# Filter Summary Report: CG,TIA,simple,Z3,Z4,Z5

Generated by MacAnalog-Symbolix

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## Contents

# 1 Examined $H(z)$ for CG TIA simple Z3 Z4 Z5: $\frac{Z_3Z_4Z_5g_m-Z_3Z_4}{2Z_3Z_4g_m+2Z_3Z_5g_m+2Z_3+Z_4Z_5g_m+Z_4}$

$$H(z) = \frac{Z_3Z_4Z_5g_m - Z_3Z_4}{2Z_3Z_4g_m + 2Z_3Z_5g_m + 2Z_3 + Z_4Z_5g_m + Z_4}$$

# 2 HP

# 3 BP

## 3.1 BP-1 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4s}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^2\left(2C_4L_4R_3R_5g_m + 2C_4L_4R_3\right) + s\left(2L_4R_3g_m + L_4R_5g_m + L_4\right)}$$

**Parameters:**

Q: $\frac{2C_4R_3R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3\sqrt{\frac{1}{C_4L_4}}}{2R_3g_m+R_5g_m+1}$
wo: $\sqrt{\frac{1}{C_4L_4}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_4L_4}}(2R_3g_m+R_5g_m+1)}{2C_4R_3R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3\sqrt{\frac{1}{C_4L_4}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
Qz: 0
Wz: None

## 3.2 BP-2 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^2\left(2C_4L_4R_3R_4R_5g_m + 2C_4L_4R_3R_4\right) + s\left(2L_4R_3R_4g_m + 2L_4R_3R_5g_m + 2L_4R_3 + L_4R_4R_5g_m + L_4R_4\right)}$$

**Parameters:**

Q: $\frac{2C_4R_3R_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3R_4\sqrt{\frac{1}{C_4L_4}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
wo: $\sqrt{\frac{1}{C_4L_4}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_4L_4}}(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)}{2C_4R_3R_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3R_4\sqrt{\frac{1}{C_4L_4}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
Qz: 0
Wz: None

## 3.3 BP-3 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3s},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4R_5g_m - L_4\right)}{2L_4g_ms + 2R_5g_m + s^2\left(C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4\right) + 2}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3R_5g_m\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+\sqrt{2}C_3\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+2\sqrt{2}C_4R_5g_m\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+2\sqrt{2}C_4\sqrt{\frac{1}{C_3L_4+2C_4L_4}}}{2g_m}$
wo: $\sqrt{2}\sqrt{\frac{1}{C_3L_4+2C_4L_4}}$
bandwidth: $\frac{2\sqrt{2}g_m\sqrt{\frac{1}{C_3L_4+2C_4L_4}}}{\sqrt{2}C_3R_5g_m\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+\sqrt{2}C_3\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+2\sqrt{2}C_4R_5g_m\sqrt{\frac{1}{C_3L_4+2C_4L_4}}+2\sqrt{2}C_4\sqrt{\frac{1}{C_3L_4+2C_4L_4}}}$

K-LP: 0
K-HP: 0
K-BP: $\frac{R_5 g_m - 1}{2 g_m}$
Qz: 0
Wz: None

### 3.4 BP-4 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4 R_4 R_5 g_m - L_4 R_4\right)}{2R_4 R_5 g_m + 2R_4 + s^2\left(C_3 L_4 R_4 R_5 g_m + C_3 L_4 R_4 + 2C_4 L_4 R_4 R_5 g_m + 2C_4 L_4 R_4\right) + s\left(2L_4 R_4 g_m + 2L_4 R_5 g_m + 2L_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{2R_4 g_m + 2R_5 g_m + 2}$
wo: $\sqrt{2}\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}$
bandwidth: $\frac{\sqrt{2}(2R_4 g_m + 2R_5 g_m + 2)\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{\sqrt{2}C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$
Qz: 0
Wz: None

### 3.5 BP-5 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \frac{L_4 s}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4 R_3 R_5 g_m - L_4 R_3\right)}{2R_3 R_5 g_m + 2R_3 + s^2\left(C_3 L_4 R_3 R_5 g_m + C_3 L_4 R_3 + 2C_4 L_4 R_3 R_5 g_m + 2C_4 L_4 R_3\right) + s\left(2L_4 R_3 g_m + L_4 R_5 g_m + L_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_3 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{2R_3 g_m + R_5 g_m + 1}$
wo: $\sqrt{2}\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}$
bandwidth: $\frac{\sqrt{2}(2R_3 g_m + R_5 g_m + 1)\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{\sqrt{2}C_3 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_3 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + 1}$
Qz: 0
Wz: None

### 3.6 BP-6 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_4 R_3 R_4 R_5 g_m - L_4 R_3 R_4\right)}{2R_3 R_4 R_5 g_m + 2R_3 R_4 + s^2\left(C_3 L_4 R_3 R_4 R_5 g_m + C_3 L_4 R_3 R_4 + 2C_4 L_4 R_3 R_4 R_5 g_m + 2C_4 L_4 R_3 R_4\right) + s\left(2L_4 R_3 R_4 g_m + 2L_4 R_3 R_5 g_m + 2L_4 R_3 + L_4 R_4 R_5 g_m + L_4 R_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$
wo: $\sqrt{2}\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}$
bandwidth: $\frac{\sqrt{2}(2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4)\sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}{\sqrt{2}C_3 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + \sqrt{2}C_3 R_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}} + 2\sqrt{2}C_4 R_3 R_4 \sqrt{\frac{1}{C_3 L_4 + 2C_4 L_4}}}$
K-LP: 0
K-HP: 0
K-BP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$
Qz: 0
Wz: None

### 3.7 BP-7 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^2\left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4\right) + s\left(2L_3 R_4 g_m + 2L_3 R_5 g_m + 2L_3\right)}$$

**Parameters:**

Q: $\frac{C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + C_3 R_4 \sqrt{\frac{1}{C_3 L_3}}}{2R_4 g_m + 2R_5 g_m + 2}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_3}}(2R_4 g_m + 2R_5 g_m + 2)}{C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + C_3 R_4 \sqrt{\frac{1}{C_3 L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$

Qz: 0

Wz: None

### 3.8 BP-8 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 R_5 g_m - L_3\right)}{2L_3 g_m s + R_5 g_m + s^2\left(C_3 L_3 R_5 g_m + C_3 L_3 + 2C_4 L_3 R_5 g_m + 2C_4 L_3\right) + 1}$$

**Parameters:**

Q: $\frac{C_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + C_3 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}{2g_m}$

wo: $\sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}$

bandwidth: $\frac{2g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}{C_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + C_3 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_5 g_m - 1}{2g_m}$

Qz: 0

Wz: None

### 3.9 BP-9 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^2\left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2C_4 L_3 R_4 R_5 g_m + 2C_4 L_3 R_4\right) + s\left(2L_3 R_4 g_m + 2L_3 R_5 g_m + 2L_3\right)}$$

**Parameters:**

Q: $\frac{C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + C_3 R_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}{2R_4 g_m + 2R_5 g_m + 2}$

wo: $\sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}$

bandwidth: $\frac{(2R_4 g_m + 2R_5 g_m + 2)\sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}{C_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + C_3 R_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}} + 2C_4 R_4 \sqrt{\frac{1}{C_3 L_3 + 2C_4 L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$

Qz: 0

Wz: None

### 3.10 BP-10 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 L_4 R_5 g_m - L_3 L_4\right)}{2L_3 L_4 g_m s + 2L_3 R_5 g_m + 2L_3 + L_4 R_5 g_m + L_4 + s^2\left(C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + 2C_4 L_3 L_4 R_5 g_m + 2C_4 L_3 L_4\right)}$$

**Parameters:**

Q: $\frac{C_3 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+C_3\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_5 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}{2g_m}$

wo: $\sqrt{\frac{2L_3+L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}$

bandwidth: $\frac{2g_m\sqrt{\frac{2L_3+L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}{C_3 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+C_3\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_5 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_5 g_m\sqrt{\frac{2}{C_3 L_4+2C_4 L_4}+\frac{1}{C_3 L_3+2C_4 L_3}}-\sqrt{\frac{2}{C_3 L_4+2C_4 L_4}+\frac{1}{C_3 L_3+2C_4 L_3}}}{2g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}$

Qz: 0

Wz: None

### 3.11 BP-11 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 L_4 R_4 R_5 g_m - L_3 L_4 R_4\right)}{2L_3 R_4 R_5 g_m + 2L_3 R_4 + L_4 R_4 R_5 g_m + L_4 R_4 + s^2\left(C_3 L_3 L_4 R_4 R_5 g_m + C_3 L_3 L_4 R_4 + 2C_4 L_3 L_4 R_4 R_5 g_m + 2C_4 L_3 L_4 R_4\right) + s\left(2L_3 L_4 R_4 g_m + 2L_3 L_4 R_5 g_m + 2L_3 L_4\right)}$$

**Parameters:**

Q: $\frac{C_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+C_3 R_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_4 R_5 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}{2R_4 g_m+2R_5 g_m+2}$

wo: $\sqrt{\frac{2L_3+L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}$

bandwidth: $\frac{\sqrt{\frac{2L_3+L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}(2R_4 g_m+2R_5 g_m+2)}{C_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+C_3 R_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_4 R_5 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2C_4 R_4\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_4 R_5 g_m\sqrt{\frac{2}{C_3 L_4+2C_4 L_4}+\frac{1}{C_3 L_3+2C_4 L_3}}-R_4\sqrt{\frac{2}{C_3 L_4+2C_4 L_4}+\frac{1}{C_3 L_3+2C_4 L_3}}}{2R_4 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2R_5 g_m\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}+2\sqrt{\frac{2L_3}{C_3 L_3 L_4+2C_4 L_3 L_4}+\frac{L_4}{C_3 L_3 L_4+2C_4 L_3 L_4}}}$

Qz: 0

Wz: None

### 3.12 BP-12 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2+L_3 s+R_3},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 R_3 R_4 R_5 g_m - L_3 R_3 R_4\right)}{R_3 R_4 R_5 g_m + R_3 R_4 + s^2\left(C_3 L_3 R_3 R_4 R_5 g_m + C_3 L_3 R_3 R_4\right) + s\left(2L_3 R_3 R_4 g_m + 2L_3 R_3 R_5 g_m + 2L_3 R_3 + L_3 R_4 R_5 g_m + L_3 R_4\right)}$$

**Parameters:**

Q: $\frac{C_3 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}}+C_3 R_3 R_4\sqrt{\frac{1}{C_3 L_3}}}{2R_3 R_4 g_m+2R_3 R_5 g_m+2R_3+R_4 R_5 g_m+R_4}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_3}}(2R_3 R_4 g_m+2R_3 R_5 g_m+2R_3+R_4 R_5 g_m+R_4)}{C_3 R_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}}+C_3 R_3 R_4\sqrt{\frac{1}{C_3 L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m+2R_3 R_5 g_m+2R_3+R_4 R_5 g_m+R_4}$

Qz: 0

Wz: None

### 3.13 BP-13 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3\right) + s\left(2L_3R_3g_m + L_3R_5g_m + L_3\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+C_3R_3\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}{2R_3g_m+R_5g_m+1}$

wo: $\sqrt{\frac{1}{C_3L_3+2C_4L_3}}$

bandwidth: $\frac{(2R_3g_m+R_5g_m+1)\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}{C_3R_3R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+C_3R_3\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

Qz: 0

Wz: None

### 3.14 BP-14 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + 2C_4L_3R_3R_4R_5g_m + 2C_4L_3R_3R_4\right) + s\left(2L_3R_3R_4g_m + 2L_3R_3R_5g_m + 2L_3R_3 + L_3R_4R_5g_m + L_3R_4\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+C_3R_3R_4\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_4\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

wo: $\sqrt{\frac{1}{C_3L_3+2C_4L_3}}$

bandwidth: $\frac{(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}{C_3R_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+C_3R_3R_4\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3+2C_4L_3}}+2C_4R_3R_4\sqrt{\frac{1}{C_3L_3+2C_4L_3}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

Qz: 0

Wz: None

### 3.15 BP-15 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3L_4R_3R_5g_m - L_3L_4R_3\right)}{2L_3R_3R_5g_m + 2L_3R_3 + L_4R_3R_5g_m + L_4R_3 + s^2\left(C_3L_3L_4R_3R_5g_m + C_3L_3L_4R_3 + 2C_4L_3L_4R_3R_5g_m + 2C_4L_3L_4R_3\right) + s\left(2L_3L_4R_3g_m + L_3L_4R_5g_m + L_3L_4\right)}$$

**Parameters:**

Q: $\frac{C_3R_3R_5g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+C_3R_3\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+2C_4R_3R_5g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+2C_4R_3\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}}{2R_3g_m+R_5g_m+1}$

wo: $\sqrt{\frac{2L_3+L_4}{C_3L_3L_4+2C_4L_3L_4}}$

bandwidth: $\frac{\sqrt{\frac{2L_3+L_4}{C_3L_3L_4+2C_4L_3L_4}}(2R_3g_m+R_5g_m+1)}{C_3R_3R_5g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+C_3R_3\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+2C_4R_3R_5g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+2C_4R_3\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3R_5g_m\sqrt{\frac{2}{C_3L_4+2C_4L_4}+\frac{1}{C_3L_3+2C_4L_3}}-R_3\sqrt{\frac{2}{C_3L_4+2C_4L_4}+\frac{1}{C_3L_3+2C_4L_3}}}{2R_3g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+R_5g_m\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}+\sqrt{\frac{2L_3}{C_3L_3L_4+2C_4L_3L_4}+\frac{L_4}{C_3L_3L_4+2C_4L_3L_4}}}$

Qz: 0

Wz: None

### 3.16 BP-16 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s\left(L_3 L_4 R_3 R_4 R_5 g_m - L_3 L_4 R_3 R_4\right)}{2L_3 R_3 R_4 R_5 g_m + 2L_3 R_3 R_4 + L_4 R_3 R_4 R_5 g_m + L_4 R_3 R_4 + s^2\left(C_3 L_3 L_4 R_3 R_4 R_5 g_m + C_3 L_3 L_4 R_3 R_4 + 2C_4 L_3 L_4 R_3 R_4 R_5 g_m + 2C_4 L_3 L_4 R_3 R_4\right) + s\left(2L_3 L_4 R_3 R_4 g_m + 2L_3 L_4 R_3 R_5 g_m + 2L_3 L_4 R_3 + L_3 L_4 R_4 R_5 g_m + L_3 L_4 R_4\right)}$$

**Parameters:**

Q: $\frac{C_3 R_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + C_3 R_3 R_4 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2C_4 R_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2C_4 R_3 R_4 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}}}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$

wo: $\sqrt{\frac{2L_3 + L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}}$

bandwidth: $\frac{\sqrt{\frac{2L_3 + L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}}\left(2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4\right)}{C_3 R_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + C_3 R_3 R_4 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2C_4 R_3 R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2C_4 R_3 R_4 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{R_3 R_4 R_5 g_m \sqrt{\frac{2}{C_3 L_4 + 2C_4 L_4} + \frac{1}{C_3 L_3 + 2C_4 L_3}} - R_3 R_4 \sqrt{\frac{2}{C_3 L_4 + 2C_4 L_4} + \frac{1}{C_3 L_3 + 2C_4 L_3}}}{2R_3 R_4 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2R_3 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + 2R_3 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + R_4 R_5 g_m \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}} + R_4 \sqrt{\frac{2L_3}{C_3 L_3 L_4 + 2C_4 L_3 L_4} + \frac{L_4}{C_3 L_3 L_4 + 2C_4 L_3 L_4}}}$

Qz: 0

Wz: None

# 4 LP

# 5 BS

### 5.1 BS-1 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^2\left(C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3\right)}{2R_3 g_m + R_5 g_m + s^2\left(2C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4\right) + s\left(2C_4 R_3 R_5 g_m + 2C_4 R_3\right) + 1}$$

**Parameters:**

Q: $\frac{2L_4 R_3 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 \sqrt{\frac{1}{C_4 L_4}}}{2R_3 R_5 g_m + 2R_3}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_4 L_4}}\left(2R_3 R_5 g_m + 2R_3\right)}{2L_4 R_3 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 \sqrt{\frac{1}{C_4 L_4}}}$

K-LP: $\frac{R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + 1}$

K-HP: $\frac{R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + 1}$

K-BP: 0

Qz: None

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

### 5.2 BS-2 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s^2\left(C_4 L_4 R_3 R_4 R_5 g_m - C_4 L_4 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2\left(2C_4 L_4 R_3 R_4 g_m + 2C_4 L_4 R_3 R_5 g_m + 2C_4 L_4 R_3 + C_4 L_4 R_4 R_5 g_m + C_4 L_4 R_4\right) + s\left(2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_4\right)}$$

**Parameters:**

Q: $\frac{2L_4 R_3 R_4 g_m \sqrt{\frac{1}{C_4 L_4}} + 2L_4 R_3 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + 2L_4 R_3 \sqrt{\frac{1}{C_4 L_4}} + L_4 R_4 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 R_4 \sqrt{\frac{1}{C_4 L_4}}}{2R_3 R_4 R_5 g_m + 2R_3 R_4}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_4 L_4}}\left(2R_3 R_4 R_5 g_m + 2R_3 R_4\right)}{2L_4 R_3 R_4 g_m \sqrt{\frac{1}{C_4 L_4}} + 2L_4 R_3 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + 2L_4 R_3 \sqrt{\frac{1}{C_4 L_4}} + L_4 R_4 R_5 g_m \sqrt{\frac{1}{C_4 L_4}} + L_4 R_4 \sqrt{\frac{1}{C_4 L_4}}}$

K-LP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$

K-HP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$

K-BP: 0

Qz: None
Wz: $\sqrt{\frac{1}{C_4 L_4}}$

### 5.3 BS-3 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^2 \left(C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^2 \left(2C_3 L_3 R_4 g_m + 2C_3 L_3 R_5 g_m + 2C_3 L_3\right) + s \left(C_3 R_4 R_5 g_m + C_3 R_4\right) + 2}$$

**Parameters:**

Q: $\frac{2L_3 R_4 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_4 R_5 g_m + R_4}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_3}} (R_4 R_5 g_m + R_4)}{2L_3 R_4 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 \sqrt{\frac{1}{C_3 L_3}}}$
K-LP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$
K-HP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

### 5.4 BS-4 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3 L_3 s^2 + 1\right)}{C_3 L_3 s^2 + C_3 R_3 s + 1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s^2 \left(C_3 L_3 R_3 R_4 R_5 g_m - C_3 L_3 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2 \left(2C_3 L_3 R_3 R_4 g_m + 2C_3 L_3 R_3 R_5 g_m + 2C_3 L_3 R_3 + C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4\right) + s \left(C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4\right)}$$

**Parameters:**

Q: $\frac{2L_3 R_3 R_4 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_3 \sqrt{\frac{1}{C_3 L_3}} + L_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + L_3 R_4 \sqrt{\frac{1}{C_3 L_3}}}{R_3 R_4 R_5 g_m + R_3 R_4}$
wo: $\sqrt{\frac{1}{C_3 L_3}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_3 L_3}} (R_3 R_4 R_5 g_m + R_3 R_4)}{2L_3 R_3 R_4 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_3 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + 2L_3 R_3 \sqrt{\frac{1}{C_3 L_3}} + L_3 R_4 R_5 g_m \sqrt{\frac{1}{C_3 L_3}} + L_3 R_4 \sqrt{\frac{1}{C_3 L_3}}}$
K-LP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$
K-HP: $\frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$
K-BP: 0
Qz: None
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

## 6 GE

### 6.1 GE-1 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 R_4 g_m s^2 - C_5 R_3 R_4 s + R_3 R_4 g_m}{2R_3 g_m + R_4 g_m + s^2 \left(2C_5 L_5 R_3 g_m + C_5 L_5 R_4 g_m\right) + s \left(2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

**Parameters:**

Q: $\frac{2L_5 R_3 g_m \sqrt{\frac{1}{C_5 L_5}} + L_5 R_4 g_m \sqrt{\frac{1}{C_5 L_5}}}{2R_3 R_4 g_m + 2R_3 + R_4}$
wo: $\sqrt{\frac{1}{C_5 L_5}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_5 L_5}} (2R_3 R_4 g_m + 2R_3 + R_4)}{2L_5 R_3 g_m \sqrt{\frac{1}{C_5 L_5}} + L_5 R_4 g_m \sqrt{\frac{1}{C_5 L_5}}}$
K-LP: $\frac{R_3 R_4}{2R_3 + R_4}$
K-HP: $\frac{R_3 R_4}{2R_3 + R_4}$

K-BP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$
Qz: $-L_5g_m\sqrt{\frac{1}{C_5L_5}}$
Wz: $\sqrt{\frac{1}{C_5L_5}}$

## 6.2 GE-2 $Z(s)=\left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s)=\frac{-C_5L_5R_3R_4s^2+L_5R_3R_4g_ms-R_3R_4}{2R_3R_4g_m+2R_3+R_4+s^2\left(2C_5L_5R_3R_4g_m+2C_5L_5R_3+C_5L_5R_4\right)+s\left(2L_5R_3g_m+L_5R_4g_m\right)}$$

**Parameters:**

Q: $\frac{2C_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3\sqrt{\frac{1}{C_5L_5}}+C_5R_4\sqrt{\frac{1}{C_5L_5}}}{2R_3g_m+R_4g_m}$
wo: $\sqrt{\frac{1}{C_5L_5}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_5L_5}}(2R_3g_m+R_4g_m)}{2C_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3\sqrt{\frac{1}{C_5L_5}}+C_5R_4\sqrt{\frac{1}{C_5L_5}}}$
K-LP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$
K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$
K-BP: $\frac{R_3R_4}{2R_3+R_4}$
Qz: $-\frac{C_5\sqrt{\frac{1}{C_5L_5}}}{g_m}$
Wz: $\sqrt{\frac{1}{C_5L_5}}$

## 6.3 GE-3 $Z(s)=\left(\infty,\ \infty,\ R_3,\ R_4,\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s)=\frac{C_5L_5R_3R_4g_ms^2+R_3R_4g_m+s\left(C_5R_3R_4R_5g_m-C_5R_3R_4\right)}{2R_3g_m+R_4g_m+s^2\left(2C_5L_5R_3g_m+C_5L_5R_4g_m\right)+s\left(2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4\right)}$$

**Parameters:**

Q: $\frac{2L_5R_3g_m\sqrt{\frac{1}{C_5L_5}}+L_5R_4g_m\sqrt{\frac{1}{C_5L_5}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
wo: $\sqrt{\frac{1}{C_5L_5}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_5L_5}}(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)}{2L_5R_3g_m\sqrt{\frac{1}{C_5L_5}}+L_5R_4g_m\sqrt{\frac{1}{C_5L_5}}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: $\frac{R_3R_4}{2R_3+R_4}$
K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
Qz: $\frac{L_5g_m\sqrt{\frac{1}{C_5L_5}}}{R_5g_m-1}$
Wz: $\sqrt{\frac{1}{C_5L_5}}$

## 6.4 GE-4 $Z(s)=\left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s)=\frac{-C_5L_5R_3R_4R_5s^2-R_3R_4R_5+s\left(L_5R_3R_4R_5g_m-L_5R_3R_4\right)}{2R_3R_4R_5g_m+2R_3R_5+R_4R_5+s^2\left(2C_5L_5R_3R_4R_5g_m+2C_5L_5R_3R_5+C_5L_5R_4R_5\right)+s\left(2L_5R_3R_4g_m+2L_5R_3R_5g_m+2L_5R_3+L_5R_4R_5g_m+L_5R_4\right)}$$

**Parameters:**

Q: $\frac{2C_5R_3R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3R_5\sqrt{\frac{1}{C_5L_5}}+C_5R_4R_5\sqrt{\frac{1}{C_5L_5}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
wo: $\sqrt{\frac{1}{C_5L_5}}$
bandwidth: $\frac{\sqrt{\frac{1}{C_5L_5}}(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)}{2C_5R_3R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3R_5\sqrt{\frac{1}{C_5L_5}}+C_5R_4R_5\sqrt{\frac{1}{C_5L_5}}}$
K-LP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$
K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

Qz: $-\frac{C_5R_5\sqrt{\frac{1}{C_5L_5}}}{R_5g_m-1}$

Wz: $\sqrt{\frac{1}{C_5L_5}}$

### 6.5 GE-5 $Z(s)=\left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s)=\frac{L_5R_3R_4g_ms+R_3R_4R_5g_m-R_3R_4+s^2\left(C_5L_5R_3R_4R_5g_m-C_5L_5R_3R_4\right)}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4+s^2\left(2C_5L_5R_3R_4g_m+2C_5L_5R_3R_5g_m+2C_5L_5R_3+C_5L_5R_4R_5g_m+C_5L_5R_4\right)+s\left(2L_5R_3g_m+L_5R_4g_m\right)}$$

**Parameters:**

Q: $\frac{2C_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3R_5g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3\sqrt{\frac{1}{C_5L_5}}+C_5R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+C_5R_4\sqrt{\frac{1}{C_5L_5}}}{2R_3g_m+R_4g_m}$

wo: $\sqrt{\frac{1}{C_5L_5}}$

bandwidth: $\frac{\sqrt{\frac{1}{C_5L_5}}(2R_3g_m+R_4g_m)}{2C_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3R_5g_m\sqrt{\frac{1}{C_5L_5}}+2C_5R_3\sqrt{\frac{1}{C_5L_5}}+C_5R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+C_5R_4\sqrt{\frac{1}{C_5L_5}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{R_3R_4}{2R_3+R_4}$

Qz: $\frac{C_5R_5g_m\sqrt{\frac{1}{C_5L_5}}-C_5\sqrt{\frac{1}{C_5L_5}}}{g_m}$

Wz: $\sqrt{\frac{1}{C_5L_5}}$

### 6.6 GE-6 $Z(s)=\left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s)=\frac{-C_5R_3R_4R_5s+R_3R_4R_5g_m-R_3R_4+s^2\left(C_5L_5R_3R_4R_5g_m-C_5L_5R_3R_4\right)}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4+s^2\left(2C_5L_5R_3R_4g_m+2C_5L_5R_3R_5g_m+2C_5L_5R_3+C_5L_5R_4R_5g_m+C_5L_5R_4\right)+s\left(2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5\right)}$$

**Parameters:**

Q: $\frac{2L_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2L_5R_3R_5g_m\sqrt{\frac{1}{C_5L_5}}+2L_5R_3\sqrt{\frac{1}{C_5L_5}}+L_5R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+L_5R_4\sqrt{\frac{1}{C_5L_5}}}{2R_3R_4R_5g_m+2R_3R_5+R_4R_5}$

wo: $\sqrt{\frac{1}{C_5L_5}}$

bandwidth: $\frac{\sqrt{\frac{1}{C_5L_5}}(2R_3R_4R_5g_m+2R_3R_5+R_4R_5)}{2L_5R_3R_4g_m\sqrt{\frac{1}{C_5L_5}}+2L_5R_3R_5g_m\sqrt{\frac{1}{C_5L_5}}+2L_5R_3\sqrt{\frac{1}{C_5L_5}}+L_5R_4R_5g_m\sqrt{\frac{1}{C_5L_5}}+L_5R_4\sqrt{\frac{1}{C_5L_5}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

Qz: $\frac{-L_5R_5g_m\sqrt{\frac{1}{C_5L_5}}+L_5\sqrt{\frac{1}{C_5L_5}}}{R_5}$

Wz: $\sqrt{\frac{1}{C_5L_5}}$

### 6.7 GE-7 $Z(s)=\left(\infty,\ \infty,\ R_3,\ L_4s+R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s)=\frac{R_3R_5g_m-R_3+s^2\left(C_4L_4R_3R_5g_m-C_4L_4R_3\right)+s\left(C_4R_3R_4R_5g_m-C_4R_3R_4\right)}{2R_3g_m+R_5g_m+s^2\left(2C_4L_4R_3g_m+C_4L_4R_5g_m+C_4L_4\right)+s\left(2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4\right)+1}$$

**Parameters:**

Q: $\frac{2L_4R_3g_m\sqrt{\frac{1}{C_4L_4}}+L_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+L_4\sqrt{\frac{1}{C_4L_4}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

wo: $\sqrt{\frac{1}{C_4L_4}}$

bandwidth: $\frac{\sqrt{\frac{1}{C_4L_4}}(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)}{2L_4R_3g_m\sqrt{\frac{1}{C_4L_4}}+L_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+L_4\sqrt{\frac{1}{C_4L_4}}}$

K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

K-HP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

Qz: $\frac{L_4\sqrt{\frac{1}{C_4L_4}}}{R_4}$

Wz: $\sqrt{\frac{1}{C_4L_4}}$

### 6.8 GE-8 $Z(s)=\left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s)=\frac{R_3R_4R_5g_m-R_3R_4+s^2\left(C_4L_4R_3R_4R_5g_m-C_4L_4R_3R_4\right)+s\left(L_4R_3R_5g_m-L_4R_3\right)}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4+s^2\left(2C_4L_4R_3R_4g_m+2C_4L_4R_3R_5g_m+2C_4L_4R_3+C_4L_4R_4R_5g_m+C_4L_4R_4\right)+s\left(2L_4R_3g_m+L_4R_5g_m+L_4\right)}$$

**Parameters:**

Q: $\frac{2C_4R_3R_4g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3\sqrt{\frac{1}{C_4L_4}}+C_4R_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+C_4R_4\sqrt{\frac{1}{C_4L_4}}}{2R_3g_m+R_5g_m+1}$

wo: $\sqrt{\frac{1}{C_4L_4}}$

bandwidth: $\frac{\sqrt{\frac{1}{C_4L_4}}(2R_3g_m+R_5g_m+1)}{2C_4R_3R_4g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3R_5g_m\sqrt{\frac{1}{C_4L_4}}+2C_4R_3\sqrt{\frac{1}{C_4L_4}}+C_4R_4R_5g_m\sqrt{\frac{1}{C_4L_4}}+C_4R_4\sqrt{\frac{1}{C_4L_4}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

Qz: $C_4R_4\sqrt{\frac{1}{C_4L_4}}$

Wz: $\sqrt{\frac{1}{C_4L_4}}$

### 6.9 GE-9 $Z(s)=\left(\infty,\ \infty,\ L_3s+R_3+\frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s)=\frac{R_4R_5g_m-R_4+s^2\left(C_3L_3R_4R_5g_m-C_3L_3R_4\right)+s\left(C_3R_3R_4R_5g_m-C_3R_3R_4\right)}{2R_4g_m+2R_5g_m+s^2\left(2C_3L_3R_4g_m+2C_3L_3R_5g_m+2C_3L_3\right)+s\left(2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4\right)+2}$$

**Parameters:**

Q: $\frac{2L_3R_4g_m\sqrt{\frac{1}{C_3L_3}}+2L_3R_5g_m\sqrt{\frac{1}{C_3L_3}}+2L_3\sqrt{\frac{1}{C_3L_3}}}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_3L_3}}(2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4)}{2L_3R_4g_m\sqrt{\frac{1}{C_3L_3}}+2L_3R_5g_m\sqrt{\frac{1}{C_3L_3}}+2L_3\sqrt{\frac{1}{C_3L_3}}}$

K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$

K-HP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$

K-BP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

Qz: $\frac{L_3\sqrt{\frac{1}{C_3L_3}}}{R_3}$

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

### 6.10 GE-10 $Z(s)=\left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s)=\frac{R_3R_4R_5g_m-R_3R_4+s^2\left(C_3L_3R_3R_4R_5g_m-C_3L_3R_3R_4\right)+s\left(L_3R_4R_5g_m-L_3R_4\right)}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4+s^2\left(2C_3L_3R_3R_4g_m+2C_3L_3R_3R_5g_m+2C_3L_3R_3+C_3L_3R_4R_5g_m+C_3L_3R_4\right)+s\left(2L_3R_4g_m+2L_3R_5g_m+2L_3\right)}$$

**Parameters:**

Q: $\frac{2C_3R_3R_4g_m\sqrt{\frac{1}{C_3L_3}}+2C_3R_3R_5g_m\sqrt{\frac{1}{C_3L_3}}+2C_3R_3\sqrt{\frac{1}{C_3L_3}}+C_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3}}+C_3R_4\sqrt{\frac{1}{C_3L_3}}}{2R_4g_m+2R_5g_m+2}$

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

bandwidth: $\frac{\sqrt{\frac{1}{C_3L_3}}(2R_4g_m+2R_5g_m+2)}{2C_3R_3R_4g_m\sqrt{\frac{1}{C_3L_3}}+2C_3R_3R_5g_m\sqrt{\frac{1}{C_3L_3}}+2C_3R_3\sqrt{\frac{1}{C_3L_3}}+C_3R_4R_5g_m\sqrt{\frac{1}{C_3L_3}}+C_3R_4\sqrt{\frac{1}{C_3L_3}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$
Qz: $C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$
Wz: $\sqrt{\frac{1}{C_3 L_3}}$

# 7 AP

# 8 INVALID-NUMER

## 8.1 INVALID-NUMER-1 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 s + R_3 g_m}{2C_4 C_5 R_3 s^2 + g_m + s\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_4 C_5 R_3 \sqrt{\frac{g_m}{C_4 C_5 R_3}}}{2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5}$
wo: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_4 C_5 R_3}}}{2}$
bandwidth: $\frac{2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5}{2C_4 C_5 R_3}$
K-LP: $R_3$
K-HP: 0
K-BP: $-\frac{C_5 R_3}{2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5}$
Qz: 0
Wz: None

## 8.2 INVALID-NUMER-2 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_5 s + R_3 R_5 g_m - R_3}{2C_4 C_5 R_3 R_5 s^2 + 2R_3 g_m + R_5 g_m + s\left(2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5\right) + 1}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_4 C_5 R_3 R_5 \sqrt{\frac{2g_m}{C_4 C_5 R_5} + \frac{g_m}{C_4 C_5 R_3} + \frac{1}{C_4 C_5 R_3 R_5}}}{2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5}$
wo: $\frac{\sqrt{2}\sqrt{\frac{2R_3 g_m + R_5 g_m + 1}{C_4 C_5 R_3 R_5}}}{2}$
bandwidth: $\frac{\sqrt{\frac{2R_3 g_m + R_5 g_m + 1}{C_4 C_5 R_3 R_5}}\left(2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5\right)}{2C_4 C_5 R_3 R_5 \sqrt{\frac{2g_m}{C_4 C_5 R_5} + \frac{g_m}{C_4 C_5 R_3} + \frac{1}{C_4 C_5 R_3 R_5}}}$
K-LP: $\frac{R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + 1}$
K-HP: 0
K-BP: $-\frac{C_5 R_3 R_5}{2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5}$
Qz: 0
Wz: None

## 8.3 INVALID-NUMER-3 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 g_m + s\left(C_5 R_3 R_5 g_m - C_5 R_3\right)}{g_m + s^2\left(2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3\right) + s\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_4 C_5 R_3 R_5 g_m \sqrt{\frac{g_m}{C_4 C_5 R_3 R_5 g_m + C_4 C_5 R_3}} + \sqrt{2} C_4 C_5 R_3 \sqrt{\frac{g_m}{C_4 C_5 R_3 R_5 g_m + C_4 C_5 R_3}}}{2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5}$
wo: $\sqrt{\frac{g_m}{2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3}}$
bandwidth: $\frac{\sqrt{\frac{g_m}{2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3}}\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}{\sqrt{2} C_4 C_5 R_3 R_5 g_m \sqrt{\frac{g_m}{C_4 C_5 R_3 R_5 g_m + C_4 C_5 R_3}} + \sqrt{2} C_4 C_5 R_3 \sqrt{\frac{g_m}{C_4 C_5 R_3 R_5 g_m + C_4 C_5 R_3}}}$

K-LP: $R_3$
K-HP: 0
K-BP: $\frac{C_5R_3R_5g_m-C_5R_3}{2C_4R_3g_m+2C_5R_3g_m+C_5R_5g_m+C_5}$
Qz: 0
Wz: None

## 8.4 INVALID-NUMER-4 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4s + R_3R_4g_m}{2C_4C_5R_3R_4s^2 + 2R_3g_m + R_4g_m + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_4C_5R_3R_4\sqrt{\frac{2g_m}{C_4C_5R_4}+\frac{g_m}{C_4C_5R_3}}}{2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\frac{\sqrt{2}\sqrt{\frac{2R_3g_m+R_4g_m}{C_4C_5R_3R_4}}}{2}$
bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{C_4C_5R_3R_4}}(2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{2C_4C_5R_3R_4\sqrt{\frac{2g_m}{C_4C_5R_4}+\frac{g_m}{C_4C_5R_3}}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $-\frac{C_5R_3R_4}{2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: 0
Wz: None

## 8.5 INVALID-NUMER-5 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{2C_4C_5R_3R_4R_5s^2 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(2C_4R_3R_4R_5g_m + 2C_4R_3R_4 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_4C_5R_3R_4R_5\sqrt{\frac{2g_m}{C_4C_5R_5}+\frac{2g_m}{C_4C_5R_4}+\frac{2}{C_4C_5R_4R_5}+\frac{g_m}{C_4C_5R_3}+\frac{1}{C_4C_5R_3R_5}}}{2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
wo: $\frac{\sqrt{2}\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_4C_5R_3R_4R_5}}}{2}$
bandwidth: $\frac{\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_4C_5R_3R_4R_5}}(2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5)}{2C_4C_5R_3R_4R_5\sqrt{\frac{2g_m}{C_4C_5R_5}+\frac{2g_m}{C_4C_5R_4}+\frac{2}{C_4C_5R_4R_5}+\frac{g_m}{C_4C_5R_3}+\frac{1}{C_4C_5R_3R_5}}}$
K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$
K-HP: 0
K-BP: $-\frac{C_5R_3R_4R_5}{2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
Qz: 0
Wz: None

