3 \left(C_1 C_L L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_1 R_L g_m + C_L L_1 R_3 + C_L L_1 R_L + C_L L_L R_1\right) + s \left(C_L R_1 R_3 + C_L R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.741 INVALID-ORDER-741** $Z(s) = \left( \frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L} \right)$

$$H(s) = \frac{L_1 L_L R_1 R_3 R_L g_m s^2}{C_1 C_L L_1 L_L R_1 R_3 R_L s^4 + R_1 R_3 R_L + s^3 \left(C_1 L_1 L_L R_1 R_3 + C_1 L_1 L_L R_1 R_L + C_L L_1 L_L R_1 R_3 R_L g_m + C_L L_1 L_L R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L + C_L L_L R_1 R_3 R_L + L_1 L_L R_1 R_3 g_m + L_1 L_L R_1 R_L g_m + L_1 L_L R_3 + L_1 L_L R_L\right) + s \left(L_1 R_1 R_3 R_L g_m + L_1 R_3 R_L + L_L R_1 R_3 + L_L R_1 R\right.$$

**10.742 INVALID-ORDER-742** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 L_L R_1 R_3 g_m s^2 + L_1 R_1 R_3 R_L g_m s}{R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_L L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_L\right) + s^3 \left(C_1 L_1 L_L R_1 + C_L L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_1 R_L g_m + C_L L_1 L_L R_3 + C_L L_1 L_L R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_L L_1 R_1 R_3 + C_L L_L R_1 R_3 + C_L L_L R_1 R_L + L_1 L_L R_1 g_m + L_1 L_L\right) + s \left(L_1 R_1 R_3 g_m + L_1 R_1 R_L g_m\right.$$

**10.743 INVALID-ORDER-743** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 R_1 R_3 R_L g_m s}{R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_L L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_L\right) + s^3 \left(C_1 C_L L_1 R_1 R_3 R_L + C_L L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_1 R_L g_m + C_L L_1 L_L R_3 + C_L L_1 L_L R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_L L_1 R_1 R_3 R_L g_m + C_L L_1 R_3 R_L + C_L L_L R_1 R_3 + C_L L_L R_1 R_L\right) + s \left(C_L R_1 R\right.$$

**10.744 INVALID-ORDER-744** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 R_1 R_L g_m s}{C_1 C_3 L_1 R_1 R_L s^3 + R_1 + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L\right) + s \left(C_3 R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.745 INVALID-ORDER-745** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{L_1 R_1 R_L g_m s}{R_1 + s^3 \left(C_1 C_3 L_1 R_1 R_L + C_1 C_L L_1 R_1 R_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L + C_L L_1 R_1 R_L g_m + C_L L_1 R_L\right) + s \left(C_3 R_1 R_L + C_L R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.746 INVALID-ORDER-746** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 R_1 R_L g_m s + L_1 R_1 g_m}{C_1 C_3 C_L L_1 R_1 R_L s^3 + C_3 R_1 + C_L R_1 + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_L\right) + s \left(C_3 C_L R_1 R_L + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.747 INVALID-ORDER-747** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 g_m s^2 + L_1 R_1 g_m}{C_1 C_3 C_L L_1 L_L R_1 s^4 + C_3 R_1 + C_L R_1 + s^3 \left(C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_L R_1\right) + s \left(C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.748 INVALID-ORDER-748** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_1 L_L R_1 g_m s^2}{R_1 + s^4 \left(C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1\right) + s^3 \left(C_3 L_1 L_L R_1 g_m + C_3 L_1 L_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_L R_1 + C_L L_L R_1\right) + s \left(L_1 R_1 g_m + L_1\right)}$$

**10.749 INVALID-ORDER-749** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 g_m s^2 + C_L L_1 R_1 R_L g_m s + L_1 R_1 g_m}{C_1 C_3 C_L L_1 L_L R_1 s^4 + C_3 R_1 + C_L R_1 + s^3 \left(C_1 C_3 C_L L_1 R_1 R_L + C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_L + C_3 C_L L_L R_1\right) + s \left(C_3 C_L R_1 R_L + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.750 INVALID-ORDER-750** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{L_1 L_L R_1 R_L g_m s^2}{R_1 R_L + s^4 \left(C_1 C_3 L_1 L_L R_1 R_L + C_1 C_L L_1 L_L R_1 R_L\right) + s^3 \left(C_1 L_1 L_L R_1 + C_3 L_1 L_L R_1 R_L g_m + C_3 L_1 L_L R_L + C_L L_1 L_L R_1 R_L g_m + C_L L_1 L_L R_L\right) + s^2 \left(C_1 L_1 R_1 R_L + C_3 L_L R_1 R_L + C_L L_L R_1 R_L + L_1 L_L R_1 g_m + L_1 L_L\right) + s \left(L_1 R_1 R_L g_m + L_1 R_L + L_L R_1\right)}$$

**10.751 INVALID-ORDER-751** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_L g_m s^3 + L_1 L_L R_1 g_m s^2 + L_1 R_1 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + R_1 + s^4 \left(C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_L + C_3 C_L L_L R_1 R_L + C_3 L_1 L_L R_1 g_m + C_3 L_1 L_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L + C_3 L_L R_1 + C_L\right.$$

**10.752 INVALID-ORDER-752** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_L g_m s^3 + L_1 R_1 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_1 R_L s^5 + R_1 + s^4 \left(C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_L + C_1 C_L L_1 R_1 R_L + C_3 C_L L_L R_1 R_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L + C_L L_1 R_1 R_L g_m + C_L L_1 R_L + C_L L_L R_1\right) +$$

**10.753 INVALID-ORDER-753** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 R_1 R_3 R_L g_m s}{C_1 C_3 L_1 R_1 R_3 R_L s^3 + R_1 R_3 + R_1 R_L + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_3 L_1 R_1 R_3 R_L g_m + C_3 L_1 R_3 R_L\right) + s \left(C_3 R_1 R_3 R_L + L_1 R_1 R_3 g_m + L_1 R_1 R_L g_m + L_1 R_3 + L_1 R_L\right)}$$

**10.754 INVALID-ORDER-754** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 R_1 R_3 g_m s}{R_1 + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_3 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_3\right) + s \left(C_3 R_1 R_3 + C_L R_1 R_3 + L_1 R_1 g_m + L_1\right)}$$

**10.755 INVALID-ORDER-755** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{L_1 R_1 R_3 R_L g_m s}{R_1 R_3 + R_1 R_L + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_1 C_L L_1 R_1 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_3 L_1 R_1 R_3 R_L g_m + C_3 L_1 R_3 R_L + C_L L_1 R_1 R_3 R_L g_m + C_L L_1 R_3 R_L\right) + s \left(C_3 R_1 R_3 R_L + C_L R_1 R_3 R_L + L_1 R_1 R_3 g_m + L_1 R_1 R_L g_m + L_1 R_3 + L_1 R_L\right)}$$

**10.756 INVALID-ORDER-756** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_3 g_m s}{C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + R_1 + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_L + C_3 C_L L_1 R_1 R_3 R_L g_m + C_3 C_L L_1 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 C_L R_1 R_3 R_L + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_3 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_1 R_L g_m + C_L L_1 R_3 + C_L L_1 R_L\right) + s \left(C_3 R_1 R_3 + C_L R\right.$$

**10.757 INVALID-ORDER-757** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 g_m s^3 + L_1 R_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + R_1 + s^4 \left(C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_3\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3 + C_3 C_L L_L R_1 R_3 + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_3 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_3 + C_L L_L R_1\right) + s \left(C\right.$$

**10.758 INVALID-ORDER-758** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_1 L_L R_1 R_3 g_m s^2}{R_1 R_3 + s^4 \left(C_1 C_3 L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_3\right) + s^3 \left(C_1 L_1 L_L R_1 + C_3 L_1 L_L R_1 R_3 g_m + C_3 L_1 L_L R_3 + C_L L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_3\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_3 L_L R_1 R_3 + C_L L_L R_1 R_3 + L_1 L_L R_1 g_m + L_1 L_L\right) + s \left(L_1 R_1 R_3 g_m + L_1 R_3 + L_L R_1\right)}$$

**10.759 INVALID-ORDER-759** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 g_m s^3 + C_L L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + R_1 + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_3\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_L + C_3 C_L L_1 R_1 R_3 R_L g_m + C_3 C_L L_1 R_3 R_L + C_3 C_L L_L R_1 R_3 + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1\right.$$

**10.760 INVALID-ORDER-760** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{L_1 L_L R_1 R_3 R_L g_m s^2}{R_1 R_3 R_L + s^4 \left(C_1 C_3 L_1 L_L R_1 R_3 R_L + C_1 C_L L_1 L_L R_1 R_3 R_L\right) + s^3 \left(C_1 L_1 L_L R_1 R_3 + C_1 L_1 L_L R_1 R_L + C_3 L_1 L_L R_1 R_3 R_L g_m + C_3 L_1 L_L R_3 R_L + C_L L_1 L_L R_1 R_3 R_L g_m + C_L L_1 L_L R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L + C_3 L_L R_1 R_3 R_L + C_L L_L R_1 R_3 R_L + L_1 L_L R_1 R_3 g_m + L_1 L_L R_1\right.$$

**10.761 INVALID-ORDER-761** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 L_L R}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_3 L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_3 C_L L_1 L_L R_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_1 L_1 L_L R_1 + C_3 C_L L_L R_1 R_3 R_L + C_3 L_1 L_L R_1 R_3 g_m + C_3 L_1 L_L R_3 + C_L L_1 L_L R_1 R_3 g\right.$$

**10.762 INVALID-ORDER-762** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_L L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 R_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_L L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_3 C_L L_1 L_L R_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_1 C_L L_1 R_1 R_3 R_L + C_3 C_L L_L R_1 R_3 R_L + C_L L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_1 R_L g_m + C_L L_1 L_L R_3 + C_L L_1 L_L\right.}$$

**10.763 INVALID-ORDER-763** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_L g_m s}{R_1 + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_3 L_1 R_1 R_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_3 + C_3 L_1 R_L\right) + s \left(C_3 R_1 R_3 + C_3 R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.764 INVALID-ORDER-764** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 R_1 R_3 g_m s + L_1 R_1 g_m}{C_1 C_3 C_L L_1 R_1 R_3 s^3 + C_3 R_1 + C_L R_1 + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_3 g_m + C_3 C_L L_1 R_3\right) + s \left(C_3 C_L R_1 R_3 + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.765 INVALID-ORDER-765** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 R_L g_m s}{C_1 C_3 C_L L_1 R_1 R_3 R_L s^4 + R_1 + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_3 L_1 R_1 R_L + C_1 C_L L_1 R_1 R_L + C_3 C_L L_1 R_1 R_3 R_L g_m + C_3 C_L L_1 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 C_L R_1 R_3 R_L + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_3 + C_3 L_1 R_L + C_L L_1 R_1 R_L g_m + C_L L_1 R_L\right) + s \left(C_3 R_1 R_3 + C_3 R_1 R_L\right.}$$

**10.766 INVALID-ORDER-766** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 R_1 R_3 R_L g_m s^2 + L_1 R_1 g_m + s \left(C_3 L_1 R_1 R_3 g_m + C_L L_1 R_1 R_L g_m\right)}{C_3 R_1 + C_L R_1 + s^3 \left(C_1 C_3 C_L L_1 R_1 R_3 + C_1 C_3 C_L L_1 R_1 R_L\right) + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_3 g_m + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_3 + C_3 C_L L_1 R_L\right) + s \left(C_3 C_L R_1 R_3 + C_3 C_L R_1 R_L + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.767 INVALID-ORDER-767** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_1 R_3 g_m s^3 + C_3 L_1 R_1 R_3 g_m s + C_L L_1 L_L R_1 g_m s^2 + L_1 R_1 g_m}{C_1 C_3 C_L L_1 L_L R_1 s^4 + C_3 R_1 + C_L R_1 + s^3 \left(C_1 C_3 C_L L_1 R_1 R_3 + C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_3 g_m + C_3 C_L L_1 R_3 + C_3 C_L L_L R_1\right) + s \left(C_3 C_L R_1 R_3 + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.768 INVALID-ORDER-768** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_3 L_1 L_L R_1 R_3 g_m s^3 + L_1 L_L R_1 g_m s^2}{C_1 C_3 C_L L_1 L_L R_1 R_3 s^5 + R_1 + s^4 \left(C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_3\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_3 C_L L_L R_1 R_3 + C_3 L_1 L_L R_1 g_m + C_3 L_1 L_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_3 + C_3 L_L R_1 + C_L L_1\right.}$$

**10.769 INVALID-ORDER-769** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_1 R_3 g_m s^3 + L_1 R_1 g_m + s^2 \left(C_3 C_L L_1 R_1 R_3 R_L g_m + C_L L_1 L_L R_1 g_m\right) + s \left(C_3 L_1 R_1 R_3 g_m + C_L L_1 R_1 R_L g_m\right)}{C_1 C_3 C_L L_1 L_L R_1 s^4 + C_3 R_1 + C_L R_1 + s^3 \left(C_1 C_3 C_L L_1 R_1 R_3 + C_1 C_3 C_L L_1 R_1 R_L + C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2 \left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_3 g_m + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_3 + C_3 C_L L_1 R_L + C_3 C_L L_L R_1\right) + s \left(C_3 C_L R_1 R_3 + C_3 C_L R_1 R_L\right.}$$

**10.770 INVALID-ORDER-770** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 L_L R_1 R_L g_m s^2}{C_1 C_3 C_L L_1 L_L R_1 R_3 R_L s^5 + R_1 R_L + s^4 \left(C_1 C_3 L_1 L_L R_1 R_3 + C_1 C_3 L_1 L_L R_1 R_L + C_1 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_3 C_L L_1 L_L R_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_1 L_1 L_L R_1 + C_3 C_L L_L R_1 R_3 R_L + C_3 L_1 L_L R_1 R_3 g_m + C_3 L_1 L_L R_1 R_L g_m + C_3 L_1 L_L R_3 + C_3 L_1\right.}$$

**10.771 INVALID-ORDER-771** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_1 R_3 R_L g_m s^4 + L_1 R_1 R_L g_m s + s^3 \left(C_3 L_1 L_L R_1 R_3 g_m + C_L L_1 L_L R_1 R_L g_m\right) + s^2 \left(C_3 L_1 R_1 R_3 R_\right.}{R_1 + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_L R_1 R_L\right) + s^4 \left(C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_3 + C_3 C_L L_1 L_L R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_3 L_1 R_1 R_L + C_3 C_L L_L R_1 R_3 + C_3 C_L L_L R_1 R_L + C_3 L_1 L_L R_1 g_m +\right.}$$

**10.772 INVALID-ORDER-772** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_L R_1 R_3 R_L g_m s^4 + C_3 L_1 R_1 R_3 R_L g_m}{R_1 + s^5\left(C_1 C_3 C_L L_1 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_L R_1 R_L\right) + s^4\left(C_1 C_3 C_L L_1 R_1 R_3 R_L + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_3 + C_3 C_L L_1 L_L R_L\right) + s^3\left(C_1 C_3 L_1 R_1 R_3 + C_1 C_3 L_1 R_1 R_L + C_1 C_L L_1 R_1 R_L + C_3 C_L L_1 R_1 R_3 R_L g_m + C_3 C\right.}$$

**10.773 INVALID-ORDER-773** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 R_L g_m s^3 + L_1 R_1 R_L g_m s}{C_1 C_3 L_1 L_3 R_1 s^4 + R_1 + s^3\left(C_1 C_3 L_1 R_1 R_L + C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3\right) + s^2\left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L + C_3 L_3 R_1\right) + s\left(C_3 R_1 R_L + L_1 R_1 g_m + L_1\right)}$$