## 8.6 INVALID-NUMER-6 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4\right) + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+\sqrt{2}C_4C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}}{2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4}$
wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}$
bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}(2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4)}{\sqrt{2}C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+\sqrt{2}C_4C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_5R_3R_4R_5g_m\sqrt{\frac{2g_m}{C_4C_5R_4R_5g_m+C_4C_5R_4}+\frac{g_m}{C_4C_5R_3R_5g_m+C_4C_5R_3}}-C_5R_3R_4\sqrt{\frac{2g_m}{C_4C_5R_4R_5g_m+C_4C_5R_4}+\frac{g_m}{C_4C_5R_3R_5g_m+C_4C_5R_3}}}{2C_4R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+2C_5R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+2C_5R_3R_5g_m\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+2C_5R_3\sqrt{\frac{2R_3g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}+\frac{R_4g_m}{C_4C_5R_3R_4R_5g_m+C_4C_5R_3R_4}}+C_5R_4R_5g_m\sqrt{\frac{2}{C_4C_5R_3R_4}}$
Qz: 0

Wz: None

## 8.7 INVALID-NUMER-7 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 s + R_4 g_m}{C_3 C_5 R_4 s^2 + 2g_m + s\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_3 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4}}}{C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5}$
wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_4}}$
bandwidth: $\frac{C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5}{C_3 C_5 R_4}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $-\frac{C_5 R_4}{C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5}$
Qz: 0
Wz: None

## 8.8 INVALID-NUMER-8 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 R_5 s + R_4 R_5 g_m - R_4}{C_3 C_5 R_4 R_5 s^2 + 2R_4 g_m + 2R_5 g_m + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_3 C_5 R_4 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5} + \frac{g_m}{C_3 C_5 R_4} + \frac{1}{C_3 C_5 R_4 R_5}}}{C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5}$
wo: $\sqrt{\frac{2R_4 g_m + 2R_5 g_m + 2}{C_3 C_5 R_4 R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{\frac{2R_4 g_m + 2R_5 g_m + 2}{C_3 C_5 R_4 R_5}}\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right)}{2C_3 C_5 R_4 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5} + \frac{g_m}{C_3 C_5 R_4} + \frac{1}{C_3 C_5 R_4 R_5}}}$
K-LP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$
K-HP: 0
K-BP: $-\frac{C_5 R_4 R_5}{C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5}$
Qz: 0
Wz: None

## 8.9 INVALID-NUMER-9 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s\left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^2\left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4\right) + s\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2} C_3 C_5 R_4 R_5 g_m \sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}} + \sqrt{2} C_3 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}}}{C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5}$
wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}}$
bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}}\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}{\sqrt{2} C_3 C_5 R_4 R_5 g_m \sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}} + \sqrt{2} C_3 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4}}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_5 R_4 R_5 g_m - C_5 R_4}{C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5}$
Qz: 0
Wz: None

## 8.10 INVALID-NUMER-10 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_5 s + R_5 g_m - 1}{2g_m + s^2\left(C_3 C_5 R_5 + 2C_4 C_5 R_5\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 C_5 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}} + 2\sqrt{2}C_4 C_5 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}}}{C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}}\left(C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}{\sqrt{2}C_3 C_5 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}} + 2\sqrt{2}C_4 C_5 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5}}}$

K-LP: $\frac{R_5 g_m - 1}{2g_m}$

K-HP: 0

K-BP: $-\frac{C_5 R_5}{C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m}$

Qz: 0

Wz: None

## 8.11 INVALID-NUMER-11 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 s + R_4 g_m}{2g_m + s^2\left(C_3 C_5 R_4 + 2C_4 C_5 R_4\right) + s\left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}} + 2\sqrt{2}C_4 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}}}{C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}}\left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}{\sqrt{2}C_3 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}} + 2\sqrt{2}C_4 C_5 R_4 \sqrt{\frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4}}}$

K-LP: $\frac{R_4}{2}$

K-HP: 0

K-BP: $-\frac{C_5 R_4}{C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5}$

Qz: 0

Wz: None

## 8.12 INVALID-NUMER-12 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 R_5 s + R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + s^2\left(C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3 C_5 R_4 R_5 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}}{C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5} + 2\sqrt{2}C_4 C_5 R_4 R_5 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}}$

wo: $\sqrt{\frac{2R_4 g_m + 2R_5 g_m + 2}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_4 g_m + 2R_5 g_m + 2}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right)}{\sqrt{2}C_3 C_5 R_4 R_5 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}} + 2\sqrt{2}C_4 C_5 R_4 R_5 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}}$

K-LP: $\frac{R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + 2}$

K-HP: 0

K-BP: $-\frac{C_5 R_4 R_5 \sqrt{\frac{g_m}{C_3 C_5 R_5 + 2C_4 C_5 R_5} + \frac{g_m}{C_3 C_5 R_4 + 2C_4 C_5 R_4} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}}{C_3 R_4 R_5 g_m \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}} + C_3 R_4 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}} + 2C_4 R_4 R_5 g_m \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{1}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}} + 2C_4 R_4 \sqrt{\frac{R_4 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5} + \frac{R_5 g_m}{C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5}}}$

Qz: 0

Wz: None

## 8.13 INVALID-NUMER-13 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s\left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^2\left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_4\right) + s\left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3C_5R_4R_5g_m\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+\sqrt{2}C_3C_5R_4\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+2\sqrt{2}C_4C_5R_4R_5g_m\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+2\sqrt{2}C_4C_5R_4\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}}{C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}(C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5)}{\sqrt{2}C_3C_5R_4R_5g_m\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+\sqrt{2}C_3C_5R_4\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+2\sqrt{2}C_4C_5R_4R_5g_m\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}+2\sqrt{2}C_4C_5R_4\sqrt{\frac{g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4+2C_4C_5R_4R_5g_m+2C_4C_5R_4}}}$

K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_5R_4R_5g_m-C_5R_4}{C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5}$
Qz: 0
Wz: None

## 8.14 INVALID-NUMER-14 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s\left(C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2g_m + s^2\left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4\right)}$$

**Parameters:**

Q: $\frac{\sqrt{2}C_3C_4R_4R_5g_m\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}+\sqrt{2}C_3C_4R_4\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}}{C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}(C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4)}{\sqrt{2}C_3C_4R_4R_5g_m\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}+\sqrt{2}C_3C_4R_4\sqrt{\frac{g_m}{C_3C_4R_4R_5g_m+C_3C_4R_4}}}$

K-LP: $\frac{R_5g_m-1}{2g_m}$
K-HP: 0
K-BP: $\frac{C_4R_4R_5g_m-C_4R_4}{C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4}$
Qz: 0
Wz: None

## 8.15 INVALID-NUMER-15 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_4 s + R_3 R_4 g_m}{C_3 C_5 R_3 R_4 s^2 + 2R_3 g_m + R_4 g_m + s\left(C_3 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4\sqrt{\frac{2g_m}{C_3C_5R_4}+\frac{g_m}{C_3C_5R_3}}}{C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4}}(C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{C_3C_5R_3R_4\sqrt{\frac{2g_m}{C_3C_5R_4}+\frac{g_m}{C_3C_5R_3}}}$

K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $-\frac{C_5R_3R_4}{C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: 0
Wz: None

## 8.16 INVALID-NUMER-16 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{C_3C_5R_3R_4R_5s^2 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4R_5\sqrt{\frac{2g_m}{C_3C_5R_5}+\frac{2g_m}{C_3C_5R_4}+\frac{2}{C_3C_5R_4R_5}+\frac{g_m}{C_3C_5R_3}+\frac{1}{C_3C_5R_3R_5}}}{C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$

wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_3C_5R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_3C_5R_3R_4R_5}}\left(C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5\right)}{C_3C_5R_3R_4R_5\sqrt{\frac{2g_m}{C_3C_5R_5}+\frac{2g_m}{C_3C_5R_4}+\frac{2}{C_3C_5R_4R_5}+\frac{g_m}{C_3C_5R_3}+\frac{1}{C_3C_5R_3R_5}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: 0

K-BP: $-\frac{C_5R_3R_4R_5}{C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$

Qz: 0

Wz: None

## 8.17 INVALID-NUMER-17 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4\right) + s\left(C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}}{C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}\left(C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4\right)}{C_3C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}}$

K-LP: $\frac{R_3R_4}{2R_3+R_4}$

K-HP: 0

K-BP: $\frac{C_5R_3R_4R_5g_m\sqrt{\frac{2g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4}+\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3}}-C_5R_3R_4\sqrt{\frac{2g_m}{C_3C_5R_4R_5g_m+C_3C_5R_4}+\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3}}}{C_3R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+2C_5R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+2C_5R_3R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+2C_5R_3\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}+C_5R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4}}}$

Qz: 0

Wz: None

## 8.18 INVALID-NUMER-18 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_3s + R_3g_m}{g_m + s^2\left(C_3C_5R_3 + 2C_4C_5R_3\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}+2C_4C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}}{C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5}$

wo: $\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}\left(C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5\right)}{C_3C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}+2C_4C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}}$

K-LP: $R_3$

K-HP: 0

K-BP: $-\frac{C_5R_3}{C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5}$

Qz: 0

Wz: None

## 8.19 INVALID-NUMER-19 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_5s + R_3R_5g_m - R_3}{2R_3g_m + R_5g_m + s^2\left(C_3C_5R_3R_5 + 2C_4C_5R_3R_5\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_5\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}+2C_4C_5R_3R_5\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}}{C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}$

wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_5g_m+1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}\left(C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5\right)}{C_3C_5R_3R_5\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}+2C_4C_5R_3R_5\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}}$

K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

K-HP: 0

K-BP: $-\frac{C_5R_3R_5\sqrt{\frac{2g_m}{C_3C_5R_5+2C_4C_5R_5}+\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}}{C_3R_3R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}+C_3R_3\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}+2C_4R_3R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{1}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}+2C_4R_3\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}+\frac{R_5g_m}{C_3C_5R_3R_5+2C_4C_5R_3R_5}}}$

Qz: 0

Wz: None

## 8.20 INVALID-NUMER-20 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s\left(C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_5g_m\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+C_3C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+2C_4C_5R_3R_5g_m\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+2C_4C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}}{C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5R_5g_m+C_5}$

wo: $\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}\left(C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5R_5g_m+C_5\right)}{C_3C_5R_3R_5g_m\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+C_3C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+2C_4C_5R_3R_5g_m\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}+2C_4C_5R_3\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m+C_3C_5R_3+2C_4C_5R_3R_5g_m+2C_4C_5R_3}}}$

K-LP: $R_3$

K-HP: 0

K-BP: $\frac{C_5R_3R_5g_m-C_5R_3}{C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5R_5g_m+C_5}$

Qz: 0

Wz: None

## 8.21 INVALID-NUMER-21 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4s + R_3R_4g_m}{2R_3g_m + R_4g_m + s^2\left(C_3C_5R_3R_4 + 2C_4C_5R_3R_4\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+2C_4C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}}{C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}\left(C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4\right)}{C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+2C_4C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}}$

K-LP: $\frac{R_3R_4}{2R_3+R_4}$

K-HP: 0

K-BP: $-\frac{C_5R_3R_4\sqrt{\frac{2g_m}{C_3C_5R_4+2C_4C_5R_4}+\frac{g_m}{C_3C_5R_3+2C_4C_5R_3}}}{C_3R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+2C_4R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+2C_5R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+2C_5R_3\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}+C_5R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4+2C_4C_5R_3R_4}}}$

Qz: 0

Wz: None

## 8.22 INVALID-NUMER-22 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(C_3C_5R_3R_4R_5 + 2C_4C_5R_3R_4R_5\right) + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4R_5\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}+2C_4C_5R_3R_4R_5\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R}{C_3C_5R_3R_4R_5+}}}{C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$

wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}\left(C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5\right)}{C_3C_5R_3R_4R_5\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}+2C_4C_5R_3R_4R_5\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{}{C_3}}}$

K-LP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-HP: 0

K-BP: $-\frac{}{C_3R_3R_4R_5g_m\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}+C_3R_3R_4\sqrt{\frac{2R_3R_4g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{2R_3}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{R_4R_5g_m}{C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}+\frac{}{C_3C_5R_3R_4R_5+}}}$

Qz: 0

Wz: None

## 8.23 INVALID-NUMER-23 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

**Parameters:**

Q: $\frac{C_3C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+2C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}}{C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}\left(C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5\right.}{C_3C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+C_3C_5R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+2C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+2C_5R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C}}}$

K-LP: $\frac{R_3R_4}{2R_3+R_4}$

K-HP: 0

K-BP: $\frac{}{C_3R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+2C_4R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}+\frac{R_4g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_4}}+2C_5R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_5R_3R_4R_5g_m+C_3C_5R_3R_4+2C}}}$

Qz: 0

Wz: None

## 8.24 INVALID-NUMER-24 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{2R_3g_m + R_5g_m + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4\right) + 1}$$

**Parameters:**

Q: $\frac{C_3C_4R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+C_3C_4R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}}{C_3R_3R_5g_m+C_3R_3+2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_5g_m+1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}\left(C_3R_3R_5g_m+C_3R_3+2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4\right)}{C_3C_4R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+C_3C_4R_3R_4\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}}$

K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

K-HP: 0

K-BP: $\frac{C_4R_3R_4R_5g_m\sqrt{\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{2g_m}{C_3C_4R_4R_5g_m+}}}{C_3R_3R_5g_m\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+C_3R_3\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_4R_3R_4g_m\sqrt{\frac{2R_3g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_4R_3R_5g_m}$

Qz: 0

Wz: None

### 8.25 INVALID-NUMER-25 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s\left(C_3 R_3 R_5 g_m - C_3 R_3\right) - 1}{2g_m + s^2\left(2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3\right) + s\left(2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4\right)}$$

**Parameters:**

Q: $\frac{2C_3C_4R_3R_5g_m\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}+2C_3C_4R_3\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}}{2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4}$

wo: $\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}(2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4)}{2C_3C_4R_3R_5g_m\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}+2C_3C_4R_3\sqrt{\frac{g_m}{C_3C_4R_3R_5g_m+C_3C_4R_3}}}$

K-LP: $\frac{R_5g_m-1}{2g_m}$

K-HP: 0

K-BP: $\frac{C_3R_3R_5g_m-C_3R_3}{2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4}$

Qz: 0

Wz: None

### 8.26 INVALID-NUMER-26 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s\left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^2\left(2C_3 C_4 R_3 R_4 R_5 g_m + 2C_3 C_4 R_3 R_4\right) + s\left(2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4\right) + 2}$$

**Parameters:**

Q: $\frac{2C_3C_4R_3R_4R_5g_m\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_3C_4R_3R_4\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}}{2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4}$

wo: $\sqrt{\frac{R_4g_m+R_5g_m+1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{R_4g_m+R_5g_m+1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}(2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4)}{2C_3C_4R_3R_4R_5g_m\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_3C_4R_3R_4\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}}$

K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$

K-HP: 0

K-BP: $\frac{C_3R_3R_4R_5g_m\sqrt{\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{g_m}{C_3C_4R_3R_5g_m}}}{2C_3R_3R_4g_m\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_3R_5g_m\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_3R_3\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+C_3R_4R_5g_m\sqrt{\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{g_m}{C_3C_4R_3R_5g_m}}+C_3R_4\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_4R_4R_5g_m\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}+2C_4R_4\sqrt{\frac{R_4g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{R_5g_m}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}+\frac{1}{C_3C_4R_3R_4R_5g_m+C_3C_4R_3R_4}}}$

Qz: 0

Wz: None

# 9 INVALID-WZ

### 9.1 INVALID-WZ-1 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_3 R_4 s^2 + R_3 g_m + s\left(C_4 R_3 R_4 g_m - C_5 R_3\right)}{g_m + s^2\left(2C_4 C_5 R_3 R_4 g_m + 2C_4 C_5 R_3 + C_4 C_5 R_4\right) + s\left(2C_4 R_3 g_m + C_4 R_4 g_m + 2C_5 R_3 g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{2C_4C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}+2C_4C_5R_3\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}+C_4C_5R_4\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}}{2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5}$

wo: $\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}(2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5)}{2C_4C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}+2C_4C_5R_3\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}+C_4C_5R_4\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}}$

K-LP: $R_3$

K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

K-BP: $\frac{C_4R_3R_4g_m-C_5R_3}{2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5}$

Qz: $-\frac{C_4C_5R_4\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3+C_4C_5R_4}}}{C_4R_4g_m-C_5}$

Wz: $\sqrt{-\frac{g_m}{C_4C_5R_4}}$

## 9.2 INVALID-WZ-2 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_3 R_4 R_5 s^2 + R_3 R_5 g_m - R_3 + s\left(C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4 - C_5 R_3 R_5\right)}{2R_3 g_m + R_5 g_m + s^2\left(2C_4 C_5 R_3 R_4 R_5 g_m + 2C_4 C_5 R_3 R_5 + C_4 C_5 R_4 R_5\right) + s\left(2C_4 R_3 R_4 g_m + 2C_4 R_3 R_5 g_m + 2C_4 R_3 + C_4 R_4 R_5 g_m + C_4 R_4 + 2C_5 R_3 R_5 g_m + C_5 R_5\right) + 1}$$

**Parameters:**

Q: $\frac{2C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4C_5R_3R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4C_5R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}}{2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4+2C_5R_3R_5g_m+C_5R_5}$

wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_5g_m+1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}\left(2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4+2C_5R_3R_5g_m+C_5R_5\right)}{2C_4C_5R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4C_5R_3R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4C_5R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}}$

K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$

K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

K-BP: $\frac{C_4R_3R_4R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_3R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_3\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4R_4R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4C_5R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_5R_5}{2C_4R_3R_4g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_3R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_3\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4R_4R_5g_m\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+2C_4R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_4C_5R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}+C_5R_5}}$

Qz: $-\frac{C_4C_5R_4R_5\sqrt{\frac{2R_3g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{R_5g_m}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}+\frac{1}{2C_4C_5R_3R_4R_5g_m+2C_4C_5R_3R_5+C_4C_5R_4R_5}}}{C_4R_4R_5g_m-C_4R_4-C_5R_5}$

Wz: $\sqrt{\frac{-R_5g_m+1}{C_4C_5R_4R_5}}$

## 9.3 INVALID-WZ-3 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 g_m + s^2\left(C_4 C_5 R_3 R_4 R_5 g_m - C_4 C_5 R_3 R_4\right) + s\left(C_4 R_3 R_4 g_m + C_5 R_3 R_5 g_m - C_5 R_3\right)}{g_m + s^2\left(2C_4 C_5 R_3 R_4 g_m + 2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3 + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4\right) + s\left(2C_4 R_3 g_m + C_4 R_4 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

**Parameters:**

Q: $\frac{2C_4C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+2C_4C_5R_3R_5g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+2C_4C_5R_3\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+C_4C_5R_4R_5g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}}{2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5R_5g_m+C_5}$

wo: $\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}$

bandwidth: $\frac{\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}\left(2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5R_5g_m+C_5\right)}{2C_4C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+2C_4C_5R_3R_5g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+2C_4C_5R_3\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+C_4C_5R_4R_5g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}+C_5R_5}$

K-LP: $R_3$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{C_4R_3R_4g_m+C_5R_3R_5g_m-C_5R_3}{2C_4R_3g_m+C_4R_4g_m+2C_5R_3g_m+C_5R_5g_m+C_5}$

Qz: $\frac{C_4C_5R_4R_5g_m\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}-C_4C_5R_4\sqrt{\frac{g_m}{2C_4C_5R_3R_4g_m+2C_4C_5R_3R_5g_m+2C_4C_5R_3+C_4C_5R_4R_5g_m+C_4C_5R_4}}}{C_4R_4g_m+C_5R_5g_m-C_5}$

Wz: $\sqrt{\frac{g_m}{C_4C_5R_4R_5g_m-C_4C_5R_4}}$

## 9.4 INVALID-WZ-4 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 R_4 s^2 + R_4 g_m + s\left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2g_m + s^2\left(2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4\right) + s\left(2C_3 R_3 g_m + C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{2\sqrt{2}C_3C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}+\sqrt{2}C_3C_5R_4\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}}{2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}\left(2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5\right)}{2\sqrt{2}C_3C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}+\sqrt{2}C_3C_5R_4\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}}$

K-LP: $\frac{R_4}{2}$

K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

K-BP: $\frac{C_3R_3R_4g_m-C_5R_4}{2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5}$

Qz: $-\frac{\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3+C_3C_5R_4}}}{C_3R_3g_m-C_5}$

Wz: $\sqrt{-\frac{g_m}{C_3C_5R_3}}$

## 9.5 INVALID-WZ-5 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 R_4 R_5 s^2 + R_4 R_5 g_m - R_4 + s\left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{2R_4 g_m + 2R_5 g_m + s^2\left(2C_3 C_5 R_3 R_4 R_5 g_m + 2C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5\right) + s\left(2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

**Parameters:**

Q: $\frac{2\sqrt{2}C_3C_5R_3R_4R_5g_m\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+2\sqrt{2}C_3C_5R_3R_5\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+\sqrt{2}C_3C_5R_4R_5\sqrt{\frac{2C_3}{2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4+2C_5R_4R_5g_m+2C_5R_5}}$

wo: $\sqrt{\frac{2R_4g_m+2R_5g_m+2}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_4g_m+2R_5g_m+2}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}(2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4+2C_5R_4R_5g_m+2C_5R_5)}{2\sqrt{2}C_3C_5R_3R_4R_5g_m\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+2\sqrt{2}C_3C_5R_3R_5\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+\sqrt{2}C_3C_5$

K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$

K-HP: $-\frac{R_3R_4}{2R_3R_4g_m+2R_3+R_4}$

K-BP: $\frac{C_3R_3R_4R_5g_m\sqrt{\frac{2C_3}{}}}{2C_3R_3R_4g_m\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+2C_3R_3R_5g_m\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}+2C_3R_3\sqrt{\frac{2C_3C_5R_3R_4R_5g_m+}{}}$

Qz: $-\frac{\sqrt{2}C_3C_5R_3R_5\sqrt{\frac{R_4g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{R_5g_m}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}+\frac{1}{2C_3C_5R_3R_4R_5g_m+2C_3C_5R_3R_5+C_3C_5R_4R_5}}}{C_3R_3R_5g_m-C_3R_3-C_5R_5}$

Wz: $\sqrt{\frac{-R_5g_m+1}{C_3C_5R_3R_5}}$

## 9.6 INVALID-WZ-6 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^2\left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4\right) + s\left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^2\left(2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 R_5 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4\right) + s\left(2C_3 R_3 g_m + C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**Parameters:**

Q: $\frac{2\sqrt{2}C_3C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3R_5g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+\sqrt{2}C_3C_5R_4R_5g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}}{2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}(2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5)}{2\sqrt{2}C_3C_5R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3R_5g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+2\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}+\sqrt{2}C_3C_5R_4R_5g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}}$

K-LP: $\frac{R_4}{2}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{C_3R_3R_4g_m+C_5R_4R_5g_m-C_5R_4}{2C_3R_3g_m+C_3R_4g_m+2C_5R_4g_m+2C_5R_5g_m+2C_5}$

Qz: $\frac{\sqrt{2}C_3C_5R_3R_5g_m\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}-\sqrt{2}C_3C_5R_3\sqrt{\frac{g_m}{2C_3C_5R_3R_4g_m+2C_3C_5R_3R_5g_m+2C_3C_5R_3+C_3C_5R_4R_5g_m+C_3C_5R_4}}}{C_3R_3g_m+C_5R_5g_m-C_5}$

Wz: $\sqrt{\frac{g_m}{C_3C_5R_3R_5g_m-C_3C_5R_3}}$

## 9.7 INVALID-WZ-7 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^2\left(C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4\right) + s\left(C_3 R_3 R_5 g_m - C_3 R_3 + C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2g_m + s^2\left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4\right) + s\left(2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4\right)}$$

**Parameters:**

Q: $\frac{2\sqrt{2}C_3C_4R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+2\sqrt{2}C_3C_4R_3R_5g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+2\sqrt{2}C_3C_4R_3\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+\sqrt{2}C_3C_4R_4R_5g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4}}}{2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}(2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4)}{2\sqrt{2}C_3C_4R_3R_4g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+2\sqrt{2}C_3C_4R_3R_5g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+2\sqrt{2}C_3C_4R_3\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}+\sqrt{2}C_3C_4R_4R_5g_m\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4}}}$

K-LP: $\frac{R_5g_m-1}{2g_m}$

K-HP: $\frac{R_3R_4R_5g_m-R_3R_4}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}$

K-BP: $\frac{C_3R_3R_5g_m-C_3R_3+C_4R_4R_5g_m-C_4R_4}{2C_3R_3g_m+C_3R_5g_m+C_3+2C_4R_4g_m+2C_4R_5g_m+2C_4}$

Qz: $\frac{\sqrt{2}C_3C_4R_3R_4\sqrt{\frac{g_m}{2C_3C_4R_3R_4g_m+2C_3C_4R_3R_5g_m+2C_3C_4R_3+C_3C_4R_4R_5g_m+C_3C_4R_4}}}{C_3R_3+C_4R_4}$

Wz: $\sqrt{\frac{1}{C_3C_4R_3R_4}}$

# 10 INVALID-ORDER

## 10.1 INVALID-ORDER-1 $Z(s) = (\infty,\ \infty,\ R_3,\ R_4,\ R_5,\ \infty)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4}$$

## 10.2 INVALID-ORDER-2 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_4 s + R_3 R_4 g_m}{2R_3 g_m + R_4 g_m + s\left(2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

## 10.3 INVALID-ORDER-3 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_4 R_5 s + R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s\left(2C_5 R_3 R_4 R_5 g_m + 2C_5 R_3 R_5 + C_5 R_4 R_5\right)}$$

## 10.4 INVALID-ORDER-4 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 R_4 g_m + s\left(C_5 R_3 R_4 R_5 g_m - C_5 R_3 R_4\right)}{2R_3 g_m + R_4 g_m + s\left(2C_5 R_3 R_4 g_m + 2C_5 R_3 R_5 g_m + 2C_5 R_3 + C_5 R_4 R_5 g_m + C_5 R_4\right)}$$

## 10.5 INVALID-ORDER-5 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + s\left(2C_4 R_3 R_5 g_m + 2C_4 R_3\right) + 1}$$

## 10.6 INVALID-ORDER-6 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 g_m s^2 - C_5 R_3 s + R_3 g_m}{2C_4 C_5 L_5 R_3 g_m s^3 + g_m + s^2\left(2C_4 C_5 R_3 + C_5 L_5 g_m\right) + s\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5\right)}$$

## 10.7 INVALID-ORDER-7 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 s^2 + L_5 R_3 g_m s - R_3}{2C_4 C_5 L_5 R_3 s^3 + 2R_3 g_m + s^2\left(2C_4 L_5 R_3 g_m + 2C_5 L_5 R_3 g_m + C_5 L_5\right) + s\left(2C_4 R_3 + L_5 g_m\right) + 1}$$

## 10.8 INVALID-ORDER-8 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 g_m s^2 + R_3 g_m + s\left(C_5 R_3 R_5 g_m - C_5 R_3\right)}{2C_4 C_5 L_5 R_3 g_m s^3 + g_m + s^2\left(2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3 + C_5 L_5 g_m\right) + s\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

## 10.9 INVALID-ORDER-9 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 R_5 s^2 - R_3 R_5 + s\left(L_5 R_3 R_5 g_m - L_5 R_3\right)}{2C_4 C_5 L_5 R_3 R_5 s^3 + 2R_3 R_5 g_m + R_5 + s^2\left(2C_4 L_5 R_3 R_5 g_m + 2C_4 L_5 R_3 + 2C_5 L_5 R_3 R_5 g_m + C_5 L_5 R_5\right) + s\left(2C_4 R_3 R_5 + 2L_5 R_3 g_m + L_5 R_5 g_m + L_5\right)}$$

### 10.10 INVALID-ORDER-10 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{L_5 R_3 g_m s + R_3 R_5 g_m - R_3 + s^2 \left(C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right)}{2R_3 g_m + R_5 g_m + s^3 \left(2C_4 C_5 L_5 R_3 R_5 g_m + 2C_4 C_5 L_5 R_3\right) + s^2 \left(2C_4 L_5 R_3 g_m + 2C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(2C_4 R_3 R_5 g_m + 2C_4 R_3 + L_5 g_m\right) + 1}$$

### 10.11 INVALID-ORDER-11 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_5 s + R_3 R_5 g_m - R_3 + s^2 \left(C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right)}{2R_3 g_m + R_5 g_m + s^3 \left(2C_4 C_5 L_5 R_3 R_5 g_m + 2C_4 C_5 L_5 R_3\right) + s^2 \left(2C_4 C_5 R_3 R_5 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5\right) + 1}$$

### 10.12 INVALID-ORDER-12 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s \left(2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_4\right)}$$

### 10.13 INVALID-ORDER-13 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 R_4 g_m s^2 - C_5 R_3 R_4 s + R_3 R_4 g_m}{2C_4 C_5 L_5 R_3 R_4 g_m s^3 + 2R_3 g_m + R_4 g_m + s^2 \left(2C_4 C_5 R_3 R_4 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_4 g_m\right) + s \left(2C_4 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

### 10.14 INVALID-ORDER-14 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 R_4 s^2 + L_5 R_3 R_4 g_m s - R_3 R_4}{2C_4 C_5 L_5 R_3 R_4 s^3 + 2R_3 R_4 g_m + 2R_3 + R_4 + s^2 \left(2C_4 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4\right) + s \left(2C_4 R_3 R_4 + 2L_5 R_3 g_m + L_5 R_4 g_m\right)}$$

### 10.15 INVALID-ORDER-15 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 R_4 g_m s^2 + R_3 R_4 g_m + s \left(C_5 R_3 R_4 R_5 g_m - C_5 R_3 R_4\right)}{2C_4 C_5 L_5 R_3 R_4 g_m s^3 + 2R_3 g_m + R_4 g_m + s^2 \left(2C_4 C_5 R_3 R_4 R_5 g_m + 2C_4 C_5 R_3 R_4 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_4 g_m\right) + s \left(2C_4 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 R_5 g_m + 2C_5 R_3 + C_5 R_4 R_5 g_m + C_5 R_4\right)}$$

### 10.16 INVALID-ORDER-16 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 R_4 R_5 s^2 - R_3 R_4 R_5 + s \left(L_5 R_3 R_4 R_5 g_m - L_5 R_3 R_4\right)}{2C_4 C_5 L_5 R_3 R_4 R_5 s^3 + 2R_3 R_4 R_5 g_m + 2R_3 R_5 + R_4 R_5 + s^2 \left(2C_4 L_5 R_3 R_4 R_5 g_m + 2C_4 L_5 R_3 R_4 + 2C_5 L_5 R_3 R_4 R_5 g_m + 2C_5 L_5 R_3 R_5 + C_5 L_5 R_4 R_5\right) + s \left(2C_4 R_3 R_4 R_5 + 2L_5 R_3 R_4 g_m + 2L_5 R_3 R_5 g_m + 2L_5 R_3 + L_5 R_4 R_5 g_m + L_5 R_4\right)}$$

### 10.17 INVALID-ORDER-17 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{L_5 R_3 R_4 g_m s + R_3 R_4 R_5 g_m - R_3 R_4 + s^2 \left(C_5 L_5 R_3 R_4 R_5 g_m - C_5 L_5 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^3 \left(2C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_4 C_5 L_5 R_3 R_4\right) + s^2 \left(2C_4 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4\right) + s \left(2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_4 + 2L_5 R_3 g_m + L_5 R_4 g_m\right)}$$

### 10.18 INVALID-ORDER-18 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_4 R_5 s + R_3 R_4 R_5 g_m - R_3 R_4 + s^2 \left(C_5 L_5 R_3 R_4 R_5 g_m - C_5 L_5 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^3 \left(2C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_4 C_5 L_5 R_3 R_4\right) + s^2 \left(2C_4 C_5 R_3 R_4 R_5 + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4\right) + s \left(2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_4 + 2C_5 R_3 R_4 R_5 g_m + 2C_5 R_3 R_5 + C_5 R_4\right.$$

### 10.19 INVALID-ORDER-19 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s\left(C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4\right)}{2R_3 g_m + R_5 g_m + s\left(2C_4 R_3 R_4 g_m + 2C_4 R_3 R_5 g_m + 2C_4 R_3 + C_4 R_4 R_5 g_m + C_4 R_4\right) + 1}$$

### 10.20 INVALID-ORDER-20 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_5 R_3 R_4 g_m s^3 + R_3 g_m + s^2\left(-C_4 C_5 R_3 R_4 + C_5 L_5 R_3 g_m\right) + s\left(C_4 R_3 R_4 g_m - C_5 R_3\right)}{g_m + s^3\left(2C_4 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2\left(2C_4 C_5 R_3 R_4 g_m + 2C_4 C_5 R_3 + C_4 C_5 R_4 + C_5 L_5 g_m\right) + s\left(2C_4 R_3 g_m + C_4 R_4 g_m + 2C_5 R_3 g_m + C_5\right)}$$

### 10.21 INVALID-ORDER-21 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_5 R_3 R_4 s^3 - R_3 + s^2\left(C_4 L_5 R_3 R_4 g_m - C_5 L_5 R_3\right) + s\left(-C_4 R_3 R_4 + L_5 R_3 g_m\right)}{2R_3 g_m + s^3\left(2C_4 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4\right) + s^2\left(2C_4 L_5 R_3 g_m + C_4 L_5 R_4 g_m + 2C_5 L_5 R_3 g_m + C_5 L_5\right) + s\left(2C_4 R_3 R_4 g_m + 2C_4 R_3 + C_4 R_4 + L_5 g_m\right) + 1}$$

### 10.22 INVALID-ORDER-22 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_5 R_3 R_4 g_m s^3 + R_3 g_m + s^2\left(C_4 C_5 R_3 R_4 R_5 g_m - C_4 C_5 R_3 R_4 + C_5 L_5 R_3 g_m\right) + s\left(C_4 R_3 R_4 g_m + C_5 R_3 R_5 g_m - C_5 R_3\right)}{g_m + s^3\left(2C_4 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2\left(2C_4 C_5 R_3 R_4 g_m + 2C_4 C_5 R_3 R_5 g_m + 2C_4 C_5 R_3 + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4 + C_5 L_5 g_m\right) + s\left(2C_4 R_3 g_m + C_4 R_4 g_m + 2C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

### 10.23 INVALID-ORDER-23 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_5 R_3 R_4 R_5 s^3 - R_3 R_5 + s^2\left(C_4 L_5 R_3 R_4 R_5 g_m - C_4 L_5 R_3 R_4 - C_5 L_5 R_3 R_5\right) + s\left(-C_4 R_3 R_4 R_5 + L_5 R_3 R_5 g_m - L_5 R_3\right)}{2R_3 R_5 g_m + R_5 + s^3\left(2C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_4 C_5 L_5 R_3 R_5 + C_4 C_5 L_5 R_4 R_5\right) + s^2\left(2C_4 L_5 R_3 R_4 g_m + 2C_4 L_5 R_3 R_5 g_m + 2C_4 L_5 R_3 + C_4 L_5 R_4 R_5 g_m + C_4 L_5 R_4 + 2C_5 L_5 R_3 R_5 g_m + C_5 L_5 R_5\right) + s\left(2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_5 + C_4 R_4 R_5 + 2L_5 R_3 g_m + L_5 R_5 g_m + L_5\right)}$$

### 10.24 INVALID-ORDER-24 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^3\left(C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_4 C_5 L_5 R_3 R_4\right) + s^2\left(C_4 L_5 R_3 R_4 g_m + C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right) + s\left(C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4 + L_5 R_3 g_m\right)}{2R_3 g_m + R_5 g_m + s^3\left(2C_4 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_5 R_3 R_5 g_m + 2C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4 R_5 g_m + C_4 C_5 L_5 R_4\right) + s^2\left(2C_4 L_5 R_3 g_m + C_4 L_5 R_4 g_m + 2C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s\left(2C_4 R_3 R_4 g_m + 2C_4 R_3 R_5 g_m + 2C_4 R_3 + C_4 R_4 R_5 g_m + C_4 R_4 + L_5 g_m\right) + 1}$$

### 10.25 INVALID-ORDER-25 $Z(s) = \left(\infty,\ \infty,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^3\left(C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_4 C_5 L_5 R_3 R_4\right) + s^2\left(-C_4 C_5 R_3 R_4 R_5 + C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right) + s\left(C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4 - C_5 R_3 R_5\right)}{2R_3 g_m + R_5 g_m + s^3\left(2C_4 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_5 R_3 R_5 g_m + 2C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4 R_5 g_m + C_4 C_5 L_5 R_4\right) + s^2\left(2C_4 C_5 R_3 R_4 R_5 g_m + 2C_4 C_5 R_3 R_5 + C_4 C_5 R_4 R_5 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s\left(2C_4 R_3 R_4 g_m + 2C_4 R_3 R_5 g_m + 2C_4 R_3 + C_4 R_4 R_5 g_m + C_4\right.$$

### 10.26 INVALID-ORDER-26 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_3 s^3 + C_4 L_4 R_3 g_m s^2 - C_5 R_3 s + R_3 g_m}{g_m + s^3\left(2C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4\right) + s^2\left(2C_4 C_5 R_3 + C_4 L_4 g_m\right) + s\left(2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5\right)}$$

### 10.27 INVALID-ORDER-27 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_3 R_5 s^3 - C_5 R_3 R_5 s + R_3 R_5 g_m - R_3 + s^2\left(C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3\right)}{2R_3 g_m + R_5 g_m + s^3\left(2C_4 C_5 L_4 R_3 R_5 g_m + C_4 C_5 L_4 R_5\right) + s^2\left(2C_4 C_5 R_3 R_5 + 2C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4\right) + s\left(2C_4 R_3 R_5 g_m + 2C_4 R_3 + 2C_5 R_3 R_5 g_m + C_5 R_5\right) + 1}$$

### 10.28 INVALID-ORDER-28 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 R_3 g_m s^2 + R_3 g_m + s^3 \left(C_4 C_5 L_4 R_3 R_5 g_m - C_4 C_5 L_4 R_3\right) + s \left(C_5 R_3 R_5 g_m - C_5 R_3\right)}{g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4\right) + s^2 \left(2 C_4 C_5 R_3 R_5 g_m + 2 C_4 C_5 R_3 + C_4 L_4 g_m\right) + s \left(2 C_4 R_3 g_m + 2 C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

### 10.29 INVALID-ORDER-29 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_3 g_m s^4 - C_4 C_5 L_4 R_3 s^3 - C_5 R_3 s + R_3 g_m + s^2 \left(C_4 L_4 R_3 g_m + C_5 L_5 R_3 g_m\right)}{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 + 2 C_4 C_5 L_5 R_3 g_m\right) + s^2 \left(2 C_4 C_5 R_3 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(2 C_4 R_3 g_m + 2 C_5 R_3 g_m + C_5\right)}$$

### 10.30 INVALID-ORDER-30 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_3 s^4 + C_4 L_4 L_5 R_3 g_m s^3 + L_5 R_3 g_m s - R_3 + s^2 \left(-C_4 L_4 R_3 - C_5 L_5 R_3\right)}{2 R_3 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 + C_4 L_4 L_5 g_m\right) + s^2 \left(2 C_4 L_4 R_3 g_m + C_4 L_4 + 2 C_4 L_5 R_3 g_m + 2 C_5 L_5 R_3 g_m + C_5 L_5\right) + s \left(2 C_4 R_3 + L_5 g_m\right) + 1}$$

### 10.31 INVALID-ORDER-31 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_3 g_m s^4 + R_3 g_m + s^3 \left(C_4 C_5 L_4 R_3 R_5 g_m - C_4 C_5 L_4 R_3\right) + s^2 \left(C_4 L_4 R_3 g_m + C_5 L_5 R_3 g_m\right) + s \left(C_5 R_3 R_5 g_m - C_5 R_3\right)}{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4 + 2 C_4 C_5 L_5 R_3 g_m\right) + s^2 \left(2 C_4 C_5 R_3 R_5 g_m + 2 C_4 C_5 R_3 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(2 C_4 R_3 g_m + 2 C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

### 10.32 INVALID-ORDER-32 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_3 R_5 s^4 - R_3 R_5 + s^3 \left(C_4 L_4 L_5 R_3 R_5 g_m - C_4 L_4 L_5 R_3\right) + s^2 \left(-C_4 L_4 R_3 R_5 - C_5 L_5 R_3 R_5\right) + s \left(L_5 R_3 R_5 g_m - L_5 R_3\right)}{2 R_3 R_5 g_m + R_5 + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 R_5 g_m + C_4 C_5 L_4 L_5 R_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 R_5 + 2 C_4 L_4 L_5 R_3 g_m + C_4 L_4 L_5 R_5 g_m + C_4 L_4 L_5\right) + s^2 \left(2 C_4 L_4 R_3 R_5 g_m + C_4 L_4 R_5 + 2 C_4 L_5 R_3 R_5 g_m + 2 C_4 L_5 R_3 + 2 C_5 L_5 R_3 R_5 g_m + C_5 L_5 R_5\right) + s \left(2 C_4 R_3 R_5 + 2 L_5 R_3 g_m + L_5 R_5 g_m + L_5\right) + 1}$$

### 10.33 INVALID-ORDER-33 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 L_5 R_3 g_m s^3 + L_5 R_3 g_m s + R_3 R_5 g_m - R_3 + s^4 \left(C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_4 C_5 L_4 L_5 R_3\right) + s^2 \left(C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3 + C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right)}{2 R_3 g_m + R_5 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_4 C_5 L_5 R_3 + C_4 L_4 L_5 g_m\right) + s^2 \left(2 C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4 + 2 C_4 L_5 R_3 g_m + 2 C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(2 C_4 R_3 R_5 g_m + 2 C_4 R_3 + L_5 g_m\right) + 1}$$

### 10.34 INVALID-ORDER-34 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_3 R_5 s^3 - C_5 R_3 R_5 s + R_3 R_5 g_m - R_3 + s^4 \left(C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_4 C_5 L_4 L_5 R_3\right) + s^2 \left(C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3 + C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right)}{2 R_3 g_m + R_5 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_4 R_3 R_5 g_m + C_4 C_5 L_4 R_5 + 2 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_4 C_5 L_5 R_3\right) + s^2 \left(2 C_4 C_5 R_3 R_5 + 2 C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4 + 2 C_5 L_5 R_3 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(2 C_4 R_3 R_5 g_m + 2\right.}$$

### 10.35 INVALID-ORDER-35 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_3 s^2 + L_4 R_3 g_m s}{2 C_4 C_5 L_4 R_3 s^3 + 2 R_3 g_m + s^2 \left(2 C_4 L_4 R_3 g_m + 2 C_5 L_4 R_3 g_m + C_5 L_4\right) + s \left(2 C_5 R_3 + L_4 g_m\right)}$$

### 10.36 INVALID-ORDER-36 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2 + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_3 R_5 s^2 + s \left(L_4 R_3 R_5 g_m - L_4 R_3\right)}{2 C_4 C_5 L_4 R_3 R_5 s^3 + 2 R_3 R_5 g_m + 2 R_3 + s^2 \left(2 C_4 L_4 R_3 R_5 g_m + 2 C_4 L_4 R_3 + 2 C_5 L_4 R_3 R_5 g_m + C_5 L_4 R_5\right) + s \left(2 C_5 R_3 R_5 + 2 L_4 R_3 g_m + L_4 R_5 g_m + L_4\right)}$$

### 10.37 INVALID-ORDER-37 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4 R_3 g_m s + s^2 \left(C_5 L_4 R_3 R_5 g_m - C_5 L_4 R_3\right)}{2R_3 g_m + s^3 \left(2C_4 C_5 L_4 R_3 R_5 g_m + 2C_4 C_5 L_4 R_3\right) + s^2 \left(2C_4 L_4 R_3 g_m + 2C_5 L_4 R_3 g_m + C_5 L_4 R_5 g_m + C_5 L_4\right) + s \left(2C_5 R_3 R_5 g_m + 2C_5 R_3 + L_4 g_m\right)}$$

### 10.38 INVALID-ORDER-38 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_4 L_5 R_3 g_m s^3 - C_5 L_4 R_3 s^2 + L_4 R_3 g_m s}{2C_4 C_5 L_4 L_5 R_3 g_m s^4 + 2R_3 g_m + s^3 \left(2C_4 C_5 L_4 R_3 + C_5 L_4 L_5 g_m\right) + s^2 \left(2C_4 L_4 R_3 g_m + 2C_5 L_4 R_3 g_m + C_5 L_4 + 2C_5 L_5 R_3 g_m\right) + s \left(2C_5 R_3 + L_4 g_m\right)}$$

### 10.39 INVALID-ORDER-39 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 L_5 R_3 s^3 + L_4 L_5 R_3 g_m s^2 - L_4 R_3 s}{2C_4 C_5 L_4 L_5 R_3 s^4 + 2R_3 + s^3 \left(2C_4 L_4 L_5 R_3 g_m + 2C_5 L_4 L_5 R_3 g_m + C_5 L_4 L_5\right) + s^2 \left(2C_4 L_4 R_3 + 2C_5 L_5 R_3 + L_4 L_5 g_m\right) + s \left(2L_4 R_3 g_m + L_4 + 2L_5 R_3 g_m\right)}$$

### 10.40 INVALID-ORDER-40 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_4 L_5 R_3 g_m s^3 + L_4 R_3 g_m s + s^2 \left(C_5 L_4 R_3 R_5 g_m - C_5 L_4 R_3\right)}{2C_4 C_5 L_4 L_5 R_3 g_m s^4 + 2R_3 g_m + s^3 \left(2C_4 C_5 L_4 R_3 R_5 g_m + 2C_4 C_5 L_4 R_3 + C_5 L_4 L_5 g_m\right) + s^2 \left(2C_4 L_4 R_3 g_m + 2C_5 L_4 R_3 g_m + C_5 L_4 R_5 g_m + C_5 L_4 + 2C_5 L_5 R_3 g_m\right) + s \left(2C_5 R_3 R_5 g_m + 2C_5 R_3 + L_4 g_m\right)}$$

### 10.41 INVALID-ORDER-41 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 L_5 R_3 R_5 s^3 - L_4 R_3 R_5 s + s^2 \left(L_4 L_5 R_3 R_5 g_m - L_4 L_5 R_3\right)}{2C_4 C_5 L_4 L_5 R_3 R_5 s^4 + 2R_3 R_5 + s^3 \left(2C_4 L_4 L_5 R_3 R_5 g_m + 2C_4 L_4 L_5 R_3 + 2C_5 L_4 L_5 R_3 R_5 g_m + C_5 L_4 L_5 R_5\right) + s^2 \left(2C_4 L_4 R_3 R_5 + 2C_5 L_5 R_3 R_5 + 2L_4 L_5 R_3 g_m + L_4 L_5 R_5 g_m + L_4 L_5\right) + s \left(2L_4 R_3 R_5 g_m + L_4 R_5 + 2L_5 R_3 R_5 g_m + 2L_5 R_3\right)}$$

### 10.42 INVALID-ORDER-42 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4 L_5 R_3 g_m s^2 + s^3 \left(C_5 L_4 L_5 R_3 R_5 g_m - C_5 L_4 L_5 R_3\right) + s \left(L_4 R_3 R_5 g_m - L_4 R_3\right)}{2R_3 R_5 g_m + 2R_3 + s^4 \left(2C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_4 C_5 L_4 L_5 R_3\right) + s^3 \left(2C_4 L_4 L_5 R_3 g_m + 2C_5 L_4 L_5 R_3 g_m + C_5 L_4 L_5 R_5 g_m + C_5 L_4 L_5\right) + s^2 \left(2C_4 L_4 R_3 R_5 g_m + 2C_4 L_4 R_3 + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3 + L_4 L_5 g_m\right) + s \left(2L_4 R_3 g_m + L_4 R_5 g_m + L_4 + 2L_5 R_3 g_m\right)}$$

### 10.43 INVALID-ORDER-43 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_3 R_5 s^2 + s^3 \left(C_5 L_4 L_5 R_3 R_5 g_m - C_5 L_4 L_5 R_3\right) + s \left(L_4 R_3 R_5 g_m - L_4 R_3\right)}{2R_3 R_5 g_m + 2R_3 + s^4 \left(2C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_4 C_5 L_4 L_5 R_3\right) + s^3 \left(2C_4 C_5 L_4 R_3 R_5 + 2C_5 L_4 L_5 R_3 g_m + C_5 L_4 L_5 R_5 g_m + C_5 L_4 L_5\right) + s^2 \left(2C_4 L_4 R_3 R_5 g_m + 2C_4 L_4 R_3 + 2C_5 L_4 R_3 R_5 g_m + C_5 L_4 R_5 + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3\right) + s \left(2C_5 R_3 R_5 + 2L_4 R_3 g_m + L_4 R_5 g_m +\right.$$

### 10.44 INVALID-ORDER-44 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_3 s^3 + R_3 g_m + s^2 \left(-C_4 C_5 R_3 R_4 + C_4 L_4 R_3 g_m\right) + s \left(C_4 R_3 R_4 g_m - C_5 R_3\right)}{g_m + s^3 \left(2C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4\right) + s^2 \left(2C_4 C_5 R_3 R_4 g_m + 2C_4 C_5 R_3 + C_4 C_5 R_4 + C_4 L_4 g_m\right) + s \left(2C_4 R_3 g_m + C_4 R_4 g_m + 2C_5 R_3 g_m + C_5\right)}$$

### 10.45 INVALID-ORDER-45 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_3 R_5 s^3 + R_3 R_5 g_m - R_3 + s^2 \left(-C_4 C_5 R_3 R_4 R_5 + C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3\right) + s \left(C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4 - C_5 R_3 R_5\right)}{2R_3 g_m + R_5 g_m + s^3 \left(2C_4 C_5 L_4 R_3 R_5 g_m + C_4 C_5 L_4 R_5\right) + s^2 \left(2C_4 C_5 R_3 R_4 R_5 g_m + 2C_4 C_5 R_3 R_5 + C_4 C_5 R_4 R_5 + 2C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4\right) + s \left(2C_4 R_3 R_4 g_m + 2C_4 R_3 R_5 g_m + 2C_4 R_3 + C_4 R_4 R_5 g_m + C_4 R_4 + 2C_5 R_3 R_5 g_m + C_5 R_5\right) + 1}$$

### 10.46 INVALID-ORDER-46 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 g_m + s^3 \left(C_4 C_5 L_4 R_3 R_5 g_m - C_4 C_5 L_4 R_3\right) + s^2 \left(C_4 C_5 R_3 R_4 R_5 g_m - C_4 C_5 R_3 R_4 + C_4 L_4 R_3 g_m\right) + s \left(C_4 R_3 R_4 g_m + C_5 R_3 R_5 g_m - C_5 R_3\right)}{g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4\right) + s^2 \left(2 C_4 C_5 R_3 R_4 g_m + 2 C_4 C_5 R_3 R_5 g_m + 2 C_4 C_5 R_3 + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4 + C_4 L_4 g_m\right) + s \left(2 C_4 R_3 g_m + C_4 R_4 g_m + 2 C_5 R_3 g_m + C_5 R_5 g_m + C_5\right)}$$

### 10.47 INVALID-ORDER-47 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_3 g_m s^4 + R_3 g_m + s^3 \left(-C_4 C_5 L_4 R_3 + C_4 C_5 L_5 R_3 R_4 g_m\right) + s^2 \left(-C_4 C_5 R_3 R_4 + C_4 L_4 R_3 g_m + C_5 L_5 R_3 g_m\right) + s \left(C_4 R_3 R_4 g_m - C_5 R_3\right)}{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 + 2 C_4 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_4 C_5 R_3 R_4 g_m + 2 C_4 C_5 R_3 + C_4 C_5 R_4 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(2 C_4 R_3 g_m + C_4 R_4 g_m + 2 C_5 R_3 g_m + C_5\right)}$$

### 10.48 INVALID-ORDER-48 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_3 s^4 - R_3 + s^3 \left(-C_4 C_5 L_5 R_3 R_4 + C_4 L_4 L_5 R_3 g_m\right) + s^2 \left(-C_4 L_4 R_3 + C_4 L_5 R_3 R_4 g_m - C_5 L_5 R_3\right) + s \left(-C_4 R_3 R_4 + L_5 R_3 g_m\right)}{2 R_3 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4 + C_4 L_4 L_5 g_m\right) + s^2 \left(2 C_4 L_4 R_3 g_m + C_4 L_4 + 2 C_4 L_5 R_3 g_m + C_4 L_5 R_4 g_m + 2 C_5 L_5 R_3 g_m + C_5 L_5\right) + s \left(2 C_4 R_3 R_4 g_m + 2 C_4 R_3 + C_4 R_4 + L_5 g_m\right) + 1}$$

### 10.49 INVALID-ORDER-49 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_3 g_m s^4 + R_3 g_m + s^3 \left(C_4 C_5 L_4 R_3 R_5 g_m - C_4 C_5 L_4 R_3 + C_4 C_5 L_5 R_3 R_4 g_m\right) + s^2 \left(C_4 C_5 R_3 R_4 R_5 g_m - C_4 C_5 R_3 R_4 + C_4 L_4 R_3 g_m + C_5 L_5 R_3 g_m\right) + s \left(C_4 R_3 R_4 g_m + C_5 R_3 R_5 g_m - C_5 R_3\right)}{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3 \left(2 C_4 C_5 L_4 R_3 g_m + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4 + 2 C_4 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_4 C_5 R_3 R_4 g_m + 2 C_4 C_5 R_3 R_5 g_m + 2 C_4 C_5 R_3 + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(2 C_4 R_3 g_m + C_4 R_4 g_m + 2 C_5 R_3 g_m + C_5 R_5 g_m + C\right.}$$

### 10.50 INVALID-ORDER-50 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_3 R_5 s^4 - R_3 R_5 + s^3 \left(-C_4 C_5 L_5 R_3 R_4 R_5 + C_4 L_4 L_5 R_3 R_5 g_m - C_4 L_4 L_5 R_3\right) + s^2 \left(-C_4 L_4 R_3 R_5 + C_4 L_5 R_3 R_4 R_5 g_m - C_4 L_5 R_3 R_4 - C_5 L_5 R_3 R_5\right) + s \left(-C_4 R_3 R_4\right.}{2 R_3 R_5 g_m + R_5 + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 R_5 g_m + C_4 C_5 L_4 L_5 R_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2 C_4 C_5 L_5 R_3 R_5 + C_4 C_5 L_5 R_4 R_5 + 2 C_4 L_4 L_5 R_3 g_m + C_4 L_4 L_5 R_5 g_m + C_4 L_4 L_5\right) + s^2 \left(2 C_4 L_4 R_3 R_5 g_m + C_4 L_4 R_5 + 2 C_4 L_5 R_3 R_4 g_m + 2 C_4 L_5 R_3 R_5 g_m + 2 C_4 L_5 R_3 + C_4 L_5 R_4 R_5 g_m\right.}$$

### 10.51 INVALID-ORDER-51 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^4 \left(C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_4 C_5 L_4 L_5 R_3\right) + s^3 \left(C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_4 C_5 L_5 R_3 R_4 + C_4 L_4 L_5 R_3 g_m\right) + s^2 \left(C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3 + C_4 L_5 R_3 R_4 g_m + C_5 L_5 R_3 R_5 g_m - C_5 L_5 R_3\right) + s}{2 R_3 g_m + R_5 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4 R_5 g_m + C_4 C_5 L_5 R_4 + C_4 L_4 L_5 g_m\right) + s^2 \left(2 C_4 L_4 R_3 g_m + C_4 L_4 R_5 g_m + C_4 L_4 + 2 C_4 L_5 R_3 g_m + C_4 L_5 R_4 g_m + 2 C_5 L_5 R_3\right.}$$

### 10.52 INVALID-ORDER-52 $Z(s) = \left(\infty,\ \infty,\ R_3,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^4 \left(C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_4 C_5 L_4 L_5 R_3\right) + s^3 \left(-C_4 C_5 L_4 R_3 R_5 + C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_4 C_5 L_5 R_3 R_4\right) + s^2 \left(-C_4 C_5 R_3 R_4 R_5 + C_4 L_4 R_3 R_5 g_m - C_4 L_4 R_3 + \right.}{2 R_3 g_m + R_5 g_m + s^4 \left(2 C_4 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(2 C_4 C_5 L_4 R_3 R_5 g_m + C_4 C_5 L_4 R_5 + 2 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_4 C_5 L_5 R_3 + C_4 C_5 L_5 R_4 R_5 g_m + C_4 C_5 L_5 R_4\right) + s^2 \left(2 C_4 C_5 R_3 R_4 R_5 g_m + 2 C_4 C_5 R_3 R_5 + C_4 C_5 R_4 R_5 + 2 C_4 L\right.}$$

### 10.53 INVALID-ORDER-53 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_3 R_4 s^2 + L_4 R_3 R_4 g_m s}{2 C_4 C_5 L_4 R_3 R_4 s^3 + 2 R_3 R_4 g_m + s^2 \left(2 C_4 L_4 R_3 R_4 g_m + 2 C_5 L_4 R_3 R_4 g_m + 2 C_5 L_4 R_3 + C_5 L_4 R_4\right) + s \left(2 C_5 R_3 R_4 + 2 L_4 R_3 g_m + L_4 R_4 g_m\right)}$$

### 10.54 INVALID-ORDER-54 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_3 R_4 R_5 s^2 + s \left(L_4 R_3 R_4 R_5 g_m - L_4 R_3 R_4\right)}{2 C_4 C_5 L_4 R_3 R_4 R_5 s^3 + 2 R_3 R_4 R_5 g_m + 2 R_3 R_4 + s^2 \left(2 C_4 L_4 R_3 R_4 R_5 g_m + 2 C_4 L_4 R_3 R_4 + 2 C_5 L_4 R_3 R_4 R_5 g_m + 2 C_5 L_4 R_3 R_5 + C_5 L_4 R_4 R_5\right) + s \left(2 C_5 R_3 R_4 R_5 + 2 L_4 R_3 R_4 g_m + 2 L_4 R_3 R_5 g_m + 2 L_4 R_3 + L_4 R_4 R_5 g_m + L_4 R_4\right)}$$

### 10.55 INVALID-ORDER-55 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_4R_3R_4g_ms + s^2\left(C_5L_4R_3R_4R_5g_m - C_5L_4R_3R_4\right)}{2R_3R_4g_m + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_4\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3R_5g_m + 2C_5L_4R_3 + C_5L_4R_4R_5g_m + C_5L_4R_4\right) + s\left(2C_5R_3R_4R_5g_m + 2C_5R_3R_4 + 2L_4R_3g_m + L_4R_4g_m\right)}$$

### 10.56 INVALID-ORDER-56 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3R_4g_ms^3 - C_5L_4R_3R_4s^2 + L_4R_3R_4g_ms}{2C_4C_5L_4L_5R_3R_4g_ms^4 + 2R_3R_4g_m + s^3\left(2C_4C_5L_4R_3R_4 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_4g_m\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3 + C_5L_4R_4 + 2C_5L_5R_3R_4g_m\right) + s\left(2C_5R_3R_4 + 2L_4R_3g_m + L_4R_4g_m\right)}$$

### 10.57 INVALID-ORDER-57 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3R_4s^3 + L_4L_5R_3R_4g_ms^2 - L_4R_3R_4s}{2C_4C_5L_4L_5R_3R_4s^4 + 2R_3R_4 + s^3\left(2C_4L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4\right) + s^2\left(2C_4L_4R_3R_4 + 2C_5L_5R_3R_4 + 2L_4L_5R_3g_m + L_4L_5R_4g_m\right) + s\left(2L_4R_3R_4g_m + 2L_4R_3 + L_4R_4 + 2L_5R_3R_4g_m\right)}$$

### 10.58 INVALID-ORDER-58 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3R_4g_ms^3 + L_4R_3R_4g_ms + s^2\left(C_5L_4R_3R_4R_5g_m - C_5L_4R_3R_4\right)}{2C_4C_5L_4L_5R_3R_4g_ms^4 + 2R_3R_4g_m + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_4 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_4g_m\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3R_5g_m + 2C_5L_4R_3 + C_5L_4R_4R_5g_m + C_5L_4R_4 + 2C_5L_5R_3R_4g_m\right) + s\left(2C_5R_3R_4R_5g_m + 2C_5R_3R\right.}$$

### 10.59 INVALID-ORDER-59 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3R_4R_5s^3 - L_4R_3R_4R_5s + s^2\left(L_4L_5R_3R_4R_5g_m - L_4L_5R_3R_4\right)}{2C_4C_5L_4L_5R_3R_4R_5s^4 + 2R_3R_4R_5 + s^3\left(2C_4L_4L_5R_3R_4R_5g_m + 2C_4L_4L_5R_3R_4 + 2C_5L_4L_5R_3R_4R_5g_m + 2C_5L_4L_5R_3R_5 + C_5L_4L_5R_4R_5\right) + s^2\left(2C_4L_4R_3R_4R_5 + 2C_5L_5R_3R_4R_5 + 2L_4L_5R_3R_4g_m + 2L_4L_5R_3R_5g_m + 2L_4L_5R_3 + L_4L_5R_4R_5g_m + L_4L_5R_4\right) + s\left(2L\right.}$$

### 10.60 INVALID-ORDER-60 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4L_5R_3R_4g_ms^2 + s^3\left(C_5L_4L_5R_3R_4R_5g_m - C_5L_4L_5R_3R_4\right) + s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(2C_4L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_5g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4R_5g_m + C_5L_4L_5R_4\right) + s^2\left(2C_4L_4R_3R_4R_5g_m + 2C_4L_4R_3R_4 + 2C_5L_5R_3R_4R_5g_m + 2C_5L_5R_3R_4\right.}$$

### 10.61 INVALID-ORDER-61 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_4R_5s^2 + s^3\left(C_5L_4L_5R_3R_4R_5g_m - C_5L_4L_5R_3R_4\right) + s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(2C_4C_5L_4R_3R_4R_5 + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_5g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4R_5g_m + C_5L_4L_5R_4\right) + s^2\left(2C_4L_4R_3R_4R_5g_m + 2C_4L_4R_3R_4 + 2C_5L_4R_3R_4R_5g_m + 2C_5L_4R_3R_5\right.}$$

### 10.62 INVALID-ORDER-62 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4s^3 + R_3R_4g_m + s^2\left(C_4L_4R_3R_4g_m - C_5L_4R_3\right) + s\left(-C_5R_3R_4 + L_4R_3g_m\right)}{2R_3g_m + R_4g_m + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4\right) + s^2\left(2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_4R_3g_m + C_5L_4\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4 + L_4g_m\right)}$$

### 10.63 INVALID-ORDER-63 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4R_5s^3 + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4 - C_5L_4R_3R_5\right) + s\left(-C_5R_3R_4R_5 + L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + C_4L_4R_4R_5g_m + C_4L_4R_4 + 2C_5L_4R_3R_5g_m + C_5L_4R_5\right) + s\left(2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right.}$$

### 10.64 INVALID-ORDER-64 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s^2\left(C_4L_4R_3R_4g_m + C_5L_4R_3R_5g_m - C_5L_4R_3\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4 + L_4R_3g_m\right)}{2R_3g_m + R_4g_m + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4\right) + s^2\left(2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_4R_3g_m + C_5L_4R_5g_m + C_5L_4\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4 + L_4g_m\right)}$$

### 10.65 INVALID-ORDER-65 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(-C_4C_5L_4R_3R_4 + C_5L_4L_5R_3g_m\right) + s^2\left(C_4L_4R_3R_4g_m - C_5L_4R_3 + C_5L_5R_3R_4g_m\right) + s\left(-C_5R_3R_4 + L_4R_3g_m\right)}{2R_3g_m + R_4g_m + s^4\left(2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4 + C_5L_4L_5g_m\right) + s^2\left(2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_4R_3g_m + C_5L_4 + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4 + L_4g_m\right)}$$

### 10.66 INVALID-ORDER-66 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4s^4 - R_3R_4 + s^3\left(C_4L_4L_5R_3R_4g_m - C_5L_4L_5R_3\right) + s^2\left(-C_4L_4R_3R_4 - C_5L_5R_3R_4 + L_4L_5R_3g_m\right) + s\left(-L_4R_3 + L_5R_3R_4g_m\right)}{2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m + 2C_5L_4L_5R_3g_m + C_5L_4L_5\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_4L_4R_3 + C_4L_4R_4 + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3 + C_5L_5R_4 + L_4L_5g_m\right) + s\left(2L_4R_3g_m\right.}$$

### 10.67 INVALID-ORDER-67 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4 + C_5L_4L_5R_3g_m\right) + s^2\left(C_4L_4R_3R_4g_m + C_5L_4R_3R_5g_m - C_5L_4R_3 + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4 + \right.}{2R_3g_m + R_4g_m + s^4\left(2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4 + C_5L_4L_5g_m\right) + s^2\left(2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_4R_3g_m + C_5L_4R_5g_m + C_5L_4 + 2C_5L_5R_3g_m + C_5L_5R_4\right.}$$

### 10.68 INVALID-ORDER-68 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4R_5s^4 - R_3R_4R_5 + s^3\left(C_4L_4L_5R_3R_4R_5g_m - C_4L_4L_5R_3R_4 - C_5L_4L_5R_3R_5\right) + s^2\left(-C_4L_4R_3R_4R_5 - C_5L_5R_3R_4R_5 + \right.}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_5 + C_4C_5L_4L_5R_4R_5\right) + s^3\left(2C_4L_4L_5R_3R_4g_m + 2C_4L_4L_5R_3R_5g_m + 2C_4L_4L_5R_3 + C_4L_4L_5R_4R_5g_m + C_4L_4L_5R_4 + 2C_5L_4L_5R_3R_5g_m + C_5L_4L_5R_5\right) + s^2\left(2C_4L_4R_3R_4R_5g_m + 2C_4L_4\right.}$$

### 10.69 INVALID-ORDER-69 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_4C_5L_4L_5R_3R_4R_5g_m - C_4C_5L_4L_5R_3R_4\right) + s^3\left(C_4L_4L_5R_3R_4g_m + C_5L_4L_5R_3R_5g_m - C_5L_4L_5R_3\right) + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_5g_m + C_5L_4L_5\right) + s^2\left(2C_4L_4R_3R_4g_m + 2\right.}$$

### 10.70 INVALID-ORDER-70 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_4C_5L_4L_5R_3R_4R_5g_m - C_4C_5L_4L_5R_3R_4\right) + s^3\left(-C_4C_5L_4R_3R_4R_5 + C_5L_4L_5R_3R_5g_m - C_5L_4L_5R_3\right) +}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_5g_m + C_5L_4L_5\right) +}$$

### 10.71 INVALID-ORDER-71 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4s^3 + C_4L_4R_3R_4g_ms^2 - C_5R_3R_4s + R_3R_4g_m}{2R_3g_m + R_4g_m + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4\right) + s^2\left(2C_4C_5R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_4g_m\right) + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

### 10.72 INVALID-ORDER-72 $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5\right) + s^2\left(2C_4C_5R_3R_4R_5 + 2C_4L_4R_3R_4g_m + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + C_4L_4R_4R_5g_m + C_4L_4R_4\right) + s\left(2C_4R_3R_4R_5g_m + 2C_4R_3R_4 + 2C_5R_3R_4R_5g_m + 2C\right.}$$

**10.73 INVALID-ORDER-73** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4L_4R_3R_4g_ms^2 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4\right) + s^2\left(2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_4g_m\right) + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

**10.74 INVALID-ORDER-74** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 - C_4C_5L_4R_3R_4s^3 - C_5R_3R_4s + R_3R_4g_m + s^2\left(C_4L_4R_3R_4g_m + C_5L_5R_3R_4g_m\right)}{2R_3g_m + R_4g_m + s^4\left(2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4 + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(2C_4C_5R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right.}$$

**10.75 INVALID-ORDER-75** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4s^4 + C_4L_4L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms - R_3R_4 + s^2\left(-C_4L_4R_3R_4 - C_5L_5R_3R_4\right)}{2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4C_5L_5R_3R_4 + 2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_4L_4R_3 + C_4L_4R_4 + 2C_4L_5R_3R_4g_m + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3 + C_5L_5R_4\right) + s\left(2C_4R_3R_4 + \right.}$$

**10.76 INVALID-ORDER-76** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s^2\left(C_4L_4R_3R_4g_m + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^4\left(2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4 + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_5R_3g_m + C\right.}$$

**10.77 INVALID-ORDER-77** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4R_5s^4 - R_3R_4R_5 + s^3\left(C_4L_4L_5R_3R_4R_5g_m - C_4L_4L_5R_3R_4\right) + s^2\left(-C_4L_4R_3R_4R_5 - C_5L_5R_3R_4R_5\right) +}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_5 + C_4C_5L_4L_5R_4R_5\right) + s^3\left(2C_4C_5L_5R_3R_4R_5 + 2C_4L_4L_5R_3R_4g_m + 2C_4L_4L_5R_3R_5g_m + 2C_4L_4L_5R_3 + C_4L_4L_5R_4R_5g_m + C_4L_4L_5R_4\right) + s^2\left(2C_4L_4R_3R_4R_5g_m + 2C_4L_4R_3R_5 + C_4L_4\right.}$$

**10.78 INVALID-ORDER-78** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4L_4L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms + R_3R_4R_5g_m - R_3R_4 + s^4\left(C_4C_5L_4L_5R_3R_4R_5g_m - C_4C_5L_4L_5R_3R_4\right) + s^2\left(C_4L_4R\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_4 + 2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_4L\right.}$$

**10.79 INVALID-ORDER-79** $Z(s) = \left(\infty,\ \infty,\ R_3,\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^4\left(C_4C_5L_4L_5R_3R_4R_5g_m - C_4C_5L_4\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5 + 2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_4\right) + s^2\left(\right.}$$

**10.80 INVALID-ORDER-80** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4}{2R_4g_m + 2R_5g_m + s\left(C_3R_4R_5g_m + C_3R_4\right) + 2}$$

**10.81 INVALID-ORDER-81** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3s},\ R_4,\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_5R_4g_ms^2 - C_5R_4s + R_4g_m}{C_3C_5L_5R_4g_ms^3 + 2g_m + s^2\left(C_3C_5R_4 + 2C_5L_5g_m\right) + s\left(C_3R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

**10.82 INVALID-ORDER-82** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_4 s^2 + L_5 R_4 g_m s - R_4}{C_3 C_5 L_5 R_4 s^3 + 2R_4 g_m + s^2 \left(C_3 L_5 R_4 g_m + 2C_5 L_5 R_4 g_m + 2C_5 L_5\right) + s \left(C_3 R_4 + 2L_5 g_m\right) + 2}$$

**10.83 INVALID-ORDER-83** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_4 g_m s^2 + R_4 g_m + s \left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{C_3 C_5 L_5 R_4 g_m s^3 + 2g_m + s^2 \left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_5 L_5 g_m\right) + s \left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**10.84 INVALID-ORDER-84** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_4 R_5 s^2 - R_4 R_5 + s \left(L_5 R_4 R_5 g_m - L_5 R_4\right)}{C_3 C_5 L_5 R_4 R_5 s^3 + 2R_4 R_5 g_m + 2R_5 + s^2 \left(C_3 L_5 R_4 R_5 g_m + C_3 L_5 R_4 + 2C_5 L_5 R_4 R_5 g_m + 2C_5 L_5 R_5\right) + s \left(C_3 R_4 R_5 + 2L_5 R_4 g_m + 2L_5 R_5 g_m + 2L_5\right)}$$

**10.85 INVALID-ORDER-85** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_5 R_4 g_m s + R_4 R_5 g_m - R_4 + s^2 \left(C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^3 \left(C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4\right) + s^2 \left(C_3 L_5 R_4 g_m + 2C_5 L_5 R_4 g_m + 2C_5 L_5 R_5 g_m + 2C_5 L_5\right) + s \left(C_3 R_4 R_5 g_m + C_3 R_4 + 2L_5 g_m\right) + 2}$$

**10.86 INVALID-ORDER-86** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^2 \left(C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^3 \left(C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4\right) + s^2 \left(C_3 C_5 R_4 R_5 + 2C_5 L_5 R_4 g_m + 2C_5 L_5 R_5 g_m + 2C_5 L_5\right) + s \left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

**10.87 INVALID-ORDER-87** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m - 1}{2g_m + s \left(C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4\right)}$$

**10.88 INVALID-ORDER-88** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 s + g_m}{s^2 \left(C_3 C_5 + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.89 INVALID-ORDER-89** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s \left(C_5 R_5 g_m - C_5\right)}{s^2 \left(C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.90 INVALID-ORDER-90** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 g_m s^2 - C_5 s + g_m}{s^3 \left(C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2 \left(C_3 C_5 + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.91 INVALID-ORDER-91** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 s^2 + L_5 g_m s - 1}{2g_m + s^3 \left(C_3 C_5 L_5 + 2C_4 C_5 L_5\right) + s^2 \left(C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s \left(C_3 + 2C_4\right)}$$

**10.92 INVALID-ORDER-92** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 g_m s^2 + g_m + s\left(C_5 R_5 g_m - C_5\right)}{s^3\left(C_3 C_5 L_5 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2\left(C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5 g_m + 2 C_4 C_5\right) + s\left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.93 INVALID-ORDER-93** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_5 s^2 - R_5 + s\left(L_5 R_5 g_m - L_5\right)}{2 R_5 g_m + s^3\left(C_3 C_5 L_5 R_5 + 2 C_4 C_5 L_5 R_5\right) + s^2\left(C_3 L_5 R_5 g_m + C_3 L_5 + 2 C_4 L_5 R_5 g_m + 2 C_4 L_5 + 2 C_5 L_5 R_5 g_m\right) + s\left(C_3 R_5 + 2 C_4 R_5 + 2 L_5 g_m\right)}$$

**10.94 INVALID-ORDER-94** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{L_5 g_m s + R_5 g_m + s^2\left(C_5 L_5 R_5 g_m - C_5 L_5\right) - 1}{2 g_m + s^3\left(C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5 R_5 g_m + 2 C_4 C_5 L_5\right) + s^2\left(C_3 L_5 g_m + 2 C_4 L_5 g_m + 2 C_5 L_5 g_m\right) + s\left(C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4\right)}$$

**10.95 INVALID-ORDER-95** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_5 s + R_5 g_m + s^2\left(C_5 L_5 R_5 g_m - C_5 L_5\right) - 1}{2 g_m + s^3\left(C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5 R_5 g_m + 2 C_4 C_5 L_5\right) + s^2\left(C_3 C_5 R_5 + 2 C_4 C_5 R_5 + 2 C_5 L_5 g_m\right) + s\left(C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4 + 2 C_5 R_5 g_m\right)}$$

**10.96 INVALID-ORDER-96** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4}{2 R_4 g_m + 2 R_5 g_m + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2 C_4 R_4 R_5 g_m + 2 C_4 R_4\right) + 2}$$

**10.97 INVALID-ORDER-97** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_4 g_m s^2 - C_5 R_4 s + R_4 g_m}{2 g_m + s^3\left(C_3 C_5 L_5 R_4 g_m + 2 C_4 C_5 L_5 R_4 g_m\right) + s^2\left(C_3 C_5 R_4 + 2 C_4 C_5 R_4 + 2 C_5 L_5 g_m\right) + s\left(C_3 R_4 g_m + 2 C_4 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5\right)}$$

**10.98 INVALID-ORDER-98** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_4 s^2 + L_5 R_4 g_m s - R_4}{2 R_4 g_m + s^3\left(C_3 C_5 L_5 R_4 + 2 C_4 C_5 L_5 R_4\right) + s^2\left(C_3 L_5 R_4 g_m + 2 C_4 L_5 R_4 g_m + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5\right) + s\left(C_3 R_4 + 2 C_4 R_4 + 2 L_5 g_m\right) + 2}$$

**10.99 INVALID-ORDER-99** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_4 g_m s^2 + R_4 g_m + s\left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{2 g_m + s^3\left(C_3 C_5 L_5 R_4 g_m + 2 C_4 C_5 L_5 R_4 g_m\right) + s^2\left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2 C_4 C_5 R_4 R_5 g_m + 2 C_4 C_5 R_4 + 2 C_5 L_5 g_m\right) + s\left(C_3 R_4 g_m + 2 C_4 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5 R_5 g_m + 2 C_5\right)}$$