**10.774 INVALID-ORDER-774** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 g_m s^2 + L_1 R_1 g_m}{C_1 C_3 C_L L_1 L_3 R_1 s^4 + C_3 R_1 + C_L R_1 + s^3\left(C_3 C_L L_1 L_3 R_1 g_m + C_3 C_L L_1 L_3\right) + s^2\left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_3 R_1\right) + s\left(C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.775 INVALID-ORDER-775** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 R_L g_m s^3 + L_1 R_1 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + R_1 + s^4\left(C_1 C_3 L_1 L_3 R_1 + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_L\right) + s^3\left(C_1 C_3 L_1 R_1 R_L + C_1 C_L L_1 R_1 R_L + C_3 C_L L_3 R_1 R_L + C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3\right) + s^2\left(C_1 L_1 R_1 + C_3 L_1 R_1 R_L g_m + C_3 L_1 R_L + C_3 L_3 R_1 + C_L L_1 R_1 R_L g_m + C_L L_1 R_L\right) + s\left(C\right.}$$

**10.776 INVALID-ORDER-776** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_1 R_L g_m s^3 + C_3 L_1 L_3 R_1 g_m s^2 + C_L L_1 R_1 R_L g_m s + L_1 R_1 g_m}{C_1 C_3 C_L L_1 L_3 R_1 s^4 + C_3 R_1 + C_L R_1 + s^3\left(C_1 C_3 C_L L_1 R_1 R_L + C_3 C_L L_1 L_3 R_1 g_m + C_3 C_L L_1 L_3\right) + s^2\left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_L + C_3 C_L L_3 R_1\right) + s\left(C_3 C_L R_1 R_L + C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.777 INVALID-ORDER-777** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_1 g_m s^4 + L_1 R_1 g_m + s^2\left(C_3 L_1 L_3 R_1 g_m + C_L L_1 L_L R_1 g_m\right)}{C_3 R_1 + C_L R_1 + s^4\left(C_1 C_3 C_L L_1 L_3 R_1 + C_1 C_3 C_L L_1 L_L R_1\right) + s^3\left(C_3 C_L L_1 L_3 R_1 g_m + C_3 C_L L_1 L_3 + C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2\left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_3 R_1 + C_3 C_L L_L R_1\right) + s\left(C_3 L_1 R_1 g_m + C_3 L_1 + C_L L_1 R_1 g_m + C_L L_1\right)}$$

**10.778 INVALID-ORDER-778** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_1 g_m s^4 + L_1 L_L R_1 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5\left(C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4\left(C_1 C_3 L_1 L_3 R_1 + C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_3 L_L R_1\right) + s^3\left(C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3 + C_3 L_1 L_L R_1 g_m + C_3 L_1 L_L + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2\left(C_1 L_1 R_1 + C_3 L_3 R_1 + C_3\right.}$$

**10.779 INVALID-ORDER-779** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_1 g_m s^4 + C_3 C_L L_1 L_3 R_1 R_L g_m s^3 + C_L L_1 R_1 R_L g_m s + L_1 R_1 g_m + s^2\left(C_3 L_1 L_3 R_1 g_m + C_L L_1 L_L R_1 g_m\right)}{C_3 R_1 + C_L R_1 + s^4\left(C_1 C_3 C_L L_1 L_3 R_1 + C_1 C_3 C_L L_1 L_L R_1\right) + s^3\left(C_1 C_3 C_L L_1 R_1 R_L + C_3 C_L L_1 L_3 R_1 g_m + C_3 C_L L_1 L_3 + C_3 C_L L_1 L_L R_1 g_m + C_3 C_L L_1 L_L\right) + s^2\left(C_1 C_3 L_1 R_1 + C_1 C_L L_1 R_1 + C_3 C_L L_1 R_1 R_L g_m + C_3 C_L L_1 R_L + C_3 C_L L_3 R_1 + C_3 C_L L_L R_1\right) + s\left(C_3 C_L R_1 R_L\right.}$$

**10.780 INVALID-ORDER-780** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_1 R_L g_m s^4 + L_1 L_L R_1 R_L g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + R_1 R_L + s^5\left(C_1 C_3 L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_3 C_L L_1 L_3 L_L R_L\right) + s^4\left(C_1 C_3 L_1 L_3 R_1 R_L + C_1 C_3 L_1 L_L R_1 R_L + C_1 C_L L_1 L_L R_1 R_L + C_3 C_L L_3 L_L R_1 R_L + C_3 L_1 L_3 L_L R_1 g_m + C_3 L_1 L_3 L_L\right) + s^3\left(C_1 L_1 L_L R_1 + C_3 L_1 L_3 R_1 R_L g_m + C\right.}$$

**10.781 INVALID-ORDER-781** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_1 R_L g_m s^5 + C_3 L_1 L_3 L_L R_1 g_m s^4 + L_1 L_L R_1 g_m s^2 + L_1 R_1 R_L g_m s + s^3\left(C_3 L_1 L_3 R_1 R_L g_m +\right.}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5\left(C_1 C_3 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4\left(C_1 C_3 L_1 L_3 R_1 + C_1 C_3 L_1 L_L R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_1\right) + s^3\left(C_1 C_3 L_1 R_1 R_L + C_3 C_L L_L R_1 R_L + C_3 L_1 L_3 R_1 g_m -\right.}$$

**10.782 INVALID-ORDER-782** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_1 R_L g_m s^5 + L_1 R_1 R_L g_m s + s}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_L + C_1 C_3 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_L + C_3 C_L L_1 L_L R_1 R_L g_m + C_3 C_L L_1 L_L R_L + C_3 C_L L_3 L_L R_1\right) + s^3 \left(C_1 C$$

**10.783 INVALID-ORDER-783** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 L_3 R_1 R_L g_m s^2}{C_1 C_3 L_1 L_3 R_1 R_L s^4 + R_1 R_L + s^3 \left(C_1 L_1 L_3 R_1 + C_3 L_1 L_3 R_1 R_L g_m + C_3 L_1 L_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_L + C_3 L_3 R_1 R_L + L_1 L_3 R_1 g_m + L_1 L_3\right) + s \left(L_1 R_1 R_L g_m + L_1 R_L + L_3 R_1\right)}$$

**10.784 INVALID-ORDER-784** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 L_3 R_1 g_m s^2}{R_1 + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_3 R_1\right) + s^3 \left(C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3 + C_L L_1 L_3 R_1 g_m + C_L L_1 L_3\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_3 R_1 + C_L L_3 R_1\right) + s \left(L_1 R_1 g_m + L_1\right)}$$

**10.785 INVALID-ORDER-785** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{L_1 L_3 R_1 R_L g_m s^2}{R_1 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_L + C_1 C_L L_1 L_3 R_1 R_L\right) + s^3 \left(C_1 L_1 L_3 R_1 + C_3 L_1 L_3 R_1 R_L g_m + C_3 L_1 L_3 R_L + C_L L_1 L_3 R_1 R_L g_m + C_L L_1 L_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_L + C_3 L_3 R_1 R_L + C_L L_3 R_1 R_L + L_1 L_3 R_1 g_m + L_1 L_3\right) + s \left(L_1 R_1 R_L g_m + L_1 R_L + L_3 R_1\right)}$$

**10.786 INVALID-ORDER-786** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 R_1 R_L g_m s^3 + L_1 L_3 R_1 g_m s^2}{C_1 C_3 C_L L_1 L_3 R_1 R_L s^5 + R_1 + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_3 R_1 + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_L\right) + s^3 \left(C_1 C_L L_1 R_1 R_L + C_3 C_L L_3 R_1 R_L + C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3 + C_L L_1 L_3 R_1 g_m + C_L L_1 L_3\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_3 R_1 + C_L L_1 R_1 R_L g_m + C_L L_1 R_L + C_L L_3$$

**10.787 INVALID-ORDER-787** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_1 g_m s^4 + L_1 L_3 R_1 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_3 L_L R_1\right) + s^3 \left(C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3 + C_L L_1 L_3 R_1 g_m + C_L L_1 L_3 + C_L L_1 L_L R_1 g_m + C_L L_1 L_L\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_3 R_1 + C_1$$

**10.788 INVALID-ORDER-788** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_1 g_m s^2}{L_3 R_1 + L_L R_1 + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 + C_1 C_L L_1 L_3 L_L R_1\right) + s^3 \left(C_3 L_1 L_3 L_L R_1 g_m + C_3 L_1 L_3 L_L + C_L L_1 L_3 L_L R_1 g_m + C_L L_1 L_3 L_L\right) + s^2 \left(C_1 L_1 L_3 R_1 + C_1 L_1 L_L R_1 + C_3 L_3 L_L R_1 + C_L L_3 L_L R_1\right) + s \left(L_1 L_3 R_1 g_m + L_1 L_3 + L_1 L_L R_1 g_m + L_1 L_L\right)}$$

**10.789 INVALID-ORDER-789** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_1 g_m s^4 + C_L L_1 L_3 R_1 R_L g_m s^3 + L_1 L_3 R_1 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_L + C_3 C_L L_3 L_L R_1\right) + s^3 \left(C_1 C_L L_1 R_1 R_L + C_3 C_L L_3 R_1 R_L + C_3 L_1 L_3 R_1 g_m +$$

**10.790 INVALID-ORDER-790** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_1 R_L g_m s^2}{L_3 R_1 R_L + L_L R_1 R_L + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 R_L + C_1 C_L L_1 L_3 L_L R_1 R_L\right) + s^3 \left(C_1 L_1 L_3 L_L R_1 + C_3 L_1 L_3 L_L R_1 R_L g_m + C_3 L_1 L_3 L_L R_L + C_L L_1 L_3 L_L R_1 R_L g_m + C_L L_1 L_3 L_L R_L\right) + s^2 \left(C_1 L_1 L_3 R_1 R_L + C_1 L_1 L_L R_1 R_L + C_3 L_3 L_L R_1 R_L + C_L L_3 L_L R_1 R_L + L_1 L_3 R_1 g_m + L_1 L_3 R_1 g_m +$$

**10.791 INVALID-ORDER-791** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_1 R_L g_m s^4 + L_1 L_3 L_L}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L s^6 + R_1 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_1 + C_1 C_L L_1 L_3 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_3 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_L + C_1 C_L L_1 L_L R_1 R_L + C_3 C_L L_3 L_L R_1 R_L + C_3 L_1 L_3 L_L R_1 g_m + C_3 L_1 L_3 L_L + C_L L_1 L_3 L_L R_1 g_m + C_L L_1 L_3 L_L\right) + s^3 \left(C$$

**10.792 INVALID-ORDER-792** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_LL_1L_3L_LR_1R_Lg_ms^4 + L_1L_3R_1R_Lg_ms^2}{C_1C_3C_LL_1L_3L_LR_1R_Ls^6 + R_1R_L + s^5\left(C_1C_LL_1L_3L_LR_1 + C_3C_LL_1L_3L_LR_1R_Lg_m + C_3C_LL_1L_3L_LR_L\right) + s^4\left(C_1C_3L_1L_3R_1R_L + C_1C_LL_1L_3R_1R_L + C_1C_LL_1L_LR_1R_L + C_3C_LL_3L_LR_1R_L + C_LL_1L_3L_LR_1g_m + C_LL_1L_3L_L\right) + s^3\left(C_1L_1L_3R_1 + C_3L_1L_3R_1R_Lg_m + C\right.}$$

**10.793 INVALID-ORDER-793** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_1L_3R_1R_Lg_ms^3 + C_3L_1R_1R_3R_Lg_ms^2 + L_1R_1R_Lg_ms}{C_1C_3L_1L_3R_1s^4 + R_1 + s^3\left(C_1C_3L_1R_1R_3 + C_1C_3L_1R_1R_L + C_3L_1L_3R_1g_m + C_3L_1L_3\right) + s^2\left(C_1L_1R_1 + C_3L_1R_1R_3g_m + C_3L_1R_1R_Lg_m + C_3L_1R_3 + C_3L_1R_L + C_3L_3R_1\right) + s\left(C_3R_1R_3 + C_3R_1R_L + L_1R_1g_m + L_1\right)}$$

**10.794 INVALID-ORDER-794** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_1L_3R_1g_ms^2 + C_3L_1R_1R_3g_ms + L_1R_1g_m}{C_1C_3C_LL_1L_3R_1s^4 + C_3R_1 + C_LR_1 + s^3\left(C_1C_3C_LL_1R_1R_3 + C_3C_LL_1L_3R_1g_m + C_3C_LL_1L_3\right) + s^2\left(C_1C_3L_1R_1 + C_1C_LL_1R_1 + C_3C_LL_1R_1R_3g_m + C_3C_LL_1R_3 + C_3C_LL_3R_1\right) + s\left(C_3C_LR_1R_3 + C_3L_1R_1g_m + C_3L_1 + C_LL_1R_1g_m + C_LL_1\right)}$$

**10.795 INVALID-ORDER-795** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_1L_3R_1R_Lg_ms^3 + C_3L_1R_1R_3R_Lg_ms^2 + L_1R_1R_Lg_ms}{C_1C_3C_LL_1L_3R_1R_Ls^5 + R_1 + s^4\left(C_1C_3C_LL_1R_1R_3R_L + C_1C_3L_1L_3R_1 + C_3C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3 + C_1C_3L_1R_1R_L + C_1C_LL_1R_1R_L + C_3C_LL_1R_1R_3R_Lg_m + C_3C_LL_1R_3R_L + C_3C_LL_3R_1R_L + C_3L_1L_3R_1g_m + C_3L_1L_3\right) + s^2\left(C_1L_1\right.}$$

**10.796 INVALID-ORDER-796** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3R_1R_Lg_ms^3 + L_1R_1g_m + s^2\left(C_3C_LL_1R_1R_3R_Lg_m + C_3L_1L_3R_1g_m\right) + s\left(C_3L_1R_1R_3g_m + C_LL_1R_1R_Lg_m\right)}{C_1C_3C_LL_1L_3R_1s^4 + C_3R_1 + C_LR_1 + s^3\left(C_1C_3C_LL_1R_1R_3 + C_1C_3C_LL_1R_1R_L + C_3C_LL_1L_3R_1g_m + C_3C_LL_1L_3\right) + s^2\left(C_1C_3L_1R_1 + C_1C_LL_1R_1 + C_3C_LL_1R_1R_3g_m + C_3C_LL_1R_1R_Lg_m + C_3C_LL_1R_3 + C_3C_LL_1R_L + C_3C_LL_3R_1\right) + s\left(C_3C_LR_1R_3 + C_3C_LR_1R_L + \right.}$$

**10.797 INVALID-ORDER-797** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3L_LR_1R_Lg_ms^4 + C_3C_LL_1L_LR_1R_3g_ms^3 + C_3L_1R_1R_3g_ms + L_1R_1g_m + s^2\left(C_3L_1L_3R_1g_m + C_LL_1L_LR_1g_m\right)}{C_3R_1 + C_LR_1 + s^4\left(C_1C_3C_LL_1L_3R_1 + C_1C_3C_LL_1L_LR_1\right) + s^3\left(C_1C_3C_LL_1R_1R_3 + C_3C_LL_1L_3R_1g_m + C_3C_LL_1L_3 + C_3C_LL_1L_LR_1g_m + C_3C_LL_1L_L\right) + s^2\left(C_1C_3L_1R_1 + C_1C_LL_1R_1 + C_3C_LL_1R_1R_3g_m + C_3C_LL_1R_3 + C_3C_LL_3R_1 + C_3C_LL_LR_1\right) + s\left(C_3C_LR_1R_3 + \right.}$$

**10.798 INVALID-ORDER-798** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_1L_3L_LR_1g_ms^4 + C_3L_1L_LR_1R_3g_ms^3 + L_1L_LR_1g_ms^2}{C_1C_3C_LL_1L_3L_LR_1s^6 + R_1 + s^5\left(C_1C_3C_LL_1L_LR_1R_3 + C_3C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1 + C_1C_3L_1L_LR_1 + C_1C_LL_1L_LR_1 + C_3C_LL_1L_LR_1R_3g_m + C_3C_LL_1L_LR_3 + C_3C_LL_3L_LR_1\right) + s^3\left(C_1C_3L_1R_1R_3 + C_3C_LL_LR_1R_3 + C_3L_1L_3R_1g_m + \right.}$$