**10.100 INVALID-ORDER-100** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_4 R_5 s^2 - R_4 R_5 + s\left(L_5 R_4 R_5 g_m - L_5 R_4\right)}{2 R_4 R_5 g_m + 2 R_5 + s^3\left(C_3 C_5 L_5 R_4 R_5 + 2 C_4 C_5 L_5 R_4 R_5\right) + s^2\left(C_3 L_5 R_4 R_5 g_m + C_3 L_5 R_4 + 2 C_4 L_5 R_4 R_5 g_m + 2 C_4 L_5 R_4 + 2 C_5 L_5 R_4 R_5 g_m + 2 C_5 L_5 R_5\right) + s\left(C_3 R_4 R_5 + 2 C_4 R_4 R_5 + 2 L_5 R_4 g_m + 2 L_5 R_5 g_m + 2 L_5\right)}$$

**10.101 INVALID-ORDER-101** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{L_5 R_4 g_m s + R_4 R_5 g_m - R_4 + s^2\left(C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right)}{2 R_4 g_m + 2 R_5 g_m + s^3\left(C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2 C_4 C_5 L_5 R_4 R_5 g_m + 2 C_4 C_5 L_5 R_4\right) + s^2\left(C_3 L_5 R_4 g_m + 2 C_4 L_5 R_4 g_m + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5 R_5 g_m + 2 C_5 L_5\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2 C_4 R_4 R_5 g_m + 2 C_4 R_4 + 2 L_5 g_m\right) + 2}$$

**10.102 INVALID-ORDER-102** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^2\left(C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^3\left(C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_4\right) + s^2\left(C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5 + 2C_5 L_5 R_4 g_m + 2C_5 L_5 R_5 g_m + 2C_5 L_5\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

**10.103 INVALID-ORDER-103** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_4 s^2 + g_m + s\left(C_4 R_4 g_m - C_5\right)}{C_3 C_4 C_5 R_4 s^3 + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.104 INVALID-ORDER-104** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_4 R_5 s^2 + R_5 g_m + s\left(C_4 R_4 R_5 g_m - C_4 R_4 - C_5 R_5\right) - 1}{C_3 C_4 C_5 R_4 R_5 s^3 + 2g_m + s^2\left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + C_3 C_5 R_5 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_5\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}$$

**10.105 INVALID-ORDER-105** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^2\left(C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4\right) + s\left(C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{s^3\left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.106 INVALID-ORDER-106** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_5 R_4 g_m s^3 + g_m + s^2\left(-C_4 C_5 R_4 + C_5 L_5 g_m\right) + s\left(C_4 R_4 g_m - C_5\right)}{C_3 C_4 C_5 L_5 R_4 g_m s^4 + s^3\left(C_3 C_4 C_5 R_4 + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.107 INVALID-ORDER-107** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_5 R_4 s^3 + s^2\left(C_4 L_5 R_4 g_m - C_5 L_5\right) + s\left(-C_4 R_4 + L_5 g_m\right) - 1}{C_3 C_4 C_5 L_5 R_4 s^4 + 2g_m + s^3\left(C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5\right) + s^2\left(C_3 C_4 R_4 + C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s\left(C_3 + 2C_4 R_4 g_m + 2C_4\right)}$$

**10.108 INVALID-ORDER-108** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_5 R_4 g_m s^3 + g_m + s^2\left(C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4 + C_5 L_5 g_m\right) + s\left(C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{C_3 C_4 C_5 L_5 R_4 g_m s^4 + s^3\left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.109 INVALID-ORDER-109** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_5 R_4 R_5 s^3 - R_5 + s^2\left(C_4 L_5 R_4 R_5 g_m - C_4 L_5 R_4 - C_5 L_5 R_5\right) + s\left(-C_4 R_4 R_5 + L_5 R_5 g_m - L_5\right)}{C_3 C_4 C_5 L_5 R_4 R_5 s^4 + 2R_5 g_m + s^3\left(C_3 C_4 L_5 R_4 R_5 g_m + C_3 C_4 L_5 R_4 + C_3 C_5 L_5 R_5 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_5\right) + s^2\left(C_3 C_4 R_4 R_5 + C_3 L_5 R_5 g_m + C_3 L_5 + 2C_4 L_5 R_4 g_m + 2C_4 L_5 R_5 g_m + 2C_4 L_5 + 2C_5 L_5 R_5 g_m\right) + s\left(C_3 R_5 + 2C_4 R_4 R_5 g_m + 2C_4 R_5 + 2L_5 g_m\right)}$$

**10.110 INVALID-ORDER-110** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3\left(C_4 C_5 L_5 R_4 R_5 g_m - C_4 C_5 L_5 R_4\right) + s^2\left(C_4 L_5 R_4 g_m + C_5 L_5 R_5 g_m - C_5 L_5\right) + s\left(C_4 R_4 R_5 g_m - C_4 R_4 + L_5 g_m\right) - 1}{2g_m + s^4\left(C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4\right) + s^3\left(C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5 R_5 g_m + 2C_4 C_5 L_5\right) + s^2\left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4\right.$$

**10.111 INVALID-ORDER-111** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_4 C_5 L_5 R_4 R_5 g_m - C_4 C_5 L_5 R_4\right) + s^2 \left(-C_4 C_5 R_4 R_5 + C_5 L_5 R_5 g_m - C_5 L_5\right) + s \left(C_4 R_4 R_5 g_m - C_4 R_4 - C_5 R_5\right) - 1}{2 g_m + s^4 \left(C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4\right) + s^3 \left(C_3 C_4 C_5 R_4 R_5 + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5 R_4 g_m + 2 C_4 C_5 L_5 R_5 g_m + 2 C_4 C_5 L_5\right) + s^2 \left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + C_3 C_5 R_5 + 2 C_4 C_5 R_4 R_5 g_m + 2 C_4 C_5 R_5 + 2 C_5 L_5 g_m\right) + s \left(C_3 R_5 g_m + C_3 + 2 C_4 R_4 g_m +$$

**10.112 INVALID-ORDER-112** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^2 \left(C_4 L_4 R_5 g_m - C_4 L_4\right) - 1}{2 C_4 L_4 g_m s^2 + 2 g_m + s^3 \left(C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4\right) + s \left(C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4\right)}$$

**10.113 INVALID-ORDER-113** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 s^3 + C_4 L_4 g_m s^2 - C_5 s + g_m}{C_3 C_4 C_5 L_4 s^4 + s^3 \left(C_3 C_4 L_4 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.114 INVALID-ORDER-114** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_5 s^3 - C_5 R_5 s + R_5 g_m + s^2 \left(C_4 L_4 R_5 g_m - C_4 L_4\right) - 1}{C_3 C_4 C_5 L_4 R_5 s^4 + 2 g_m + s^3 \left(C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2 C_4 C_5 L_4 R_5 g_m\right) + s^2 \left(C_3 C_5 R_5 + 2 C_4 C_5 R_5 + 2 C_4 L_4 g_m\right) + s \left(C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4 + 2 C_5 R_5 g_m\right)}$$

**10.115 INVALID-ORDER-115** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 g_m s^2 + g_m + s^3 \left(C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s \left(C_5 R_5 g_m - C_5\right)}{s^4 \left(C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(C_3 C_4 L_4 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.116 INVALID-ORDER-116** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 g_m s^4 - C_4 C_5 L_4 s^3 - C_5 s + g_m + s^2 \left(C_4 L_4 g_m + C_5 L_5 g_m\right)}{C_3 C_4 C_5 L_4 L_5 g_m s^5 + C_3 C_4 C_5 L_4 s^4 + s^3 \left(C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_4 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.117 INVALID-ORDER-117** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 s^4 + C_4 L_4 L_5 g_m s^3 + L_5 g_m s + s^2 \left(-C_4 L_4 - C_5 L_5\right) - 1}{C_3 C_4 C_5 L_4 L_5 s^5 + 2 g_m + s^4 \left(C_3 C_4 L_4 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 + C_3 C_5 L_5 + 2 C_4 C_5 L_5\right) + s^2 \left(C_3 L_5 g_m + 2 C_4 L_4 g_m + 2 C_4 L_5 g_m + 2 C_5 L_5 g_m\right) + s \left(C_3 + 2 C_4\right)}$$

**10.118 INVALID-ORDER-118** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3 \left(C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s^2 \left(C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(C_5 R_5 g_m - C_5\right)}{C_3 C_4 C_5 L_4 L_5 g_m s^5 + s^4 \left(C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_4 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.119 INVALID-ORDER-119** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_5 s^4 - R_5 + s^3 \left(C_4 L_4 L_5 R_5 g_m - C_4 L_4 L_5\right) + s^2 \left(-C_4 L_4 R_5 - C_5 L_5 R_5\right) + s \left(L_5 R_5 g_m - L_5\right)}{C_3 C_4 C_5 L_4 L_5 R_5 s^5 + 2 R_5 g_m + s^4 \left(C_3 C_4 L_4 L_5 R_5 g_m + C_3 C_4 L_4 L_5 + 2 C_4 C_5 L_4 L_5 R_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_5 + C_3 C_5 L_5 R_5 + 2 C_4 C_5 L_5 R_5 + 2 C_4 L_4 L_5 g_m\right) + s^2 \left(C_3 L_5 R_5 g_m + C_3 L_5 + 2 C_4 L_4 R_5 g_m + 2 C_4 L_5 R_5 g_m + 2 C_4 L_5 + 2 C_5 L_5 R_5 g_m\right) + s \left(C_3 R_5 + 2 C_4 R_5 + 2 L_5 g_m\right)}$$

**10.120 INVALID-ORDER-120** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 L_5 g_m s^3 + L_5 g_m s + R_5 g_m + s^4 \left(C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^2 \left(C_4 L_4 R_5 g_m - C_4 L_4 + C_5 L_5 R_5 g_m - C_5 L_5\right) - 1}{2 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(C_3 C_4 L_4 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5 R_5 g_m + 2 C_4 C_5 L_5\right) + s^2 \left(C_3 L_5 g_m + 2 C_4 L_4 g_m + 2 C_4 L_5 g_m + 2 C_5 L_5 g_m\right) + s \left(C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2$$

### 10.121 INVALID-ORDER-121 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_5s^3 - C_5R_5s + R_5g_m + s^4\left(C_4C_5L_4L_5R_5g_m - C_4C_5L_4L_5\right) + s^2\left(C_4L_4R_5g_m - C_4L_4 + C_5L_5R_5g_m - C_5L_5\right) - 1}{2g_m + s^5\left(C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(C_3C_4C_5L_4R_5 + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_4R_5g_m + C_3C_4L_4 + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_5R_5g_m + 2C_4C_5L_5\right) + s^2\left(C_3C_5R_5 + 2C_4C_5R_5 + 2C_4L_4g_m + 2C_5L_5g_m\right) + s\left(C_3R_5g_m + C\right.}$$

### 10.122 INVALID-ORDER-122 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5L_4s^2 + L_4g_ms}{2C_5s + 2g_m + s^3\left(C_3C_5L_4 + 2C_4C_5L_4\right) + s^2\left(C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right)}$$

### 10.123 INVALID-ORDER-123 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_5s^2 + s\left(L_4R_5g_m - L_4\right)}{2R_5g_m + s^3\left(C_3C_5L_4R_5 + 2C_4C_5L_4R_5\right) + s^2\left(C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4 + 2C_5L_4R_5g_m\right) + s\left(2C_5R_5 + 2L_4g_m\right) + 2}$$

### 10.124 INVALID-ORDER-124 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4g_ms + s^2\left(C_5L_4R_5g_m - C_5L_4\right)}{2g_m + s^3\left(C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2\left(C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right) + s\left(2C_5R_5g_m + 2C_5\right)}$$

### 10.125 INVALID-ORDER-125 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5g_ms^3 - C_5L_4s^2 + L_4g_ms}{2C_5s + 2g_m + s^4\left(C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_5L_4 + 2C_4C_5L_4\right) + s^2\left(C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m + 2C_5L_5g_m\right)}$$

### 10.126 INVALID-ORDER-126 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5s^3 + L_4L_5g_ms^2 - L_4s}{s^4\left(C_3C_5L_4L_5 + 2C_4C_5L_4L_5\right) + s^3\left(C_3L_4L_5g_m + 2C_4L_4L_5g_m + 2C_5L_4L_5g_m\right) + s^2\left(C_3L_4 + 2C_4L_4 + 2C_5L_5\right) + s\left(2L_4g_m + 2L_5g_m\right) + 2}$$

### 10.127 INVALID-ORDER-127 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5g_ms^3 + L_4g_ms + s^2\left(C_5L_4R_5g_m - C_5L_4\right)}{2g_m + s^4\left(C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2\left(C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m + 2C_5L_5g_m\right) + s\left(2C_5R_5g_m + 2C_5\right)}$$

### 10.128 INVALID-ORDER-128 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_5s^3 - L_4R_5s + s^2\left(L_4L_5R_5g_m - L_4L_5\right)}{2R_5 + s^4\left(C_3C_5L_4L_5R_5 + 2C_4C_5L_4L_5R_5\right) + s^3\left(C_3L_4L_5R_5g_m + C_3L_4L_5 + 2C_4L_4L_5R_5g_m + 2C_4L_4L_5 + 2C_5L_4L_5R_5g_m\right) + s^2\left(C_3L_4R_5 + 2C_4L_4R_5 + 2C_5L_5R_5 + 2L_4L_5g_m\right) + s\left(2L_4R_5g_m + 2L_5R_5g_m + 2L_5\right)}$$

### 10.129 INVALID-ORDER-129 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4L_5g_ms^2 + s^3\left(C_5L_4L_5R_5g_m - C_5L_4L_5\right) + s\left(L_4R_5g_m - L_4\right)}{2R_5g_m + s^4\left(C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5\right) + s^3\left(C_3L_4L_5g_m + 2C_4L_4L_5g_m + 2C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4 + 2C_5L_5R_5g_m + 2C_5L_5\right) + s\left(2L_4g_m + 2L_5g_m\right) + 2}$$

**10.130 INVALID-ORDER-130** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_5 s^2 + s^3\left(C_5 L_4 L_5 R_5 g_m - C_5 L_4 L_5\right) + s\left(L_4 R_5 g_m - L_4\right)}{2R_5 g_m + s^4\left(C_3 C_5 L_4 L_5 R_5 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_5 g_m + 2C_4 C_5 L_4 L_5\right) + s^3\left(C_3 C_5 L_4 R_5 + 2C_4 C_5 L_4 R_5 + 2C_5 L_4 L_5 g_m\right) + s^2\left(C_3 L_4 R_5 g_m + C_3 L_4 + 2C_4 L_4 R_5 g_m + 2C_4 L_4 + 2C_5 L_4 R_5 g_m + 2C_5 L_5 R_5 g_m + 2C_5 L_5\right) + s\left(2C_5 R_5 + 2L_4 g_m\right) + 2}$$

**10.131 INVALID-ORDER-131** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^2\left(C_4 L_4 R_5 g_m - C_4 L_4\right) + s\left(C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2g_m + s^3\left(C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4\right) + s^2\left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2C_4 L_4 g_m\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4\right)}$$

**10.132 INVALID-ORDER-132** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 s^3 + g_m + s^2\left(-C_4 C_5 R_4 + C_4 L_4 g_m\right) + s\left(C_4 R_4 g_m - C_5\right)}{C_3 C_4 C_5 L_4 s^4 + s^3\left(C_3 C_4 C_5 R_4 + C_3 C_4 L_4 g_m + 2C_4 C_5 L_4 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.133 INVALID-ORDER-133** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_5 s^3 + R_5 g_m + s^2\left(-C_4 C_5 R_4 R_5 + C_4 L_4 R_5 g_m - C_4 L_4\right) + s\left(C_4 R_4 R_5 g_m - C_4 R_4 - C_5 R_5\right) - 1}{C_3 C_4 C_5 L_4 R_5 s^4 + 2g_m + s^3\left(C_3 C_4 C_5 R_4 R_5 + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2C_4 C_5 L_4 R_5 g_m\right) + s^2\left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + C_3 C_5 R_5 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_5 + 2C_4 L_4 g_m\right) + s\left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}$$

**10.134 INVALID-ORDER-134** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3\left(C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s^2\left(C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4 + C_4 L_4 g_m\right) + s\left(C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{s^4\left(C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3\left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + C_3 C_4 L_4 g_m + 2C_4 C_5 L_4 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.135 INVALID-ORDER-135** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3\left(-C_4 C_5 L_4 + C_4 C_5 L_5 R_4 g_m\right) + s^2\left(-C_4 C_5 R_4 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s\left(C_4 R_4 g_m - C_5\right)}{C_3 C_4 C_5 L_4 L_5 g_m s^5 + s^4\left(C_3 C_4 C_5 L_4 + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3\left(C_3 C_4 C_5 R_4 + C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2C_4 C_5 L_4 g_m + 2C_4 C_5 L_5 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s\left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.136 INVALID-ORDER-136** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 s^4 + s^3\left(-C_4 C_5 L_5 R_4 + C_4 L_4 L_5 g_m\right) + s^2\left(-C_4 L_4 + C_4 L_5 R_4 g_m - C_5 L_5\right) + s\left(-C_4 R_4 + L_5 g_m\right) - 1}{C_3 C_4 C_5 L_4 L_5 s^5 + 2g_m + s^4\left(C_3 C_4 C_5 L_5 R_4 + C_3 C_4 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(C_3 C_4 L_4 + C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5\right) + s^2\left(C_3 C_4 R_4 + C_3 L_5 g_m + 2C_4 L_4 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s\left(C_3 + 2C_4 R_4 g_m + 2C_4\right)}$$

**10.137 INVALID-ORDER-137** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 g_m s^4 + g_m + s^3\left(C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4 + C_4 C_5 L_5 R_4 g_m\right) + s^2\left(C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s\left(C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{C_3 C_4 C_5 L_4 L_5 g_m s^5 + s^4\left(C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4 + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3\left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2C_4 C_5 L_4 g_m + 2C_4 C_5 L_5 g_m\right) + s^2\left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s\left(C_3 g_m\right.$$

**10.138 INVALID-ORDER-138** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_5 s^4 - R_5 + s^3\left(-C_4 C_5 L_5 R_4 R_5 + C_4 L_4 L_5 R_5 g_m - C_4 L_4 L_5\right) + s^2\left(-C_4 L_4 R_5 + C_4 L_5 R_4 R_5 g_m - C_4 L_5 R_4 - C_5 L_5 R_5\right) + s\left(-C_4 R_4 R_5 + L_5 R_5 g_m\right.$$

$$\left. + C_3 C_4 C_5 L_4 L_5 R_5 s^5 + 2R_5 g_m + s^4\left(C_3 C_4 C_5 L_5 R_4 R_5 + C_3 C_4 L_4 L_5 R_5 g_m + C_3 C_4 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_5 g_m\right) + s^3\left(C_3 C_4 L_4 R_5 + C_3 C_4 L_5 R_4 R_5 g_m + C_3 C_4 L_5 R_4 + C_3 C_5 L_5 R_5 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_5 + 2C_4 L_4 L_5 g_m\right) + s^2\left(C_3 C_4 R_4 R_5 + C_3 L_5 R_5 g_m + C_3 L_5 + \right.\right.$$

**10.139 INVALID-ORDER-139** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^4\left(C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^3\left(C_4 C_5 L_5 R_4 R_5 g_m - C_4 C_5 L_5 R_4 + C_4 L_4 L_5 g_m\right) + s^2\left(C_4 L_4 R_5 g_m - C_4 L_4 + C_4 L_5 R_4 g_m + C_5 L_5 R_5 g_m - C_5 L_5\right) + s\left(C_4 R_4 R_5\right.}{2g_m + s^5\left(C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4\left(C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4 + C_3 C_4 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5 R_5 g_m + 2C_4 C_5 L_5\right) + s^2\left(C_3 C_4 R_4\right.$$

### 10.140 INVALID-ORDER-140 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^4\left(C_4C_5L_4L_5R_5g_m - C_4C_5L_4L_5\right) + s^3\left(-C_4C_5L_4R_5 + C_4C_5L_5R_4R_5g_m - C_4C_5L_5R_4\right) + s^2\left(-C_4C_5R_4R_5 + C_4L_4R_5g_m - C_4L_4 + C_5L_5R_5\right)}{2g_m + s^5\left(C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(C_3C_4C_5L_4R_5 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4C_5R_4R_5 + C_3C_4L_4R_5g_m + C_3C_4L_4 + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_5R_4g_m + 2C_4C_5L_5R_5g_m + 2C_4C_5\right.$$

### 10.141 INVALID-ORDER-141 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_4s^2 + L_4R_4g_m s}{2R_4g_m + s^3\left(C_3C_5L_4R_4 + 2C_4C_5L_4R_4\right) + s^2\left(C_3L_4R_4g_m + 2C_4L_4R_4g_m + 2C_5L_4R_4g_m + 2C_5L_4\right) + s\left(2C_5R_4 + 2L_4g_m\right)}$$

### 10.142 INVALID-ORDER-142 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ \frac{R_5}{C_5R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_4R_5s^2 + s\left(L_4R_4R_5g_m - L_4R_4\right)}{2R_4R_5g_m + 2R_4 + s^3\left(C_3C_5L_4R_4R_5 + 2C_4C_5L_4R_4R_5\right) + s^2\left(C_3L_4R_4R_5g_m + C_3L_4R_4 + 2C_4L_4R_4R_5g_m + 2C_4L_4R_4 + 2C_5L_4R_4R_5g_m + 2C_5L_4R_5\right) + s\left(2C_5R_4R_5 + 2L_4R_4g_m + 2L_4R_5g_m + 2L_4\right)}$$

### 10.143 INVALID-ORDER-143 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4R_4g_m s + s^2\left(C_5L_4R_4R_5g_m - C_5L_4R_4\right)}{2R_4g_m + s^3\left(C_3C_5L_4R_4R_5g_m + C_3C_5L_4R_4 + 2C_4C_5L_4R_4R_5g_m + 2C_4C_5L_4R_4\right) + s^2\left(C_3L_4R_4g_m + 2C_4L_4R_4g_m + 2C_5L_4R_4g_m + 2C_5L_4R_5g_m + 2C_5L_4\right) + s\left(2C_5R_4R_5g_m + 2C_5R_4 + 2L_4g_m\right)}$$

### 10.144 INVALID-ORDER-144 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_4g_m s^3 - C_5L_4R_4s^2 + L_4R_4g_m s}{2R_4g_m + s^4\left(C_3C_5L_4L_5R_4g_m + 2C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_5L_4R_4 + 2C_4C_5L_4R_4 + 2C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_4g_m + 2C_4L_4R_4g_m + 2C_5L_4R_4g_m + 2C_5L_4 + 2C_5L_5R_4g_m\right) + s\left(2C_5R_4 + 2L_4g_m\right)}$$

### 10.145 INVALID-ORDER-145 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ \frac{L_5 s}{C_5L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_4s^3 + L_4L_5R_4g_m s^2 - L_4R_4 s}{2R_4 + s^4\left(C_3C_5L_4L_5R_4 + 2C_4C_5L_4L_5R_4\right) + s^3\left(C_3L_4L_5R_4g_m + 2C_4L_4L_5R_4g_m + 2C_5L_4L_5R_4g_m + 2C_5L_4L_5\right) + s^2\left(C_3L_4R_4 + 2C_4L_4R_4 + 2C_5L_5R_4 + 2L_4L_5g_m\right) + s\left(2L_4R_4g_m + 2L_4 + 2L_5R_4g_m\right)}$$

### 10.146 INVALID-ORDER-146 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_4g_m s^3 + L_4R_4g_m s + s^2\left(C_5L_4R_4R_5g_m - C_5L_4R_4\right)}{2R_4g_m + s^4\left(C_3C_5L_4L_5R_4g_m + 2C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_5L_4R_4R_5g_m + C_3C_5L_4R_4 + 2C_4C_5L_4R_4R_5g_m + 2C_4C_5L_4R_4 + 2C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_4g_m + 2C_4L_4R_4g_m + 2C_5L_4R_4g_m + 2C_5L_4R_5g_m + 2C_5L_4 + 2C_5L_5R_4g_m\right) + s\left(2C_5R_4R_5g_m + 2C_5R_4 + 2L_4g_m\right.$$

### 10.147 INVALID-ORDER-147 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ \frac{L_5R_5 s}{C_5L_5R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_4R_5s^3 - L_4R_4R_5s + s^2\left(L_4L_5R_4R_5g_m - L_4L_5R_4\right)}{2R_4R_5 + s^4\left(C_3C_5L_4L_5R_4R_5 + 2C_4C_5L_4L_5R_4R_5\right) + s^3\left(C_3L_4L_5R_4R_5g_m + C_3L_4L_5R_4 + 2C_4L_4L_5R_4R_5g_m + 2C_4L_4L_5R_4 + 2C_5L_4L_5R_4R_5g_m + 2C_5L_4L_5R_5\right) + s^2\left(C_3L_4R_4R_5 + 2C_4L_4R_4R_5 + 2C_5L_5R_4R_5 + 2L_4L_5R_4g_m + 2L_4L_5R_5g_m + 2L_4L_5\right) + s\left(2L_4R_4R_5g\right.$$

### 10.148 INVALID-ORDER-148 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4R_4 s}{C_4L_4R_4 s^2+L_4 s+R_4},\ \frac{C_5L_5R_5 s^2+L_5 s+R_5}{C_5L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4L_5R_4g_m s^2 + s^3\left(C_5L_4L_5R_4R_5g_m - C_5L_4L_5R_4\right) + s\left(L_4R_4R_5g_m - L_4R_4\right)}{2R_4R_5g_m + 2R_4 + s^4\left(C_3C_5L_4L_5R_4R_5g_m + C_3C_5L_4L_5R_4 + 2C_4C_5L_4L_5R_4R_5g_m + 2C_4C_5L_4L_5R_4\right) + s^3\left(C_3L_4L_5R_4g_m + 2C_4L_4L_5R_4g_m + 2C_5L_4L_5R_4g_m + 2C_5L_4L_5R_5g_m + 2C_5L_4L_5\right) + s^2\left(C_3L_4R_4R_5g_m + C_3L_4R_4 + 2C_4L_4R_4R_5g_m + 2C_4L_4R_4 + 2C_5L_5R_4R_5\right.$$

### 10.149 INVALID-ORDER-149 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_4 R_4 R_5 s^2 + s^3\left(C_5 L_4 L_5 R_4 R_5 g_m - C_5 L_4 L_5 R_4\right) + s\left(L_4 R_4 R_5 g_m - L_4 R_4\right)}{2R_4 R_5 g_m + 2R_4 + s^4\left(C_3 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_5 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5 R_4\right) + s^3\left(C_3 C_5 L_4 R_4 R_5 + 2C_4 C_5 L_4 R_4 R_5 + 2C_5 L_4 L_5 R_4 g_m + 2C_5 L_4 L_5 R_5 g_m + 2C_5 L_4 L_5\right) + s^2\left(C_3 L_4 R_4 R_5 g_m + C_3 L_4 R_4 + 2C_4 L_4 R_4 R_5 g_m + 2C_4 L_4 R_4 + 2C_5 L_4 R_4 R_5\right.$$

### 10.150 INVALID-ORDER-150 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^2\left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right) + s\left(L_4 R_5 g_m - L_4\right)}{2R_4 g_m + 2R_5 g_m + s^3\left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2\left(C_3 L_4 R_5 g_m + C_3 L_4 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2L_4 g_m\right) + 2}$$

### 10.151 INVALID-ORDER-151 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_4 s^3 + R_4 g_m + s^2\left(C_4 L_4 R_4 g_m - C_5 L_4\right) + s\left(-C_5 R_4 + L_4 g_m\right)}{C_3 C_4 C_5 L_4 R_4 s^4 + 2g_m + s^3\left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2\left(C_3 C_5 R_4 + C_3 L_4 g_m + 2C_4 L_4 g_m + 2C_5 L_4 g_m\right) + s\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

### 10.152 INVALID-ORDER-152 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_4 R_5 s^3 + R_4 R_5 g_m - R_4 + s^2\left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4 - C_5 L_4 R_5\right) + s\left(-C_5 R_4 R_5 + L_4 R_5 g_m - L_4\right)}{C_3 C_4 C_5 L_4 R_4 R_5 s^4 + 2R_4 g_m + 2R_5 g_m + s^3\left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + C_3 C_5 L_4 R_5 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_5\right) + s^2\left(C_3 C_5 R_4 R_5 + C_3 L_4 R_5 g_m + C_3 L_4 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4 + 2C_5 L_4 R_5 g_m\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m +\right.$$

### 10.153 INVALID-ORDER-153 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^3\left(C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4\right) + s^2\left(C_4 L_4 R_4 g_m + C_5 L_4 R_5 g_m - C_5 L_4\right) + s\left(C_5 R_4 R_5 g_m - C_5 R_4 + L_4 g_m\right)}{2g_m + s^4\left(C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4\right) + s^3\left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_4 R_5 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2\left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + C_3 L_4 g_m + 2C_4 L_4 g_m + 2C_5 L_4 g_m\right) + s\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

### 10.154 INVALID-ORDER-154 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_4 g_m s^4 + R_4 g_m + s^3\left(-C_4 C_5 L_4 R_4 + C_5 L_4 L_5 g_m\right) + s^2\left(C_4 L_4 R_4 g_m - C_5 L_4 + C_5 L_5 R_4 g_m\right) + s\left(-C_5 R_4 + L_4 g_m\right)}{C_3 C_4 C_5 L_4 L_5 R_4 g_m s^5 + 2g_m + s^4\left(C_3 C_4 C_5 L_4 R_4 + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_4 + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2\left(C_3 C_5 R_4 + C_3 L_4 g_m + 2C_4 L_4 g_m + 2C_5 L_4 g_m + 2C_5 L_5 g_m\right) + s\left(C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

### 10.155 INVALID-ORDER-155 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_4 s^4 - R_4 + s^3\left(C_4 L_4 L_5 R_4 g_m - C_5 L_4 L_5\right) + s^2\left(-C_4 L_4 R_4 - C_5 L_5 R_4 + L_4 L_5 g_m\right) + s\left(-L_4 + L_5 R_4 g_m\right)}{C_3 C_4 C_5 L_4 L_5 R_4 s^5 + 2R_4 g_m + s^4\left(C_3 C_4 L_4 L_5 R_4 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5\right) + s^3\left(C_3 C_4 L_4 R_4 + C_3 C_5 L_5 R_4 + C_3 L_4 L_5 g_m + 2C_4 L_4 L_5 g_m + 2C_5 L_4 L_5 g_m\right) + s^2\left(C_3 L_4 + C_3 L_5 R_4 g_m + 2C_4 L_4 R_4 g_m + 2C_4 L_4 + 2C_5 L_5 R_4 g_m + 2C_5 L_5\right) + s\left(C_3 R_4\right.$$

### 10.156 INVALID-ORDER-156 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_4 g_m s^4 + R_4 g_m + s^3\left(C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4 + C_5 L_4 L_5 g_m\right) + s^2\left(C_4 L_4 R_4 g_m + C_5 L_4 R_5 g_m - C_5 L_4 + C_5 L_5 R_4 g_m\right) + s\left(C_5 R_4 R_5 g_m - C_5 R_4 + L_4 g_m\right)}{C_3 C_4 C_5 L_4 L_5 R_4 g_m s^5 + 2g_m + s^4\left(C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_4 R_5 g_m + C_3 C_5 L_4 + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2\left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + C_3 L_4 g_m +\right.$$

### 10.157 INVALID-ORDER-157 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_4 R_5 s^4 - R_4 R_5 + s^3\left(C_4 L_4 L_5 R_4 R_5 g_m - C_4 L_4 L_5 R_4 - C_5 L_4 L_5 R_5\right) + s^2\left(-C_4 L_4 R_4 R_5 - C_5 L_5 R_4 R_5 + L_4 L_5 R_5 g_m\right.$$
$$C_3 C_4 C_5 L_4 L_5 R_4 R_5 s^5 + 2R_4 R_5 g_m + 2R_5 + s^4\left(C_3 C_4 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_4 L_5 R_4 + C_3 C_5 L_4 L_5 R_5 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5 R_5\right) + s^3\left(C_3 C_4 L_4 R_4 R_5 + C_3 C_5 L_5 R_4 R_5 + C_3 L_4 L_5 R_5 g_m + C_3 L_4 L_5 + 2C_4 L_4 L_5 R_4 g_m + 2C_4 L_4 L_5 R_5 g_m + 2C_4 L_4 L_5 + 2C_5 L_4$$

### 10.158 INVALID-ORDER-158 $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4\left(C_4 C_5 L_4 L_5 R_4 R_5 g_m - C_4 C_5 L_4 L_5 R_4\right) + s^3\left(C_4 L_4 L_5 R_4 g_m + C_5 L_4 L_5 R_5 g_m - C_5 L_4 L_5\right) + s^2\left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right.$$
$$2R_4 g_m + 2R_5 g_m + s^5\left(C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4\left(C_3 C_4 L_4 L_5 R_4 g_m + C_3 C_5 L_4 L_5 R_5 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_5 g_m + 2C_4 C_5 L_4 L_5\right) + s^3\left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + C_3 L_4 L_5 g_m +\right.$$

**10.159 INVALID-ORDER-159** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_4 C_5 L_4 L_5 R_4 R_5 g_m - C_4 C_5 L_4 L_5 R_4\right) + s^3 \left(-C_4 C_5 L_4 R_4 R_5 + C_5 L_4 L_5 R_5 g_m - C_5 L_4 L_5\right) + s^2}{2R_4 g_m + 2R_5 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(C_3 C_4 C_5 L_4 R_4 R_5 + C_3 C_5 L_4 L_5 R_5 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_5 g_m + 2C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + C_3 C_5 L_4 R_5 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 +\right.}$$

**10.160 INVALID-ORDER-160** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^2 \left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^3 \left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2 \left(2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s \left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4\right) + 2}$$

**10.161 INVALID-ORDER-161** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_4 s^3 + C_4 L_4 R_4 g_m s^2 - C_5 R_4 s + R_4 g_m}{C_3 C_4 C_5 L_4 R_4 s^4 + 2g_m + s^3 \left(C_3 C_4 L_4 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_4 + 2C_4 C_5 R_4 + 2C_4 L_4 g_m\right) + s \left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**10.162 INVALID-ORDER-162** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_4 R_5 s^3 - C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^2 \left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right)}{C_3 C_4 C_5 L_4 R_4 R_5 s^4 + 2R_4 g_m + 2R_5 g_m + s^3 \left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_5\right) + s^2 \left(C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s \left(C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) +}$$

**10.163 INVALID-ORDER-163** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 R_4 g_m s^2 + R_4 g_m + s^3 \left(C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4\right) + s \left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^4 \left(C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4\right) + s^3 \left(C_3 C_4 L_4 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_4 + 2C_4 L_4 g_m\right) + s \left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**10.164 INVALID-ORDER-164** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_4 g_m s^4 - C_4 C_5 L_4 R_4 s^3 - C_5 R_4 s + R_4 g_m + s^2 \left(C_4 L_4 R_4 g_m + C_5 L_5 R_4 g_m\right)}{C_3 C_4 C_5 L_4 L_5 R_4 g_m s^5 + 2g_m + s^4 \left(C_3 C_4 C_5 L_4 R_4 + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 + 2C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 C_5 R_4 + 2C_4 C_5 R_4 + 2C_4 L_4 g_m + 2C_5 L_5 g_m\right) + s \left(C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**10.165 INVALID-ORDER-165** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_4 s^4 + C_4 L_4 L_5 R_4 g_m s^3 + L_5 R_4 g_m s - R_4 + s^2 \left(-C_4 L_4 R_4 - C_5 L_5 R_4\right)}{C_3 C_4 C_5 L_4 L_5 R_4 s^5 + 2R_4 g_m + s^4 \left(C_3 C_4 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_4 + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4 + 2C_4 L_4 L_5 g_m\right) + s^2 \left(C_3 L_5 R_4 g_m + 2C_4 L_4 R_4 g_m + 2C_4 L_4 + 2C_4 L_5 R_4 g_m + 2C_5 L_5 R_4 g_m + 2C_5 L_5\right) + s \left(C_3 R_4 + 2C_4 R_4 + 2L_5 g_m\right)}$$

**10.166 INVALID-ORDER-166** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_4 L_5 R_4 g_m s^4 + R_4 g_m + s^3 \left(C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4\right) + s^2 \left(C_4 L_4 R_4 g_m + C_5 L_5 R_4 g_m\right) + s \left(C_5 R_4 R_5 g_m - C_5 R_4\right)}{C_3 C_4 C_5 L_4 L_5 R_4 g_m s^5 + 2g_m + s^4 \left(C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_4 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4 + 2C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_4 + 2C_4 L_4\right.}$$

**10.167 INVALID-ORDER-167** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 L_5 R_4 R_5 s^4 - R_4 R_5 + s^3 \left(C_4 L_4 L_5 R_4 R_5 g_m - C_4 L_4 L_5 R_4\right) + s^2 \left(-C_4 L_4 R_4 R_5 - C_5 L_5 R_4 R_5\right) + s \left(L_5 R_4 R_5 g_m - L_5\right.}{C_3 C_4 C_5 L_4 L_5 R_4 R_5 s^5 + 2R_4 R_5 g_m + 2R_5 + s^4 \left(C_3 C_4 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5 R_5\right) + s^3 \left(C_3 C_4 L_4 R_4 R_5 + C_3 C_5 L_5 R_4 R_5 + 2C_4 C_5 L_5 R_4 R_5 + 2C_4 L_4 L_5 R_4 g_m + 2C_4 L_4 L_5 R_5 g_m + 2C_4 L_4 L_5\right) + s^2 \left(C_3 L_5 R_4 R_5 g_m + C_3 L_5 R_4 + 2\right.}$$

**10.168 INVALID-ORDER-168** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4 L_4 L_5 R_4 g_m s^3 + L_5 R_4 g_m s + R_4 R_5 g_m - R_4 + s^4 \left(C_4 C_5 L_4 L_5 R_4 R_5 g_m - C_4 C_5 L_4 L_5 R_4\right) + s^2 \left(C_4 L_4 R_4 R_5 g_m - C_4 L}{2R_4 g_m + 2R_5 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(C_3 C_4 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_5 g_m + 2C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_4 + 2C_4 L_4 L_5 g}$$

**10.169 INVALID-ORDER-169** $Z(s) = \left(\infty,\ \infty,\ \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_4 R_4 R_5 s^3 - C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^4 \left(C_4 C_5 L_4 L_5 R_4 R_5 g_m - C_4 C_5 L_4 L_5 R_4\right) + s^2 \left(C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4 + C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^3 \left(C_4 C_5 L_4 R_4 R_5 + C_4 L_4 R_4 R_5 g_m + C_4 L_4 R_4 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4 + C_5 L_5 R_5 g_m + C_5 L_5 + L_4 L_5 R_5 g_m + L_4 L_5\right)}{2R_4 g_m + 2R_5 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(C_3 C_4 C_5 L_4 R_4 R_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_5 g_m + 2C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_5 + 2C_4 C_5 L_5}$$

**10.170 INVALID-ORDER-170** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s\left(C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4\right)}$$

**10.171 INVALID-ORDER-171** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 R_4 g_m s^2 - C_5 R_3 R_4 s + R_3 R_4 g_m}{C_3 C_5 L_5 R_3 R_4 g_m s^3 + 2R_3 g_m + R_4 g_m + s^2\left(C_3 C_5 R_3 R_4 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_4 g_m\right) + s\left(C_3 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

**10.172 INVALID-ORDER-172** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 R_4 s^2 + L_5 R_3 R_4 g_m s - R_3 R_4}{C_3 C_5 L_5 R_3 R_4 s^3 + 2R_3 R_4 g_m + 2R_3 + R_4 + s^2\left(C_3 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4\right) + s\left(C_3 R_3 R_4 + 2L_5 R_3 g_m + L_5 R_4 g_m\right)}$$

**10.173 INVALID-ORDER-173** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_5 R_3 R_4 g_m s^2 + R_3 R_4 g_m + s\left(C_5 R_3 R_4 R_5 g_m - C_5 R_3 R_4\right)}{C_3 C_5 L_5 R_3 R_4 g_m s^3 + 2R_3 g_m + R_4 g_m + s^2\left(C_3 C_5 R_3 R_4 R_5 g_m + C_3 C_5 R_3 R_4 + 2C_5 L_5 R_3 g_m + C_5 L_5 R_4 g_m\right) + s\left(C_3 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 R_5 g_m + 2C_5 R_3 + C_5 R_4 R_5 g_m + C_5 R_4\right)}$$

**10.174 INVALID-ORDER-174** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_5 R_3 R_4 R_5 s^2 - R_3 R_4 R_5 + s\left(L_5 R_3 R_4 R_5 g_m - L_5 R_3 R_4\right)}{C_3 C_5 L_5 R_3 R_4 R_5 s^3 + 2R_3 R_4 R_5 g_m + 2R_3 R_5 + R_4 R_5 + s^2\left(C_3 L_5 R_3 R_4 R_5 g_m + C_3 L_5 R_3 R_4 + 2C_5 L_5 R_3 R_4 R_5 g_m + 2C_5 L_5 R_3 R_5 + C_5 L_5 R_4 R_5\right) + s\left(C_3 R_3 R_4 R_5 + 2L_5 R_3 R_4 g_m + 2L_5 R_3 R_5 g_m + 2L_5 R_3 + L_5 R_4 R_5 g_m + L_5 R_4\right)}$$

**10.175 INVALID-ORDER-175** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_5 R_3 R_4 g_m s + R_3 R_4 R_5 g_m - R_3 R_4 + s^2\left(C_5 L_5 R_3 R_4 R_5 g_m - C_5 L_5 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^3\left(C_3 C_5 L_5 R_3 R_4 R_5 g_m + C_3 C_5 L_5 R_3 R_4\right) + s^2\left(C_3 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4\right) + s\left(C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4 + 2L_5 R_3 g_m + L_5 R_4 g_m\right)}$$

**10.176 INVALID-ORDER-176** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_3 R_4 R_5 s + R_3 R_4 R_5 g_m - R_3 R_4 + s^2\left(C_5 L_5 R_3 R_4 R_5 g_m - C_5 L_5 R_3 R_4\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^3\left(C_3 C_5 L_5 R_3 R_4 R_5 g_m + C_3 C_5 L_5 R_3 R_4\right) + s^2\left(C_3 C_5 R_3 R_4 R_5 + 2C_5 L_5 R_3 R_4 g_m + 2C_5 L_5 R_3 R_5 g_m + 2C_5 L_5 R_3 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4\right) + s\left(C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4 + 2C_5 R_3 R_4 R_5 g_m + 2C_5 R_3 R_5 + C_5 R_4 R_5\right)}$$

**10.177 INVALID-ORDER-177** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3}{2R_3g_m + R_5g_m + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3\right) + 1}$$

**10.178 INVALID-ORDER-178** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_5R_3g_ms^2 - C_5R_3s + R_3g_m}{g_m + s^3\left(C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3 + 2C_4C_5R_3 + C_5L_5g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

**10.179 INVALID-ORDER-179** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_5R_3s^2 + L_5R_3g_ms - R_3}{2R_3g_m + s^3\left(C_3C_5L_5R_3 + 2C_4C_5L_5R_3\right) + s^2\left(C_3L_5R_3g_m + 2C_4L_5R_3g_m + 2C_5L_5R_3g_m + C_5L_5\right) + s\left(C_3R_3 + 2C_4R_3 + L_5g_m\right) + 1}$$

**10.180 INVALID-ORDER-180** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_5R_3g_ms^2 + R_3g_m + s\left(C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_5L_5g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

**10.181 INVALID-ORDER-181** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_5R_3R_5s^2 - R_3R_5 + s\left(L_5R_3R_5g_m - L_5R_3\right)}{2R_3R_5g_m + R_5 + s^3\left(C_3C_5L_5R_3R_5 + 2C_4C_5L_5R_3R_5\right) + s^2\left(C_3L_5R_3R_5g_m + C_3L_5R_3 + 2C_4L_5R_3R_5g_m + 2C_4L_5R_3 + 2C_5L_5R_3R_5g_m + C_5L_5R_5\right) + s\left(C_3R_3R_5 + 2C_4R_3R_5 + 2L_5R_3g_m + L_5R_5g_m + L_5\right)}$$

**10.182 INVALID-ORDER-182** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_5R_3g_ms + R_3R_5g_m - R_3 + s^2\left(C_5L_5R_3R_5g_m - C_5L_5R_3\right)}{2R_3g_m + R_5g_m + s^3\left(C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5R_3\right) + s^2\left(C_3L_5R_3g_m + 2C_4L_5R_3g_m + 2C_5L_5R_3g_m + C_5L_5R_5g_m + C_5L_5\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + L_5g_m\right) + 1}$$

**10.183 INVALID-ORDER-183** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_5s + R_3R_5g_m - R_3 + s^2\left(C_5L_5R_3R_5g_m - C_5L_5R_3\right)}{2R_3g_m + R_5g_m + s^3\left(C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5R_3\right) + s^2\left(C_3C_5R_3R_5 + 2C_4C_5R_3R_5 + 2C_5L_5R_3g_m + C_5L_5R_5g_m + C_5L_5\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

**10.184 INVALID-ORDER-184** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

**10.185 INVALID-ORDER-185** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_5R_3R_4g_ms^2 - C_5R_3R_4s + R_3R_4g_m}{2R_3g_m + R_4g_m + s^3\left(C_3C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4 + 2C_4C_5R_3R_4 + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**10.186 INVALID-ORDER-186** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_5R_3R_4s^2 + L_5R_3R_4g_ms - R_3R_4}{2R_3R_4g_m + 2R_3 + R_4 + s^3\left(C_3C_5L_5R_3R_4 + 2C_4C_5L_5R_3R_4\right) + s^2\left(C_3L_5R_3R_4g_m + 2C_4L_5R_3R_4g_m + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3 + C_5L_5R_4\right) + s\left(C_3R_3R_4 + 2C_4R_3R_4 + 2L_5R_3g_m + L_5R_4g_m\right)}$$

### 10.187 INVALID-ORDER-187 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_5R_3R_4g_ms^2 + R_3R_4g_m + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^3\left(C_3C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4 + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

### 10.188 INVALID-ORDER-188 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_5R_3R_4R_5s^2 - R_3R_4R_5 + s\left(L_5R_3R_4R_5g_m - L_5R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^3\left(C_3C_5L_5R_3R_4R_5 + 2C_4C_5L_5R_3R_4R_5\right) + s^2\left(C_3L_5R_3R_4R_5g_m + C_3L_5R_3R_4 + 2C_4L_5R_3R_4R_5g_m + 2C_4L_5R_3R_4 + 2C_5L_5R_3R_4R_5g_m + 2C_5L_5R_3R_5 + C_5L_5R_4R_5\right) + s\left(C_3R_3R_4R_5 + 2C_4R_3R_4R_5 + 2L_5R_3R_4g_m + 2L_5R_3R_5g_m + \right.}$$

### 10.189 INVALID-ORDER-189 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_5R_3R_4g_ms + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_5L_5R_3R_4R_5g_m - C_5L_5R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_5L_5R_3R_4R_5g_m + C_3C_5L_5R_3R_4 + 2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_4\right) + s^2\left(C_3L_5R_3R_4g_m + 2C_4L_5R_3R_4g_m + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3R_5g_m + 2C_5L_5R_3 + C_5L_5R_4R_5g_m + C_5L_5R_4\right) + s\left(C_3R_3R_4R_5\right.}$$

### 10.190 INVALID-ORDER-190 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_5L_5R_3R_4R_5g_m - C_5L_5R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_5L_5R_3R_4R_5g_m + C_3C_5L_5R_3R_4 + 2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_4\right) + s^2\left(C_3C_5R_3R_4R_5 + 2C_4C_5R_3R_4R_5 + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3R_5g_m + 2C_5L_5R_3 + C_5L_5R_4R_5g_m + C_5L_5R_4\right) + s\left(C_3R_3R_4R_5\right.}$$

### 10.191 INVALID-ORDER-191 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5R_3R_4s^2 + R_3g_m + s\left(C_4R_3R_4g_m - C_5R_3\right)}{C_3C_4C_5R_3R_4s^3 + g_m + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.192 INVALID-ORDER-192 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5R_3R_4R_5s^2 + R_3R_5g_m - R_3 + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4 - C_5R_3R_5\right)}{C_3C_4C_5R_3R_4R_5s^3 + 2R_3g_m + R_5g_m + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + C_3C_5R_3R_5 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_5 + C_4C_5R_4R_5\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

### 10.193 INVALID-ORDER-193 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^2\left(C_4C_5R_3R_4R_5g_m - C_4C_5R_3R_4\right) + s\left(C_4R_3R_4g_m + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4C_5R_4R_5g_m + C_4C_5R_4\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

### 10.194 INVALID-ORDER-194 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_5R_3R_4g_ms^3 + R_3g_m + s^2\left(-C_4C_5R_3R_4 + C_5L_5R_3g_m\right) + s\left(C_4R_3R_4g_m - C_5R_3\right)}{C_3C_4C_5L_5R_3R_4g_ms^4 + g_m + s^3\left(C_3C_4C_5R_3R_4 + C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4 + C_5L_5g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.195 INVALID-ORDER-195 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_5R_3R_4s^3 - R_3 + s^2\left(C_4L_5R_3R_4g_m - C_5L_5R_3\right) + s\left(-C_4R_3R_4 + L_5R_3g_m\right)}{C_3C_4C_5L_5R_3R_4s^4 + 2R_3g_m + s^3\left(C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3 + C_4C_5L_5R_4\right) + s^2\left(C_3C_4R_3R_4 + C_3L_5R_3g_m + 2C_4L_5R_3g_m + C_4L_5R_4g_m + 2C_5L_5R_3g_m + C_5L_5\right) + s\left(C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3 + C_4R_4 + L_5g_m\right) + 1}$$

**10.196 INVALID-ORDER-196** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_5R_3R_4g_ms^3 + R_3g_m + s^2\left(C_4C_5R_3R_4R_5g_m - C_4C_5R_3R_4 + C_5L_5R_3g_m\right) + s\left(C_4R_3R_4g_m + C_5R_3R_5g_m - C_5R_3\right)}{C_3C_4C_5L_5R_3R_4g_ms^4 + g_m + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4 + C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4C_5R_4R_5g_m + C_4C_5R_4 + C_5L_5g_m\right) + s$$

**10.197 INVALID-ORDER-197** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_5R_3R_4R_5s^3 - R_3R_5 + s^2\left(C_4L_5R_3R_4R_5g_m - C_4L_5R_3R_4 - C_5L_5R_3R_5\right) + s\left(-C_4R_3R_4R_5 + L_5R_3R_5g_m - L_5R_3\right)}{C_3C_4C_5L_5R_3R_4R_5s^4 + 2R_3R_5g_m + R_5 + s^3\left(C_3C_4L_5R_3R_4R_5g_m + C_3C_4L_5R_3R_4 + C_3C_5L_5R_3R_5 + 2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_5 + C_4C_5L_5R_4R_5\right) + s^2\left(C_3C_4R_3R_4R_5 + C_3L_5R_3R_5g_m + C_3L_5R_3 + 2C_4L_5R_3R_4g_m + 2C_4L_5R_3R_5g_m + 2C_4L_5R_3 + C_4L_5R\right.$$

**10.198 INVALID-ORDER-198** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^3\left(C_4C_5L_5R_3R_4R_5g_m - C_4C_5L_5R_3R_4\right) + s^2\left(C_4L_5R_3R_4g_m + C_5L_5R_3R_5g_m - C_5L_5R_3\right) + s\left(C_4R_3R_4R_5\right.}{2R_3g_m + R_5g_m + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4\right) + s^3\left(C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5R_3 + C_4C_5L_5R_4R_5g_m + C_4C_5L_5R_4\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + C_3L_5R_3g_m\right.$$

**10.199 INVALID-ORDER-199** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^3\left(C_4C_5L_5R_3R_4R_5g_m - C_4C_5L_5R_3R_4\right) + s^2\left(-C_4C_5R_3R_4R_5 + C_5L_5R_3R_5g_m - C_5L_5\right.}{2R_3g_m + R_5g_m + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4\right) + s^3\left(C_3C_4C_5R_3R_4R_5 + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5R_3 + C_4C_5L_5R_4R_5g_m + C_4C_5L_5R_4\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + C_3C_5R_3R_5\right.$$

**10.200 INVALID-ORDER-200** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_4L_4R_3R_5g_m - C_4L_4R_3\right)}{2R_3g_m + R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3\right) + s^2\left(2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4L_4\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3\right) + 1}$$

**10.201 INVALID-ORDER-201** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3s^3 + C_4L_4R_3g_ms^2 - C_5R_3s + R_3g_m}{C_3C_4C_5L_4R_3s^4 + g_m + s^3\left(C_3C_4L_4R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4\right) + s^2\left(C_3C_5R_3 + 2C_4C_5R_3 + C_4L_4g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

**10.202 INVALID-ORDER-202** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_5s^3 - C_5R_3R_5s + R_3R_5g_m - R_3 + s^2\left(C_4L_4R_3R_5g_m - C_4L_4R_3\right)}{C_3C_4C_5L_4R_3R_5s^4 + 2R_3g_m + R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + 2C_4C_5L_4R_3R_5g_m + C_4C_5L_4R_5\right) + s^2\left(C_3C_5R_3R_5 + 2C_4C_5R_3R_5 + 2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4L_4\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

**10.203 INVALID-ORDER-203** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4L_4R_3g_ms^2 + R_3g_m + s^3\left(C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3\right) + s\left(C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3\right) + s^3\left(C_3C_4L_4R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4R_5g_m + C_4C_5L_4\right) + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4L_4g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

**10.204 INVALID-ORDER-204** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3g_ms^4 - C_4C_5L_4R_3s^3 - C_5R_3s + R_3g_m + s^2\left(C_4L_4R_3g_m + C_5L_5R_3g_m\right)}{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(C_3C_4C_5L_4R_3 + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4 + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3 + 2C_4C_5R_3 + C_4L_4g_m + C_5L_5g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.205 INVALID-ORDER-205 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3s^4 + C_4L_4L_5R_3g_ms^3 + L_5R_3g_ms - R_3 + s^2\left(-C_4L_4R_3 - C_5L_5R_3\right)}{C_3C_4C_5L_4L_5R_3s^5 + 2R_3g_m + s^4\left(C_3C_4L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3 + C_3C_5L_5R_3 + 2C_4C_5L_5R_3 + C_4L_4L_5g_m\right) + s^2\left(C_3L_5R_3g_m + 2C_4L_4R_3g_m + C_4L_4 + 2C_4L_5R_3g_m + 2C_5L_5R_3g_m + C_5L_5\right) + s\left(C_3R_3 + 2C_4R_3 + L_5g_m\right) + 1}$$

### 10.206 INVALID-ORDER-206 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3g_ms^4 + R_3g_m + s^3\left(C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3\right) + s^2\left(C_4L_4R_3g_m + C_5L_5R_3g_m\right) + s\left(C_5R_3R_5g_m - C_5R_3\right)}{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3 + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4R_5g_m + C_4C_5L_4 + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4L_4g_m + \right.}$$

### 10.207 INVALID-ORDER-207 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_5s^4 - R_3R_5 + s^3\left(C_4L_4L_5R_3R_5g_m - C_4L_4L_5R_3\right) + s^2\left(-C_4L_4R_3R_5 - C_5L_5R_3R_5\right) + s\left(L_5R_3R_5g_m - L_5R_3\right)}{C_3C_4C_5L_4L_5R_3R_5s^5 + 2R_3R_5g_m + R_5 + s^4\left(C_3C_4L_4L_5R_3R_5g_m + C_3C_4L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_5g_m + C_4C_5L_4L_5R_5\right) + s^3\left(C_3C_4L_4R_3R_5 + C_3C_5L_5R_3R_5 + 2C_4C_5L_5R_3R_5 + 2C_4L_4L_5R_3g_m + C_4L_4L_5R_5g_m + C_4L_4L_5\right) + s^2\left(C_3L_5R_3R_5g_m + C_3L_5R_3 + 2C_4L_4\right.}$$

### 10.208 INVALID-ORDER-208 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4L_4L_5R_3g_ms^3 + L_5R_3g_ms + R_3R_5g_m - R_3 + s^4\left(C_4C_5L_4L_5R_3R_5g_m - C_4C_5L_4L_5R_3\right) + s^2\left(C_4L_4R_3R_5g_m - C_4L_4R_3 - \right.}{2R_3g_m + R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3\right) + s^4\left(C_3C_4L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_5g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5R_3 + C_4L_4L_5g_m\right) +}$$

### 10.209 INVALID-ORDER-209 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_5s^3 - C_5R_3R_5s + R_3R_5g_m - R_3 + s^4\left(C_4C_5L_4L_5R_3R_5g_m - C_4C_5L_4L_5R_3\right) + s^2\left(C_4L_4\right.}{2R_3g_m + R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3\right) + s^4\left(C_3C_4C_5L_4R_3R_5 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_5g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_4R_3R_5g_m + C_4C_5L_4R_5 + 2C_4C_5L_5R_3R_5\right.}$$

### 10.210 INVALID-ORDER-210 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3s^2 + L_4R_3g_ms}{2R_3g_m + s^3\left(C_3C_5L_4R_3 + 2C_4C_5L_4R_3\right) + s^2\left(C_3L_4R_3g_m + 2C_4L_4R_3g_m + 2C_5L_4R_3g_m + C_5L_4\right) + s\left(2C_5R_3 + L_4g_m\right)}$$

### 10.211 INVALID-ORDER-211 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_5s^2 + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^3\left(C_3C_5L_4R_3R_5 + 2C_4C_5L_4R_3R_5\right) + s^2\left(C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + 2C_5L_4R_3R_5g_m + C_5L_4R_5\right) + s\left(2C_5R_3R_5 + 2L_4R_3g_m + L_4R_5g_m + L_4\right)}$$

### 10.212 INVALID-ORDER-212 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_4R_3g_ms + s^2\left(C_5L_4R_3R_5g_m - C_5L_4R_3\right)}{2R_3g_m + s^3\left(C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_3 + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3\right) + s^2\left(C_3L_4R_3g_m + 2C_4L_4R_3g_m + 2C_5L_4R_3g_m + C_5L_4R_5g_m + C_5L_4\right) + s\left(2C_5R_3R_5g_m + 2C_5R_3 + L_4g_m\right)}$$

### 10.213 INVALID-ORDER-213 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3g_ms^3 - C_5L_4R_3s^2 + L_4R_3g_ms}{2R_3g_m + s^4\left(C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_4R_3 + 2C_4C_5L_4R_3 + C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_3g_m + 2C_4L_4R_3g_m + 2C_5L_4R_3g_m + C_5L_4 + 2C_5L_5R_3g_m\right) + s\left(2C_5R_3 + L_4g_m\right)}$$

### 10.214 INVALID-ORDER-214 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3s^3 + L_4L_5R_3g_ms^2 - L_4R_3s}{2R_3 + s^4\left(C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3\right) + s^3\left(C_3L_4L_5R_3g_m + 2C_4L_4L_5R_3g_m + 2C_5L_4L_5R_3g_m + C_5L_4L_5\right) + s^2\left(C_3L_4R_3 + 2C_4L_4R_3 + 2C_5L_5R_3 + L_4L_5g_m\right) + s\left(2L_4R_3g_m + L_4 + 2L_5R_3g_m\right)}$$

### 10.215 INVALID-ORDER-215 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3g_ms^3 + L_4R_3g_ms + s^2\left(C_5L_4R_3R_5g_m - C_5L_4R_3\right)}{2R_3g_m + s^4\left(C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_3 + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_3g_m + 2C_4L_4R_3g_m + 2C_5L_4R_3g_m + C_5L_4R_5g_m + C_5L_4 + 2C_5L_5R_3g_m\right) + s\left(2C_5R_3R_5g_m + 2C_5R_3 + L_4g_m\right)}$$

### 10.216 INVALID-ORDER-216 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3R_5s^3 - L_4R_3R_5s + s^2\left(L_4L_5R_3R_5g_m - L_4L_5R_3\right)}{2R_3R_5 + s^4\left(C_3C_5L_4L_5R_3R_5 + 2C_4C_5L_4L_5R_3R_5\right) + s^3\left(C_3L_4L_5R_3R_5g_m + C_3L_4L_5R_3 + 2C_4L_4L_5R_3R_5g_m + 2C_4L_4L_5R_3 + 2C_5L_4L_5R_3R_5g_m + C_5L_4L_5R_5\right) + s^2\left(C_3L_4R_3R_5 + 2C_4L_4R_3R_5 + 2C_5L_5R_3R_5 + 2L_4L_5R_3g_m + L_4L_5R_5g_m + L_4L_5\right) + s\left(2L_4R_3R_5g_m +\right.}$$

### 10.217 INVALID-ORDER-217 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4L_5R_3g_ms^2 + s^3\left(C_5L_4L_5R_3R_5g_m - C_5L_4L_5R_3\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^4\left(C_3C_5L_4L_5R_3R_5g_m + C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3\right) + s^3\left(C_3L_4L_5R_3g_m + 2C_4L_4L_5R_3g_m + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_5g_m + C_5L_4L_5\right) + s^2\left(C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + 2C_5L_5R_3R_5g_m\right.}$$

### 10.218 INVALID-ORDER-218 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_5s^2 + s^3\left(C_5L_4L_5R_3R_5g_m - C_5L_4L_5R_3\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^4\left(C_3C_5L_4L_5R_3R_5g_m + C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3\right) + s^3\left(C_3C_5L_4R_3R_5 + 2C_4C_5L_4R_3R_5 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_5g_m + C_5L_4L_5\right) + s^2\left(C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + 2C_5L_4R_3R_5g_m\right.}$$

### 10.219 INVALID-ORDER-219 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_4L_4R_3R_5g_m - C_4L_4R_3\right) + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{2R_3g_m + R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4L_4\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4\right) + 1}$$

### 10.220 INVALID-ORDER-220 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3s^3 + R_3g_m + s^2\left(-C_4C_5R_3R_4 + C_4L_4R_3g_m\right) + s\left(C_4R_3R_4g_m - C_5R_3\right)}{C_3C_4C_5L_4R_3s^4 + g_m + s^3\left(C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4 + C_4L_4g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.221 INVALID-ORDER-221 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_5s^3 + R_3R_5g_m - R_3 + s^2\left(-C_4C_5R_3R_4R_5 + C_4L_4R_3R_5g_m - C_4L_4R_3\right) + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4 - C_5R_3R_5\right)}{C_3C_4C_5L_4R_3R_5s^4 + 2R_3g_m + R_5g_m + s^3\left(C_3C_4C_5R_3R_4R_5 + C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + 2C_4C_5L_4R_3R_5g_m + C_4C_5L_4R_5\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + C_3C_5R_3R_5 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_5 + C_4C_5R_4R_5 + 2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4\right.}$$

### 10.222 INVALID-ORDER-222 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^3\left(C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3\right) + s^2\left(C_4C_5R_3R_4R_5g_m - C_4C_5R_3R_4 + C_4L_4R_3g_m\right) + s\left(C_4R_3R_4g_m + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4R_5g_m + C_4C_5L_4\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4C_5R_4R_5g\right.}$$

### 10.223 INVALID-ORDER-223 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3g_ms^4 + R_3g_m + s^3\left(-C_4C_5L_4R_3 + C_4C_5L_5R_3R_4g_m\right) + s^2\left(-C_4C_5R_3R_4 + C_4L_4R_3g_m + C_5L_5R_3g_m\right) + s\left(C_4R_3R_4g_m - C_5R_3\right)}{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(C_3C_4C_5L_4R_3 + C_3C_4C_5L_5R_3R_4g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4 + 2C_4C_5L_5R_3g_m + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5\right.}$$

### 10.224 INVALID-ORDER-224 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3s^4 - R_3 + s^3\left(-C_4C_5L_5R_3R_4 + C_4L_4L_5R_3g_m\right) + s^2\left(-C_4L_4R_3 + C_4L_5R_3R_4g_m - C_5L_5R_3\right) + s\left(-C_4R_3R_4 + L_5R_3g_m\right)}{C_3C_4C_5L_4L_5R_3s^5 + 2R_3g_m + s^4\left(C_3C_4C_5L_5R_3R_4 + C_3C_4L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3 + C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3 + 2C_4C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3 + C_4C_5L_5R_4 + C_4L_4L_5g_m\right) + s^2\left(C_3C_4R_3R_4 + C_3L_5R_3g_m + 2C_4L_4R_3\right.}$$

### 10.225 INVALID-ORDER-225 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3g_ms^4 + R_3g_m + s^3\left(C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3 + C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_4C_5R_3R_4R_5g_m - C_4C_5R\right.}{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3 + C_3C_4C_5L_5R_3R_4g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m + 2C_4C_5L_4R_3g_m + C_4C_5L_4R_5g_m + C_4C_5L_4 + 2C_4C_5L_5R_3g_m + C_4C_5L_5R_4g\right.}$$

### 10.226 INVALID-ORDER-226 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_5s^4 - R_3R_5 + s^3\left(-C_4C_5L_5R_3R_4R_5 + C_4L_4L_5\right.}{C_3C_4C_5L_4L_5R_3R_5s^5 + 2R_3R_5g_m + R_5 + s^4\left(C_3C_4C_5L_5R_3R_4R_5 + C_3C_4L_4L_5R_3R_5g_m + C_3C_4L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_5g_m + C_4C_5L_4L_5R_5\right) + s^3\left(C_3C_4L_4R_3R_5 + C_3C_4L_5R_3R_4R_5g_m + C_3C_4L_5R_3R_4 + C_3C_5L_5R_3R_5 + 2C_4C_5L_5R_3R_4R_5g_m + 2C_4C_5L_5R_3R_5 +\right.}$$

### 10.227 INVALID-ORDER-227 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_4C_5L_4L_5R_3R_5g_m - C_4C_5L_4L_5R_3\right) + s^3\left(\right.}{2R_3g_m + R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3\right) + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4 + C_3C_4L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_5g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3R_5g_m +\right.}$$

### 10.228 INVALID-ORDER-228 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_4C_5L_4L_5R_3R_5\right.}{2R_3g_m + R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3\right) + s^4\left(C_3C_4C_5L_4R_3R_5 + C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_5g_m + C_4C_5L_4L_5\right) + s^3\left(C_3C_4C_5R_3R_4R_5 + C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + C_3C_5L_5R_3R_5g_m +\right.}$$

### 10.229 INVALID-ORDER-229 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_4s^2 + L_4R_3R_4g_ms}{2R_3R_4g_m + s^3\left(C_3C_5L_4R_3R_4 + 2C_4C_5L_4R_3R_4\right) + s^2\left(C_3L_4R_3R_4g_m + 2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3 + C_5L_4R_4\right) + s\left(2C_5R_3R_4 + 2L_4R_3g_m + L_4R_4g_m\right)}$$

### 10.230 INVALID-ORDER-230 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_4R_5s^2 + s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^3\left(C_3C_5L_4R_3R_4R_5 + 2C_4C_5L_4R_3R_4R_5\right) + s^2\left(C_3L_4R_3R_4R_5g_m + C_3L_4R_3R_4 + 2C_4L_4R_3R_4R_5g_m + 2C_4L_4R_3R_4 + 2C_5L_4R_3R_4R_5g_m + 2C_5L_4R_3R_5 + C_5L_4R_4R_5\right) + s\left(2C_5R_3R_4R_5 + 2L_4R_3R_4g_m + 2L_4R_3R_5g_m + 2L_4R_3 + L_4R_4R_5g_m +\right.}$$

### 10.231 INVALID-ORDER-231 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_4R_3R_4g_ms + s^2\left(C_5L_4R_3R_4R_5g_m - C_5L_4R_3R_4\right)}{2R_3R_4g_m + s^3\left(C_3C_5L_4R_3R_4R_5g_m + C_3C_5L_4R_3R_4 + 2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_4\right) + s^2\left(C_3L_4R_3R_4g_m + 2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3R_5g_m + 2C_5L_4R_3 + C_5L_4R_4R_5g_m + C_5L_4R_4\right) + s\left(2C_5R_3R_4R_5g_m + 2C_5R_3R_4 + 2L_4R_3g_m + L_4R_4\right.}$$

**10.232 INVALID-ORDER-232** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3R_4g_ms^3 - C_5L_4R_3R_4s^2 + L_4R_3R_4g_ms}{2R_3R_4g_m + s^4\left(C_3C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_4R_3R_4 + 2C_4C_5L_4R_3R_4 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_4g_m\right) + s^2\left(C_3L_4R_3R_4g_m + 2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3 + C_5L_4R_4 + 2C_5L_5R_3R_4g_m\right) + s\left(2C_5R_3R_4 + 2L_4R_3g_m + L\right.}$$

**10.233 INVALID-ORDER-233** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3R_4s^3 + L_4L_5R_3R_4g_ms^2 - L_4R_3R_4s}{2R_3R_4 + s^4\left(C_3C_5L_4L_5R_3R_4 + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(C_3L_4L_5R_3R_4g_m + 2C_4L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4\right) + s^2\left(C_3L_4R_3R_4 + 2C_4L_4R_3R_4 + 2C_5L_5R_3R_4 + 2L_4L_5R_3g_m + L_4L_5R_4g_m\right) + s\left(2L_4R_3R_4g_m + 2L_4R_3 + L_4R_4 + 2L\right.}$$

**10.234 INVALID-ORDER-234** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_4L_5R_3R_4g_ms^3 + L_4R_3R_4g_ms + s^2\left(C_5L_4R_3R_4R_5g_m - C_5L_4R_3R_4\right)}{2R_3R_4g_m + s^4\left(C_3C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_4R_3R_4R_5g_m + C_3C_5L_4R_3R_4 + 2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_4 + 2C_5L_4L_5R_3g_m + C_5L_4L_5R_4g_m\right) + s^2\left(C_3L_4R_3R_4g_m + 2C_4L_4R_3R_4g_m + 2C_5L_4R_3R_4g_m + 2C_5L_4R_3R_5g_m + 2C_5L_4L_4R_3\right.}$$

**10.235 INVALID-ORDER-235** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_4L_5R_3R_4R_5s^3 - L_4R_3R_4R_5s + s^2\left(L_4L_5R_3R_4R_5g_m - L_4L_5R_3R_4\right)}{2R_3R_4R_5 + s^4\left(C_3C_5L_4L_5R_3R_4R_5 + 2C_4C_5L_4L_5R_3R_4R_5\right) + s^3\left(C_3L_4L_5R_3R_4R_5g_m + C_3L_4L_5R_3R_4 + 2C_4L_4L_5R_3R_4R_5g_m + 2C_4L_4L_5R_3R_4 + 2C_5L_4L_5R_3R_4R_5g_m + 2C_5L_4L_5R_3R_5 + C_5L_4L_5R_4R_5\right) + s^2\left(C_3L_4R_3R_4R_5 + 2C_4L_4R_3R_4R_5 + 2C_5L_5R_3R_4R_5 + 2L\right.}$$

**10.236 INVALID-ORDER-236** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_4L_5R_3R_4g_ms^2 + s^3\left(C_5L_4L_5R_3R_4R_5g_m - C_5L_4L_5R_3R_4\right) + s\left(L_4R_3R_4\right.}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(C_3C_5L_4L_5R_3R_4R_5g_m + C_3C_5L_4L_5R_3R_4 + 2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(C_3L_4L_5R_3R_4g_m + 2C_4L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_5g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4R_5g_m + C_5L_4L_5R_4\right) + s^2\left(C_3L_4\right.}$$

**10.237 INVALID-ORDER-237** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_4R_3R_4R_5s^2 + s^3\left(C_5L_4L_5R_3R_4R_5g_m - C_5L_4L_5R_3R_4\right) +}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(C_3C_5L_4L_5R_3R_4R_5g_m + C_3C_5L_4L_5R_3R_4 + 2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(C_3C_5L_4R_3R_4R_5 + 2C_4C_5L_4R_3R_4R_5 + 2C_5L_4L_5R_3R_4g_m + 2C_5L_4L_5R_3R_5g_m + 2C_5L_4L_5R_3 + C_5L_4L_5R_4R_5g_m + C_5L_4L_5R_4\right) + s^2\left(C_3L_4\right.}$$

**10.238 INVALID-ORDER-238** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4\right) + s^2\left(C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_4g_m + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + C_4L_4R_4R_5g_m + C_4L_4R_4\right) + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2L_4R_3g_m + L_4R_5g_m + L_4\right)}$$

**10.239 INVALID-ORDER-239** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4s^3 + R_3R_4g_m + s^2\left(C_4L_4R_3R_4g_m - C_5L_4R_3\right) + s\left(-C_5R_3R_4 + L_4R_3g_m\right)}{C_3C_4C_5L_4R_3R_4s^4 + 2R_3g_m + R_4g_m + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_4R_3 + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4\right) + s^2\left(C_3C_5R_3R_4 + C_3L_4R_3g_m + 2C_4L_4R_3g_m + C_4L_4R_4g_m + 2C_5L_4R_3g_m + C_5L_4\right) + s\left(C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4 + L\right.}$$

**10.240 INVALID-ORDER-240** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4R_5s^3 + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4 - C_5L_4R_3R_5\right) + s\left(-C_5R_3R\right.}{C_3C_4C_5L_4R_3R_4R_5s^4 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4 + C_3C_5L_4R_3R_5 + 2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5\right) + s^2\left(C_3C_5R_3R_4R_5 + C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_4g_m + 2C_4L\right.}$$

### 10.241 INVALID-ORDER-241 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s^2\left(C_4L_4R_3R_4g_m + C_5L_4R_3R_5g_m - C_5L_4R_3\right) + s\left(C_5R_3R_4R_5g_m - C_5\right.}{2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4\right) + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_3 + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + C_3L_4R_3g_m\right.}$$

### 10.242 INVALID-ORDER-242 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(-C_4C_5L_4R_3R_4 + C_5L_4L_5R_3g_m\right) + s^2\left(C_4L_4R_3R_4g_m - C_5L_4R_3 + C_5L_5R_3R_4g_m\right) + s\left(-\right.}{C_3C_4C_5L_4L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4 + C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_4R_3 + C_3C_5L_5R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4 + C_5L_4L_5g_m\right) + s^2\left(C_3C_5R_3R_4\right.}$$

### 10.243 INVALID-ORDER-243 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4s^4 - R_3R_4 + s^3\left(C_4L_4L_5R_3R_4g_m - C_5L_4L_5R_3\right) + s^2\left(-C_4L_4R_3R_4 - C_5L_5R_3R_4 + L_4L_5R_3\right.}{C_3C_4C_5L_4L_5R_3R_4s^5 + 2R_3R_4g_m + 2R_3 + R_4 + s^4\left(C_3C_4L_4L_5R_3R_4g_m + C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4\right) + s^3\left(C_3C_4L_4R_3R_4 + C_3C_5L_5R_3R_4 + C_3L_4L_5R_3g_m + 2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m + 2C_5L_4L_5R_3g_m + C_5L_4L_5\right.}$$

### 10.244 INVALID-ORDER-244 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4 + C_5\right.}{C_3C_4C_5L_4L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4 + C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_3 + C_3C_5L_5R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3\right.}$$

### 10.245 INVALID-ORDER-245 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4R_5s^4 -}{C_3C_4C_5L_4L_5R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(C_3C_4L_4L_5R_3R_4R_5g_m + C_3C_4L_4L_5R_3R_4 + C_3C_5L_4L_5R_3R_5 + 2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_5 + C_4C_5L_4L_5R_4R_5\right) + s^3\left(C_3C_4L_4R_3R_4R_5 + C_3C_5L_5R_3R_4R_5 + C_3L_4L_5R_3R_5g_m + C_3L_4L\right.}$$