**10.799 INVALID-ORDER-799** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3L_LR_1g_ms^4 + L_1R_1g_m + s^3\left(C_3C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_LR_1R_3g_m\right) + s^2\left(C_3C_LL_1R_1R_3R_Lg_m + C_3L_1L_3R_1g_m + C_LL_1L_LR_1g_m\right) + s\left(C_3L_1R_1R_3g_m + \right.}{C_3R_1 + C_LR_1 + s^4\left(C_1C_3C_LL_1L_3R_1 + C_1C_3C_LL_1L_LR_1\right) + s^3\left(C_1C_3C_LL_1R_1R_3 + C_1C_3C_LL_1R_1R_L + C_3C_LL_1L_3R_1g_m + C_3C_LL_1L_3 + C_3C_LL_1L_LR_1g_m + C_3C_LL_1L_L\right) + s^2\left(C_1C_3L_1R_1 + C_1C_LL_1R_1 + C_3C_LL_1R_1R_3g_m + C_3C_LL_1R_1R_Lg_m + C_3C_LL_1R_3 + C_3C\right.}$$

**10.800 INVALID-ORDER-800** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{}{C_1C_3C_LL_1L_3L_LR_1R_Ls^6 + R_1R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_L + C_1C_3L_1L_3L_LR_1 + C_3C_LL_1L_3L_LR_1R_Lg_m + C_3C_LL_1L_3L_LR_L\right) + s^4\left(C_1C_3L_1L_3R_1R_L + C_1C_3L_1L_LR_1R_3 + C_1C_3L_1L_LR_1R_L + C_1C_LL_1L_LR_1R_L + C_3C_LL_1L_LR_1R_3R_Lg_m + C_3C_LL_1L_LR_3R_L + C\right.}$$

**10.801 INVALID-ORDER-801** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ L_3s + R_3 + \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3C_LL_1L_3L_LR_1R_Lg_ms^5 + L_1R_1R_Lg_ms + s^4\left(C_3C_LL_1L_LR_1R_3R_Lg_m + \right.}{C_1C_3C_LL_1L_3L_LR_1s^6 + R_1 + s^5\left(C_1C_3C_LL_1L_LR_1R_3 + C_1C_3C_LL_1L_LR_1R_L + C_3C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1 + C_1C_3L_1L_LR_1 + C_1C_LL_1L_LR_1 + C_3C_LL_1L_LR_1R_3g_m + C_3C_LL_1L_LR_1R_Lg_m + C_3C_LL_1L_LR_3 + C_3C_LL_1L_LR_L + C_3C_LL_3\right.}$$

**10.802 INVALID-ORDER-802** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_L + C_1 C_3 C_L L_1 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_L + C_3 C_L L_1 L_L R_1 R_3 g_m\right.}$$

**10.803 INVALID-ORDER-803** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{L_1 L_3 R_1 R_3 R_L g_m s^2}{C_1 C_3 L_1 L_3 R_1 R_3 R_L s^4 + R_1 R_3 R_L + s^3 \left(C_1 L_1 L_3 R_1 R_3 + C_1 L_1 L_3 R_1 R_L + C_3 L_1 L_3 R_1 R_3 R_L g_m + C_3 L_1 L_3 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L + C_3 L_3 R_1 R_3 R_L + L_1 L_3 R_1 R_3 g_m + L_1 L_3 R_1 R_L g_m + L_1 L_3 R_3 + L_1 L_3 R_L\right) + s \left(L_1 R_1 R_3 R_L g_m + L_1 R_3 R_L + L_3 R_1 R_3 + L_3 R_1 R_L\right)}$$

**10.804 INVALID-ORDER-804** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{L_1 L_3 R_1 R_3 g_m s^2}{R_1 R_3 + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_3\right) + s^3 \left(C_1 L_1 L_3 R_1 + C_3 L_1 L_3 R_1 R_3 g_m + C_3 L_1 L_3 R_3 + C_L L_1 L_3 R_1 R_3 g_m + C_L L_1 L_3 R_3\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_3 L_3 R_1 R_3 + C_L L_3 R_1 R_3 + L_1 L_3 R_1 g_m + L_1 L_3\right) + s \left(L_1 R_1 R_3 g_m + L_1 R_3 + L_3 R_1\right)}$$

**10.805 INVALID-ORDER-805** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1}\right)$

$$H(s) = \frac{L_1 L_3 R_1 R_3 R_L g_m s^2}{R_1 R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L + C_1 C_L L_1 L_3 R_1 R_3 R_L\right) + s^3 \left(C_1 L_1 L_3 R_1 R_3 + C_1 L_1 L_3 R_1 R_L + C_3 L_1 L_3 R_1 R_3 R_L g_m + C_3 L_1 L_3 R_3 R_L + C_L L_1 L_3 R_1 R_3 R_L g_m + C_L L_1 L_3 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L + C_3 L_3 R_1 R_3 R_L + C_L L_3 R_1 R_3 R_L + L_1 L_3 R_1 R_3 g_m + L_1 L_3 R_1 R_L g\right.}$$

**10.806 INVALID-ORDER-806** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 R_1 R_3 R_L g_m s^3 + L_1 L_3 R_1 R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + R_1 R_3 + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_L + C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_3 C_L L_1 L_3 R_3 R_L\right) + s^3 \left(C_1 C_L L_1 R_1 R_3 R_L + C_1 L_1 L_3 R_1 + C_3 C_L L_3 R_1 R_3 R_L + C_3 L_1 L_3 R_1 R_3 g_m + C_3 L_1 L_3 R_3 + C_L L_1 L_3 R_1 R_3 g_m + C_L L_1 L\right.}$$

**10.807 INVALID-ORDER-807** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_L L_1 L_3 L_L R_1 R_3 g_m s^4 + L_1 L_3 R_1 R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + R_1 R_3 + s^5 \left(C_1 C_L L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_3\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_L R_1 R_3 + C_3 C_L L_3 L_L R_1 R_3 + C_L L_1 L_3 L_L R_1 g_m + C_L L_1 L_3 L_L\right) + s^3 \left(C_1 L_1 L_3 R_1 + C_3 L_1 L_3 R_1 R_3 g_m + C_3\right.}$$

**10.808 INVALID-ORDER-808** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_1 R_3 g_m s^2}{L_3 R_1 R_3 + L_L R_1 R_3 + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 + C_1 C_L L_1 L_3 L_L R_1 R_3\right) + s^3 \left(C_1 L_1 L_3 L_L R_1 + C_3 L_1 L_3 L_L R_1 R_3 g_m + C_3 L_1 L_3 L_L R_3 + C_L L_1 L_3 L_L R_1 R_3 g_m + C_L L_1 L_3 L_L R_3\right) + s^2 \left(C_1 L_1 L_3 R_1 R_3 + C_1 L_1 L_L R_1 R_3 + C_3 L_3 L_L R_1 R_3 + C_L L_3 L_L R_1 R_3 + L_1 L_3 L_L R_1 g_m + L_1\right.}$$

**10.809 INVALID-ORDER-809** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + R_1 R_3 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L + C_1 C_L L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_3\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_3 + C_1 C_L L_1 L_3 R_1 R_L + C_1 C_L L_1 L_L R_1 R_3 + C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_3 C_L L_1 L_3 R_3 R_L + C_3 C\right.}$$

**10.810 INVALID-ORDER-810** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L}\right)$

$$H(s) = \frac{L_1 L_3 L_L R_1 R_3 R_L g_m s^2}{L_3 R_1 R_3 R_L + L_L R_1 R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L\right) + s^3 \left(C_1 L_1 L_3 L_L R_1 R_3 + C_1 L_1 L_3 L_L R_1 R_L + C_3 L_1 L_3 L_L R_1 R_3 R_L g_m + C_3 L_1 L_3 L_L R_3 R_L + C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_L L_1 L_3 L_L R_3 R_L\right) + s^2 \left(C_1 L_1 L_3 R_1 R_3 R_L + C_1 L_1 L_L R_1 R_3 R_L +\right.}$$

**10.811 INVALID-ORDER-811** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2+L_1 s+R_1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + R_1 R_3 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 + C_1 C_L L_1 L_3 L_L R_1 R_3 + C_1 C_L L_1 L_3 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_3 C_L L_1 L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L + C_1 C_L L_1 L_L R_1 R_3 R_L + C_1 L_1 L_3 L_L R_1 + C_3 C_L L_3 L_L R_1 R_3 R_L + C_3 L_1 L_3\right.}$$

**10.812 INVALID-ORDER-812** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3R_Ls^6 + R_1R_3R_L + s^5\left(C_1C_LL_1L_3L_LR_1R_3 + C_1C_LL_1L_3L_LR_1R_L + C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_3C_LL_1L_3L_LR_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3R_L + C_1C_LL_1L_3R_1R_3R_L + C_1C_LL_1L_LR_1R_3R_L + C_3C_LL_3L_LR_1R_3R_L + C_LL_1L_3L_LR_1R_3g_m + C\right.}{\left.}$$

**10.813 INVALID-ORDER-813** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3L_1L_3R_1R_3R_Lg_ms^3 + L_1L_3R_1R_Lg_ms^2 + L_1R_1R_3R_Lg_ms}{R_1R_3 + R_1R_L + s^4\left(C_1C_3L_1L_3R_1R_3 + C_1C_3L_1L_3R_1R_L\right) + s^3\left(C_1L_1L_3R_1 + C_3L_1L_3R_1R_3g_m + C_3L_1L_3R_1R_Lg_m + C_3L_1L_3R_3 + C_3L_1L_3R_L\right) + s^2\left(C_1L_1R_1R_3 + C_1L_1R_1R_L + C_3L_3R_1R_3 + C_3L_3R_1R_L + L_1L_3R_1g_m + L_1L_3\right) + s\left(L_1R_1R_3g_m + L_1R_1R_Lg_m + L_1R\right.}$$

**10.814 INVALID-ORDER-814** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3L_1L_3R_1R_3g_ms^3 + L_1L_3R_1g_ms^2 + L_1R_1R_3g_ms}{C_1C_3C_LL_1L_3R_1R_3s^5 + R_1 + s^4\left(C_1C_3L_1L_3R_1 + C_1C_LL_1L_3R_1 + C_3C_LL_1L_3R_1R_3g_m + C_3C_LL_1L_3R_3\right) + s^3\left(C_1C_LL_1R_1R_3 + C_3C_LL_3R_1R_3 + C_3L_1L_3R_1g_m + C_3L_1L_3 + C_LL_1L_3R_1g_m + C_LL_1L_3\right) + s^2\left(C_1L_1R_1 + C_3L_3R_1 + C_LL_1R_1R_3g_m + C_LL_1R_3 + C_LL_3R\right.}$$

**10.815 INVALID-ORDER-815** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_3L_1L_3R_1R_3R_Lg_ms^3 + L_1L_3R_1R_{\left.}}{C_1C_3C_LL_1L_3R_1R_3R_Ls^5 + R_1R_3 + R_1R_L + s^4\left(C_1C_3L_1L_3R_1R_3 + C_1C_3L_1L_3R_1R_L + C_1C_LL_1L_3R_1R_L + C_3C_LL_1L_3R_1R_3R_Lg_m + C_3C_LL_1L_3R_3R_L\right) + s^3\left(C_1C_LL_1R_1R_3R_L + C_1L_1L_3R_1 + C_3C_LL_3R_1R_3R_L + C_3L_1L_3R_1R_3g_m + C_3L_1L_3R_1R_Lg_m + C_3L_1L_3R_3 + \right.}$$

**10.816 INVALID-ORDER-816** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3R_1R_3R_Lg_ms^4 + L_1R_1R_3g_ms + s^3\left(C_3L_1L_3R_1R_3g_m + C_LL_1L_3R_1R_Lg\right) + s^2\left(C_LL_1R_1R_3R_Lg\right.}{R_1 + s^5\left(C_1C_3C_LL_1L_3R_1R_3 + C_1C_3C_LL_1L_3R_1R_L\right) + s^4\left(C_1C_3L_1L_3R_1 + C_1C_LL_1L_3R_1 + C_3C_LL_1L_3R_1R_3g_m + C_3C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_3R_3 + C_3C_LL_1L_3R_L\right) + s^3\left(C_1C_LL_1R_1R_3 + C_1C_LL_1R_1R_L + C_3C_LL_3R_1R_3 + C_3C_LL_3R_1R_L + C_3L_1L_3R_1g_m + C_3\right.}$$

**10.817 INVALID-ORDER-817** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3L_LR_1R_3g_ms^5 + C_LL_1L_3L_LR_1g_ms^4 + L_1L_3R_1g_ms^2 + L_1R_1R_3g_ms + s^3\left(C_3L_1L_3R_1R_3g_m + C\right.}{C_1C_3C_LL_1L_3L_LR_1s^6 + R_1 + s^5\left(C_1C_3C_LL_1L_3R_1R_3 + C_3C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1 + C_1C_LL_1L_3R_1 + C_1C_LL_1L_LR_1 + C_3C_LL_1L_3R_1R_3g_m + C_3C_LL_1L_3R_3 + C_3C_LL_3L_LR_1\right) + s^3\left(C_1C_LL_1R_1R_3 + C_3C_LL_3R_1R_3 + C_3L_1L_3R_1g_m + C\right.}$$

**10.818 INVALID-ORDER-818** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_3L_1L_3L_LR_1R_3g_ms^4 + L_1L_3L_LR_1}{C_1C_3C_LL_1L_3L_LR_1R_3s^6 + R_1R_3 + s^5\left(C_1C_3L_1L_3L_LR_1 + C_1C_LL_1L_3L_LR_1 + C_3C_LL_1L_3L_LR_1R_3g_m + C_3C_LL_1L_3L_LR_3\right) + s^4\left(C_1C_3L_1L_3R_1R_3 + C_1C_LL_1L_LR_1R_3 + C_3C_LL_3L_LR_1R_3 + C_3L_1L_3L_LR_1g_m + C_3L_1L_3L_L + C_LL_1L_3L_LR_1g_m + C_LL_1L_3L_L\right) + s^3\left(C_1\right.}$$

**10.819 INVALID-ORDER-819** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_3C_LL_1L_3L_LR_1R_3g_ms^5 + L_1R_1R_3g_ms + s^4\left(C_3C_LL_1L_3R_1R_3R_Lg_m + \right.}{C_1C_3C_LL_1L_3L_LR_1s^6 + R_1 + s^5\left(C_1C_3C_LL_1L_3R_1R_3 + C_1C_3C_LL_1L_3R_1R_L + C_3C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1 + C_1C_LL_1L_3R_1 + C_1C_LL_1L_LR_1 + C_3C_LL_1L_3R_1R_3g_m + C_3C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_3R_3 + C_3C_LL_1L_3R_L + C_3C_LL_3L_L\right.}$$

**10.820 INVALID-ORDER-820** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3R_Ls^6 + R_1R_3R_L + s^5\left(C_1C_3L_1L_3L_LR_1R_3 + C_1C_3L_1L_3L_LR_1R_L + C_1C_LL_1L_3L_LR_1R_L + C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_3C_LL_1L_3L_LR_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3R_L + C_1C_LL_1L_LR_1R_3R_L + C_1L_1L_3L_LR_1 + C_3C_LL_3L_LR_1R_3R_L + C_3L_1L_3\right.}$$

**10.821 INVALID-ORDER-821** $Z(s) = \left(\frac{L_1R_1s}{C_1L_1R_1s^2+L_1s+R_1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{R_1R_3 + R_1R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3 + C_1C_3C_LL_1L_3L_LR_1R_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1 + C_1C_LL_1L_3L_LR_1 + C_3C_LL_1L_3L_LR_1R_3g_m + C_3C_LL_1L_3L_LR_1R_Lg_m + C_3C_LL_1L_3L_LR_3 + C_3C_LL_1L_3L_LR_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3 + C_1C_3L_1L_3R_1R_L + C_1C_LL_1L_LR\right.}$$

**10.822 INVALID-ORDER-822** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{C_3 L_3 R_3 s^2 + L_3 s + R_3}{C_3 L_3 s^2 + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2 + 1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{}{R_1 R_3 + R_1 R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L + C_1 C_L L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_3 C_L L_1 L_3 L_L R_3 + C_3 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_3 R_1 R_L + C_1 C_L L\right.}$$

**10.823 INVALID-ORDER-823** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 R_3 R_L g_m s^3 + L_1 R_1 R_3 R_L g_m s}{R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_3 R_1 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_3 L_1 L_3 R_1 R_3 g_m + C_3 L_1 L_3 R_1 R_L g_m + C_3 L_1 L_3 R_3 + C_3 L_1 L_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 + C_1 L_1 R_1 R_L + C_3 L_1 R_1 R_3 R_L g_m + C_3 L_1 R_3 R_L + C_3 L_3 R_1 R_3 + C_3 L_3 R_1 R_L\right) + s \left(C_3 R_1 R_3 R_L +\right.}$$

**10.824 INVALID-ORDER-824** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 R_3 g_m s^3 + L_1 R_1 R_3 g_m s}{C_1 C_3 C_L L_1 L_3 R_1 R_3 s^5 + R_1 + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_3 C_L L_1 L_3 R_1 R_3 g_m + C_3 C_L L_1 L_3 R_3\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3 + C_3 C_L L_3 R_1 R_3 + C_3 L_1 L_3 R_1 g_m + C_3 L_1 L_3\right) + s^2 \left(C_1 L_1 R_1 + C_3 L_1 R_1 R_3 g_m + C_3 L_1 R_3 + C_3 L_3 R_1 + C_L L_1 R_1 R_3 g_m + C_L L_1 R_3\right) + s \left(C_3 R_1\right.}$$

**10.825 INVALID-ORDER-825** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 R_1 R_3 R_L g_m s^3 + L_1 R_1 R_3 R_L g_m s}{C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L s^5 + R_1 R_3 + R_1 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_3 R_1 R_L + C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_3 C_L L_1 L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 R_L + C_1 C_L L_1 R_1 R_3 R_L + C_3 C_L L_3 R_1 R_3 R_L + C_3 L_1 L_3 R_1 R_3 g_m + C_3 L_1 L_3 R_1 R_L g_m + C_3 L_1 L_3 R_3 + C_3 L_1 L_3 R_L\right)}$$

**10.826 INVALID-ORDER-826** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 R_1 R_3 R_L g_m s^4 + C_3 L_1 L_3 R_1 R_3 g_m s^3}{R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 + C_1 C_3 C_L L_1 L_3 R_1 R_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 + C_3 C_L L_1 L_3 R_1 R_3 g_m + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_3 + C_3 C_L L_1 L_3 R_L\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_3 + C_1 C_L L_1 R_1 R_L + C_3 C_L L_1 R_1 R_3 R_L g_m + C_3 C_L L\right.}$$

**10.827 INVALID-ORDER-827** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_3 C_L L_1 L_3 L_L R_1 R_3 g_m s^5 + L_1 R_1 R_3 g_m s + s^3 \left(}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 + C_1 C_3 C_L L_1 L_L R_1 R_3 + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_3 R_1 R_3 g_m + C_3 C_L L_1 L_3 R_3 + C_3 C_L L_1 L_L R_1 R_3 g_m + C_3 C_L L_1 L_L R_3 + C_3 C_L L_3 L_L R_1\right) + s^3 \left(C_1 C_3 L\right.}$$

**10.828 INVALID-ORDER-828** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_3 L_1 L_3 L_L R_1 R_3 g_m s^4 + L_1 L_L R_1 R_3 g_m s^2}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 s^6 + R_1 R_3 + s^5 \left(C_1 C_3 L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_3\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_L R_1 R_3 + C_1 C_L L_1 L_L R_1 R_3 + C_3 C_L L_3 L_L R_1 R_3 + C_3 L_1 L_3 L_L R_1 g_m + C_3 L_1 L_3 L_L\right) + s^3 \left(C_1 L_1 L_L R_1 + C_3 L_1 L_3 R_1 R_3 g_m + C_3 L\right.}$$

**10.829 INVALID-ORDER-829** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_1 s^6 + R_1 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 + C_1 C_3 C_L L_1 L_3 R_1 R_L + C_1 C_3 C_L L_1 L_L R_1 R_3 + C_3 C_L L_1 L_3 L_L R_1 g_m + C_3 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 + C_1 C_L L_1 L_L R_1 + C_3 C_L L_1 L_3 R_1 R_3 g_m + C_3 C_L L_1 L_3 R_1 R_L g_m + C_3 C_L L_1 L_3 R_3 +\right.}$$

**10.830 INVALID-ORDER-830** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{}{C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L s^6 + R_1 R_3 R_L + s^5 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 + C_1 C_3 L_1 L_3 L_L R_1 R_L + C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_3 C_L L_1 L_3 L_L R_3 R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L + C_1 C_3 L_1 L_L R_1 R_3 R_L + C_1 C_L L_1 L_L R_1 R_3 R_L + C_3 C_L L_3 L_L R_1 R_3 R_L + C_3 L_1 L_3 L_L R_1 R_3 g_m + C_3\right.}$$

**10.831 INVALID-ORDER-831** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2 + L_L s + R_L}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{}{R_1 R_3 + R_1 R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 R_L + C_1 C_3 L_1 L_3 L_L R_1 + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_3 C_L L_1 L_3 L_L R_3 + C_3 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_3 R_1 R_L + C_1 C_3 L\right.}$$

**10.832 INVALID-ORDER-832** $Z(s) = \left(\frac{L_1 R_1 s}{C_1 L_1 R_1 s^2 + L_1 s + R_1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2 + C_L R_L s + 1}\right)$

$$H(s) = \frac{}{R_1 R_3 + R_1 R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L + C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_3 C_L L_1 L_3 L_L R_3 + C_3 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 + C_1 C_3 L_1 L_3 R_1 R_L + C\right.}$$

**10.833 INVALID-ORDER-833** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 L_1 R_1 R_3 g_m s^2 + L_1 R_3 g_m s + R_1 R_3 g_m}{R_1 g_m + s^3 \left(C_1 C_L L_1 R_1 R_3 g_m + C_1 C_L L_1 R_3\right) + s^2 \left(C_1 L_1 R_1 g_m + C_1 L_1 + C_L L_1 R_3 g_m\right) + s \left(C_L R_1 R_3 g_m + C_L R_3 + L_1 g_m\right) + 1}$$

**10.834 INVALID-ORDER-834** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{C_1 L_1 R_1 R_3 R_L g_m s^2 + L_1 R_3 R_L g_m s + R_1 R_3 R_L g_m}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L + s^3 \left(C_1 C_L L_1 R_1 R_3 R_L g_m + C_1 C_L L_1 R_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_1 L_1 R_1 R_L g_m + C_1 L_1 R_3 + C_1 L_1 R_L + C_L L_1 R_3 R_L g_m\right) + s \left(C_L R_1 R_3 R_L g_m + C_L R_3 R_L + L_1 R_3 g_m + L_1 R_L g_m\right)}$$

**10.835 INVALID-ORDER-835** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 R_1 R_3 R_L g_m s^3 + R_1 R_3 g_m + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_L L_1 R_3 R_L g_m\right) + s \left(C_L R_1 R_3 R_L g_m + L_1 R_3 g_m\right)}{R_1 g_m + s^3 \left(C_1 C_L L_1 R_1 R_3 g_m + C_1 C_L L_1 R_1 R_L g_m + C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L\right) + s^2 \left(C_1 L_1 R_1 g_m + C_1 L_1 + C_L L_1 R_3 g_m + C_L L_1 R_L g_m\right) + s \left(C_L R_1 R_3 g_m + C_L R_1 R_L g_m + C_L R_3 + C_L R_L + L_1 g_m\right) + 1}$$

**10.836 INVALID-ORDER-836** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m s^4 + C_L L_1 L_L R_3 g_m s^3 + L_1 R_3 g_m s + R_1 R_3 g_m + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_L L_L R_1 R_3 g_m\right)}{R_1 g_m + s^4 \left(C_1 C_L L_1 L_L R_1 g_m + C_1 C_L L_1 L_L\right) + s^3 \left(C_1 C_L L_1 R_1 R_3 g_m + C_1 C_L L_1 R_3 + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_1 g_m + C_1 L_1 + C_L L_1 R_3 g_m + C_L L_L R_1 g_m + C_L L_L\right) + s \left(C_L R_1 R_3 g_m + C_L R_3 + L_1 g_m\right) + 1}$$

**10.837 INVALID-ORDER-837** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2 + 1}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_1 R_3 g_m s^3 + L_1 L_L R_3 g_m s^2 + L_L R_1 R_3 g_m s}{R_1 R_3 g_m + R_3 + s^4 \left(C_1 C_L L_1 L_L R_1 R_3 g_m + C_1 C_L L_1 L_L R_3\right) + s^3 \left(C_1 L_1 L_L R_1 g_m + C_1 L_1 L_L + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_1 L_1 R_3 + C_L L_L R_1 R_3 g_m + C_L L_L R_3 + L_1 L_L g_m\right) + s \left(L_1 R_3 g_m + L_L R_1 g_m + L_L\right)}$$

**10.838 INVALID-ORDER-838** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_L L_1 L_L R_1 R_3 g_m s^4 + R_1 R_3 g_m + s^3 \left(C_1 C_L L_1 R_1 R_3 R_L g_m + C_L L_1 L_L R_3 g_m\right) + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_L L_1 R_3 R_L g_m + C_L L_L R_1 R_3 g_m\right) + s \left(C_L R_1 R_3 R_L g_m + L_1 R_3 g_m\right)}{R_1 g_m + s^4 \left(C_1 C_L L_1 L_L R_1 g_m + C_1 C_L L_1 L_L\right) + s^3 \left(C_1 C_L L_1 R_1 R_3 g_m + C_1 C_L L_1 R_1 R_L g_m + C_1 C_L L_1 R_3 + C_1 C_L L_1 R_L + C_L L_1 L_L g_m\right) + s^2 \left(C_1 L_1 R_1 g_m + C_1 L_1 + C_L L_1 R_3 g_m + C_L L_1 R_L g_m + C_L L_L R_1 g_m + C_L L_L\right) + s \left(C_L R_1 R_3 g_m + C_L R_1 R_L g_m + C_L R_3 + C_L R_L +\right.}$$

**10.839 INVALID-ORDER-839** $Z(s) = \left(\frac{C_1 L_1 R_1 s^2 + L_1 s + R_1}{C_1 L_1 s^2 + 1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2 + L_L s + R_L}\right)$

$$H(s) = \frac{C_1 L_1 L_L R_1 R_3 R_L g_m s^3 + L_1 L_L R_3 R_L g_m s^2 + L_L R_1 R_3 R_L g_m s}{R_1 R_3 R_L g_m + R_3 R_L + s^4 \left(C_1 C_L L_1 L_L R_1 R_3 R_L g_m + C_1 C_L L_1 L_L R_3 R_L\right) + s^3 \left(C_1 L_1 L_L R_1 R_3 g_m + C_1 L_1 L_L R_1 R_L g_m + C_1 L_1 L_L R_3 + C_1 L_1 L_L R_L + C_L L_1 L_L R_3 R_L g_m\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L g_m + C_1 L_1 R_3 R_L + C_L L_L R_1 R_3 R_L g_m + C_L L_L R_3 R_L + L_1 L_L R_3 g_m + L_1 L_L R_L\right.}$$

**10.840 INVALID-ORDER-840** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^3\left(C_1L_1L_LR_1R_3g_m + C_LL_1L_LR_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m + L_1L_LR_3g_m\right) + s\left(L_1R_3R_Lg_m + L_LR_1R}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1L_1L_LR_1g_m + C_1L_1L_L + C_LL_1L_LR_3g_m + C_LL_1L_LR_Lg_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_LL_LR_1R_3g_m -}$$

**10.841 INVALID-ORDER-841** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4 + C_LL_1L_LR_3R_Lg_ms^3 + L_1R_3R_Lg_ms + R_1R_3R_Lg_m + s^2\left(C_1L_1R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L + C_LL_1L_LR_3g_m + C_LL_1L_LR_Lg_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_L}$$

**10.842 INVALID-ORDER-842** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_Lg_ms^2 + L_1R_Lg_ms + R_1R_Lg_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_Lg_m\right) + s\left(C_3R_1R_Lg_m + C_3R_L + L_1g_m\right) + 1}$$

**10.843 INVALID-ORDER-843** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1R_1g_ms^2 + L_1g_ms + R_1g_m}{s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1\right) + s^2\left(C_3L_1g_m + C_LL_1g_m\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.844 INVALID-ORDER-844** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1R_1R_Lg_ms^2 + L_1R_Lg_ms + R_1R_Lg_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_Lg_m + C_LL_1R_Lg_m\right) + s\left(C_3R_1R_Lg_m + C_3R_L + C_LR_1R_Lg_m + C_LR_L + L_1g_m\right) + 1}$$

**10.845 INVALID-ORDER-845** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1R_1R_Lg_ms^3 + R_1g_m + s^2\left(C_1L_1R_1g_m + C_LL_1R_Lg_m\right) + s\left(C_LR_1R_Lg_m + L_1g_m\right)}{s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_1R_L\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_Lg_m\right) + s^2\left(C_3C_LR_1R_Lg_m + C_3C_LR_L + C_3L_1g_m + C_LL_1g_m\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.846 INVALID-ORDER-846** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1g_ms^4 + C_LL_1L_Lg_ms^3 + L_1g_ms + R_1g_m + s^2\left(C_1L_1R_1g_m + C_LL_LR_1g_m\right)}{C_3C_LL_1L_Lg_ms^4 + s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_3L_1g_m + C_LL_1g_m\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.847 INVALID-ORDER-847** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_1g_ms^3 + L_1L_Lg_ms^2 + L_LR_1g_ms}{L_1g_ms + R_1g_m + s^4\left(C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_3L_1L_Lg_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + 1}$$

**10.848 INVALID-ORDER-848** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1g_ms^4 + R_1g_m + s^3\left(C_1C_LL_1R_1R_Lg_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_LL_1R_Lg_m + C_LL_LR_1g_m\right) + s\left(C_LR_1R_Lg_m + L_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_Lg_m + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_3C_LR_1R_Lg_m + C_3C_LR_L + C_3L_1g_m + C_LL_1g}$$

**10.849 INVALID-ORDER-849** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_Lg_ms^3 + L_1L_LR_Lg_ms^2 + L_LR_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L\right) + s^3\left(C_1L_1L_LR_1g_m + C_1L_1L_L + C_3L_1L_LR_Lg_m + C_LL_1L_LR_Lg_m\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_3L_LR_1R_Lg_m + C_3L_LR_L + C_LL_LR_1R_Lg_m + C_LL_LR_L + L\right.}$$

**10.850 INVALID-ORDER-850** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_Lg_ms^4 + R_1R_Lg_m + s^3\left(C_1L_1L_LR_1g_m + C_LL_1L_LR_Lg_m\right) + s^2\left(C_1L_1R_1R_Lg_m + C_LL_LR_1R_Lg_m + L_1L_Lg_m\right) + s\left(L_1R_Lg_m + L_LR_1g_m\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L + C_3L_1L_Lg_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L\right.}$$

**10.851 INVALID-ORDER-851** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_Lg_ms^4 + C_LL_1L_LR_Lg_ms^3 + L_1R_Lg_ms + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_LL_LR_1R_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_1L\right.}$$

**10.852 INVALID-ORDER-852** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + L_1R_3R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_3L_1R_3R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + L_1R_3g_m + L_1R_Lg_m\right)}$$

**10.853 INVALID-ORDER-853** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1R_1R_3g_ms^2 + L_1R_3g_ms + R_1R_3g_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_3g_m + C_LL_1R_3g_m\right) + s\left(C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3 + L_1g_m\right) + 1}$$

**10.854 INVALID-ORDER-854** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + L_1R_3R_Lg_ms + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_3L_1R_3R_Lg_m + C_LL_1R_3R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + C_3R_3R_L + C_LR_1R_3R_Lg_m +\right.}$$

**10.855 INVALID-ORDER-855** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1R_1R_3R_Lg_ms^3 + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_LL_1R_3R_Lg_m\right) + s\left(C_LR_1R_3R_Lg_m + L_1R_3g_m\right)}{R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_3 + C_1C_LL_1R_L + C_3C_LL_1R_3R_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_1R_3g_m + C_L\right.}$$

**10.856 INVALID-ORDER-856** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + C_LL_1L_LR_3g_ms^3 + L_1R_3g_ms + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3 + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 +\right.}$$