### 10.246 INVALID-ORDER-246 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_4L_5R_3R_4\right) + s^4\left(C_3C_4L_4L_5R_3R_4g_m + C_3C_5L_4L_5R_3R_5g_m + C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L\right.}$$

### 10.247 INVALID-ORDER-247 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_4L_5R_3R_4\right) + s^4\left(C_3C_4C_5L_4R_3R_4R_5 + C_3C_5L_4L_5R_3R_5g_m + C_3C_5L_4L_5R_3 + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L\right.}$$

### 10.248 INVALID-ORDER-248 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4\right) + s^2\left(2C_4L_4R_3R_4g_m + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + C_4L_4R_4R_5g_m + C_4L_4R_4\right) + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

### 10.249 INVALID-ORDER-249 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4s^3 + C_4L_4R_3R_4g_ms^2 - C_5R_3R_4s + R_3R_4g_m}{C_3C_4C_5L_4R_3R_4s^4 + 2R_3g_m + R_4g_m + s^3\left(C_3C_4L_4R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4\right) + s^2\left(C_3C_5R_3R_4 + 2C_4C_5R_3R_4 + 2C_4L_4R_3g_m + C_4L_4R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**10.250 INVALID-ORDER-250** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_4L_4R_3R_4R_5g_m - C_4L_4R_3R_4\right)}{C_3C_4C_5L_4R_3R_4R_5s^4 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4 + 2C_4C_5L_4R_3R_4R_5g_m + 2C_4C_5L_4R_3R_5 + C_4C_5L_4R_4R_5\right) + s^2\left(C_3C_5R_3R_4R_5 + 2C_4C_5R_3R_4R_5 + 2C_4L_4R_3R_4g_m + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + C\right.}$$

**10.251 INVALID-ORDER-251** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4L_4R_3R_4g_ms^2 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4\right) + s^3\left(C_3C_4L_4R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4 + 2C_4L_4R_3\right.}$$

**10.252 INVALID-ORDER-252** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 - C_4C_5L_4R_3R_4s^3 - C_5R_3R_4s + R_3R_4g_m + s^2\left(C_4L_4R_3R_4g_m + C_5L_5R_3R_4g_m\right)}{C_3C_4C_5L_4L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_5R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4 + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4 + 2C_4C_5R_3R_4 + 2C_4L_4R\right.}$$

**10.253 INVALID-ORDER-253** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4s^4 + C_4L_4L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms - R_3R_4 + s^2\left(-C_4L_4R_3R_4 - C_5L_5R_3R_4\right)}{C_3C_4C_5L_4L_5R_3R_4s^5 + 2R_3R_4g_m + 2R_3 + R_4 + s^4\left(C_3C_4L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4\right) + s^3\left(C_3C_4L_4R_3R_4 + C_3C_5L_5R_3R_4 + 2C_4C_5L_5R_3R_4 + 2C_4L_4L_5R_3g_m + C_4L_4L_5R_4g_m\right) + s^2\left(C_3L_5R_3R_4g_m + 2C_4L_4R_3R_4g_m + 2C\right.}$$

**10.254 INVALID-ORDER-254** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_4L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_4C_5L_4R_3R_4R_5g_m - C_4C_5L_4R_3R_4\right) + s}{C_3C_4C_5L_4L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(C_3C_4L_4R_3R_4g_m + C_3C_5L_5R_3R_4g_m + 2C_4C_5L_4R_3R_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + C_4C_5L_4R_4R_5g_m + C_4C_5L_4R_4\right.}$$

**10.255 INVALID-ORDER-255** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_4L_5R_3R_4R_5s^4 - R_3R_4R_5 + s^3\left(\right.}{C_3C_4C_5L_4L_5R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(C_3C_4L_4L_5R_3R_4R_5g_m + C_3C_4L_4L_5R_3R_4 + 2C_4C_5L_4L_5R_3R_4R_5g_m + 2C_4C_5L_4L_5R_3R_5 + C_4C_5L_4L_5R_4R_5\right) + s^3\left(C_3C_4L_4R_3R_4R_5 + C_3C_5L_5R_3R_4R_5 + 2C_4C_5L_5R_3R_4R_5 + 2C_4L_4L_5R_3R_4g_m + 2C_4\right.}$$

**10.256 INVALID-ORDER-256** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4L_4L_5R_3R_4g_ms^3}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_4L_5R_3R_4\right) + s^4\left(C_3C_4L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C\right.}$$

**10.257 INVALID-ORDER-257** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_4L_5R_3R_4\right) + s^4\left(C_3C_4C_5L_4R_3R_4R_5 + 2C_4C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_5g_m + 2C_4C_5L_4L_5R_3 + C_4C_5L_4L_5R_4R_5g_m + C_4C_5L_4L_5R_4\right) + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C\right.}$$

**10.258 INVALID-ORDER-258** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s\left(C_3R_3R_4R_5g_m - C_3R_3R_4\right)}{2R_4g_m + 2R_5g_m + s\left(2C_3R_3R_4g_m + 2C_3R_3R_5g_m + 2C_3R_3 + C_3R_4R_5g_m + C_3R_4\right) + 2}$$

**10.259 INVALID-ORDER-259** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 R_4 g_m s^3 + R_4 g_m + s^2 \left(-C_3 C_5 R_3 R_4 + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2 g_m + s^3 \left(2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 + 2 C_5 L_5 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5\right)}$$

**10.260 INVALID-ORDER-260** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 R_4 s^3 - R_4 + s^2 \left(C_3 L_5 R_3 R_4 g_m - C_5 L_5 R_4\right) + s \left(-C_3 R_3 R_4 + L_5 R_4 g_m\right)}{2 R_4 g_m + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4\right) + s^2 \left(2 C_3 L_5 R_3 g_m + C_3 L_5 R_4 g_m + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5\right) + s \left(2 C_3 R_3 R_4 g_m + 2 C_3 R_3 + C_3 R_4 + 2 L_5 g_m\right) + 2}$$

**10.261 INVALID-ORDER-261** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 R_4 g_m s^3 + R_4 g_m + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4 + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2 g_m + s^3 \left(2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 R_5 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2 C_5 L_5 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5 R_5 g_m + 2 C_5\right)}$$

**10.262 INVALID-ORDER-262** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 R_4 R_5 s^3 - R_4 R_5 + s^2 \left(C_3 L_5 R_3 R_4 R_5 g_m - C_3 L_5 R_3 R_4 - C_5 L_5 R_4 R_5\right) + s \left(-C_3 R_3 R_4 R_5 + L_5 R_4 R_5 g_m - L_5 R_4\right)}{2 R_4 R_5 g_m + 2 R_5 + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 L_5 R_3 R_5 + C_3 C_5 L_5 R_4 R_5\right) + s^2 \left(2 C_3 L_5 R_3 R_4 g_m + 2 C_3 L_5 R_3 R_5 g_m + 2 C_3 L_5 R_3 + C_3 L_5 R_4 R_5 g_m + C_3 L_5 R_4 + 2 C_5 L_5 R_4 R_5 g_m + 2 C_5 L_5 R_5\right) + s \left(2 C_3 R_3 R_4 R_5 g_m + 2 C_3 R_3 R_5 + C_3 R_4 R_5 + 2 L_5 R_4 g_m + 2 L_5 R_5 g_m + 2 L_5\right) + 2}$$

**10.263 INVALID-ORDER-263** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4\right) + s^2 \left(C_3 L_5 R_3 R_4 g_m + C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right) + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 + L_5 R_4 g_m\right)}{2 R_4 g_m + 2 R_5 g_m + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4\right) + s^2 \left(2 C_3 L_5 R_3 g_m + C_3 L_5 R_4 g_m + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5 R_5 g_m + 2 C_5 L_5\right) + s \left(2 C_3 R_3 R_4 g_m + 2 C_3 R_3 R_5 g_m + 2 C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2 L_5 g_m\right) + 2}$$

**10.264 INVALID-ORDER-264** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4\right) + s^2 \left(-C_3 C_5 R_3 R_4 R_5 + C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right) + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{2 R_4 g_m + 2 R_5 g_m + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4\right) + s^2 \left(2 C_3 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5 + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5 R_5 g_m + 2 C_5 L_5\right) + s \left(2 C_3 R_3 R_4 g_m + 2 C_3 R_3 R_5 g_m + 2 C_3 R_3 + C_3 R_4 R_5 g_m + \right.$$

**10.265 INVALID-ORDER-265** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 s^2 + g_m + s \left(C_3 R_3 g_m - C_5\right)}{2 C_3 C_4 C_5 R_3 s^3 + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.266 INVALID-ORDER-266** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 R_5 s^2 + R_5 g_m + s \left(C_3 R_3 R_5 g_m - C_3 R_3 - C_5 R_5\right) - 1}{2 C_3 C_4 C_5 R_3 R_5 s^3 + 2 g_m + s^2 \left(2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + 2 C_3 C_5 R_3 R_5 g_m + C_3 C_5 R_5 + 2 C_4 C_5 R_5\right) + s \left(2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4 + 2 C_5 R_5 g_m\right)}$$

**10.267 INVALID-ORDER-267** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^2 \left(C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3\right) + s \left(C_3 R_3 g_m + C_5 R_5 g_m - C_5\right)}{s^3 \left(2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.268 INVALID-ORDER-268** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 g_m s^3 + g_m + s^2 \left(-C_3 C_5 R_3 + C_5 L_5 g_m\right) + s \left(C_3 R_3 g_m - C_5\right)}{2C_3 C_4 C_5 L_5 R_3 g_m s^4 + s^3 \left(2C_3 C_4 C_5 R_3 + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2 \left(2C_3 C_4 R_3 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.269 INVALID-ORDER-269** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 s^3 + s^2 \left(C_3 L_5 R_3 g_m - C_5 L_5\right) + s \left(-C_3 R_3 + L_5 g_m\right) - 1}{2C_3 C_4 C_5 L_5 R_3 s^4 + 2g_m + s^3 \left(2C_3 C_4 L_5 R_3 g_m + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5\right) + s^2 \left(2C_3 C_4 R_3 + C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s \left(2C_3 R_3 g_m + C_3 + 2C_4\right)}$$

**10.270 INVALID-ORDER-270** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 g_m s^3 + g_m + s^2 \left(C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_5 L_5 g_m\right) + s \left(C_3 R_3 g_m + C_5 R_5 g_m - C_5\right)}{2C_3 C_4 C_5 L_5 R_3 g_m s^4 + s^3 \left(2C_3 C_4 C_5 R_3 R_5 g_m + 2C_3 C_4 C_5 R_3 + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2 \left(2C_3 C_4 R_3 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.271 INVALID-ORDER-271** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 R_5 s^3 - R_5 + s^2 \left(C_3 L_5 R_3 R_5 g_m - C_3 L_5 R_3 - C_5 L_5 R_5\right) + s \left(-C_3 R_3 R_5 + L_5 R_5 g_m - L_5\right)}{2C_3 C_4 C_5 L_5 R_3 R_5 s^4 + 2R_5 g_m + s^3 \left(2C_3 C_4 L_5 R_3 R_5 g_m + 2C_3 C_4 L_5 R_3 + 2C_3 C_5 L_5 R_3 R_5 g_m + C_3 C_5 L_5 R_5 + 2C_4 C_5 L_5 R_5\right) + s^2 \left(2C_3 C_4 R_3 R_5 + 2C_3 L_5 R_3 g_m + C_3 L_5 R_5 g_m + C_3 L_5 + 2C_4 L_5 R_5 g_m + 2C_4 L_5 + 2C_5 L_5 R_5 g_m\right) + s \left(2C_3 R_3 R_5 g_m + C_3 R_5 + 2C_4 R_5 + 2L_5 g_m\right)}$$

**10.272 INVALID-ORDER-272** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_3 C_5 L_5 R_3 R_5 g_m - C_3 C_5 L_5 R_3\right) + s^2 \left(C_3 L_5 R_3 g_m + C_5 L_5 R_5 g_m - C_5 L_5\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3 + L_5 g_m\right) - 1}{2g_m + s^4 \left(2C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_5 R_3\right) + s^3 \left(2C_3 C_4 L_5 R_3 g_m + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_5 g_m + 2C_4 C_5 L_5\right) + s^2 \left(2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3 + C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) + s \left(2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + \right.$$

**10.273 INVALID-ORDER-273** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_3 C_5 L_5 R_3 R_5 g_m - C_3 C_5 L_5 R_3\right) + s^2 \left(-C_3 C_5 R_3 R_5 + C_5 L_5 R_5 g_m - C_5 L_5\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3 - C_5 R_5\right) - 1}{2g_m + s^4 \left(2C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_5 R_3\right) + s^3 \left(2C_3 C_4 C_5 R_3 R_5 + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_5 g_m + 2C_4 C_5 L_5\right) + s^2 \left(2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3 + 2C_3 C_5 R_3 R_5 g_m + C_3 C_5 R_5 + 2C_4 C_5 R_5 + 2C_5 L_5 g_m\right) + s \left(2C_3 R_3 g_m + C_3 R_5 g_m \right.$$

**10.274 INVALID-ORDER-274** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 R_4 s^2 + R_4 g_m + s \left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2C_3 C_4 C_5 R_3 R_4 s^3 + 2g_m + s^2 \left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 + 2C_4 C_5 R_4\right) + s \left(2C_3 R_3 g_m + C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**10.275 INVALID-ORDER-275** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 R_3 R_4 R_5 s^2 + R_4 R_5 g_m - R_4 + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{2C_3 C_4 C_5 R_3 R_4 R_5 s^3 + 2R_4 g_m + 2R_5 g_m + s^2 \left(2C_3 C_4 R_3 R_4 R_5 g_m + 2C_3 C_4 R_3 R_4 + 2C_3 C_5 R_3 R_4 R_5 g_m + 2C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5 + 2C_4 C_5 R_4 R_5\right) + s \left(2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) +$$

**10.276 INVALID-ORDER-276** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4\right) + s \left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^3 \left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 R_5 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_4\right) + s \left(2C_3 R_3 g_m + C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

**10.277 INVALID-ORDER-277** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 R_4 g_m s^3 + R_4 g_m + s^2 \left(-C_3 C_5 R_3 R_4 + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2C_3 C_4 C_5 L_5 R_3 R_4 g_m s^4 + 2g_m + s^3 \left(2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 + 2C_4 C_5 R_4 + 2C_5 L_5 g_m\right) + s \left(2C_3 R_3 g_m + C_3 R_4 g_m + 2C_4 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

**10.278 INVALID-ORDER-278** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 R_4 s^3 - R_4 + s^2 \left(C_3 L_5 R_3 R_4 g_m - C_5 L_5 R_4\right) + s \left(-C_3 R_3 R_4 + L_5 R_4 g_m\right)}{2C_3 C_4 C_5 L_5 R_3 R_4 s^4 + 2R_4 g_m + s^3 \left(2C_3 C_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4\right) + s^2 \left(2C_3 C_4 R_3 R_4 + 2C_3 L_5 R_3 g_m + C_3 L_5 R_4 g_m + 2C_4 L_5 R_4 g_m + 2C_5 L_5 R_4 g_m + 2C_5 L_5\right) + s \left(2C_3 R_3 R_4 g_m + 2C_3 R_3 + C_3 R_4 + 2C_4 R_4 + 2L_5 g_m\right)}$$

**10.279 INVALID-ORDER-279** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_5 R_3 R_4 g_m s^3 + R_4 g_m + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4 + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2C_3 C_4 C_5 L_5 R_3 R_4 g_m s^4 + 2g_m + s^3 \left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 R_5 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_4 + 2C_5\right.$$

**10.280 INVALID-ORDER-280** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_5 R_3 R_4 R_5 s^3 - R_4 R_5 + s^2 \left(C_3 L_5 R_3 R_4 R_5 g_m - C_3 L_5 R_3 R_4 - C_5 L_5 R_4 R_5\right) + s \left(-C_3 R_3 R_4 R_5 + L_5 R_4 R_5 g_m - L_5\right.}{2C_3 C_4 C_5 L_5 R_3 R_4 R_5 s^4 + 2R_4 R_5 g_m + 2R_5 + s^3 \left(2C_3 C_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 L_5 R_3 R_4 + 2C_3 C_5 L_5 R_3 R_4 R_5 g_m + 2C_3 C_5 L_5 R_3 R_5 + C_3 C_5 L_5 R_4 R_5 + 2C_4 C_5 L_5 R_4 R_5\right) + s^2 \left(2C_3 C_4 R_3 R_4 R_5 + 2C_3 L_5 R_3 R_4 g_m + 2C_3 L_5 R_3 R_5 g_m + 2C_3 L_5 R_3 + C_3 L_5 R_4 R_5 g_m + C_3 L_5 R_4 +\right.$$

**10.281 INVALID-ORDER-281** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4\right) + s^2 \left(C_3 L_5 R_3 R_4 g_m + C_5 L_5 R_4 R_5 g_m - C_5 L_5 R_4\right) + s \left(C_3\right.}{2R_4 g_m + 2R_5 g_m + s^4 \left(2C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_5 R_3 R_4\right) + s^3 \left(2C_3 C_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5 R_3 R_5 g_m + 2C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_4\right) + s^2 \left(2C_3 C_4 R_3 R_4 R_5 g_m + 2C_3 C_4 R_3 R_4 + 2C\right.$$

**10.282 INVALID-ORDER-282** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4\right) + s^2 \left(-C_3 C_5 R_3 R_4 R_5 + C_5 L_5 R_4 R_5 g_m\right.}{2R_4 g_m + 2R_5 g_m + s^4 \left(2C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_5 R_3 R_4\right) + s^3 \left(2C_3 C_4 C_5 R_3 R_4 R_5 + 2C_3 C_5 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5 R_3 R_5 g_m + 2C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4 C_5 L_5 R_4 R_5 g_m + 2C_4 C_5 L_5 R_4\right) + s^2 \left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_4 + 2C\right.$$

**10.283 INVALID-ORDER-283** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 R_3 R_4 s^3 + g_m + s^2 \left(C_3 C_4 R_3 R_4 g_m - C_3 C_5 R_3 - C_4 C_5 R_4\right) + s \left(C_3 R_3 g_m + C_4 R_4 g_m - C_5\right)}{s^3 \left(2C_3 C_4 C_5 R_3 R_4 g_m + 2C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4\right) + s^2 \left(2C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

**10.284 INVALID-ORDER-284** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 R_3 R_4 R_5 s^3 + R_5 g_m + s^2 \left(C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4 - C_3 C_5 R_3 R_5 - C_4 C_5 R_4 R_5\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3 + C_4 R_4 R_5 g_m - C_4 R_4 - C_5 R_5\right) - 1}{2g_m + s^3 \left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_5 + C_3 C_4 C_5 R_4 R_5\right) + s^2 \left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2C_3 C_5 R_3 R_5 g_m + C_3 C_5 R_5 + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_5\right) + s \left(2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m\right.$$

**10.285 INVALID-ORDER-285** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3 \left(C_3 C_4 C_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(C_3 C_4 R_3 R_4 g_m + C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4\right) + s \left(C_3 R_3 g_m + C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{s^3 \left(2C_3 C_4 C_5 R_3 R_4 g_m + 2C_3 C_4 C_5 R_3 R_5 g_m + 2C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4\right) + s^2 \left(2C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

### 10.286 INVALID-ORDER-286 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_5R_3R_4g_m s^4 + g_m + s^3\left(-C_3C_4C_5R_3R_4 + C_3C_5L_5R_3g_m + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m - C_3C_5R_3 - C_4C_5R_4 + C_5L_5g_m\right) + s\left(C_3R_3g_m + C_4R_4g_m - C_5\right)}{s^4\left(2C_3C_4C_5L_5R_3g_m + C_3C_4C_5L_5R_4g_m\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4 + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(2C_3C_4R_3g_m + C_3C_4R_4g_m + 2C_3C_5R_3g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

### 10.287 INVALID-ORDER-287 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_5R_3R_4s^4 + s^3\left(C_3C_4L_5R_3R_4g_m - C_3C_5L_5R_3 - C_4C_5L_5R_4\right) + s^2\left(-C_3C_4R_3R_4 + C_3L_5R_3g_m + C_4L_5R_4g_m - C_5L_5\right) + s\left(-C_3R_3 - C_4R_4 + L_5g_m\right) - 1}{2g_m + s^4\left(2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4\right) + s^3\left(2C_3C_4L_5R_3g_m + C_3C_4L_5R_4g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5 + 2C_4C_5L_5R_4g_m + 2C_4C_5L_5\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_4R_3 + C_3C_4R_4 + C_3L_5g_m + 2C_4L_5g_m + 2C_5L_5g_m\right) + s\left(2C_3R_3g_m + \right.}$$

### 10.288 INVALID-ORDER-288 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_5R_3R_4g_m s^4 + g_m + s^3\left(C_3C_4C_5R_3R_4R_5g_m - C_3C_4C_5R_3R_4 + C_3C_5L_5R_3g_m + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3R_5g_m - C_3C_5R_3 + C_4C_5R_4R_5g_m - C_4C_5R_4 + C_5L_5g_m\right) + s\left(C_3R_3g_m + C_4R_4g_m + C_5R_5g\right.}{s^4\left(2C_3C_4C_5L_5R_3g_m + C_3C_4C_5L_5R_4g_m\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3R_5g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4 + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(2C_3C_4R_3g_m + C_3C_4R_4g_m + 2C_3C_5R_3g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5R_5\right.}$$

### 10.289 INVALID-ORDER-289 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_5R_3R_4R_5s^4 - R_5 + s^3\left(C_3C_4L_5R_3R_4R_5g_m - C_3C_4L_5R_3R_4 - C_3C_5L_5R_3R_5 - C_4C_5L_5R_4R_5\right) + s^2\left(-C_3C_4R_3R_4R_5 + C_3L_5R_3R_5g_m - C_3L_5R_3 + \right.}{2R_5g_m + s^4\left(2C_3C_4C_5L_5R_3R_4R_5g_m + 2C_3C_4C_5L_5R_3R_5 + C_3C_4C_5L_5R_4R_5\right) + s^3\left(2C_3C_4L_5R_3R_4g_m + 2C_3C_4L_5R_3R_5g_m + 2C_3C_4L_5R_3 + C_3C_4L_5R_4R_5g_m + C_3C_4L_5R_4 + 2C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_5 + 2C_4C_5L_5R_4R_5g_m + 2C_4C_5L_5R_5\right) + s^2\left(2C_3C_4R_3R_4R_5\right.}$$

### 10.290 INVALID-ORDER-290 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m - C_3C_4C_5L_5R_3R_4\right) + s^3\left(C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3R_5g_m - C_3C_5L_5R_3 + C_4C_5L_5R_4R_5g_m - C_4C_5L_5R_4\right) + s^2\left(C_3C_4R_3R_4R_5g_m - C_3C_4R_3R_4 + C_3L_5R_3g_m + \right.}{2g_m + s^4\left(2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4\right) + s^3\left(2C_3C_4L_5R_3g_m + C_3C_4L_5R_4g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_4g_m + 2C_4C_5L_5R_5g_m + 2C_4C_5L_5\right) + s^2\left(2C_3C_4R_3R_4\right.}$$

### 10.291 INVALID-ORDER-291 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m - C_3C_4C_5L_5R_3R_4\right) + s^3\left(-C_3C_4C_5R_3R_4R_5 + C_3C_5L_5R_3R_5g_m - C_3C_5L_5R_3 + C_4C_5L_5R_4R_5g_m - C_4C_5L_5R_4\right) + s^2\left(C_3C_4R_3\right.}{2g_m + s^4\left(2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4\right) + s^3\left(2C_3C_4C_5R_3R_4R_5g_m + 2C_3C_4C_5R_3R_5 + C_3C_4C_5R_4R_5 + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_4g_m + 2C_4C_5L_5R_5g_m + 2C_4C\right.}$$

### 10.292 INVALID-ORDER-292 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m - C_3C_4L_4R_3\right) + s^2\left(C_4L_4R_5g_m - C_4L_4\right) + s\left(C_3R_3R_5g_m - C_3R_3\right) - 1}{2g_m + s^3\left(2C_3C_4L_4R_3g_m + C_3C_4L_4R_5g_m + C_3C_4L_4\right) + s^2\left(2C_3C_4R_3R_5g_m + 2C_3C_4R_3 + 2C_4L_4g_m\right) + s\left(2C_3R_3g_m + C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4\right)}$$

### 10.293 INVALID-ORDER-293 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4R_3s^4 + g_m + s^3\left(C_3C_4L_4R_3g_m - C_4C_5L_4\right) + s^2\left(-C_3C_5R_3 + C_4L_4g_m\right) + s\left(C_3R_3g_m - C_5\right)}{s^4\left(2C_3C_4C_5L_4R_3g_m + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4C_5R_3 + C_3C_4L_4g_m + 2C_4C_5L_4g_m\right) + s^2\left(2C_3C_4R_3g_m + 2C_3C_5R_3g_m + C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

### 10.294 INVALID-ORDER-294 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4R_3R_5s^4 + R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m - C_3C_4L_4R_3 - C_4C_5L_4R_5\right) + s^2\left(-C_3C_5R_3R_5 + C_4L_4R_5g_m - C_4L_4\right) + s\left(C_3R_3R_5g_m - C_3R_3 - C_5R_5\right) - 1}{2g_m + s^4\left(2C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_5\right) + s^3\left(2C_3C_4C_5R_3R_5 + 2C_3C_4L_4R_3g_m + C_3C_4L_4R_5g_m + C_3C_4L_4 + 2C_4C_5L_4R_5g_m\right) + s^2\left(2C_3C_4R_3R_5g_m + 2C_3C_4R_3 + 2C_3C_5R_3R_5g_m + C_3C_5R_5 + 2C_4C_5R_5 + 2C_4L_4g_m\right) + s\left(2C_3R_3g_m + C_3R_5g_m + C_3 + 2C_4R_5\right)}$$

### 10.295 INVALID-ORDER-295 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m + C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_4 L_4 g_m\right) + s \left(C_3 R_3 g_m + C_5 R_5 g_m - C_5\right)}{s^4 \left(2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 L_4 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

### 10.296 INVALID-ORDER-296 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 g_m s^5 + g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m + C_3 C_5 L_5 R_3 g_m - C_4 C_5 L_4\right) + s^2 \left(-C_3 C_5 R_3 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(C_3 R_3 g_m - C_5\right)}{C_3 C_4 C_5 L_4 L_5 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 + C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_4 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

### 10.297 INVALID-ORDER-297 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 s^5 + s^4 \left(C_3 C_4 L_4 L_5 R_3 g_m - C_4 C_5 L_4 L_5\right) + s^3 \left(-C_3 C_4 L_4 R_3 - C_3 C_5 L_5 R_3 + C_4 L_4 L_5 g_m\right) + s^2 \left(C_3 L_5 R_3 g_m - C_4 L_4 - C_5 L_5\right) + s \left(-C_3 R_3 + L_5 g_m\right) - 1}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 L_4 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 + 2 C_3 C_4 L_5 R_3 g_m + 2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5\right) + s^2 \left(2 C_3 C_4 R_3 + C_3 L_5 g_m + 2 C_4 L_4 g_m + 2 C_4 L_5 g_m + 2 C_5 L_5 g_m\right) +$$

### 10.298 INVALID-ORDER-298 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 g_m s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3 + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m + C_3 C_5 L_5 R_3 g_m + C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_4 L_4 g_m + C_5 L_5 g_m\right) + s \left(C_3 R_3 g_m + C_5$$
$$C_3 C_4 C_5 L_4 L_5 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 L_4 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_4 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R_5$$

### 10.299 INVALID-ORDER-299 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 R_5 s^5 - R_5 + s^4 \left(C_3 C_4 L_4 L_5 R_3 R_5 g_m - C_3 C_4 L_4 L_5 R_3 - C_4 C_5 L_4 L_5 R_5\right) + s^3 \left(-C_3 C_4 L_4 R_3 R_5 - C_3 C_5 L_5 R_3 R_5 + C_4 L_4 L_5 R_5 g_m - C_4 L_4 L_5\right) + s$$
$$2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_5 + 2 C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_5 g_m + C_3 C_4 L_4 L_5 + 2 C_4 C_5 L_4 L_5 R_5 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 R_5 g_m + C_3 C_4 L_4 R_5 + 2 C_3 C_4 L_5 R_3 R_5 g_m + 2 C_3 C_4 L_5 R_3 + 2 C_3 C_5 L_5 R_3 R_5 g_m + C_3 C_5 L_5 R_5$$

### 10.300 INVALID-ORDER-300 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3\right) + s^4 \left(C_3 C_4 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_3 R_5 g_m - C_3 C_4 L_4 R_3 + C_3 C_5 L_5 R_3 R_5 g_m - C_3 C_5 L_5 R_3 + C_4 L_4 L_5 g_m\right) +$$
$$2 g_m + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 L_4 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2 C_3 C_4 L_5 R_3 g_m + 2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 -$$

### 10.301 INVALID-ORDER-301 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3\right) + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_5 + C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 C_4 L_4 R_3 R_5 g_m - C_3 C_4 L_4 R_3 + C_3 C_5 L_5 R_3$$
$$2 g_m + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L_4 R_5 + 2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2 C_3 C_5 L_5 R_3 g_m + C_3$$

### 10.302 INVALID-ORDER-302 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^2 \left(C_3 L_4 R_3 R_5 g_m - C_3 L_4 R_3\right) + s \left(L_4 R_5 g_m - L_4\right)}{2 R_5 g_m + s^3 \left(2 C_3 C_4 L_4 R_3 R_5 g_m + 2 C_3 C_4 L_4 R_3\right) + s^2 \left(2 C_3 L_4 R_3 g_m + C_3 L_4 R_5 g_m + C_3 L_4 + 2 C_4 L_4 R_5 g_m + 2 C_4 L_4\right) + s \left(2 C_3 R_3 R_5 g_m + 2 C_3 R_3 + 2 L_4 g_m\right) + 2}$$

### 10.303 INVALID-ORDER-303 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_4 R_3 s^3 + L_4 g_m s + s^2 \left(C_3 L_4 R_3 g_m - C_5 L_4\right)}{2 C_3 C_4 C_5 L_4 R_3 s^4 + 2 g_m + s^3 \left(2 C_3 C_4 L_4 R_3 g_m + 2 C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2 C_4 C_5 L_4\right) + s^2 \left(2 C_3 C_5 R_3 + C_3 L_4 g_m + 2 C_4 L_4 g_m + 2 C_5 L_4 g_m\right) + s \left(2 C_3 R_3 g_m + 2 C_5\right)}$$

### 10.304 INVALID-ORDER-304 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_4R_3R_5s^3 + s^2\left(C_3L_4R_3R_5g_m - C_3L_4R_3 - C_5L_4R_5\right) + s\left(L_4R_5g_m - L_4\right)}{2C_3C_4C_5L_4R_3R_5s^4 + 2R_5g_m + s^3\left(2C_3C_4L_4R_3R_5g_m + 2C_3C_4L_4R_3 + 2C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_5 + 2C_4C_5L_4R_5\right) + s^2\left(2C_3C_5R_3R_5 + 2C_3L_4R_3g_m + C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4 + 2C_5L_4R_5g_m\right) + s\left(2C_3R_3R_5g_m + 2C_3R_3 + 2C_5R_5 + 2L_4g_m\right)}$$

### 10.305 INVALID-ORDER-305 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4g_ms + s^3\left(C_3C_5L_4R_3R_5g_m - C_3C_5L_4R_3\right) + s^2\left(C_3L_4R_3g_m + C_5L_4R_5g_m - C_5L_4\right)}{2g_m + s^4\left(2C_3C_4C_5L_4R_3R_5g_m + 2C_3C_4C_5L_4R_3\right) + s^3\left(2C_3C_4L_4R_3g_m + 2C_3C_5L_4R_3g_m + C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2\left(2C_3C_5R_3R_5g_m + 2C_3C_5R_3 + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right) + s\left(2C_3R_3g_m + 2C_5R_5g_m + 2C_5\right)}$$

### 10.306 INVALID-ORDER-306 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_4L_5R_3g_ms^4 + L_4g_ms + s^3\left(-C_3C_5L_4R_3 + C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_3g_m - C_5L_4\right)}{2C_3C_4C_5L_4L_5R_3g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_4R_3 + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_4R_3g_m + 2C_3C_5L_4R_3g_m + C_3C_5L_4 + 2C_3C_5L_5R_3g_m + 2C_4C_5L_4\right) + s^2\left(2C_3C_5R_3 + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m + 2C_5L_5g_m\right) + s\left(2C_3R_3g_m + 2C_5\right)}$$

### 10.307 INVALID-ORDER-307 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_4L_5R_3s^4 - L_4s + s^3\left(C_3L_4L_5R_3g_m - C_5L_4L_5\right) + s^2\left(-C_3L_4R_3 + L_4L_5g_m\right)}{2C_3C_4C_5L_4L_5R_3s^5 + s^4\left(2C_3C_4L_4L_5R_3g_m + 2C_3C_5L_4L_5R_3g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5\right) + s^3\left(2C_3C_4L_4R_3 + 2C_3C_5L_5R_3 + C_3L_4L_5g_m + 2C_4L_4L_5g_m + 2C_5L_4L_5g_m\right) + s^2\left(2C_3L_4R_3g_m + C_3L_4 + 2C_3L_5R_3g_m + 2C_4L_4 + 2C_5L_5\right) + s\left(2C_3R_3 + 2L_4g_m + 2L_5g_m\right.}$$

### 10.308 INVALID-ORDER-308 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_4L_5R_3g_ms^4 + L_4g_ms + s^3\left(C_3C_5L_4R_3R_5g_m - C_3C_5L_4R_3 + C_5L_4L_5g_m\right) + s^2\left(C_3L_4R_3g_m + C_5L_4R_5g_m - C_5L_4\right)}{2C_3C_4C_5L_4L_5R_3g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_4R_3R_5g_m + 2C_3C_4C_5L_4R_3 + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_4R_3g_m + 2C_3C_5L_4R_3g_m + C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_3C_5L_5R_3g_m + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2\left(2C_3C_5R_3R_5g_m + 2C_3C_5R_3 + C_3\right.}$$

### 10.309 INVALID-ORDER-309 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_4L_5R_3R_5s^4 - L_4R_5s + s^3\left(C_3L_4L_5R_3R_5g_m - C_3L_4L_5R_3 - C_5L_4L_5R_5\right) + s^2\left(-C_3L_4R_3R_5 + L_4L_5R_5g_m - L\right.}{2C_3C_4C_5L_4L_5R_3R_5s^5 + 2R_5 + s^4\left(2C_3C_4L_4L_5R_3R_5g_m + 2C_3C_4L_4L_5R_3 + 2C_3C_5L_4L_5R_3R_5g_m + C_3C_5L_4L_5R_5 + 2C_4C_5L_4L_5R_5\right) + s^3\left(2C_3C_4L_4R_3R_5 + 2C_3C_5L_5R_3R_5 + 2C_3L_4L_5R_3g_m + C_3L_4L_5R_5g_m + C_3L_4L_5 + 2C_4L_4L_5R_5g_m + 2C_4L_4L_5 + 2C_5L_4L_5R_5g_m\right.}$$

### 10.310 INVALID-ORDER-310 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_3C_5L_4L_5R_3R_5g_m - C_3C_5L_4L_5R_3\right) + s^3\left(C_3L_4L_5R_3g_m + C_5L_4L_5R_5g_m - C_5L_4L_5\right) + s^2\left(C_3L_4R_3R_5g_m - C_3L\right.}{2R_5g_m + s^5\left(2C_3C_4C_5L_4L_5R_3R_5g_m + 2C_3C_4C_5L_4L_5R_3\right) + s^4\left(2C_3C_4L_4L_5R_3g_m + 2C_3C_5L_4L_5R_3g_m + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5\right) + s^3\left(2C_3C_4L_4R_3R_5g_m + 2C_3C_4L_4R_3 + 2C_3C_5L_5R_3R_5g_m + 2C_3C_5L_5R_3 + C_3L_4L_5g_m + 2\right.}$$

### 10.311 INVALID-ORDER-311 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_3C_5L_4L_5R_3R_5g_m - C_3C_5L_4L_5R_3\right) + s^3\left(-C_3C_5L_4R_3R_5 + C_5L_4L_5R_5g_m - C_5L_4L_5\right) + s^2\left(C\right.}{2R_5g_m + s^5\left(2C_3C_4C_5L_4L_5R_3R_5g_m + 2C_3C_4C_5L_4L_5R_3\right) + s^4\left(2C_3C_4C_5L_4R_3R_5 + 2C_3C_5L_4L_5R_3g_m + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5\right) + s^3\left(2C_3C_4L_4R_3R_5g_m + 2C_3C_4L_4R_3 + 2C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_5 + 2C_3C_5L_5R_3R_5\right.}$$

### 10.312 INVALID-ORDER-312 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^3\left(C_3C_4L_4R_3R_5g_m - C_3C_4L_4R_3\right) + s^2\left(C_3C_4R_3R_4R_5g_m - C_3C_4R_3R_4 + C_4L_4R_5g_m - C_4L_4\right) + s\left(C_3R_3R_5g_m - C_3R_3 + C_4R_4R_5g_m - C_4R_4\right) - 1}{2g_m + s^3\left(2C_3C_4L_4R_3g_m + C_3C_4L_4R_5g_m + C_3C_4L_4\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_4R_3R_5g_m + 2C_3C_4R_3 + C_3C_4R_4R_5g_m + C_3C_4R_4 + 2C_4L_4g_m\right) + s\left(2C_3R_3g_m + C_3R_5g_m + C_3 + 2C_4R_4g_m + 2C_4R_5g_m + 2C_4\right)}$$

### 10.313 INVALID-ORDER-313 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4R_3s^4 + g_m + s^3\left(-C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m - C_4C_5L_4\right) + s^2\left(C_3C_4R_3R_4g_m - C_3C_5R_3 - C_4C_5R_4 + C_4L_4g_m\right) + s\left(C_3R_3g_m + C_4R_4g_m - C_5\right)}{s^4\left(2C_3C_4C_5L_4R_3g_m + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4 + C_3C_4L_4g_m + 2C_4C_5L_4g_m\right) + s^2\left(2C_3C_4R_3g_m + C_3C_4R_4g_m + 2C_3C_5R_3g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