**10.857 INVALID-ORDER-857** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3g_ms^3 + L_1L_LR_3g_ms^2 + L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3\right) + s^3\left(C_1L_1L_LR_1g_m + C_1L_1L_L + C_3L_1L_LR_3g_m + C_LL_1L_LR_3g_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_3 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_LR_3 + L_1L_Lg\right.}$$

### 10.858 INVALID-ORDER-858 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + R_1R_3g_m + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_LL_1L_L\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_3 + C_1C_LL_1\right.}$$

### 10.859 INVALID-ORDER-859 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3R_Lg_ms^3 + L_1L_LR_3R_Lg_ms^2 + L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_1L_LR_1R_3R_Lg_m + C_1C_3L_1L_LR_3R_L + C_1C_LL_1L_LR_1R_3R_Lg_m + C_1C_LL_1L_LR_3R_L\right) + s^3\left(C_1L_1L_LR_1R_3g_m + C_1L_1L_LR_1R_Lg_m + C_1L_1L_LR_3 + C_1L_1L_LR_L + C_3L_1L_LR_3R_Lg_m + C_LL_1L_LR_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_1L_1\right.}$$

### 10.860 INVALID-ORDER-860 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L + C_3C_LL_1L_LR_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m\right.}$$

### 10.861 INVALID-ORDER-861 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4 -}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L + C_3C_LL_1L_LR_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_LL_1R_1R_3R_Lg_m\right.}$$

### 10.862 INVALID-ORDER-862 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3R_Lg_ms^3 + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_1R_3R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + L_1R_Lg_m\right)}{R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_3g_m + C_3L_1R_Lg_m\right) + s\left(C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L + L_1g_m\right) + 1}$$

### 10.863 INVALID-ORDER-863 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3g_ms^3 + R_1g_m + s^2\left(C_1L_1R_1g_m + C_3L_1R_3g_m\right) + s\left(C_3R_1R_3g_m + L_1g_m\right)}{s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m\right) + s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_3 + C_3L_1g_m + C_LL_1g_m\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

### 10.864 INVALID-ORDER-864 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3R_Lg_ms^3 + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_1R_3R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + L_1R_Lg_m\right)}{R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_3C_LL_1R_3R_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3C_LR_1R_3R_Lg_m + C_3C_LR_3R_L + C_3L_1R_3g_m + C_3\right.}$$

### 10.865 INVALID-ORDER-865 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1R_1R_3R_Lg_ms^4 + R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_3C_LL_1R_3R_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3C_LR_1R_3R_Lg_m + C_3L_1R_3g_m + C_LL_1R_Lg_m\right) + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m + L_1g_m\right)}{s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_1R_Lg_m\right) + s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L + C_3L_1g_m + C_LL_1g_m\right) +}$$

### 10.866 INVALID-ORDER-866 $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3g_ms^5 + R_1g_m + s^4\left(C_1C_LL_1L_LR_1g_m + C_3C_LL_1L_LR_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_3C_LL_LR_1R_3g_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_1R_3g_m + C_LL_LR_1g_m\right) + s\left(C_3R_1R_3g_m + L_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3 + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_3 + C_3L_1g_m + C_LL_1g_m\right.}$$

**10.867 INVALID-ORDER-867** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_LR_1R_3g_ms^4 + L_LR_1g_ms + s^3\left(C_1L_1L_LR_1g_m + C_3L_1L_LR_3g_m\right) + s^2\left(C_3L_LR_1R_3g_m + L_1L_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3 + C_3L_1L_Lg_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1\right.}$$

**10.868 INVALID-ORDER-868** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3g_ms^5 + R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_1L_LR_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_3C_LL_1R_3R_Lg_m + C_3C_LL_LR_1R_3g_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3C_LR_1\right.}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_1R_Lg_m + C_3C_LL_LR_1g_m + C_3C_L\right.}$$

**10.869 INVALID-ORDER-869** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3L_1L_LR_1R_3R_Lg_ms^4 + }{R_1R_Lg_m + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_3 + C_1C_3L_1L_LR_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L + C_3C_LL_1L_LR_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L\right.}$$

**10.870 INVALID-ORDER-870** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3R_Lg_ms^5 + R_1R_Lg_m + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_3C_LL_1L_LR_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1L_1L_LR_1g_m + C_3\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m + C_3C_LL_1L_LR_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1\right.}$$

**10.871 INVALID-ORDER-871** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3R_Lg_ms^5 + R_1R_Lg_m + s^4\left(C_1C_LL_1L_LR_1\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m + C_3C_LL_1L_LR_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_1\right.}$$

**10.872 INVALID-ORDER-872** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + C_3L_1L_3R_Lg_ms^3 + L_1R_Lg_ms + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_3R_1R_Lg_m\right)}{R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_Lg_m + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_3R_1R_Lg_m + C_3R_L + L_1g_m\right) + 1}$$

**10.873 INVALID-ORDER-873** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1g_ms^4 + C_3L_1L_3g_ms^3 + L_1g_ms + R_1g_m + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m\right)}{C_3C_LL_1L_3g_ms^4 + s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_3L_1g_m + C_LL_1g_m\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.874 INVALID-ORDER-874** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + C_3L_1L_3R_Lg_ms^3 + L_1R_Lg_ms + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_3R_1R_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + \right.}$$

**10.875 INVALID-ORDER-875** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_Lg_ms^5 + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_Lg_m + C_3C_LL_3R_1R_Lg_m + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m + C_LL_1R_Lg_m\right) + s\left(C_LR_1R_Lg_m + L_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_3C_LL_1L_3g_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_Lg_m + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_3C_LR_1R_Lg_m + C_3C_LR_L + C_3L_1g_m + C_LL_1g_m\right.}$$

**10.876 INVALID-ORDER-876** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + C_3C_LL_1L_3L_Lg_ms^5 + L_1g_ms + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_3L_LR_1g_m\right) + s^3\left(C_3L_1L_3g_m + C_LL_1L_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m + C_LL_LR_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_3C_LL_1L_3g_m + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_3L_1g_m + C_LL_1g_m\right.$$

**10.877 INVALID-ORDER-877** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1g_ms^5 + C_3L_1L_3L_Lg_ms^4 + L_1L_Lg_ms^2 + L_LR_1g_ms + s^3\left(C_1L_1L_LR_1g_m + C_3L_3L_LR_1g_m\right)}{C_3C_LL_1L_3L_Lg_ms^5 + L_1g_ms + R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3L_1L_3g_m + C_3L_1L_Lg_m + C_L\right.$$

**10.878 INVALID-ORDER-878** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_1L_3R_Lg_m + C_3C_LL_3L_LR_1g_m\right) + s^3\left(C_1C_LL_1R_1R_Lg_m + C_3C_LL_3R_1R_Lg_m + C_3L_1L_3g_m + C_LL_1\right.$$
$$s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_3C_LL_1L_3g_m + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_Lg_m + C_3C_LL_3R_1g_m + C_3C_LL\right.$$

**10.879 INVALID-ORDER-879** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1R_Lg_ms^5 +}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L +\right.$$

**10.880 INVALID-ORDER-880** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_Lg_ms^6 + R_1R_Lg_m + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_LL_1L_LR_1R_Lg_m + C_3C_LL_3L_LR_1R_Lg_m\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_Lg_m + C_3C_LL_3L\right.$$

**10.881 INVALID-ORDER-881** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_Lg_ms^6 + C_3C_LL_1L_3L_LR_Lg_ms^5 + L_1}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_3R_Lg_m -\right.$$

**10.882 INVALID-ORDER-882** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_Lg_ms^3 + L_1L_3R_Lg_ms^2 + L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L\right) + s^3\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_3L_1L_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_3L_3R_1R_Lg_m + C_3L_3R_L + L_1L_3g_m\right) + s\left(L_1R_Lg_m + L_3R_1g_m + L_3\right)}$$

**10.883 INVALID-ORDER-883** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1L_3R_1g_ms^3 + L_1L_3g_ms^2 + L_3R_1g_ms}{L_1g_ms + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3\right) + s^3\left(C_3L_1L_3g_m + C_LL_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + 1}$$

**10.884 INVALID-ORDER-884** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_Lg_ms^3 + L_1L_3R_Lg_ms^2 + L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L\right) + s^3\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_3L_1L_3R_Lg_m + C_LL_1L_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_3L_3R_1R_Lg_m + C_3L_3R_L + C_LL_3R_1R_Lg_m + C_LL_3R_L + L_1L_3\right.$$

**10.885 INVALID-ORDER-885** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3R_1R_Lg_ms^4 + L_3R_1g_ms + s^3\left(C_1L_1L_3R_1g_m + C_LL_1L_3R_Lg_m\right) + s^2\left(C_LL_3R_1R_Lg_m + L_1L_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L + C_3L_1L_3g_m + C_LL_1L_3g_m\right) + s^2\left(C_1L_1R_{1}\right.}$$

**10.886 INVALID-ORDER-886** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1g_ms^5 + C_LL_1L_3L_Lg_ms^4 + L_1L_3g_ms^2 + L_3R_1g_ms + s^3\left(C_1L_1L_3R_1g_m + C_LL_3L_LR_1g_m\right)}{C_3C_LL_1L_3L_Lg_ms^5 + L_1g_ms + R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_3L_1L_3g_m + C_LL_1L_3g_m + C_L\right.}$$

**10.887 INVALID-ORDER-887** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_3L_LR_1g_ms^3 + L_1L_3L_Lg_ms^2 + L_3L_LR_1g_ms}{L_3R_1g_m + L_3 + L_LR_1g_m + L_L + s^4\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L\right) + s^3\left(C_3L_1L_3L_Lg_m + C_LL_1L_3L_Lg_m\right) + s^2\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_1L_1L_LR_1g_m + C_1L_1L_L + C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_L\right.}$$

**10.888 INVALID-ORDER-888** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1g_ms^5 + L_3R_1g_ms + s^4\left(C_1C_LL_1L_3R_1R_Lg_m + C_LL_1L_3\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_3R_Lg_m + C_3C_LL_3L_L\right.}$$

**10.889 INVALID-ORDER-889** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_3L_LR_1R_Lg_ms^3 + L_1L_3L_LR_Lg_ms^2 + L_3L_LR_1R_Lg_ms}{L_3R_1R_Lg_m + L_3R_L + L_LR_1R_Lg_m + L_LR_L + s^4\left(C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_L + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_L\right) + s^3\left(C_1L_1L_3L_LR_1g_m + C_1L_1L_3L_L + C_3L_1L_3L_LR_Lg_m + C_LL_1L_3L_LR_Lg_m\right) + s^2\left(C_1L_1L_3R_1R_Lg_m + C_1L_1L_3R_L + C_1L_{1}\right.}$$

**10.890 INVALID-ORDER-890** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1R_Lg_ms^5 +}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L +\right.}$$

**10.891 INVALID-ORDER-891** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1R_Lg_ms^5 +}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L +\right.}$$

**10.892 INVALID-ORDER-892** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + R_1R_Lg_m + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_3L_1L_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_Lg_m + C_3L_1R_3R_Lg_m + C_3L_3R_1R_Lg_m\right) + s\left(C_3R_1R_3R_Lg_m + L_1R_Lg_m\right)}{R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_1R_3g_m + C_3L_1R_Lg_m + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L + L_1g_m\right)}$$

**10.893 INVALID-ORDER-893** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1g_ms^4 + R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_1R_3g_m + C_3L_3R_1g_m\right) + s\left(C_3R_1R_3g_m + L_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3 + C_3C_LL_1L_3g_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_3C_LR_1R_3g_m + C_3C_LR_3 + C_3L_1g_m + C_LL_1g_m\right)}$$

**10.894 INVALID-ORDER-894** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + R_1R_Lg_m + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_3L_1L_3R_\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_L\right.}$$

**10.895 INVALID-ORDER-895** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_Lg_ms^5 + R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3L_1L_3R_1g_m + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_3C_LL_1R_3R_Lg_m + C_3C_LL_3R_1R_Lg_m + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_3C_LR_1\right.}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L + C_3C_LL_1L_3g_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_1R_Lg_m + C_3C_LL_3R_1g_m + C_3C_LL_\right.}$$

**10.896 INVALID-ORDER-896** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_1L_LR_3g_m + C_3C_LL_3L_LR_1g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_3C_LL_LR_1R_3g_m + C_3L_1L_3g_m + C_LL_\right.}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3 + C_3C_LL_1L_3g_m + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_1R_3g_m + C_3C_LL_3R_1g_m + C_3C_LL_3\right.}$$

**10.897 INVALID-ORDER-897** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1g_ms^5 + L_LR_1g_ms + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_3L_1L_3L\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3 + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_LR_3g_m + C_3C_LL_3L_L\right.}$$

**10.898 INVALID-ORDER-898** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_LR_1R_3g_m + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_1L_3R_Lg_m + C_3C_LL_1L_LR_3g_m + C_3C_LL_3L_LR_1g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + \right.}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L + C_3C_LL_1L_3g_m + C_3C_LL_1L_Lg_m\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_\right.}$$

**10.899 INVALID-ORDER-899** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_3L_1L_LR_1R_3g_m + C_1C_3\right.}$$

**10.900 INVALID-ORDER-900** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_Lg_ms^6 + R_1R_Lg_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3L_1L_3L_LR_1g_m + C_3C_LL_1L_3L_LR_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_LR_1R_3g_m + C\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + \right.}$$

**10.901 INVALID-ORDER-901** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_1R_3\right.}$$

**10.902 INVALID-ORDER-902** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_3R_Lg_ms^3 + L_1L_3R_3R_Lg_ms^2 + L_3R_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_1L_3R_1R_3R_Lg_m + C_1C_3L_1L_3R_3R_L\right) + s^3\left(C_1L_1L_3R_1R_3g_m + C_1L_1L_3R_1R_Lg_m + C_1L_1L_3R_3 + C_1L_1L_3R_L + C_3L_1L_3R_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_1L_1R_3R_L + C_3L_3R_1R_3R_Lg_m + C_3L_3R_3R_L + L_1L_3R_3g_m + L_1L_3R_Lg_m\right) +$$

**10.903 INVALID-ORDER-903** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_3g_ms^3 + L_1L_3R_3g_ms^2 + L_3R_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_LL_1L_3R_1R_3g_m + C_1C_LL_1L_3R_3\right) + s^3\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_3L_1L_3R_3g_m + C_LL_1L_3R_3g_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_3 + C_3L_3R_1R_3g_m + C_3L_3R_3 + C_LL_3R_1R_3g_m + C_LL_3R_3 + L_1L_3g_m\right) +$$

**10.904 INVALID-ORDER-904** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_3R_Lg_ms^3 + L_1L_3R_3R_Lg_ms^2 + L_3R_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_1L_3R_1R_3R_Lg_m + C_1C_3L_1L_3R_3R_L + C_1C_LL_1L_3R_1R_3R_Lg_m + C_1C_LL_1L_3R_3R_L\right) + s^3\left(C_1L_1L_3R_1R_3g_m + C_1L_1L_3R_1R_Lg_m + C_1L_1L_3R_3 + C_1L_1L_3R_L + C_3L_1L_3R_3R_Lg_m + C_LL_1L_3R_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_1L_1R_3R\right.$

**10.905 INVALID-ORDER-905** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3R_1R_3R_Lg_ms^4 + L_3R}{R_1R_3g_m + R_3 + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_LL_1L_3R_1R_3g_m + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_3 + C_1C_LL_1L_3R_L + C_3C_LL_1L_3R_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L + C\right.$

**10.906 INVALID-ORDER-906** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1R_3g_ms^5 + C_L}{R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_LL_1L_3R_1R_3g_m + C_1C_LL_1L_3R_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3 + C_3\right.$

**10.907 INVALID-ORDER-907** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_3L_LR_1R_3g_ms^3 + L_1L_3L_LR_3g_ms^2 + L_3L_LR_1R_3g_ms}{L_3R_1R_3g_m + L_3R_3 + L_LR_1R_3g_m + L_LR_3 + s^4\left(C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_3 + C_1C_LL_1L_3L_LR_1R_3g_m + C_1C_LL_1L_3L_LR_3\right) + s^3\left(C_1L_1L_3L_LR_1g_m + C_1L_1L_3L_L + C_3L_1L_3L_LR_3g_m + C_LL_1L_3L_LR_3g_m\right) + s^2\left(C_1L_1L_3R_1R_3g_m + C_1L_1L_3R_3 + C_1L_1L_L\right.$

**10.908 INVALID-ORDER-908** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_LL_1L_3R_1R_3g_m + C_1C_LL_1$$

**10.909 INVALID-ORDER-909** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L}{L_3R_1R_3R_Lg_m + L_3R_3R_L + L_LR_1R_3R_Lg_m + L_LR_3R_L + s^4\left(C_1C_3L_1L_3L_LR_1R_3R_Lg_m + C_1C_3L_1L_3L_LR_3R_L + C_1C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_LL_1L_3L_LR_3R_L\right) + s^3\left(C_1L_1L_3L_LR_1R_3g_m + C_1L_1L_3L_LR_1R_Lg_m + C_1L_1L_3L_LR_3 + C_1L_1L_3L_LR_L + C_3L_1L_3L_LR_3R\right.$$

**10.910 INVALID-ORDER-910** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{}{R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_3 + C_1C_LL_1L_3L_LR_1R_3g_m + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_3 + C_1C_LL_1L_3L_LR_L + C_3C_LL_1L_3L_LR_3R_Lg_m\right) + s^4\left(C_1C_3L_1\right.$$

**10.911 INVALID-ORDER-911** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{}{R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_LL_1L_3L_LR_1R_3g_m + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_3 + C_1C_LL_1L_3L_LR_L + C_3C_LL_1L_3L_LR_3R_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3R_Lg_m + C_1C_3L_1L_3R_3R_L + C_1C_LL_1$$

**10.912 INVALID-ORDER-912** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^3\left(C_1L_1L_3R_1R_Lg_m + C_3L_1L_3R_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_3L_3R_1R_3R_Lg_m + L_1L_3R_Lg_m\right) + s\left(L_1R_3R_Lg_m + L_3R_1R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L\right) + s^3\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_3L_1L_3R_3g_m + C_3L_1L_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_3L_3R_1R_3g_m + C_3L_3R_1R_Lg_m + C_3L_3R_3R_Lg_m + L_1L_3g_m\right) + s\left(L_1R_3g_m + L_1R_Lg_m + L_3R_1g_m + L_3R_Lg_m\right)}$$

**10.913 INVALID-ORDER-913** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3g_ms^4 + R_1R_3g_m + s^3\left(C_1L_1L_3R_1g_m + C_3L_1L_3R_3g_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_3L_3R_1R_3g_m + L_1L_3g_m\right) + s\left(L_1R_3g_m + L_3R_1g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_3C_LL_1L_3R_3g_m\right) + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3 + C_3L_1L_3g_m + C_LL_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m\right.$$

**10.914 INVALID-ORDER-914** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3R_Lg_ms^4 + }{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L + C_3C_LL_1L_3R_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C\right.$$

**10.915 INVALID-ORDER-915** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_3R_Lg_ms^5 + R_1R_3g_m + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_LL_1L_3R_1R_Lg_m + C_3C_LL_1L_3R_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_1L_1L_3R_1g_m + C_3C\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_3C_LL_1L_3R_3R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_L\right.$$

**10.916 INVALID-ORDER-916** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + R_1R_3g_m + s^5\left(C_1C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_LL_1L_LR_1R_3g_m + C_3C_LL_3L_LR_1R_3g_m + \right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3 + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_3R_3g_m + C_3C_LL_3L_L\right.$$

**10.917 INVALID-ORDER-917** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1R_3g_ms^5 + L}{R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3 + C_3$$

**10.918 INVALID-ORDER-918** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + R_1R_3g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_LL_1L_3L_LR_1g_m + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_LL_1L_3R_1R_Lg_m + C\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C\right.$$

**10.919 INVALID-ORDER-919** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1R_3R_Lg_ms^5 + L}{R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_3 + C_1C_3L_1L_3L_LR_L + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_L + C_3C_LL_1L_3L_LR_3R_Lg_m\right) + s^4\left(C_1C_3L_1$$

**10.920 INVALID-ORDER-920** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_ms^6 + R_1R_3R_Lg_m + s}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m + C_3C_LL_1L_3L_LR_L\right.$$

**10.921 INVALID-ORDER-921** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m + C_3C\right.$$

**10.922 INVALID-ORDER-922** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3R_Lg_ms^4 + C_3L_1L_3R_3R_Lg_ms^3 + L_1R_3R_Lg_ms + R_1R_3R_Lg_m + s^2\left(C_1L_1R_1R_3R_Lg_m + C_3L_3R_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_3L_1L_3R_3g_m + C_3L_1L_3R_Lg_m\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_3L_1R_3\right.}$$

**10.923 INVALID-ORDER-923** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3g_ms^4 + C_3L_1L_3R_3g_ms^3 + L_1R_3g_ms + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_3L_3R_1R_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_3C_LL_1L_3R_3g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3 + C_3L_1L_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3\right.}$$

**10.924 INVALID-ORDER-924** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3R_Lg_ms^4 + C_3}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L + C_3C_LL_1L_3R_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_LL_1R_1R_3R_Lg_m + C_1\right.}$$

**10.925 INVALID-ORDER-925** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_3R_Lg_ms^5 + R_1R_3g_m + s^4\left(C_1C_3L_1L_3R_1R_3\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_3C_LL_1L_3R_3g_m + C_3C_LL_1L_3R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C\right.}$$

**10.926 INVALID-ORDER-926** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + C_3C_LL_1L_3L_LR_3g_ms^5 + L_1R_3}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3 + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_1L_3R_3g_m + \right.}$$

**10.927 INVALID-ORDER-927** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1R_3g_ms^5 + C_3}{R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3 + C_3C\right.}$$

**10.928 INVALID-ORDER-928** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3 + C_3C_LL_1L_3L_Lg_m\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3C_LL_1R_3R\right.}$$

**10.929 INVALID-ORDER-929** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{}{R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_3 + C_1C_3L_1L_3L_LR_L + C_3C_LL_1L_3L_LR_3R_Lg_m\right) + s^4\left(C_1C_3L_1L_3R_1R_3R_Lg_m + C_1C_3L_1L_3R_3R_L + C_1C_3L_1L\right.}$$

**10.930 INVALID-ORDER-930** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_3C_LL_1L_3L_LR_3g_m + C_3C\right.}$$

**10.931 INVALID-ORDER-931** $Z(s) = \left(\frac{C_1L_1R_1s^2+L_1s+R_1}{C_1L_1s^2+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L + C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L + C_3C_LL_1L_3L_LR$$

**10.932 INVALID-ORDER-932** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1R_1R_3g_ms^2 + R_1R_3g_m}{R_1g_m + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3\right) + s^2\left(C_1C_LR_1R_3 + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.933 INVALID-ORDER-933** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L\right) + s^2\left(C_1C_LR_1R_3R_L + C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_LR_1R_3R_Lg_m + C_LR_3R_L\right)}$$

**10.934 INVALID-ORDER-934** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1R_1R_3R_Lg_ms^3 + C_1L_1R_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{R_1g_m + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_3 + C_1C_LL_1R_L\right) + s^2\left(C_1C_LR_1R_3 + C_1C_LR_1R_L + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 + C_LR_L\right) + 1}$$

**10.935 INVALID-ORDER-935** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^4\left(C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_1C_LL_LR_1\right) + s^2\left(C_1C_LR_1R_3 + C_1L_1R_1g_m + C_1L_1 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.936 INVALID-ORDER-936** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3\right) + s^3\left(C_1C_LL_LR_1R_3 + C_1L_1L_LR_1g_m + C_1L_1L_L\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_3 + C_1L_LR_1 + C_LL_LR_1R_3g_m + C_LL_LR_3\right) + s\left(C_1R_1R_3 + L_LR_1g_m + L_L\right)}$$

**10.937 INVALID-ORDER-937** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + C_1C_LL_1R_1R_3R_Lg_ms^3 + C_LR_1R_3R_Lg_ms + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^4\left(C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_3 + C_1C_LL_1R_L + C_1C_LL_LR_1\right) + s^2\left(C_1C_LR_1R_3 + C_1C_LR_1R_L + C_1L_1R_1g_m + C_1L_1 + C_LL_LR_1g_m + C_LL_L\right) + s\left(C_1R_1 + C_LR_1R_3g_m + C_LR_1R_Lg_m + C_LR_3 +$$

**10.938 INVALID-ORDER-938** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3R_Lg_ms^3 + L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_LL_1L_LR_1R_3R_Lg_m + C_1C_LL_1L_LR_3R_L\right) + s^3\left(C_1C_LL_LR_1R_3R_L + C_1L_1L_LR_1R_3g_m + C_1L_1L_LR_1R_Lg_m + C_1L_1L_LR_3 + C_1L_1L_LR_L\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_1L_1R_3R_L + C_1L_LR_1R_3 + C_1L_LR_1R_L + C_LL_LR_1R_3R_Lg_m + C_LL_LR_3$$

**10.939 INVALID-ORDER-939** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4 + C_1L_1L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms + R_1R_3R_Lg_m + s^2\left(C_1L_1R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L + C_1L_1L_LR_1g_m + C_1L_1L_L\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L + C_1L_LR_1 + C_LL$$

**10.940 INVALID-ORDER-940** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3,\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^2\left(C_1L_1R_1R_3R_Lg_m + C_LL_LR_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L + C_1C_LL_LR_1R_3 + C_1C_LL_LR_1R_L\right) + s^2\left(C_1C_LR_1R_3R_L + C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3\right.}$$

**10.941 INVALID-ORDER-941** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_Lg_ms^2 + R_1R_Lg_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L\right) + s^2\left(C_1C_3R_1R_L + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L\right) + 1}$$

**10.942 INVALID-ORDER-942** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1R_1g_ms^2 + R_1g_m}{s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.943 INVALID-ORDER-943** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1R_1R_Lg_ms^2 + R_1R_Lg_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR_1R_L + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L + C_LR_1R_Lg_m + C_LR_L\right) + 1}$$

**10.944 INVALID-ORDER-944** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1R_1R_Lg_ms^3 + C_1L_1R_1g_ms^2 + C_LR_1R_Lg_ms + R_1g_m}{s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_1R_L\right) + s^3\left(C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.945 INVALID-ORDER-945** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1g_ms^4 + R_1g_m + s^2\left(C_1L_1R_1g_m + C_LL_LR_1g_m\right)}{C_1C_3C_LL_LR_1s^4 + s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.946 INVALID-ORDER-946** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_1g_ms^3 + L_LR_1g_ms}{C_1R_1s + R_1g_m + s^4\left(C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_LR_1 + C_1C_LL_LR_1\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_LR_1g_m + C_3L_L + C_LL_LR_1g_m + C_LL_L\right) + 1}$$

**10.947 INVALID-ORDER-947** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1g_ms^4 + C_1C_LL_1R_1R_Lg_ms^3 + C_LR_1R_Lg_ms + R_1g_m + s^2\left(C_1L_1R_1g_m + C_LL_LR_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_L\right.}$$

**10.948 INVALID-ORDER-948** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_Lg_ms^3 + L_LR_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_3L_LR_1R_L + C_1C_LL_LR_1R_L + C_1L_1L_LR_1g_m + C_1L_1L_L\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_1L_LR_1 + C_3L_LR_1R_Lg_m + C_3L_LR_L + C_LL_LR_1R_Lg_m + C_\right.}$$

**10.949 INVALID-ORDER-949** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_Lg_ms^4 + C_1L_1L_LR_1g_ms^3 + L_LR_1g_ms + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_LL_LR_1R_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3C_LL_LR_1R_L + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3\right.}$$

**10.950 INVALID-ORDER-950** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_Lg_ms^4 + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_LL_LR_1R_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3C_LL_LR_1R_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_1C_LL_LR_1 + C_3C_LL_LR_1R_Lg_m + C_3C_LL_LR_L\right) + s^2\left(C_1C_3R_1R_L + C_1C\right.}$$

**10.951 INVALID-ORDER-951** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R_1R_3R_Lg_m + C_3R_3R_L\right)}$$

**10.952 INVALID-ORDER-952** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1R_1R_3g_ms^2 + R_1R_3g_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_3 + C_LR_1R_3g_m + C_LR_3\right) + 1}$$

**10.953 INVALID-ORDER-953** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1R_1R_3R_Lg_ms^2 + R_1R_3R_Lg_m}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_LL_1R_1R_3R_Lg_m + C_1C_LL_1R_3R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1C_LR_1R_3R_L + C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1L_1R_L\right) + s\left(C_1R_1R_3 + C_1R_1R_L + C_3R_1R_3R_Lg_m + C_3R_3\right.}$$

**10.954 INVALID-ORDER-954** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1R_1R_3R_Lg_ms^3 + C_1L_1R_1R_3g_ms^2 + C_LR_1R_3R_Lg_ms + R_1R_3g_m}{R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_3 + C_1C_LL_1R_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3 + C_1C_LR_1R_L + C_1L_1R_1g_m + C_1L_1 + C_3C_LR_1\right.}$$

**10.955 INVALID-ORDER-955** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_LL_LR_1R_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR\right.}$$

**10.956 INVALID-ORDER-956** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3g_ms^3 + L_LR_1R_3g_ms}{R_1R_3g_m + R_3 + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_3\right) + s^3\left(C_1C_3L_LR_1R_3 + C_1C_LL_LR_1R_3 + C_1L_1L_LR_1g_m + C_1L_1L_L\right) + s^2\left(C_1L_1R_1R_3g_m + C_1L_1R_3 + C_1L_LR_1 + C_3L_LR_1R_3g_m + C_3L_LR_3 + C_LL_LR_1R_3g_m + C_LL_L\right.}$$

**10.957 INVALID-ORDER-957** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_LR_1R_3g_ms^4 + C_1C_LL_1R_1R_3R_Lg_ms}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3C_LL_LR_1R_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_1\right.}$$

**10.958 INVALID-ORDER-958** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_LR_1R_3R_Lg_ms^3 + L_LR_1R_3R_Lg_ms}{R_1R_3R_Lg_m + R_3R_L + s^4\left(C_1C_3L_1L_LR_1R_3R_Lg_m + C_1C_3L_1L_LR_3R_L + C_1C_LL_1L_LR_1R_3R_Lg_m + C_1C_LL_1L_LR_3\right) + s^3\left(C_1C_3L_LR_1R_3R_L + C_1C_LL_LR_1R_3R_L + C_1L_1L_LR_1R_3g_m + C_1L_1L_LR_1R_Lg_m + C_1L_1L_LR_3 + C_1L_1L_LR_L\right) + s^2\left(C_1L_1R_1R_3R_Lg_m + C_1L_1R\right.}$$

**10.959 INVALID-ORDER-959** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_3C_LL_LR_1R_3R_L + C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + \right.}$$

**10.960 INVALID-ORDER-960** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_3C_LL_LR_1R_3R_L + C_1C_LL_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_3 + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_LL_1R_1R_3R_Lg_m\right.}$$

**10.961 INVALID-ORDER-961** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3R_Lg_ms^3 + C_1L_1R_1R_Lg_ms^2 + C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1L_1R_1g_m + C_1L_1\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right) + 1}$$

**10.962 INVALID-ORDER-962** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3g_ms^3 + C_1L_1R_1g_ms^2 + C_3R_1R_3g_ms + R_1g_m}{s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.963 INVALID-ORDER-963** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1R_1R_3R_Lg_ms^3 + C_1L_1R_1R_Lg_ms^2 + C_3R_1R_3R_Lg_ms + R_1R_Lg_m}{R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1C_LR_1R_L + C_1L_1R_1g_m + C_1L_1 + C_3C_LR_1\right.}$$

**10.964 INVALID-ORDER-964** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1R_1R_3R_Lg_ms^4 + R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3C_LR_1R_3R_Lg_m\right) + s\left(C_3R_1R_3g_m + C_LR_1R_Lg_m\right)}{s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_1R_Lg_m + C_3C_LR_3 + C_3C_LR_L\right) +}$$

**10.965 INVALID-ORDER-965** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3g_ms^5 + C_1C_LL_1L_LR_1g_ms^4 + C_3R_1R_3g_ms + R_1g_m + s^3\left(C_1C_3L_1R_1R_3g_m + C_3C_LL_LR_1R_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_LL_LR_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right.}$$