### 10.314 INVALID-ORDER-314 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4R_3R_5s^4 + R_5g_m + s^3\left(-C_3C_4C_5R_3R_4R_5 + C_3C_4L_4R_3R_5g_m - C_3C_4L_4R_3 - C_4C_5L_4R_5\right) + s^2\left(C_3C_4R_3R_4R_5g_m - C_3C_4R_3R_4 - C_3C_5R_3R_5 - C_4C_5R_4R_5 + C_4L_4R_5g_m - C_4\right.}{2g_m + s^4\left(2C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_5\right) + s^3\left(2C_3C_4C_5R_3R_4R_5g_m + 2C_3C_4C_5R_3R_5 + C_3C_4C_5R_4R_5 + 2C_3C_4L_4R_3g_m + C_3C_4L_4R_5g_m + C_3C_4L_4 + 2C_4C_5L_4R_5g_m\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_4R_3R_5g_m + 2C_3C_4R_3 + C_3C_4R_4R_5g_m + C_3C_4R_4 + 2C_3C_5\right.}$$

### 10.315 INVALID-ORDER-315 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m - C_3C_4C_5L_4R_3\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m - C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + C_4C_5L_4R_5g_m - C_4C_5L_4\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3R_5g_m - C_3C_5R_3 + C_4C_5R_4R_5g_m - C_4C_5R_4 + C_4L_4g_m\right) + s\left(C_3R_3g_m\right.}{s^4\left(2C_3C_4C_5L_4R_3g_m + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3R_5g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4 + C_3C_4L_4g_m + 2C_4C_5L_4g_m\right) + s^2\left(2C_3C_4R_3g_m + C_3C_4R_4g_m + 2C_3C_5R_3g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_4g_m\right.}$$

### 10.316 INVALID-ORDER-316 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(-C_3C_4C_5L_4R_3 + C_3C_4C_5L_5R_3R_4g_m + C_4C_5L_4L_5g_m\right) + s^3\left(-C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m - C_4C_5L_4 + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_3R_4g_m - C_3C_5R_3 - C_4C_5R_4 + C_4L_4g_m + C_5L_5g_m\right.}{C_3C_4C_5L_4L_5g_ms^5 + s^4\left(2C_3C_4C_5L_4R_3g_m + C_3C_4C_5L_4 + 2C_3C_4C_5L_5R_3g_m + C_3C_4C_5L_5R_4g_m\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4 + C_3C_4L_4g_m + C_3C_5L_5g_m + 2C_4C_5L_4g_m + 2C_4C_5L_5g_m\right) + s^2\left(2C_3C_4R_3g_m + C_3C_4R_4g_m + 2C_3C_5R_3g_m + C_3C\right.}$$

### 10.317 INVALID-ORDER-317 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4L_5R_3s^5 + s^4\left(-C_3C_4C_5L_5R_3R_4 + C_3C_4L_4L_5R_3g_m - C_4C_5L_4L_5\right) + s^3\left(-C_3C_4L_4R_3 + C_3C_4L_5R_3R_4g_m - C_3C_5L_5R_3 - C_4C_5L_5R_4 + C_4L_4L_5g_m\right) + s^2\left(-C_3C_4R_3R_4 + C_3L_5R_3\right.}{2g_m + s^5\left(2C_3C_4C_5L_4L_5R_3g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4 + C_3C_4L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_4R_3g_m + C_3C_4L_4 + 2C_3C_4L_5R_3g_m + C_3C_4L_5R_4g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5 + 2C_4C_5L_5R_4g_m + 2C\right.}$$

### 10.318 INVALID-ORDER-318 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_4L_5R_3g_ms^5 + g_m + s^4\left(C_3C_4C_5L_4R_3R_5g_m - C_3C_4C_5L_4R_3 + C_3C_4C_5L_5R_3R_4g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m - C_3C_4C_5R_3R_4 + C_3C_4L_4R_3g_m + C_3C_5L_5R_3g_m + C_4C_5L_4R_5g_m - C_4C_5L_4 + C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_4R_\right.}{C_3C_4C_5L_4L_5g_ms^5 + s^4\left(2C_3C_4C_5L_4R_3g_m + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4 + 2C_3C_4C_5L_5R_3g_m + C_3C_4C_5L_5R_4g_m\right) + s^3\left(2C_3C_4C_5R_3R_4g_m + 2C_3C_4C_5R_3R_5g_m + 2C_3C_4C_5R_3 + C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4 + C_3C_4L_4g_m + C_3C_5L_5g_m + 2C_4C_5L_4g_m + 2C_4C_5L_\right.}$$

### 10.319 INVALID-ORDER-319 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_4L_5R_3R_5s^5 - R_5 + s^4\left(-C_3C_4C_5L_5R_3R_4R_5 + C_3C_4L_4L_5R_3R_5g_m - C_3C_4L_4L_5R_3 - C_4C_5L_4L_5R_5\right) + s^3\left(-C_3C_4L_4R_3R_5\right.}{2R_5g_m + s^5\left(2C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_5\right) + s^4\left(2C_3C_4C_5L_5R_3R_4R_5g_m + 2C_3C_4C_5L_5R_3R_5 + C_3C_4C_5L_5R_4R_5 + 2C_3C_4L_4L_5R_3g_m + C_3C_4L_4L_5R_5g_m + C_3C_4L_4L_5 + 2C_4C_5L_4L_5R_5g_m\right) + s^3\left(2C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_5 + 2C_3C_4L_5R_3R_4g_m + 2\right.}$$

### 10.320 INVALID-ORDER-320 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m - C_3C_4C_5L_4L_5R_3\right) + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m - C_3C_4C_5L_5R_3R_4 + C_3C_4L_4L_5R_3g_m + C_4C_5L_4L_5R_5g_m - C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_4R_3R_5g_m - C_3C_4L_4R_3 + C_3C_4L_5\right.}{2g_m + s^5\left(2C_3C_4C_5L_4L_5R_3g_m + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + C_3C_4L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_4R_3g_m + C_3C_4L_4R_5g_m + C_3C_4L_4 +\right.}$$

### 10.321 INVALID-ORDER-321 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^5\left(C_3C_4C_5L_4L_5R_3R_5g_m - C_3C_4C_5L_4L_5R_3\right) + s^4\left(-C_3C_4C_5L_4R_3R_5 + C_3C_4C_5L_5R_3R_4R_5g_m - C_3C_4C_5L_5R_3R_4 + C_4C_5L_4L_5R_5g_m - C_4\right.}{2g_m + s^5\left(2C_3C_4C_5L_4L_5R_3g_m + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_5 + 2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4C_5R_3R_4R_5g_m\right.}$$

**10.322 INVALID-ORDER-322** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^2 \left(C_3 L_4 R_3 R_4 R_5 g_m - C_3 L_4 R_3 R_4\right) + s \left(L_4 R_4 R_5 g_m - L_4 R_4\right)}{2R_4 R_5 g_m + 2R_4 + s^3 \left(2C_3 C_4 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 R_3 R_4\right) + s^2 \left(2C_3 L_4 R_3 R_4 g_m + 2C_3 L_4 R_3 R_5 g_m + 2C_3 L_4 R_3 + C_3 L_4 R_4 R_5 g_m + C_3 L_4 R_4 + 2C_4 L_4 R_4 R_5 g_m + 2C_4 L_4 R_4\right) + s \left(2C_3 R_3 R_4 R_5 g_m + 2C_3 R_3 R_4 + 2L_4 R_4 g_m + 2L_4 R_5 g_m + 2L_4\right)}$$

**10.323 INVALID-ORDER-323** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_4 R_3 R_4 s^3 + L_4 R_4 g_m s + s^2 \left(C_3 L_4 R_3 R_4 g_m - C_5 L_4 R_4\right)}{2C_3 C_4 C_5 L_4 R_3 R_4 s^4 + 2R_4 g_m + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 + C_3 C_5 L_4 R_4 + 2C_4 C_5 L_4 R_4\right) + s^2 \left(2C_3 C_5 R_3 R_4 + 2C_3 L_4 R_3 g_m + C_3 L_4 R_4 g_m + 2C_4 L_4 R_4 g_m + 2C_5 L_4 R_4 g_m + 2C_5 L_4\right) + s \left(2C_3 R_3 R_4 g_m + 2C_5 R_4 + 2L_4 g_m\right)}$$

**10.324 INVALID-ORDER-324** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_4 R_3 R_4 R_5 s^3 + s^2 \left(C_3 L_4 R_3 R_4 R_5 g_m - C_3 L_4 R_3 R_4 - C_5 L_4 R_4 R_5\right) + s \left(L_4 R_4 R_5 g_m - L_4 R_4\right)}{2C_3 C_4 C_5 L_4 R_3 R_4 R_5 s^4 + 2R_4 R_5 g_m + 2R_4 + s^3 \left(2C_3 C_4 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 R_3 R_4 + 2C_3 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_5 L_4 R_3 R_5 + C_3 C_5 L_4 R_4 R_5 + 2C_4 C_5 L_4 R_4 R_5\right) + s^2 \left(2C_3 C_5 R_3 R_4 R_5 + 2C_3 L_4 R_3 R_4 g_m + 2C_3 L_4 R_3 R_5 g_m + 2C_3 L_4 R_3 + C_3 L_4 R_4 R_5 g_m + C_3 L_4 R_4 +\right.$$

**10.325 INVALID-ORDER-325** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4 R_4 g_m s + s^3 \left(C_3 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_5 L_4 R_3 R_4\right) + s^2 \left(C_3 L_4 R_3 R_4 g_m + C_5 L_4 R_4 R_5 g_m - C_5 L_4 R_4\right)}{2R_4 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_5 g_m + 2C_3 C_5 L_4 R_3 + C_3 C_5 L_4 R_4 R_5 g_m + C_3 C_5 L_4 R_4 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_4\right) + s^2 \left(2C_3 C_5 R_3 R_4 R_5 g_m + 2C_3 C_5 R_3 R_4 + 2C_3 L_4 R_3 g_m\right.$$

**10.326 INVALID-ORDER-326** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_4 L_5 R_3 R_4 g_m s^4 + L_4 R_4 g_m s + s^3 \left(-C_3 C_5 L_4 R_3 R_4 + C_5 L_4 L_5 R_4 g_m\right) + s^2 \left(C_3 L_4 R_3 R_4 g_m - C_5 L_4 R_4\right)}{2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + 2R_4 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 + C_3 C_5 L_4 R_4 + 2C_3 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_4 R_4 + 2C_5 L_4 L_5 g_m\right) + s^2 \left(2C_3 C_5 R_3 R\right.$$

**10.327 INVALID-ORDER-327** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_4 L_5 R_3 R_4 s^4 - L_4 R_4 s + s^3 \left(C_3 L_4 L_5 R_3 R_4 g_m - C_5 L_4 L_5 R_4\right) + s^2 \left(-C_3 L_4 R_3 R_4 + L_4 L_5 R_4 g_m\right)}{2C_3 C_4 C_5 L_4 L_5 R_3 R_4 s^5 + 2R_4 + s^4 \left(2C_3 C_4 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 + C_3 C_5 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 + 2C_3 C_5 L_5 R_3 R_4 + 2C_3 L_4 L_5 R_3 g_m + C_3 L_4 L_5 R_4 g_m + 2C_4 L_4 L_5 R_4 g_m + 2C_5 L_4 L_5 R_4 g_m + 2C_5 L_4 L_5\right) + s^2 \left(2C\right.$$

**10.328 INVALID-ORDER-328** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_4 L_5 R_3 R_4 g_m s^4 + L_4 R_4 g_m s + s^3 \left(C_3 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_5 L_4 R\right.}{2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + 2R_4 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 R_5 g_m + 2C_3 C_5 L_4 R_3 + C_3 C_5 L_4 R_4 R_5 g_m + C_3 C_5 L_4 R_4 +\right.$$

**10.329 INVALID-ORDER-329** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_4 L_5 R_3 R_4 R_5 s^4 - L_4 R_4 R}{2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 s^5 + 2R_4 R_5 + s^4 \left(2C_3 C_4 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 L_5 R_3 R_4 + 2C_3 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_5 L_4 L_5 R_3 R_5 + C_3 C_5 L_4 L_5 R_4 R_5 + 2C_4 C_5 L_4 L_5 R_4 R_5\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 R_5 + 2C_3 C_5 L_5 R_3 R_4 R_5 + 2C_3 L_4 L_5 R_3 R_4 g_m + 2C_3 L_4 L_5 R_3 R_5 g_m + 2C\right.$$

**10.330 INVALID-ORDER-330** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{s^4 \left(C_3 C_5 L_4 L\right.}{2R_4 R_5 g_m + 2R_4 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4\right) + s^4 \left(2C_3 C_4 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_5 L_4 L_5 R_3 + C_3 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_5 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3\right.$$

**10.331 INVALID-ORDER-331** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 R_5 g_m + 2R_4 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4\right) + s^4 \left(2C_3 C_4 L_4 L_5 R_3 R_4 R_5 + 2C_3 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_5 L_4 L_5 R_3 + C_3 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_5 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3\right.$$

### 10.332 INVALID-ORDER-332 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4\right) + s^2 \left(C_3 L_4 R_3 R_5 g_m - C_3 L_4 R_3 + C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right) + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 + L_4 R_5 g_m - L_4\right)}{2R_4 g_m + 2R_5 g_m + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2 \left(2C_3 L_4 R_3 g_m + C_3 L_4 R_5 g_m + C_3 L_4 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s \left(2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2L_{\ldots}\right.}$$

### 10.333 INVALID-ORDER-333 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 R_3 R_4 s^4 + R_4 g_m + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m - C_3 C_5 L_4 R_3 - C_4 C_5 L_4 R_4\right) + s^2 \left(-C_3 C_5 R_3 R_4 + C_3 L_4 R_3 g_m + C_4 L_4 R_4 g_m - C_5 L_4\right) + s \left(C_3 R_3 R_4 g_m - C_5 R_4 + L_4 g_m\right)}{2g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2 \left(2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 + C_3 L_4 g_m + 2C_4 L_4 g_m + 2C_5 L_4 g_m\right) + s \left(2C_3 R_3 g_m + \right.}$$

### 10.334 INVALID-ORDER-334 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 R_3 R_4 R_5 s^4 + R_4 R_5 g_m - R_4 + s^3 \left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4 - C_3 C_5 L_4 R_3 R_5 - C_4 C_5 L_4 R_4 R_5\right) + s^2 \left(-C_3 C_5 R_3 R_4 R_5 + C_{3\ldots}\right.}{2R_4 g_m + 2R_5 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 C_5 L_4 R_4 R_5\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + 2C_3 C_5 L_4 R_3 R_5 g_m + C_3 C_5 L_4 R_5 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_5\right) + s^2 \left(2C_3 C\right.}$$

### 10.335 INVALID-ORDER-335 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m + C_3 C_5 L_4 R_3 R_5 g_m - C_3 C_5 L_4 R_3 + C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4\right) + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4 + C_3 L_4 R_3 g\right.}{2g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 R_5 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2 \left(2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4\right.}$$

### 10.336 INVALID-ORDER-336 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + R_4 g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m - C_3 C_5 L_4 R_3 + C_3 C_5 L_5 R_3 R_4 g_m - C_4 C_5 L_4 R_4 + C_5 L_4 L_5 g_m\right) + s^2 \left(-C_3 C_5\right.}{2g_m + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4\right.}$$

### 10.337 INVALID-ORDER-337 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 R_4 s^5 - R_4 + s^4 \left(C_3 C_4 L_4 L_5 R_3 R_4 g_m - C_3 C_5 L_4 L_5 R_3 - C_4 C_5 L_4 L_5 R_4\right) + s^3 \left(-C_3 C_4 L_4 R_3 R_4 - C_3 C_5 L_5 R_3 R_4 + C_3 L_4 L_5 R_3 g_m + C\right.}{2R_4 g_m + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(2C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 + 2C_3 C_5 L_5 R_3 R_4 g_m\right.}$$

### 10.338 INVALID-ORDER-338 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + R_4 g_m + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_5 L_4 L_5 R_3 g_m + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m + C_3 C_5 L_4 R_3 R_5 g_m - C_3 C_5 L_4 R_3 + C_3 C_5 L_4\right.}{2g_m + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4\right.}$$

### 10.339 INVALID-ORDER-339 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 s^5 - R_4 R_5 + s^4 \left(C_3 C_4 L_4 L_5 R_3 R_4 R_5 g_m - C_3 C_4\right.}{2R_4 R_5 g_m + 2R_5 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5\right) + s^4 \left(2C_3 C_4 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 L_4 L_5 R_3 + C_3 C_4 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_4 L_5 R_4 + 2C_3 C_5 L_4 L_5 R_3 R_5 g_m + C_3 C_5 L_4 L_5 R_5 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m\right.}$$

### 10.340 INVALID-ORDER-340 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3 R_4\right) + s^4 \left(C_3 C_4 L_4 L_5 R_3 R_4 g_m + C_3 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_5 L_4 L_5\right.}{2R_4 g_m + 2R_5 g_m + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(2C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 R_5 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C\right.}$$

### 10.341 INVALID-ORDER-341 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3 R_4\right) + s^{\ldots}}{2R_4 g_m + 2R_5 g_m + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 C_5 L_4 R_4 R_5 + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 R_5 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4\right.}$$

**10.342 INVALID-ORDER-342** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^3\left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4\right) + s^2\left(C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right) + s\left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^3\left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2\left(2C_3 C_4 R_3 R_4 R_5 g_m + 2C_3 C_4 R_3 R_4 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s\left(2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 \right.}$$

**10.343 INVALID-ORDER-343** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 R_3 R_4 s^4 + R_4 g_m + s^3\left(C_3 C_4 L_4 R_3 R_4 g_m - C_4 C_5 L_4 R_4\right) + s^2\left(-C_3 C_5 R_3 R_4 + C_4 L_4 R_4 g_m\right) + s\left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2g_m + s^4\left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4\right) + s^3\left(2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2\left(2C_3 C_4 R_3 R_4 g_m + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 + 2C_4 C_5 R_4 + 2C_4 L_4 g_m\right) + s\left(2C_3 R_3 g_m + C_3 R\right.}$$

**10.344 INVALID-ORDER-344** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 R_3 R_4 R_5 s^4 + R_4 R_5 g_m - R_4 + s^3\left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4 - C_4 C_5 L_4 R_4 R_5\right) + s^2\left(-\right.}{2R_4 g_m + 2R_5 g_m + s^4\left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 C_5 L_4 R_4 R_5\right) + s^3\left(2C_3 C_4 C_5 R_3 R_4 R_5 + 2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + 2C_4 C_5 L_4 R_4 R_5 g_m + 2C_4 C_5 L_4 R_5\right) + s^2\left(2C_3 C_4 R_3 R_4 R_5 g_m\right.}$$

**10.345 INVALID-ORDER-345** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^4\left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4\right) + s^3\left(C_3 C_4 L_4 R_3 R_4 g_m + C_4 C_5 L_4 R_4 R_5 g_m - C_4 C_5 L_4 R_4\right) + s^2\left(C_3 C_5 R_3 R_4 R_5 g_m - C\right.}{2g_m + s^4\left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4\right) + s^3\left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2\left(2C_3 C_4 R_3 R_4 g_m + \right.}$$

**10.346 INVALID-ORDER-346** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + R_4 g_m + s^4\left(-C_3 C_4 C_5 L_4 R_3 R_4 + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3\left(C_3 C_4 L_4 R_3 R_4 g_m + C_3 C_5 L_5 R_3 R_4 g_m - C_4 C_5 L_4 R_4\right) + s^2\left(C_3 C_5 R_3 R_4 + C_4 L_4 R_4 g_m\right) + s\left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2g_m + s^5\left(2C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4\left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m + 2C_4 C_5 L_4 R_4 g\right.}$$

**10.347 INVALID-ORDER-347** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 R_4 s^5 - R_4 + s^4\left(C_3 C_4 L_4 L_5 R_3 R_4 g_m - C_4 C_5 L_4 L_5 R_4\right) + s^3\left(-C_3 C_4 L_4 R_3 R_4 - C_3 C_5 L_5 R_3 R_4\right.}{2R_4 g_m + s^5\left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4\left(2C_3 C_4 C_5 L_5 R_3 R_4 + 2C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5\right) + s^3\left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 + 2C_3 C_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_5\right.}$$

**10.348 INVALID-ORDER-348** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m s^5 + R_4 g_m + s^4\left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4 + C_4 C_5 L_4 L_5 R_4 g_m\right)}{2g_m + s^5\left(2C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4\left(2C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3\left(2C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 R_3 R_4 + 2C_3 C_4 L_4 R_3 g_m\right.}$$

**10.349 INVALID-ORDER-349** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_4 L_5 R_3 R_4}{2R_4 R_5 g_m + 2R_5 + s^5\left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5\right) + s^4\left(2C_3 C_4 C_5 L_5 R_3 R_4 R_5 + 2C_3 C_4 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 L_4 L_5 R_3 + C_3 C_4 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_4 L_5 R_4 + 2C_4 C_5 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_4 L_5\right.}$$

**10.350 INVALID-ORDER-350** $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^5\left(C_3 C_4 C_5 L_4 L_5 R\right.}{2R_4 g_m + 2R_5 g_m + s^5\left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4\left(2C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_5 R_3 R_4 + 2C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5\right.}$$

### 10.351 INVALID-ORDER-351 $Z(s) = \left(\infty,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 g_m + 2R_5 g_m + s^5 \left(2C_3C_4C_5L_4L_5R_3R_4g_m + 2C_3C_4C_5L_4L_5R_3R_5g_m + 2C_3C_4C_5L_4L_5R_3 + C_3C_4C_5L_4L_5R_4R_5g_m + C_3C_4C_5L_4L_5R_4\right) + s^4 \left(2C_3C_4C_5L_4R_3R_4R_5g_m + 2C_3C_4C_5L_4R_3R_5 + C_3C_4C_5L_4R_4R_5 + 2C_3C_4C_5L_5R_3R_4R_5g_m + 2C_3C_4C_5L_5R_3R_4 + 2C_4C_5$$

### 10.352 INVALID-ORDER-352 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4s^3 + C_3L_3R_4g_m s^2 - C_5R_4 s + R_4 g_m}{2g_m + s^3\left(2C_3C_5L_3R_4g_m + 2C_3C_5L_3\right) + s^2\left(C_3C_5R_4 + 2C_3L_3g_m\right) + s\left(C_3R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

### 10.353 INVALID-ORDER-353 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4R_5s^3 - C_5R_4R_5s + R_4R_5g_m - R_4 + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4\right)}{2R_4g_m + 2R_5g_m + s^3\left(2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_5\right) + s^2\left(C_3C_5R_4R_5 + 2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3\right) + s\left(C_3R_4R_5g_m + C_3R_4 + 2C_5R_4R_5g_m + 2C_5R_5\right) + 2}$$

### 10.354 INVALID-ORDER-354 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3L_3R_4g_m s^2 + R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4\right) + s\left(C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^3\left(2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3\right) + s^2\left(C_3C_5R_4R_5g_m + C_3C_5R_4 + 2C_3L_3g_m\right) + s\left(C_3R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

### 10.355 INVALID-ORDER-355 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_m s^4 - C_3C_5L_3R_4s^3 - C_5R_4 s + R_4g_m + s^2\left(C_3L_3R_4g_m + C_5L_5R_4g_m\right)}{2C_3C_5L_3L_5g_m s^4 + 2g_m + s^3\left(2C_3C_5L_3R_4g_m + 2C_3C_5L_3 + C_3C_5L_5R_4g_m\right) + s^2\left(C_3C_5R_4 + 2C_3L_3g_m + 2C_5L_5g_m\right) + s\left(C_3R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

### 10.356 INVALID-ORDER-356 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4s^4 + C_3L_3L_5R_4g_m s^3 + L_5R_4g_m s - R_4 + s^2\left(-C_3L_3R_4 - C_5L_5R_4\right)}{2R_4g_m + s^4\left(2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5\right) + s^3\left(C_3C_5L_5R_4 + 2C_3L_3L_5g_m\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3 + C_3L_5R_4g_m + 2C_5L_5R_4g_m + 2C_5L_5\right) + s\left(C_3R_4 + 2L_5g_m\right) + 2}$$

### 10.357 INVALID-ORDER-357 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_m s^4 + R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4\right) + s^2\left(C_3L_3R_4g_m + C_5L_5R_4g_m\right) + s\left(C_5R_4R_5g_m - C_5R_4\right)}{2C_3C_5L_3L_5g_m s^4 + 2g_m + s^3\left(2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + C_3C_5L_5R_4g_m\right) + s^2\left(C_3C_5R_4R_5g_m + C_3C_5R_4 + 2C_3L_3g_m + 2C_5L_5g_m\right) + s\left(C_3R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

### 10.358 INVALID-ORDER-358 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4R_5s^4 - R_4R_5 + s^3\left(C_3L_3L_5R_4R_5g_m - C_3L_3L_5R_4\right) + s^2\left(-C_3L_3R_4R_5 - C_5L_5R_4R_5\right) + s\left(L_5R_4R_5g_m - L_5R_4\right)}{2R_4R_5g_m + 2R_5 + s^4\left(2C_3C_5L_3L_5R_4R_5g_m + 2C_3C_5L_3L_5R_5\right) + s^3\left(C_3C_5L_5R_4R_5 + 2C_3L_3L_5R_4g_m + 2C_3L_3L_5R_5g_m + 2C_3L_3L_5\right) + s^2\left(2C_3L_3R_4R_5g_m + 2C_3L_3R_5 + C_3L_5R_4R_5g_m + C_3L_5R_4 + 2C_5L_5R_4R_5g_m + 2C_5L_5R_5\right) + s\left(C_3R_4R_5 + 2L_5R_4g_m + 2L_5R_5g_m +$$

### 10.359 INVALID-ORDER-359 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5R_4g_m s^3 + L_5R_4g_m s + R_4R_5g_m - R_4 + s^4\left(C_3C_5L_3L_5R_4R_5g_m - C_3C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4 + C_5L_5R_4R_5g_m - C_5L_5R_4\right)}{2R_4g_m + 2R_5g_m + s^4\left(2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5\right) + s^3\left(C_3C_5L_5R_4R_5g_m + C_3C_5L_5R_4 + 2C_3L_3L_5g_m\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3 + C_3L_5R_4g_m + 2C_5L_5R_4g_m + 2C_5L_5R_5g_m + 2C_5L_5\right) + s\left(C_3R_4R_5g_m + C_3R_4 + 2L_5g_m\right) + 2}$$

**10.360 INVALID-ORDER-360** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4R_5s^3 - C_5R_4R_5s + R_4R_5g_m - R_4 + s^4\left(C_3C_5L_3L_5R_4R_5g_m - C_3C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4 + C_5L_5R_4R_5g_m - C_5L_5R_4\right)}{2R_4g_m + 2R_5g_m + s^4\left(2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_5 + C_3C_5L_5R_4R_5g_m + C_3C_5L_5R_4\right) + s^2\left(C_3C_5R_4R_5 + 2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3 + 2C_5L_5R_4g_m + 2C_5L_5R_5g_m + 2C_5L_5\right) + s\left(C_3R_4R_5g_m\right.}$$

**10.361 INVALID-ORDER-361** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^2\left(C_3L_3R_5g_m - C_3L_3\right) - 1}{2C_3L_3g_ms^2 + 2g_m + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4\right)}$$

**10.362 INVALID-ORDER-362** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3s^3 + C_3L_3g_ms^2 - C_5s + g_m}{2C_3C_4C_5L_3s^4 + s^3\left(2C_3C_4L_3g_m + 2C_3C_5L_3g_m\right) + s^2\left(C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.363 INVALID-ORDER-363** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_5s^3 - C_5R_5s + R_5g_m + s^2\left(C_3L_3R_5g_m - C_3L_3\right) - 1}{2C_3C_4C_5L_3R_5s^4 + 2g_m + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_5L_3R_5g_m\right) + s^2\left(C_3C_5R_5 + 2C_3L_3g_m + 2C_4C_5R_5\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4 + 2C_5R_5g_m\right)}$$

**10.364 INVALID-ORDER-364** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3L_3g_ms^2 + g_m + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3\right) + s\left(C_5R_5g_m - C_5\right)}{s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3\right) + s^3\left(2C_3C_4L_3g_m + 2C_3C_5L_3g_m\right) + s^2\left(C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.365 INVALID-ORDER-365** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5g_ms^4 - C_3C_5L_3s^3 - C_5s + g_m + s^2\left(C_3L_3g_m + C_5L_5g_m\right)}{2C_3C_4C_5L_3L_5g_ms^5 + 2C_3C_4C_5L_3s^4 + s^3\left(2C_3C_4L_3g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.366 INVALID-ORDER-366** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5s^4 + C_3L_3L_5g_ms^3 + L_5g_ms + s^2\left(-C_3L_3 - C_5L_5\right) - 1}{2C_3C_4C_5L_3L_5s^5 + 2g_m + s^4\left(2C_3C_4L_3L_5g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3 + C_3C_5L_5 + 2C_4C_5L_5\right) + s^2\left(2C_3L_3g_m + C_3L_5g_m + 2C_4L_5g_m + 2C_5L_5g_m\right) + s\left(C_3 + 2C_4\right)}$$

**10.367 INVALID-ORDER-367** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5g_ms^4 + g_m + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3\right) + s^2\left(C_3L_3g_m + C_5L_5g_m\right) + s\left(C_5R_5g_m - C_5\right)}{2C_3C_4C_5L_3L_5g_ms^5 + s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3\right) + s^3\left(2C_3C_4L_3g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.368 INVALID-ORDER-368** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_5s^4 - R_5 + s^3\left(C_3L_3L_5R_5g_m - C_3L_3L_5\right) + s^2\left(-C_3L_3R_5 - C_5L_5R_5\right) + s\left(L_5R_5g_m - L_5\right)}{2C_3C_4C_5L_3L_5R_5s^5 + 2R_5g_m + s^4\left(2C_3C_4L_3L_5R_5g_m + 2C_3C_4L_3L_5 + 2C_3C_5L_3L_5R_5g_m\right) + s^3\left(2C_3C_4L_3R_5 + C_3C_5L_5R_5 + 2C_3L_3L_5g_m + 2C_4C_5L_5R_5\right) + s^2\left(2C_3L_3R_5g_m + C_3L_5R_5g_m + C_3L_5 + 2C_4L_5R_5g_m + 2C_4L_5 + 2C_5L_5R_5g_m\right) + s\left(C_3R_5 + 2C_4R_5 + 2L_5g_m\right.}$$

**10.369 INVALID-ORDER-369** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5g_ms^3 + L_5g_ms + R_5g_m + s^4\left(C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_5L_5R_5g_m - C_5L_5\right) - 1}{2g_m + s^5\left(2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5\right) + s^4\left(2C_3C_4L_3L_5g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_5g_m + 2C_4C_5L_5\right) + s^2\left(2C_3L_3g_m + C_3L_5g_m + 2C_4L_5g_m + 2C_5L_5g_m\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_5g\right.}$$

**10.370 INVALID-ORDER-370** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_5s^3 - C_5R_5s + R_5g_m + s^4\left(C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_5L_5R_5g_m - C_5L_5\right) - 1}{2g_m + s^5\left(2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5\right) + s^4\left(2C_3C_4C_5L_3R_5 + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_5L_3R_5g_m + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_5g_m + 2C_4C_5L_5\right) + s^2\left(C_3C_5R_5 + 2C_3L_3g_m + 2C_4C_5R_5 + 2C_5L_5g_m\right) + s\left(C_3R_5g\right.}$$

**10.371 INVALID-ORDER-371** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4\right)}{2R_4g_m + 2R_5g_m + s^3\left(2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3\right) + s\left(C_3R_4R_5g_m + C_3R_4 + 2C_4R_4R_5g_m + 2C_4R_4\right) + 2}$$

**10.372 INVALID-ORDER-372** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4s^3 + C_3L_3R_4g_ms^2 - C_5R_4s + R_4g_m}{2C_3C_4C_5L_3R_4s^4 + 2g_m + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3\right) + s^2\left(C_3C_5R_4 + 2C_3L_3g_m + 2C_4C_5R_4\right) + s\left(C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

**10.373 INVALID-ORDER-373** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4R_5s^3 - C_5R_4R_5s + R_4R_5g_m - R_4 + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4\right)}{2C_3C_4C_5L_3R_4R_5s^4 + 2R_4g_m + 2R_5g_m + s^3\left(2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4 + 2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_5\right) + s^2\left(C_3C_5R_4R_5 + 2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3 + 2C_4C_5R_4R_5\right) + s\left(C_3R_4R_5g_m + C_3R_4 + 2C_4R_4R_5g_m + 2C_4R_4 + 2C_5R_4R_5g_m + 2C_5R_5\right.}$$

**10.374 INVALID-ORDER-374** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3L_3R_4g_ms^2 + R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4\right) + s\left(C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_4\right) + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3\right) + s^2\left(C_3C_5R_4R_5g_m + C_3C_5R_4 + 2C_3L_3g_m + 2C_4C_5R_4R_5g_m + 2C_4C_5R_4\right) + s\left(C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

**10.375 INVALID-ORDER-375** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_ms^4 - C_3C_5L_3R_4s^3 - C_5R_4s + R_4g_m + s^2\left(C_3L_3R_4g_m + C_5L_5R_4g_m\right)}{2C_3C_4C_5L_3L_5R_4g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_4 + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3 + C_3C_5L_5R_4g_m + 2C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_5R_4 + 2C_3L_3g_m + 2C_4C_5R_4 + 2C_5L_5g_m\right) + s\left(C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

**10.376 INVALID-ORDER-376** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5 s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4s^4 + C_3L_3L_5R_4g_ms^3 + L_5R_4g_ms - R_4 + s^2\left(-C_3L_3R_4 - C_5L_5R_4\right)}{2C_3C_4C_5L_3L_5R_4s^5 + 2R_4g_m + s^4\left(2C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_4 + C_3C_5L_5R_4 + 2C_3L_3L_5g_m + 2C_4C_5L_5R_4\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3 + C_3L_5R_4g_m + 2C_4L_5R_4g_m + 2C_5L_5R_4g_m + 2C_5L_5\right) + s\left(C_3R_4 + 2C_4R_4 + 2L_5g\right.}$$

**10.377 INVALID-ORDER-377** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_ms^4 + R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4\right) + s^2\left(C_3L_3R_4g_m + C_5L_5R_4g_m\right) + s\left(C_5R_4R_5g_m - C_5R_4\right)}{2C_3C_4C_5L_3L_5R_4g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_4 + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + C_3C_5L_5R_4g_m + 2C_4C_5L_5R_4g_m\right) + s^2\left(C_3C_5R_4R_5g_m + C_3C_5R_4 + 2C_3L_3g_m + 2C_4C_5R_4R_5g_m + 2\right.}$$

**10.378 INVALID-ORDER-378** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5R_5 s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4R_5s^4 - R_4R_5 + s^3\left(C_3L_3L_5R_4R_5g_m - C_3L_3L_5R_4\right) + s^2\left(-C_3L_3R_4R_5 - C_5L_5R_4R_5\right) + s\left(L_5R_4R_5g_m -\right.}{2C_3C_4C_5L_3L_5R_4R_5s^5 + 2R_4R_5g_m + 2R_5 + s^4\left(2C_3C_4L_3L_5R_4R_5g_m + 2C_3C_4L_3L_5R_4 + 2C_3C_5L_3L_5R_4R_5g_m + 2C_3C_5L_3L_5R_5\right) + s^3\left(2C_3C_4L_3R_4R_5 + C_3C_5L_5R_4R_5 + 2C_3L_3L_5R_4g_m + 2C_3L_3L_5R_5g_m + 2C_3L_3L_5 + 2C_4C_5L_5R_4R_5\right) + s^2\left(2C_3L_3R_4R_5g_m + 2C_3L_3\right.}$$

**10.379 INVALID-ORDER-379** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5R_4g_ms^3 + L_5R_4g_ms + R_4R_5g_m - R_4 + s^4\left(C_3C_5L_3L_5R_4R_5g_m - C_3C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_4R_5g_m - C\right.}{2R_4g_m + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_4R_5g_m + 2C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4 + C_3C_5L_5R_4R_5g_m + C_3C_5L_5R_4 + 2C_3L_3L_5g_m + 2C_4C_5L_5R_4R_5g_m + 2C_4\right.}$$

### 10.380 INVALID-ORDER-380 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 R_4 R_5 s^3 - C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_5 L_3 L_5 R_4\right) + s^2}{2R_4 g_m + 2R_5 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_5 R_4\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 + 2C_3 C_5 L_3 L_5 R_4 g_m + 2C_3 C_5 L_3 L_5 R_5 g_m + 2C_3 C_5 L_3 L_5\right) + s^3 \left(2C_3 C_4 L_3 R_4 R_5 g_m + 2C_3 C_4 L_3 R_4 + 2C_3 C_5 L_3 R_4 R_5 g_m + 2C_3 C_5 L_3 R_5 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2C_4}$$

### 10.381 INVALID-ORDER-381 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4\right) + s^2 \left(C_3 L_3 R_5 g_m - C_3 L_3\right) + s \left(C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2g_m + s^3 \left(2C_3 C_4 L_3 R_4 g_m + 2C_3 C_4 L_3 R_5 g_m + 2C_3 C_4 L_3\right) + s^2 \left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2C_3 L_3 g_m\right) + s \left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4\right)}$$

### 10.382 INVALID-ORDER-382 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 R_4 s^4 + g_m + s^3 \left(C_3 C_4 L_3 R_4 g_m - C_3 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m - C_4 C_5 R_4\right) + s \left(C_4 R_4 g_m - C_5\right)}{s^4 \left(2C_3 C_4 C_5 L_3 R_4 g_m + 2C_3 C_4 C_5 L_3\right) + s^3 \left(C_3 C_4 C_5 R_4 + 2C_3 C_4 L_3 g_m + 2C_3 C_5 L_3 g_m\right) + s^2 \left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