**10.966 INVALID-ORDER-966** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_LR_1R_3g_ms^4 + C_1L_1L_LR_1g_ms^3 + C_3L_LR_1R_3g_ms^2 + L_LR_1g_ms}{R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3\right) + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_3L_LR_1 + C_1C_LL_LR_1 + C_3C_LL_LR_1R_3g_m + C_3C_LL_LR_3\right) + s^2\left(C_1C_3R_1\right.}$$

**10.967 INVALID-ORDER-967** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3g_ms^5 + R_1g_m + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_LL_1L_LR_1g_m\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_LL_1R_1R_Lg_m + C_3C_LL_LR_1R_3g_m\right) + s^2\left(C_1L_1R_1g_m + C_3C_LR_1R_3R_Lg_m\right.}{s^5\left(C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_1R_L + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_LR_1g_m + C_3C_L\right.}$$

**10.968 INVALID-ORDER-968** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3L_1$$
$$R_1R_Lg_m + R_L + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L\right) + s^4\left(C_1C_3C_LL_LR_1R_3R_L + C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_3 + C_1C_3L_1L_LR_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + \right.$$

**10.969 INVALID-ORDER-969** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3R_Lg_ms^5 + R_1R_Lg_m + s^4\left(C_1C_3L_1L_LR_1R_3g_m + C_1C_LL_1L_LR_1R_Lg_m\right) + s^3\left(C_1C_3L_1R_1R_3$$
$$R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1$$

**10.970 INVALID-ORDER-970** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_LR_1R_3R_Lg$$
$$R_1g_m + s^5\left(C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_1L_LR_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3C_LL_LR_1R_3 + C_1C_3C_LL_LR_1R_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R$$

**10.971 INVALID-ORDER-971** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_3R_1R_Lg_m\right)}{R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_3L_3R_1\right) + s^2\left(C_1C_3R_1R_L + C_1L_1R_1g_m + C_1L_1 + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_Lg_m + C_3R_L\right) + 1}$$

**10.972 INVALID-ORDER-972** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1g_ms^4 + R_1g_m + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m\right)}{C_1C_3C_LL_3R_1s^4 + s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right) + s\left(C_3R_1g_m + C_3 + C_LR_1g_m + C_L\right)}$$

**10.973 INVALID-ORDER-973** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_3R_1R_Lg_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_L + C_1C_3L_3R_1 + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_3R_1R_L + C_1C_LR$$

**10.974 INVALID-ORDER-974** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_Lg_ms^5 + C_1C_3L_1L_3R_1g_ms^4 + C_LR_1R_Lg_ms + R_1g_m + s^3\left(C_1C_LL_1R_1R_Lg_m + C_3C_LL_3R_1R_Lg_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_1C_3C_LL_3R_1\right) + s^3\left(C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_Lg_m + C_3C_LR_L\right) + s\left(C_1R_1g_m + C_1 + C_3R_1g_m + C_3\right) + R_1g_m$$

**10.975 INVALID-ORDER-975** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_3L_LR_1g_m\right) + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m + C_LL_LR_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3 + C_3C_LL_LR_1g_m + C_3C_LL_L\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1\right.}$$

**10.976 INVALID-ORDER-976** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3L_LR_1g_ms^5 + L_LR_1g_ms + s^3\left(C_1L_1L_LR_1g_m + C_3L_3L_LR_1g_m\right)}{C_1C_3C_LL_3L_LR_1s^5 + C_1R_1s + R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_3L_LR_1 + C_1\right.}$$

**10.977 INVALID-ORDER-977** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1g_ms^6 + C_1C_3C_LL_1L_3R_1R_Lg_ms^5 + C_LR_1R_Lg_ms + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_LL_1L_LR_1g_m + C_3C_LL_3L_LR_1g_m\right) + s^3\left(C_1C_LL_1R_1R_Lg_m + C_3C_LL_3R_1R_Lg_m\right.}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3 + C_1C_3C_LL_1L_LR_1g_m + C_1C_3C_LL_1L_L\right) + s^4\left(C_1C_3C_LL_1R_1R_Lg_m + C_1C_3C_LL_1R_L + C_1C_3C_LL_3R_1 + C_1C_3C_LL_LR_1\right) + s^3\left(C_1C_3C_LR_1R_L + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL\right.}$$

**10.978 INVALID-ORDER-978** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1C_3L_1}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_L + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_3L_1L_LR_1R_Lg_m + C_1C_3L_1L_LR_L + C_1C_3L_3L_LR_1 + C_1C_LL_1L_LR_1R_Lg_m + C\right.}$$

**10.979 INVALID-ORDER-979** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_Lg_ms^6 + C_1C_3L_1L_3L_LR_1g_ms^5 + L_LR_1g_ms + R_1R_Lg_m + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_LR_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_3L_1L_LR_1g_m + C_1C_3L_1L_L + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L\right.}$$

**10.980 INVALID-ORDER-980** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_1L_LR_1R_Lg_m + C_1C_3C_LL_1L_LR_L + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3C_LL_LR_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_LR_1\right.}$$

**10.981 INVALID-ORDER-981** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_Lg_ms^3 + L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1L_1L_3R_1g_m + C_1L_1L_3\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_1L_3R_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L\right) + s\left(C_1R_1R_L + L_3R_1g_m + L_3\right)}$$

**10.982 INVALID-ORDER-982** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1L_1L_3R_1g_ms^3 + L_3R_1g_ms}{C_1R_1s + R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1\right) + s^2\left(C_1L_1R_1g_m + C_1L_1 + C_3L_3R_1g_m + C_3L_3 + C_LL_3R_1g_m + C_LL_3\right) + 1}$$

**10.983 INVALID-ORDER-983** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1L_1L_3R_1R_Lg_ms^3 + L_3R_1R_Lg_ms}{R_1R_Lg_m + R_L + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L\right) + s^3\left(C_1C_3L_3R_1R_L + C_1C_LL_3R_1R_L + C_1L_1L_3R_1g_m + C_1L_1L_3\right) + s^2\left(C_1L_1R_1R_Lg_m + C_1L_1R_L + C_1L_3R_1 + C_3L_3R_1R_Lg_m + C_3L_3R_L + C_LL_3R_1R_Lg_m + C_LL_3\right.}$$

**10.984 INVALID-ORDER-984** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3R_1R_Lg_ms^4 + C_1L_1L_3R_1g_ms^3 + C_LL_3R_1R_Lg_ms^2 + L_3R_1g_ms}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_1R_1R_Lg_m + C_1C_LL_1R_L + C_1C_LL_3R_1 + C_3C_LL_3R_1R_Lg_m + C_3C_LL_3R_L\right) + s^2\left(C_1C_LR_1\right.}$$

**10.985 INVALID-ORDER-985** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1g_ms^5 + L_3R_1g_ms + s^3\left(C_1L_1L_3R_1g_m + C_LL_3L_LR_1g_m\right)}{C_1C_3C_LL_3L_LR_1s^5 + C_1R_1s + R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_LR_1g_m + C_3C_LL_3L_L\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_3R_1 + C_1\right.}$$

**10.986 INVALID-ORDER-986** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1L_1L_3L_LR_1g_ms^3 + L_3L_LR_1g_ms}{L_3R_1g_m + L_3 + L_LR_1g_m + L_L + s^4\left(C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L\right) + s^3\left(C_1C_3L_3L_LR_1 + C_1C_LL_3L_LR_1\right) + s^2\left(C_1L_1L_3R_1g_m + C_1L_1L_3 + C_1L_1L_LR_1g_m + C_1L_1L_L + C_3L_3L_LR_1g_m + C_3L_3L_L + C_LL_3L_LR_1g_m + C_L\right.}$$

**10.987 INVALID-ORDER-987** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_LL_1L_3L_LR_1g_ms^5 + C_1C_LL_1L_3R_1R_Lg_ms^4}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_L\right.}$$

**10.988 INVALID-ORDER-988** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1L_1L_3L_LR_1R_Lg_ms^3 + L_3L_LR_1R_Lg_ms}{L_3R_1R_Lg_m + L_3R_L + L_LR_1R_Lg_m + L_LR_L + s^4\left(C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_L + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_L\right) + s^3\left(C_1C_3L_3L_LR_1R_L + C_1C_LL_3L_LR_1R_L + C_1L_1L_3L_LR_1g_m + C_1L_1L_3L_L\right) + s^2\left(C_1L_1L_3R_1R_Lg_m + C_1L_1L_3R_L + C_1L_1\right.}$$

**10.989 INVALID-ORDER-989** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + C_1C_3L_1R_1R_3R_Lg_ms^3}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_L + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_3L_3L_LR_1 + C_1C_LL_1L_LR_1R_Lg_m + C\right.}$$

**10.990 INVALID-ORDER-990** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{L_3s}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_LL}{R_1R_Lg_m + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L + C_1C_LL_1L_LR_1R_Lg_m + C_1C_LL_1L_LR_L +\right.}$$

**10.991 INVALID-ORDER-991** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + C_1C_3L_1R_1R_3R_Lg_ms^3 + C_3R_1R_3R_Lg_ms + R_1R_Lg_m + s^2\left(C_1L_1R_1R_Lg_m + C_3L_3R_1R_Lg_m\right)}{R_1g_m + s^4\left(C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_1C_3L_3R_1\right) + s^2\left(C_1C_3R_1R_3 + C_1C_3R_1R_L + C_1L_1R_1g_m + C_1L_1 + C_3L_3R_1g_m + C_3L_3\right) + s\left(C_1R_1 + C_3R_1R_3g_m + C_3R_1R_Lg_m + C_3R_3 + C_3R_L\right)}$$

**10.992 INVALID-ORDER-992** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1g_ms^4 + C_1C_3L_1R_1R_3g_ms^3 + C_3R_1R_3g_ms + R_1g_m + s^2\left(C_1L_1R_1g_m + C_3L_3R_1g_m\right)}{s^5\left(C_1C_3C_LL_1L_3R_1g_m + C_1C_3C_LL_1L_3\right) + s^4\left(C_1C_3C_LL_1R_1R_3g_m + C_1C_3C_LL_1R_3 + C_1C_3C_LL_3R_1\right) + s^3\left(C_1C_3C_LR_1R_3 + C_1C_3L_1R_1g_m + C_1C_3L_1 + C_1C_LL_1R_1g_m + C_1C_LL_1 + C_3C_LL_3R_1g_m + C_3C_LL_3\right) + s^2\left(C_1C_3R_1 + C_1C_LR_1 + C_3C_LR_1R_3g_m + C_3C_LR_3\right)}$$

**10.993 INVALID-ORDER-993** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_Lg_ms^4 + C_1C_3L_1R_1R_3R_Lg_ms^3 -}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_1R_Lg_m + C_1C_3L_1R_3 + C_1C_3L_1R_L + C_1C_3L_3R_1\right.}$$

**10.994 INVALID-ORDER-994** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 R_1 R_L g_m s^5 + R_1 g_m + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_1 g_m\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 g_m + C_1 C_L L_1 R_1 R_L g_m + C_3 C_L L_3 R_1 R_L g_m\right) + s^2 \left(C_1 L_1 R_1 g_m + C_3 C_L R_1 R_3 R_L g_m \right.}{s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 g_m + C_1 C_3 C_L L_1 L_3\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 g_m + C_1 C_3 C_L L_1 R_1 R_L g_m + C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L + C_1 C_3 C_L L_3 R_1\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 + C_1 C_3 C_L R_1 R_L + C_1 C_3 L_1 R_1 g_m + C_1 C_3 L_1 + C_1 C_L L_1 R_1 g_m + C_1 C_L L_1 + C_3 C_L L_3 R_1 g_m + C_3 C_L L_3 \right.}$$

**10.995 INVALID-ORDER-995** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 g_m s^5 + C_3 R_1 R_3 g_m s + R_1 g_m + s^4 \left(C_1 C_3 L_1 L_3 R_1 g_m + C_1 C_L L_1 L_L R_1 g_m + C_3 C_L L_3 L_L R_1 g_m\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 g_m + C_3 C_L L_L R_1 R_3 g_m\right) + }{s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 g_m + C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L R_1 g_m + C_1 C_3 C_L L_1 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 g_m + C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_3 R_1 + C_1 C_3 C_L L_L R_1\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 + C_1 C_3 L_1 R_1 g_m + C_1 C_3 L_1 + C_1 C_L L_1 R_1 g_m + C_1 C_L L_1 + C_3 C_L L_3 R_1 g_m + C_3 C_L L_3 \right.}$$

**10.996 INVALID-ORDER-996** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 L_L R_1 g_m s^5 + C_1 C_3 L_1 L_L R_1 R_3 g_m s^4 + }{R_1 g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 g_m + C_1 C_3 C_L L_1 L_3 L_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_3 L_L R_1\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 + C_1 C_3 L_1 L_3 R_1 g_m + C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L R_1 g_m + C_1 C_3 L_1 L_L + C_3 C_L L_3 L_1 \right.}$$

**10.997 INVALID-ORDER-997** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 g_m s^6 + R_1 g_m + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_L g_m + C_1 C_3 C_L L_1 L_L R_1 R_3 g_m\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_1 g_m + C_1 C_L L_1 L_L R_1 g_m + C_3 C_L L_3 L_L R_1 g_m\right) + s^3 \left(C_1 C_3 L_1 R_1 R_3 g_m + C_1 C_3 \right.}{s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 g_m + C_1 C_3 C_L L_1 L_3 + C_1 C_3 C_L L_1 L_L R_1 g_m + C_1 C_3 C_L L_1 L_L\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 g_m + C_1 C_3 C_L L_1 R_1 R_L g_m + C_1 C_3 C_L L_1 R_3 + C_1 C_3 C_L L_1 R_L + C_1 C_3 C_L L_3 R_1 + C_1 C_3 C_L L_L R_1\right) + s^3 \left(C_1 C_3 C_L R_1 R_3 + C_1 C_3 C_L R_1 R_L + C_1 C_3 L_1 R_1 g_m + C_1 C_3 L \right.}$$

**10.998 INVALID-ORDER-998** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m s^6 + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m s^5 + C_1 C_3 C_L L_1 L_L R_3 R_L + C_1 C_3 C_L L_3 L_L R_1 R_L + C_1 C_3 L_1 L_3 L_L R_1 g_m + C_1 C_3 L_1 L_3 R_L + C_1 C_3 }{R_1 R_L g_m + R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_1 L_3 L_L R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 R_L + C_1 C_3 C_L L_3 L_L R_1 R_L + C_1 C_3 L_1 L_3 L_L R_1 g_m + C_1 C_3 L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 R_L g_m + C_1 C_3 L_1 L_3 R_L + C_1 C \right.}$$

**10.999 INVALID-ORDER-999** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m s^6 + R_1 R_L g_m + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 L_L R_1 g_m \right.}{R_1 g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 g_m + C_1 C_3 C_L L_1 L_3 L_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_L R_1 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L + C_1 C_3 C_L L_3 L_L R_1\right) + s^4 \left(C_1 C_3 C_L L_L R_1 R_3 + C_1 C_3 C_L L_L R_1 R_L + C_1 C_3 L_1 L_3 R_1 g_m + C_1 C_3 L_1 L_3 + C_1 C_3 L_1 L_L R \right.}$$

**10.1000 INVALID-ORDER-1000** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1} \right)$

$$H(s) = \frac{}{R_1 g_m + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 g_m + C_1 C_3 C_L L_1 L_3 L_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_L g_m + C_1 C_3 C_L L_1 L_3 R_L + C_1 C_3 C_L L_1 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_L R_1 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 + C_1 C_3 C_L L_1 L_L R_L + C_1 C_3 C_L L_3 L_L R_1\right) + s^4 \left(C_1 C_3 C_L L_1 R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 R_1 R_3 + \right.}$$

**10.1001 INVALID-ORDER-1001** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L \right)$

$$H(s) = \frac{C_1 L_1 L_3 R_1 R_3 R_L g_m s^3 + L_3 R_1 R_3 R_L g_m s}{R_1 R_3 R_L g_m + R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L + C_1 L_1 L_3 R_1 R_3 g_m + C_1 L_1 L_3 R_1 R_L g_m + C_1 L_1 L_3 R_3 + C_1 L_1 L_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L g_m + C_1 L_1 R_3 R_L + C_1 L_3 R_1 R_3 + C_1 L_3 R_1 R_L + C_3 L_3 R_1 R_3 R_L g_m + C_3 L_3 R_3 R_L\right) + }$$

**10.1002 INVALID-ORDER-1002** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 L_1 L_3 R_1 R_3 g_m s^3 + L_3 R_1 R_3 g_m s}{R_1 R_3 g_m + R_3 + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 g_m + C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_1 R_3 g_m + C_1 C_L L_1 L_3 R_3\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 + C_1 C_L L_3 R_1 R_3 + C_1 L_1 L_3 R_1 g_m + C_1 L_1 L_3\right) + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_1 L_1 R_3 + C_1 L_3 R_1 + C_3 L_3 R_1 R_3 g_m + C_3 L_3 R_3 + C_L L_3 R_1 R_3 g_m + C_L L_3 R_3\right) + }$$

**10.1003 INVALID-ORDER-1003** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L}{C_L R_L s+1} \right)$

$$H(s) = \frac{C_1 L_1 L_3 R_1 R_3 R_L g_m s^3 + L_3 R_1 R_3 R_L g_m s}{R_1 R_3 R_L g_m + R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1 L_3 R_1 R_3 R_L g_m + C_1 C_L L_1 L_3 R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 R_L + C_1 C_L L_3 R_1 R_3 R_L + C_1 L_1 L_3 R_1 R_3 g_m + C_1 L_1 L_3 R_1 R_L g_m + C_1 L_1 L_3 R_3 + C_1 L_1 L_3 R_L\right) + s^2 \left(C_1 L_1 R_1 R_3 R_L g_m + C_1 L_1 R_3 R_L\right.$$

**10.1004 INVALID-ORDER-1004** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_3 R$$

$$R_1 R_3 g_m + R_3 + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_3 R_3 R_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 R_3 g_m + C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_1 R_3 g_m + C_1 C_L L_1 L_3 R_1 R_L g_m + C_1 C_L L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 + C_1 C_L L_1 R_1 R_3 R_L g_m + C_1$$

**10.1005 INVALID-ORDER-1005** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + \frac{1}{C_L s} \right)$

$$H(s) = \frac{C_1 C_L L_1 L_3$$

$$R_1 R_3 g_m + R_3 + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_3\right) + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 + C_1 C_L L_1 L_3 L_L R_1 g_m + C_1 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 g_m + C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1 L_3 R_1 R_3 g_m + C_1 C_L L_1 L_3 R_3 + C_1 C_L L_1 L_L R_1 R_3 g_m + C_1 C_L L_1 L_L R_3 + C_1$$

**10.1006 INVALID-ORDER-1006** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L s}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{C_1 L_1 L_3 L_L R_1 R_3 g_m s^3 + L_3 L_L R_1 R_3 g_m s}{L_3 R_1 R_3 g_m + L_3 R_3 + L_L R_1 R_3 g_m + L_L R_3 + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_L L_1 L_3 L_L R_3\right) + s^3 \left(C_1 C_3 L_3 L_L R_1 R_3 + C_1 C_L L_3 L_L R_1 R_3 + C_1 L_1 L_3 L_L R_1 g_m + C_1 L_1 L_3 L_L\right) + s^2 \left(C_1 L_1 L_3 R_1 R_3 g_m + C_1 L_1 L_3 R_3 + C_1 L_1 L_L$$

**10.1007 INVALID-ORDER-1007** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ L_L s + R_L + \frac{1}{C_L s} \right)$

$$H(s) = \frac{}{R_1 R_3 g_m + R_3 + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_3\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_3 R_3 R_L + C_1 C_3 C_L L_3 L_L R_1 R_3 + C_1 C_L L_1 L_3 L_L R_1 g_m + C_1 C_L L_1 L_3 L_L\right) + s^4 \left(C_1 C_3 C_L L_3 R_1 R_3 R_L + C_1 C_3 L_1 L_3 R_1 R_3 g_m + C_1 C_3 L_1 L_3 R_3 + C_1 C_L L_1$$

**10.1008 INVALID-ORDER-1008** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{L_L R_L s}{C_L L_L R_L s^2+L_L s+R_L} \right)$

$$H(s) = \frac{}{L_3 R_1 R_3 R_L g_m + L_3 R_3 R_L + L_L R_1 R_3 R_L g_m + L_L R_3 R_L + s^4 \left(C_1 C_3 L_1 L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 L_L R_3 R_L + C_1 C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_1 C_L L_1 L_3 L_L R_3 R_L\right) + s^3 \left(C_1 C_3 L_3 L_L R_1 R_3 R_L + C_1 C_L L_3 L_L R_1 R_3 R_L + C_1 L_1 L_3 L_L R_1 R_3 g_m + C_1 L_1 L_3 L_L R_1 R_L g_m + C_1$$

**10.1009 INVALID-ORDER-1009** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{C_L L_L R_L s^2+L_L s+R_L}{C_L L_L s^2+1} \right)$

$$H(s) = \frac{}{R_1 R_3 R_L g_m + R_3 R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L\right) + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L + C_1 C_3 L_1 L_3 L_L R_1 R_3 g_m + C_1 C_3 L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_L L_1 L_3 L_L R_1 R_L g_m + C_1 C_L L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_$$

**10.1010 INVALID-ORDER-1010** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1} \right)$

$$H(s) = \frac{}{R_1 R_3 R_L g_m + R_3 R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_3 L_L R_3 R_L\right) + s^5 \left(C_1 C_3 C_L L_3 L_L R_1 R_3 R_L + C_1 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_L L_1 L_3 L_L R_1 R_L g_m + C_1 C_L L_1 L_3 L_L R_3 + C_1 C_L L_1 L_3 L_L R_L\right) + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 L_1 L_3 R_3 R_L + C_1 C_L L_1$$

**10.1011 INVALID-ORDER-1011** $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{C_3 L_3 R_3 s^2+L_3 s+R_3}{C_3 L_3 s^2+1},\ \infty,\ \infty,\ R_L \right)$

$$H(s) = \frac{C_1 C_3 L_1 L_3 R_1 R_3 R_L g_m s^4 + C_1 L_1 L_3 R_1 R_L g_m s^3 + L_3 R_1 R_L g_m s + R_1 R_3 R_L g_m + s^2 \left(C_1 L_1 R_1 R_3 R_L g_m + C_3 L_3 R_1 R_3 R_L g_m\right)}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L + s^4 \left(C_1 C_3 L_1 L_3 R_1 R_3 g_m + C_1 C_3 L_1 L_3 R_1 R_L g_m + C_1 C_3 L_1 L_3 R_3 + C_1 C_3 L_1 L_3 R_L\right) + s^3 \left(C_1 C_3 L_3 R_1 R_3 + C_1 C_3 L_3 R_1 R_L + C_1 L_1 L_3 R_1 g_m + C_1 L_1 L_3\right) + s^2 \left(C_1 L_1 R_1 R_3 g_m + C_1 L_1 R_1 R_L g_m + C_1 L_1 R_3 + C_1 L_1 R_L + C_1 L_3 R_1 + C_3 L_3 R_1 R$$

**10.1012 INVALID-ORDER-1012** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3g_ms^4 + C_1L_1L_3R_1g_ms^3 + L_3R_1g_ms + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_3L_3R_1R_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_1C_LL_3R_1 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_1C_LR_1R_3\right.}$$

**10.1013 INVALID-ORDER-1013** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_3R_L + C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L + C_1C_LL_1L_3R_1R_Lg_m + C_1C_LL_1L_3R_L\right) + s^3\left(C_1C_3L_3R_1R_3 + C_1C_3L_3\right.}$$

**10.1014 INVALID-ORDER-1014** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_3R_Lg_ms^5 + R_1R_3g_m + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_LL_1L_3R_1R_Lg_m\right) + s^3\left(C_1C_LL_1R_1R_3R_L\right.}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3\right) + s^3\left(C_1C_3L_3R_1 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_1\right.}$$

**10.1015 INVALID-ORDER-1015** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + C_1C_LL_1L_3L_LR_1g_ms^5 + L_3R_1g_ms + R_1R_3g_m + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_L\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1g_m + C_1C_LL_1L_3 + C_1C_LL_1L_LR_1g_m + C_1C_LL_1L_L + C_3C_LL_3L_L\right.}$$

**10.1016 INVALID-ORDER-1016** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C}{R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_3L_3L_LR_1 + C_1C_LL_1L_LR_1R_3g_m + C_1C\right.}$$

**10.1017 INVALID-ORDER-1017** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + R_1R_3g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_LL_1L_3L_LR_1g_m\right.}{R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_3R_1\right.}$$

**10.1018 INVALID-ORDER-1018** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{C_1}{R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_3R_L + C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_3 + C_1C_3L_1L_3L_LR_L + C_1C_LL_1L_3L_LR_1R_Lg_m + C_1C_LL_1L_3L_LR_L\right) + s^4\left(C_1C_3L_1\right.}$$

**10.1019 INVALID-ORDER-1019** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_ms^6 + C_1C_LL_1L_3L_LR_1g_ms^5 + L_3R_1g_ms + R_1R_3g_m + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_L\right.}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L + C_1C_LL_1L_3L_LR_1g_m + C_1C_LL_1L_3\right.}$$

**10.1020 INVALID-ORDER-1020** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \infty,\ \infty,\ \frac{R_L\left(C_LL_Ls^2+1\right)}{C_LL_Ls^2+C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L + C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L + C_1C_LL_1L_3L_LR_1g_m +\right.}$$

**10.1021 INVALID-ORDER-1021** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3R_Lg_ms^4 + R_1R_3R_Lg_m + s^2\left(C_1L_1R_1R_3R_Lg_m + C_3L_3R_1R_3R_Lg_m\right)}{R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_3L_3R_1R_3 + C_1C_3L_3R_1R_L\right) + s^2\left(C_1C_3R_1R_3R_L + C_1L_1R_1R_3g_m + C_1L_1R_1R_Lg_m + C_1L_1R_3 + C_1\right.}$$

**10.1022 INVALID-ORDER-1022** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3L_1L_3R_1R_3g_ms^4 + R_1R_3g_m + s^2\left(C_1L_1R_1R_3g_m + C_3L_3R_1R_3g_m\right)}{R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3L_1R_1R_3g_m + C_1C_3L_1R_3 + C_1C_3L_3R_1 + C_1C_LL_1R_1R_3g_m + C_1C_LL_1R_3 + C_3C_LL_3R_1R_3g_m + C_3C_LL_3R_3\right) + s^2\left(C_1C_3R_1R_3 + C_1C_LR_1R_3\right.}$$

**10.1023 INVALID-ORDER-1023** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3$$
$$R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^5\left(C_1C_3C_LL_1L_3R_1R_3R_Lg_m + C_1C_3C_LL_1L_3R_3R_L\right) + s^4\left(C_1C_3C_LL_3R_1R_3R_L + C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_1R_Lg_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_3R_L\right) + s^3\left(C_1C_3L_1R_1R_3R_Lg_m + C_1C_3L_1R_3R_L + C_1C_3L_3R_1R_3 + C_1C_3L_3$

**10.1024 INVALID-ORDER-1024** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3R_1R_3R_Lg_m$$
$$R_1g_m + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R_L + C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_3R_1R_L + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3\right) + s^3\left(C_1C_3C_LR_1R_3R_L + C_1C_3L_1R_1R_3\right.}$$

**10.1025 INVALID-ORDER-1025** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{C_1C_3C_LL_1L_3L_LR_1R_3g_m$$
$$R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_3R_1R_3 + C_1C_3C_LL_LR_1R_3 + C_1C_3L_1L_3R_1g_m + C_1C_3L_1L_3 + C_1C_LL_1L_LR_1\right.}$$

**10.1026 INVALID-ORDER-1026** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{C_1C_3L_1L_3$$
$$R_1R_3g_m + R_3 + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_3\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_3 + C_1C_3L_1L_3L_LR_1g_m + C_1C_3L_1L_3L_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3g_m + C_1C_3L_1L_3R_3 + C_1C_3L_1L_LR_1R_3g_m + C_1C_3L_1L_LR_3 + C_1C_3L_3L_LR_1 + C_1C_LL_1L_LR_1R_3g_m + C_1C\right.}$$

**10.1027 INVALID-ORDER-1027** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ L_Ls + R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{$$
$$R_1g_m + s^6\left(C_1C_3C_LL_1L_3L_LR_1g_m + C_1C_3C_LL_1L_3L_L\right) + s^5\left(C_1C_3C_LL_1L_3R_1R_3g_m + C_1C_3C_LL_1L_3R_1R_Lg_m + C_1C_3C_LL_1L_3R_3 + C_1C_3C_LL_1L_3R_L + C_1C_3C_LL_1L_LR_1R_3g_m + C_1C_3C_LL_1L_LR_3 + C_1C_3C_LL_3L_LR_1\right) + s^4\left(C_1C_3C_LL_1R_1R_3R_Lg_m + C_1C_3C_LL_1R_3R\right.}$$

**10.1028 INVALID-ORDER-1028** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{L_LR_Ls}{C_LL_LR_Ls^2+L_Ls+R_L}\right)$

$$H(s) = \frac{$$
$$R_1R_3R_Lg_m + R_3R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_3L_LR_3R_L\right) + s^5\left(C_1C_3C_LL_3L_LR_1R_3R_L + C_1C_3L_1L_3L_LR_1R_3g_m + C_1C_3L_1L_3L_LR_1R_Lg_m + C_1C_3L_1L_3L_LR_3 + C_1C_3L_1L_3L_LR_L\right) + s^4\left(C_1C_3L_1L_3R_1R_3R_Lg_m + C_1C_3L_1L_3R_3R_L + C_1C_3L_1L$

**10.1029 INVALID-ORDER-1029** $Z(s) = \left(\frac{R_1\left(C_1L_1s^2+1\right)}{C_1L_1s^2+C_1R_1s+1},\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \infty,\ \infty,\ \frac{C_LL_LR_Ls^2+L_Ls+R_L}{C_LL_Ls^2+1}\right)$

$$H(s) = \frac{$$
$$R_1R_3g_m + R_1R_Lg_m + R_3 + R_L + s^6\left(C_1C_3C_LL_1L_3L_LR_1R_3g_m + C_1C_3C_LL_1L_3L_LR_1R_Lg_m + C_1C_3C_LL_1L_3L_LR_3 + C_1C_3C_LL_1L_3L_LR_L\right) + s^5\left(C_1C_3C_LL_1L_LR_1R_3R_Lg_m + C_1C_3C_LL_1L_LR_3R_L + C_1C_3C_LL_3L_LR_1R_3 + C_1C_3C_LL_3L_LR_1R_L + C_1C_3L_1L_3L_LR_1g_m -$$

### 10.1030 INVALID-ORDER-1030 $Z(s) = \left( \frac{R_1\left(C_1 L_1 s^2+1\right)}{C_1 L_1 s^2+C_1 R_1 s+1},\ \infty,\ \frac{R_3\left(C_3 L_3 s^2+1\right)}{C_3 L_3 s^2+C_3 R_3 s+1},\ \infty,\ \infty,\ \frac{R_L\left(C_L L_L s^2+1\right)}{C_L L_L s^2+C_L R_L s+1} \right)$

$$H(s) = \frac{}{R_1 R_3 g_m + R_1 R_L g_m + R_3 + R_L + s^6 \left(C_1 C_3 C_L L_1 L_3 L_L R_1 R_3 g_m + C_1 C_3 C_L L_1 L_3 L_L R_1 R_L g_m + C_1 C_3 C_L L_1 L_3 L_L R_3 + C_1 C_3 C_L L_1 L_3 L_L R_L\right) + s^5 \left(C_1 C_3 C_L L_1 L_3 R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_3 R_3 R_L + C_1 C_3 C_L L_1 L_L R_1 R_3 R_L g_m + C_1 C_3 C_L L_1 L_L R_3 R_L + C_1 C_3 C_L L_3 L_L R\right.$$

## 11 PolynomialError