### 10.383 INVALID-ORDER-383 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 R_4 R_5 s^4 + R_5 g_m + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 - C_3 C_5 L_3 R_5\right) + s^2 \left(C_3 L_3 R_5 g_m - C_3 L_3 - C_4 C_5 R_4 R_5\right) + s \left(C_4 R_4 R_5 g_m - C_4 R_4 - C_5 R_5\right) - 1}{2g_m + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 R_5\right) + s^3 \left(C_3 C_4 C_5 R_4 R_5 + 2C_3 C_4 L_3 R_4 g_m + 2C_3 C_4 L_3 R_5 g_m + 2C_3 C_4 L_3 + 2C_3 C_5 L_3 R_5 g_m\right) + s^2 \left(C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + C_3 C_5 R_5 + 2C_3 L_3 g_m + 2C_4 C_5 R_4 R_5 g_m + 2C_4 C_5 R_5\right) + s \left(C_3 R_5 g_m + C_3 + 2C_4 R_4 g_m + 2C_4 R_5 g_m + 2C_4 R_5\right)}$$

### 10.384 INVALID-ORDER-384 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4\right) + s \left(C_4 R_4 g_m + C_5 R_5 g_m - C_5\right)}{s^4 \left(2C_3 C_4 C_5 L_3 R_4 g_m + 2C_3 C_4 C_5 L_3 R_5 g_m + 2C_3 C_4 C_5 L_3\right) + s^3 \left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + 2C_3 C_4 L_3 g_m + 2C_3 C_5 L_3 g_m\right) + s^2 \left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

### 10.385 INVALID-ORDER-385 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(-C_3 C_4 C_5 L_3 R_4 + C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m - C_3 C_5 L_3 + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 L_3 g_m - C_4 C_5 R_4 + C_5 L_5 g_m\right) + s \left(C_4 R_4 g_m - C_5\right)}{2C_3 C_4 C_5 L_3 L_5 g_m s^5 + s^4 \left(2C_3 C_4 C_5 L_3 R_4 g_m + 2C_3 C_4 C_5 L_3 + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(C_3 C_4 C_5 R_4 + 2C_3 C_4 L_3 g_m + 2C_3 C_5 L_3 g_m + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2 \left(C_3 C_4 R_4 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

### 10.386 INVALID-ORDER-386 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_5 R_4 s^5 + s^4 \left(C_3 C_4 L_3 L_5 R_4 g_m - C_3 C_5 L_3 L_5\right) + s^3 \left(-C_3 C_4 L_3 R_4 + C_3 L_3 L_5 g_m - C_4 C_5 L_5 R_4\right) + s^2 \left(-C_3 L_3 + C_4 L_5 R_4 g_m - C_5 L_5\right) + s \left(-C_4 R_4 + L_5 g_m\right) - 1}{2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_5\right) + s^4 \left(C_3 C_4 C_5 L_5 R_4 + 2C_3 C_4 L_3 L_5 g_m + 2C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 g_m + 2C_3 C_4 L_3 + C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m + 2C_4 C_5 L_5\right) + s^2 \left(C_3 C_4 R_4 + 2C_3 L_3 g_m + C_3 L_5 g_m + 2C_4 L_5 g_m + 2C_5 L_5 g_m\right) +$$

### 10.387 INVALID-ORDER-387 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4 + C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3 + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4 + C_5 L_5 g_m\right) + s \left(C_4 R_4 g_m + C_5 R_5$$
$$2C_3 C_4 C_5 L_3 L_5 g_m s^5 + s^4 \left(2C_3 C_4 C_5 L_3 R_4 g_m + 2C_3 C_4 C_5 L_3 R_5 g_m + 2C_3 C_4 C_5 L_3 + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + 2C_3 C_4 L_3 g_m + 2C_3 C_5 L_3 g_m + C_3 C_5 L_5 g_m + 2C_4 C_5 L_5 g_m\right) + s^2 \left(C_3 C_4 R_4 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_4 g_m + 2C_4 C_5 R_5$$

### 10.388 INVALID-ORDER-388 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_5 R_4 R_5 s^5 - R_5 + s^4 \left(C_3 C_4 L_3 L_5 R_4 R_5 g_m - C_3 C_4 L_3 L_5 R_4 - C_3 C_5 L_3 L_5 R_5\right) + s^3 \left(-C_3 C_4 L_3 R_4 R_5 + C_3 L_3 L_5 R_5 g_m - C_3 L_3 L_5 - C_4 C_5 L_5 R_4 R_5\right) + s^$$
$$2R_5 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_5 R_5\right) + s^4 \left(C_3 C_4 C_5 L_5 R_4 R_5 + 2C_3 C_4 L_3 L_5 R_4 g_m + 2C_3 C_4 L_3 L_5 R_5 g_m + 2C_3 C_4 L_3 L_5 + 2C_3 C_5 L_3 L_5 R_5 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 R_5 g_m + 2C_3 C_4 L_3 R_5 + C_3 C_4 L_5 R_4 R_5 g_m + C_3 C_4 L_5 R_4 + C_3 C_5 L_5 R_5 + 2C_3 L_3 L_5 g_m + 2$$

### 10.389 INVALID-ORDER-389 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_5 R_4\right) + s^4 \left(C_3 C_4 L_3 L_5 R_4 g_m + C_3 C_5 L_3 L_5 R_5 g_m - C_3 C_5 L_3 L_5\right) + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 + C_3 L_3 L_5 g_m + C_4 C_5 L_5 R_4 R_5 g_m - C_4 C_5 L_5 R_4\right) +$$
$$2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_5\right) + s^4 \left(C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4 + 2C_3 C_4 L_3 L_5 g_m + 2C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 g_m + 2C_3 C_4 L_3 R_5 g_m + 2C_3 C_4 L_3 + C_3 C_4 L_5 R_4 g_m + C_3 C_5 L_5 R_5 g_m + C_3 C_5 L_5 + 2C_4 C_5 L_5 R_4 g_m$

**10.390 INVALID-ORDER-390** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5\left(C_3C_4C_5L_3L_5R_4R_5g_m - C_3C_4C_5L_3L_5R_4\right) + s^4\left(-C_3C_4C_5L_3R_4R_5 + C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5\right) + s^3\left(C_3C_4L_3R_4R_5g_m - C_3C_4L_3R_4 - C_3C_5L_3R_5\right.}{2g_m + s^5\left(2C_3C_4C_5L_3L_5R_4g_m + 2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5\right) + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_5 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + 2C_3C_5L_3L_5g_m\right) + s^3\left(C_3C_4C_5R_4R_5 + 2C_3C_4L_3R_4g_m + 2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_5L_3R_5g_m + \right.}$$

**10.391 INVALID-ORDER-391** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_4L_4R_5g_m - C_4L_4\right) - 1}{2C_3C_4L_3L_4g_m s^4 + 2g_m + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_4L_4R_5g_m + C_3C_4L_4\right) + s^2\left(2C_3L_3g_m + 2C_4L_4g_m\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4\right)}$$

**10.392 INVALID-ORDER-392** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4s^5 + C_3C_4L_3L_4g_m s^4 - C_5 s + g_m + s^3\left(-C_3C_5L_3 - C_4C_5L_4\right) + s^2\left(C_3L_3g_m + C_4L_4g_m\right)}{2C_3C_4C_5L_3L_4g_m s^5 + s^4\left(2C_3C_4C_5L_3 + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + 2C_4C_5L_4g_m\right) + s^2\left(C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.393 INVALID-ORDER-393** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_5s^5 - C_5R_5s + R_5g_m + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4\right) + s^3\left(-C_3C_5L_3R_5 - C_4C_5L_4R_5\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_4L_4R_5g_m - C_4L_4\right) - 1}{2C_3C_4C_5L_3L_4R_5g_m s^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_5 + C_3C_4C_5L_4R_5 + 2C_3C_4L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_4L_4R_5g_m + C_3C_4L_4 + 2C_3C_5L_3R_5g_m + 2C_4C_5L_4R_5g_m\right) + s^2\left(C_3C_5R_5 + 2C_3L_3g_m + 2C_4C_5R_5 + 2C_4L_4g_m\right) + s\left(C_3R_5g_m + C_3 + 2C_4\right.}$$

**10.394 INVALID-ORDER-394** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4L_3L_4g_m s^4 + g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m - C_3C_4C_5L_3L_4\right) + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3 + C_4C_5L_4R_5g_m - C_4C_5L_4\right) + s^2\left(C_3L_3g_m + C_4L_4g_m\right) + s\left(C_5R_5g_m - C_5\right)}{2C_3C_4C_5L_3L_4g_m s^5 + s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + 2C_4C_5L_4g_m\right) + s^2\left(C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.395 INVALID-ORDER-395** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5g_m s^6 - C_3C_4C_5L_3L_4s^5 - C_5 s + g_m + s^4\left(C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(-C_3C_5L_3 - C_4C_5L_4\right) + s^2\left(C_3L_3g_m + C_4L_4g_m + C_5L_5g_m\right)}{s^5\left(2C_3C_4C_5L_3L_4g_m + 2C_3C_4C_5L_3L_5g_m + C_3C_4C_5L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3 + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_4g_m + 2C_4C_5L_5g_m\right) + s^2\left(C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.396 INVALID-ORDER-396** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5s^6 + C_3C_4L_3L_4L_5g_m s^5 + L_5g_m s + s^4\left(-C_3C_4L_3L_4 - C_3C_5L_3L_5 - C_4C_5L_4L_5\right) + s^3\left(C_3L_3L_5g_m + C_4L_4L_5g_m\right) + s^2\left(-C_3L_3 - C_4L_4 - C_5L_5\right) - 1}{2C_3C_4C_5L_3L_4L_5g_m s^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_4L_3L_5g_m + C_3C_4L_4L_5g_m + 2C_3C_5L_3L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3 + C_3C_4L_4 + C_3C_5L_5 + 2C_4C_5L_5\right) + s^2\left(2C_3L_3g_m + C_3L_5g_m + 2C_4L_4g_m + 2C_4L_5g_m + \right.}$$

**10.397 INVALID-ORDER-397** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5g_m s^6 + g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m - C_3C_4C_5L_3L_4\right) + s^4\left(C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3 + C_4C_5L_4R_5g_m - C_4C_5L_4\right) + s^2\left(C_3L_3g_m + C_4L_4g_m + C_5L_5g_m\right) + s\left(C_5\right.}{s^5\left(2C_3C_4C_5L_3L_4g_m + 2C_3C_4C_5L_3L_5g_m + C_3C_4C_5L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4\right) + s^3\left(2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_4g_m + 2C_4C_5L_5g_m\right) + s^2\left(C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R\right.}$$

**10.398 INVALID-ORDER-398** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_5s^6 - R_5 + s^5\left(C_3C_4L_3L_4L_5R_5g_m - C_3C_4L_3L_4L_5\right) + s^4\left(-C_3C_4L_3L_4R_5 - C_3C_5L_3L_5R_5 - C_4C_5L_4L_5R_5\right) + s^3\left(C_3L_3L_5R_5g_m - C_3L_3L_5 + \right.}{2C_3C_4C_5L_3L_4L_5R_5g_m s^6 + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_5 + C_3C_4C_5L_4L_5R_5 + 2C_3C_4L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_5R_5g_m + 2C_3C_4L_3L_5 + C_3C_4L_4L_5R_5g_m + C_3C_4L_4L_5 + 2C_3C_5L_3L_5R_5g_m + 2C_4C_5L_4L_5R_5g_m\right) + s^3\left(2C_3C_4L_3R_5 + C_3C_4L_4\right.}$$

**10.399 INVALID-ORDER-399** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{C_3C_4L_3L_4L_5g_m s^5 + L_5g_m s + R_5g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m - C_3C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4 + C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5 + C_4C_5L_4L_5R_5g_m - C_4C_5L_4L_5\right) + s^3\left(C_3\right.}{2C_3C_4C_5L_3L_4L_5g_m s^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_4L_3L_5g_m + C_3C_4L_4L_5g_m + 2C_3C_5L_3L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_4L_4R_5g_m + C_3C_4\right.}$$

**10.400 INVALID-ORDER-400** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_5s^5 - C_5R_5s + R_5g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m - C_3C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4 + C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5 + C_4C\right.}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4C_5L_3R_5 + C_3C_4C_5L_4R_5 + 2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 +\right.}$$

**10.401 INVALID-ORDER-401** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_5g_m - C_3L_3L_4\right) + s\left(L_4R_5g_m - L_4\right)}{2C_3L_3L_4g_ms^3 + 2L_4g_ms + 2R_5g_m + s^4\left(2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4\right) + s^2\left(2C_3L_3R_5g_m + 2C_3L_3 + C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4\right) + 2}$$

**10.402 INVALID-ORDER-402** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4s^4 + C_3L_3L_4g_ms^3 - C_5L_4s^2 + L_4g_ms}{2C_3C_4C_5L_3L_4s^5 + 2C_5s + 2g_m + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m\right) + s^3\left(2C_3C_5L_3 + C_3C_5L_4 + 2C_4C_5L_4\right) + s^2\left(2C_3L_3g_m + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right)}$$

**10.403 INVALID-ORDER-403** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_5s^4 - C_5L_4R_5s^2 + s^3\left(C_3L_3L_4R_5g_m - C_3L_3L_4\right) + s\left(L_4R_5g_m - L_4\right)}{2C_3C_4C_5L_3L_4R_5s^5 + 2R_5g_m + s^4\left(2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4 + 2C_3C_5L_3L_4R_5g_m\right) + s^3\left(2C_3C_5L_3R_5 + C_3C_5L_4R_5 + 2C_3L_3L_4g_m + 2C_4C_5L_4R_5\right) + s^2\left(2C_3L_3R_5g_m + 2C_3L_3 + C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_5g_m + 2C_4L_4 + 2C_5L_4R_5g_m\right) + s\left(2C_5R_5 + 2L_4g\right.}$$

**10.404 INVALID-ORDER-404** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4g_ms^3 + L_4g_ms + s^4\left(C_3C_5L_3L_4R_5g_m - C_3C_5L_3L_4\right) + s^2\left(C_5L_4R_5g_m - C_5L_4\right)}{2g_m + s^5\left(2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m\right) + s^3\left(2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2\left(2C_3L_3g_m + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right) + s\left(2C_5R_5g_m + 2C_5\right)}$$

**10.405 INVALID-ORDER-405** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5g_ms^5 - C_3C_5L_3L_4s^4 - C_5L_4s^2 + L_4g_ms + s^3\left(C_3L_3L_4g_m + C_5L_4L_5g_m\right)}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2C_3C_4C_5L_3L_4s^5 + 2C_5s + 2g_m + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m + 2C_3C_5L_3L_5g_m + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_5L_3 + C_3C_5L_4 + 2C_4C_5L_4\right) + s^2\left(2C_3L_3g_m + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m + 2C_5L_5g_m\right)}$$

**10.406 INVALID-ORDER-406** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5s^5 + C_3L_3L_4L_5g_ms^4 + L_4L_5g_ms^2 - L_4s + s^3\left(-C_3L_3L_4 - C_5L_4L_5\right)}{2C_3C_4C_5L_3L_4L_5s^6 + s^5\left(2C_3C_4L_3L_4L_5g_m + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4 + 2C_3C_5L_3L_5 + C_3C_5L_4L_5 + 2C_4C_5L_4L_5\right) + s^3\left(2C_3L_3L_4g_m + 2C_3L_3L_5g_m + C_3L_4L_5g_m + 2C_4L_4L_5g_m + 2C_5L_4L_5g_m\right) + s^2\left(2C_3L_3 + C_3L_4 + 2C_4L_4 + 2C_5L_5\right) + s\left(2L_4g_m + 2L\right.}$$

**10.407 INVALID-ORDER-407** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5g_ms^5 + L_4g_ms + s^4\left(C_3C_5L_3L_4R_5g_m - C_3C_5L_3L_4\right) + s^3\left(C_3L_3L_4g_m + C_5L_4L_5g_m\right) + s^2\left(C_5L_4R_5g_m - C_5L_4\right)}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m + 2C_3C_5L_3L_5g_m + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_5g_m + 2C_4C_5L_4\right) + s^2}$$

**10.408 INVALID-ORDER-408** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_5s^5 - L_4R_5s + s^4\left(C_3L_3L_4L_5R_5g_m - C_3L_3L_4L_5\right) + s^3\left(-C_3L_3L_4R_5 - C_5L_4L_5R_5\right) + s^2\left(L_4L_5R_5g_m -\right.}{2C_3C_4C_5L_3L_4L_5R_5s^6 + 2R_5 + s^5\left(2C_3C_4L_3L_4L_5R_5g_m + 2C_3C_4L_3L_4L_5 + 2C_3C_5L_3L_4L_5R_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_5 + 2C_3C_5L_3L_5R_5 + C_3C_5L_4L_5R_5 + 2C_3L_3L_4L_5g_m + 2C_4C_5L_4L_5R_5\right) + s^3\left(2C_3L_3L_4R_5g_m + 2C_3L_3L_5R_5g_m + 2C_3L_3L_5 + C_3L_4L_5R_5g_m + C_3L\right.}$$

**10.409 INVALID-ORDER-409** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4L_5g_ms^4 + L_4L_5g_ms^2 + s^5\left(C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4L_5\right) + s^3\left(C_3L_3L_4R_5g_m - C_3L_3L_4 + C_5L_4L_5\right.}{2R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_5g_m + 2C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4L_3L_4L_5g_m + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4 + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5 + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5\right) + s^3\left(2C_3L_3L_4g_m\right.}$$

### 10.410 INVALID-ORDER-410 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_5s^4 - C_5L_4R_5s^2 + s^5\left(C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4L_5\right) + s^3\left(C_3L_3L_4R_5g_m - C_3C_5L_3L_4L_5R_5 + C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4L_5\right) + s^4\left(C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4L_5\right) + s^2\left(C_3L_3L_4R_5g_m - C_3C_5L_3L_4L_5R_5 + C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4L_5 + C_4L_4R_5g_m - C_4L_4R_5\right) + s\left(C_4L_4R_5g_m - C_4L_4R_5 + C_4L_4R_5g_m - C_4L_4R_5\right) - 1}{2R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_5g_m + 2C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_4L_5R_5 + 2C_3C_5L_3L_4L_5R_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4 + 2C_3C_5L_3L_4L_5R_5g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5 + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5\right) + s^3\left(2C_3L_3L_4R_5g_m + 2C_3L_3L_4 + 2C_3C_5L_3L_4L_5R_5g_m + 2C_3C_5L_3L_4L_5 + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5 + 2C_3L_3R_5g_m + 2C_3L_3 + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5 + 2C_4L_4R_5g_m + 2C_4L_4R_5\right) + s^2\left(2C_3L_3L_4R_5g_m + 2C_3L_3L_4 + 2C_3C_5L_3L_4L_5R_5g_m + 2C_3C_5L_3L_4L_5 + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5 + 2C_3L_3R_5g_m + 2C_3L_3 + C_3C_5L_4L_5R_5g_m + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_5g_m + 2C_4C_5L_4L_5 + 2C_4L_4R_5g_m + 2C_4L_4R_5\right) + s\left(2C_3L_3R_5g_m + 2C_3L_3 + 2C_4L_4R_5g_m + 2C_4L_4R_5\right)}$$

### 10.411 INVALID-ORDER-411 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4\right) + s^3\left(C_3C_4L_3R_4R_5g_m - C_3C_4L_3R_4\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_4L_4R_5g_m - C_4L_4\right) + s\left(C_4R_4R_5g_m - C_4R_4\right) - 1}{2C_3C_4L_3L_4g_ms^4 + 2g_m + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_4L_4R_5g_m + C_3C_4L_4\right) + s^2\left(C_3C_4R_4R_5g_m + C_3C_4R_4 + 2C_3L_3g_m + 2C_4L_4g_m\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_4g_m + 2C_4R_5g_m + 2C_4\right)}$$

### 10.412 INVALID-ORDER-412 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4s^5 + g_m + s^4\left(-C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m\right) + s^3\left(C_3C_4L_3R_4g_m - C_3C_5L_3 - C_4C_5L_4\right) + s^2\left(C_3L_3g_m - C_4C_5R_4 + C_4L_4g_m\right) + s\left(C_4R_4g_m - C_5\right)}{2C_3C_4C_5L_3L_4g_ms^5 + s^4\left(2C_3C_4C_5L_3R_4g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4\right) + s^3\left(C_3C_4C_5R_4 + 2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + 2C_4C_5L_4g_m\right) + s^2\left(C_3C_4R_4g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

### 10.413 INVALID-ORDER-413 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_5s^5 + R_5g_m + s^4\left(-C_3C_4C_5L_3R_4R_5 + C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4\right) + s^3\left(C_3C_4L_3R_4R_5g_m - C_3C_4L_3R_4 - C_3C_5L_3R_5 - C_4C_5L_4R_5\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 - C_4C_5R_4 + C_4L_4R_5g_m - C_4L_4R_5\right) + s\left(C_4R_4R_5g_m - C_4R_4R_5\right)}{2C_3C_4C_5L_3L_4R_5g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_5 + C_3C_4C_5L_4R_5 + 2C_3C_4L_3L_4g_m\right) + s^3\left(C_3C_4C_5R_4R_5 + 2C_3C_4L_3R_4g_m + 2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + C_3C_4L_4R_5g_m + C_3C_4L_4 + 2C_3C_5L_3R_5g_m + 2C_4C_5L_4R_5g_m\right) + s^2\left(C_3C_4R_4R_5g_m + C_3C_4R_4 + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_4R_5g_m + 2C_4C_5R_4 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3R_5g_m + C_3 + 2C_4R_4R_5g_m + 2C_4R_4 + 2C_4R_5g_m + 2C_4\right)}$$

### 10.414 INVALID-ORDER-414 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m - C_3C_4C_5L_3L_4\right) + s^4\left(C_3C_4C_5L_3R_4R_5g_m - C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m\right) + s^3\left(C_3C_4L_3R_4g_m + C_3C_5L_3R_5g_m - C_3C_5L_3 + C_4C_5L_4R_5g_m - C_4C_5L_4\right) + s^2\left(C_3L_3g_m + C_4C_5R_4R_5g_m - C_4C_5R_4 + C_4L_4g_m\right) + s\left(C_4R_4g_m - C_5\right)}{2C_3C_4C_5L_3L_4g_ms^5 + s^4\left(2C_3C_4C_5L_3R_4g_m + 2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4\right) + s^3\left(C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4 + 2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + 2C_4C_5L_4g_m\right) + s^2\left(C_3C_4R_4g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

### 10.415 INVALID-ORDER-415 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(-C_3C_4C_5L_3L_4 + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(-C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_3R_4g_m - C_3C_5L_3 - C_4C_5L_4 + C_4C_5L_5R_4g_m\right) + s^2\left(C_3L_3g_m - C_4C_5R_4 + C_4L_4\right.}{s^5\left(2C_3C_4C_5L_3L_4g_m + 2C_3C_4C_5L_3L_5g_m + C_3C_4C_5L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_4g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4 + C_3C_4C_5L_5R_4g_m\right) + s^3\left(C_3C_4C_5R_4 + 2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_4g_m + 2C_4C_5L_5g_m\right) + s^2\left(C_3C_4R_4g_m + C_3\right.}$$

### 10.416 INVALID-ORDER-416 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5s^6 + s^5\left(-C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m\right) + s^4\left(-C_3C_4L_3L_4 + C_3C_4L_3L_5R_4g_m - C_3C_5L_3L_5 - C_4C_5L_4L_5\right) + s^3\left(-C_3C_4L_3R_4 + C_3L_3L_5g_m - C_4C_5L_5R_4 + C_4L_4L_5g_m\right.}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_5R_4g_m + 2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5\right) + s^4\left(C_3C_4C_5L_5R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_4L_3L_5g_m + C_3C_4L_4L_5g_m + 2C_3C_5L_3L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_4g_m + 2C_3C_4L_3 + C_3C_4L_4 + C_3C_4L_5R_4g_m + \right.}$$

### 10.417 INVALID-ORDER-417 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m - C_3C_4C_5L_3L_4 + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(C_3C_4C_5L_3R_4R_5g_m - C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_3R_4g_m + C_3C_5L_3R_5g_m - C_3C_5L_3 + C_4C_5L_4R\right.}{s^5\left(2C_3C_4C_5L_3L_4g_m + 2C_3C_4C_5L_3L_5g_m + C_3C_4C_5L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_4g_m + 2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3 + C_3C_4C_5L_4R_5g_m + C_3C_4C_5L_4 + C_3C_4C_5L_5R_4g_m\right) + s^3\left(C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4 + 2C_3C_4L_3g_m + C_3C_4L_4g_m + 2C_3C_5L_3g_m + C_3C_5\right.}$$

### 10.418 INVALID-ORDER-418 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_5s^6 - R_5 + s^5\left(-C_3C_4C_5L_3L_5R_4R_5 + C_3C_4L_3L_4L_5R_5g_m - C_3C_4L_3L_4L_5\right) + s^4\left(-C_3C_4L_3L_4R_5 + C_3C_4L_3L_5R_4R_5\right.}{2C_3C_4C_5L_3L_4L_5R_5g_ms^6 + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_4R_5g_m + 2C_3C_4C_5L_3L_5R_5 + C_3C_4C_5L_4L_5R_5 + 2C_3C_4L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_5R_4R_5 + 2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_5R_4g_m + 2C_3C_4L_3L_5R_5g_m + 2C_3C_4L_3L_5 + C_3C_4L_4L_5R_5g_m + C_3C_4L_4L_5 + 2C\right.}$$

### 10.419 INVALID-ORDER-419 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m - C_3C_4C_5L_3L_4L_5\right) + s^5\left(C_3C_4C_5L_3L_5R_4R_5g_m - C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_5g_m - C_3C_4L_3L_4 + C_3C_4L_3L_5R_4g_m + C_3C_5L_3L_5R_5g_m - C_3C_5\right.}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_5R_4g_m + 2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_4L_3L_5g_m + C_3C_4L_4L_5g_m + 2C_3C_5L_3L_5g_m + 2C_4C_5L_4L_5\right.}$$

### 10.420 INVALID-ORDER-420 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m - C_3C_4C_5L_3L_4L_5\right) + s^5\left(-C_3C_4C_5L_3L_4R_5 + C_3C_4C_5L_3L_5R_4R_5g_m - C_3C_4C_5L_3L_5R_4\right) + s^4\left(-C_3C_4C_5L_3R_4R_5 + \right.}{2C_3C_4C_5L_3L_4L_5g_m s^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_5R_4g_m + 2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5 + C_3C_4C_5L_4L_5R_5g_m + C_3C_4C_5L_4L_5\right) + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_5 + C_3C_4C_5L_4R_5 + C_3C_4C_5L_5R_4R_5g_m + C_3C_4C_5L_5R_4 + 2\right.}$$

### 10.421 INVALID-ORDER-421 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_4R_5g_m - C_3L_3L_4R_4\right) + s\left(L_4R_4R_5g_m - L_4R_4\right)}{2R_4R_5g_m + 2R_4 + s^4\left(2C_3C_4L_3L_4R_4R_5g_m + 2C_3C_4L_3L_4R_4\right) + s^3\left(2C_3L_3L_4R_4g_m + 2C_3L_3L_4R_5g_m + 2C_3L_3L_4\right) + s^2\left(2C_3L_3R_4R_5g_m + 2C_3L_3R_4 + C_3L_4R_4R_5g_m + C_3L_4R_4 + 2C_4L_4R_4R_5g_m + 2C_4L_4R_4\right) + s\left(2L_4R_4g_m + 2L_4R_5g_m + 2L_4\right)}$$

### 10.422 INVALID-ORDER-422 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_4s^4 + C_3L_3L_4R_4g_m s^3 - C_5L_4R_4s^2 + L_4R_4g_m s}{2C_3C_4C_5L_3L_4R_4s^5 + 2R_4g_m + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_4g_m + 2C_3C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_4 + C_3C_5L_4R_4 + 2C_3L_3L_4g_m + 2C_4C_5L_4R_4\right) + s^2\left(2C_3L_3R_4g_m + C_3L_4R_4g_m + 2C_4L_4R_4g_m + 2C_5L_4R_4g_m + 2C_5L_4\right) + s\left(2C_5R_4 + 2L_4g_m\right)}$$

### 10.423 INVALID-ORDER-423 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_4R_5s^4 - C_5L_4R_4R_5s^2 + s^3\left(C_3L_3L_4R_4R_5g_m - C_3L_3L_4R_4\right) + s\left(L_4R_4R_5g_m - L_4R_4\right)}{2C_3C_4C_5L_3L_4R_4R_5s^5 + 2R_4R_5g_m + 2R_4 + s^4\left(2C_3C_4L_3L_4R_4R_5g_m + 2C_3C_4L_3L_4R_4 + 2C_3C_5L_3L_4R_4R_5g_m + 2C_3C_5L_3L_4R_5\right) + s^3\left(2C_3C_5L_3R_4R_5 + C_3C_5L_4R_4R_5 + 2C_3L_3L_4R_4g_m + 2C_3L_3L_4R_5g_m + 2C_3L_3L_4 + 2C_4C_5L_4R_4R_5\right) + s^2\left(2C_3L_3R_4R_5g_m + 2C_3L_3\right.}$$

### 10.424 INVALID-ORDER-424 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4R_4g_m s^3 + L_4R_4g_m s + s^4\left(C_3C_5L_3L_4R_4R_5g_m - C_3C_5L_3L_4R_4\right) + s^2\left(C_5L_4R_4R_5g_m - C_5L_4R_4\right)}{2R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_4R_5g_m + 2C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_4g_m + 2C_3C_5L_3L_4R_5g_m + 2C_3C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_4 + C_3C_5L_4R_4R_5g_m + C_3C_5L_4R_4 + 2C_3L_3L_4g_m + 2C_4C_5L_4R_4R_5g_m + 2C_4C_5L_4R_4\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3R_5 + C_3L_4R_4g_m + C_3L_4R_4 + 2C_4L_4R_4g_m + 2C_4L_4R_4R_5g_m + 2C_4L_4R_4 + 2C_4L_4R_5g_m + 2C_4L_4R_5 + 2C_5L_4R_5g_m + 2C_5L_4\right) + s\left(2L_4R_4g_m + 2L_4R_5g_m + 2L_4\right)}$$

### 10.425 INVALID-ORDER-425 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_4g_m s^5 - C_3C_5L_3L_4R_4s^4 - C_5L_4R_4s^2 + L_4R_4g_m s + s^3\left(C_3L_3L_4R_4g_m + C_5L_4L_5R_4g_m\right)}{2C_3C_4C_5L_3L_4L_5R_4g_m s^6 + 2R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_4 + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_4g_m + 2C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_4g_m + C_3C_5L_4L_5R_4g_m + 2C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_3C_5L_3R_4 + C_3C_5L_4R_4 + 2C_3L_3L_4g_m + 2C_4C_5L_4R_4\right.}$$

### 10.426 INVALID-ORDER-426 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_4s^5 + C_3L_3L_4L_5R_4g_m s^4 + L_4L_5R_4g_m s^2 - L_4R_4s + s^3\left(-C_3L_3L_4R_4 - C_5L_4L_5R_4\right)}{2C_3C_4C_5L_3L_4L_5R_4s^6 + 2R_4 + s^5\left(2C_3C_4L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_4 + 2C_3C_5L_3L_5R_4 + C_3C_5L_4L_5R_4 + 2C_3L_3L_4L_5g_m + 2C_4C_5L_4L_5R_4\right) + s^3\left(2C_3L_3L_4R_4g_m + 2C_3L_3L_4 + 2C_3L_3L_5R_4g_m + C_3L_4L_5R_4g_m + 2C_4\right.}$$

### 10.427 INVALID-ORDER-427 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_4g_m s^5 + L_4R_4g_m s + s^4\left(C_3C_5L_3L_4R_4R_5g_m - C_3C_5L_3L_4\right.}{2C_3C_4C_5L_3L_4L_5R_4g_m s^6 + 2R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_4R_5g_m + 2C_3C_4C_5L_3L_4R_4 + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_4g_m + 2C_3C_5L_3L_4R_5g_m + 2C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_4g_m + C_3C_5L_4L_5R_4g_m + 2C_4C_5L_4L_5R_4g_m\right) + s^3\left(2C_3C_5L_3\right.}$$

### 10.428 INVALID-ORDER-428 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_4R_5s^5 - L_4R_4R_5}{2C_3C_4C_5L_3L_4L_5R_4R_5s^6 + 2R_4R_5 + s^5\left(2C_3C_4L_3L_4L_5R_4R_5g_m + 2C_3C_4L_3L_4L_5R_4 + 2C_3C_5L_3L_4L_5R_4R_5g_m + 2C_3C_5L_3L_4L_5R_5\right) + s^4\left(2C_3C_4L_3L_4R_4R_5 + 2C_3C_5L_3L_5R_4R_5 + C_3C_5L_4L_5R_4R_5 + 2C_3L_3L_4L_5R_4g_m + 2C_3L_3L_4L_5R_5g_m + 2C_3L_3L_4L_5 + 2C_4C_5L_4\right.}$$

### 10.429 INVALID-ORDER-429 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4L_5R}{2R_4R_5g_m + 2R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_5g_m + 2C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_4R_5g_m + 2C_3C_4L_3L_4R_4 + 2C_3C_5L_3L_5R_4R_5g_m + 2C_3C_5L_3L_5R_4 + C_3C_5L_4L_5\right.}$$

**10.430 INVALID-ORDER-430** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{}{2R_4R_5g_m + 2R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_4R_5 + 2C_3C_5L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_5g_m + 2C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_4R_5g_m + 2C_3C_4L_3L_4R_4 + 2C_3C_5L_3L_4R_4R_5g_m + 2C_3C_5L_3L_4R_5 + 2C_3C_5L_3L\right.}$$

**10.431 INVALID-ORDER-431** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^4\left(C_3C_4L_3L_4R_4R_5g_m - C_3C_4L_3L_4R_4\right) + s^3\left(C_3L_3L_4R_5g_m - C_3L_3L_4\right) + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4 + C_4L_4R_4R_5g_m - C_4L_4R_4\right) + s\left(L_4R_5g_m - L_4\right)}{2R_4g_m + 2R_5g_m + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4\right) + s^3\left(C_3C_4L_4R_4R_5g_m + C_3C_4L_4R_4 + 2C_3L_3L_4g_m\right) + s^2\left(2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3 + C_3L_4R_5g_m + C_3L_4 + 2C_4L_4R_4g_m + 2C_4L_4R_5g_m + 2C_4L_4\right) + s\left(C_3R_4R_5g_m + C_3R_4 +\right.}$$

**10.432 INVALID-ORDER-432** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_4s^5 + R_4g_m + s^4\left(C_3C_4L_3L_4R_4g_m - C_3C_5L_3L_4\right) + s^3\left(-C_3C_5L_3R_4 + C_3L_3L_4g_m - C_4C_5L_4R_4\right) + s^2\left(C_3L_3R_4g_m + C_4L_4R_4g_m - C_5L_4\right) + s\left(-C_5R_4 + L_4g_m\right)}{2g_m + s^5\left(2C_3C_4C_5L_3L_4R_4g_m + 2C_3C_4C_5L_3L_4\right) + s^4\left(C_3C_4C_5L_4R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m\right) + s^3\left(C_3C_4L_4R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3 + C_3C_5L_4 + 2C_4C_5L_4R_4g_m + 2C_4C_5L_4\right) + s^2\left(C_3C_5R_4 + 2C_3L_3g_m + C_3L_4g_m + 2C_4L_4g_m + 2C_5L_4g_m\right) +}$$

**10.433 INVALID-ORDER-433** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_4R_5s^5 + R_4R_5g_m - R_4 + s^4\left(C_3C_4L_3L_4R_4R_5g_m - C_3C_4L_3L_4R_4 - C_3C_5L_3L_4R_5\right) + s^3\left(-C_3C_5L_3R_4R_5 + C_3L_3L_4R_5g_m - C_3L_3\right.}{2R_4g_m + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_4R_4R_5g_m + 2C_3C_4C_5L_3L_4R_5\right) + s^4\left(C_3C_4C_5L_4R_4R_5 + 2C_3C_4L_3L_4R_4g_m + 2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4 + 2C_3C_5L_3L_4R_5g_m\right) + s^3\left(C_3C_4L_4R_4R_5g_m + C_3C_4L_4R_4 + 2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_5 + C_3C_5L_4R_5 + 2C_3L_3\right.}$$

**10.434 INVALID-ORDER-434** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_4R_5g_m - C_3C_4C_5L_3L_4R_4\right) + s^4\left(C_3C_4L_3L_4R_4g_m + C_3C_5L_3L_4R_5g_m - C_3C_5L_3L_4\right) + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4 + C_3L_3L_4g_m + C_4C_5L_4R_4R_5g_m - C_4C_5L_4R_4\right.}{2g_m + s^5\left(2C_3C_4C_5L_3L_4R_4g_m + 2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_4\right) + s^4\left(C_3C_4C_5L_4R_4R_5g_m + C_3C_4C_5L_4R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m\right) + s^3\left(C_3C_4L_4R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + C_3C_5L_4R_5g_m + C_3C_5L_4 + 2C_4C_5L_4R_4g_m\right.}$$

**10.435 INVALID-ORDER-435** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_4g_ms^6 + R_4g_m + s^5\left(-C_3C_4C_5L_3L_4R_4 + C_3C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_4g_m - C_3C_5L_3L_4 + C_3C_5L_3L_5R_4g_m + C_4C_5L_4L_5R_4g_m\right) + s^3\left(-C_3C_5L_3R_4 + C_3L_3L_4g_m - C_4C_5L_4\right.}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_4R_4g_m + 2C_3C_4C_5L_3L_4 + C_3C_4C_5L_4L_5R_4g_m\right) + s^4\left(C_3C_4C_5L_4R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m + 2C_3C_5L_3L_5g_m + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_4R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3 + C_3C_5\right.}$$

**10.436 INVALID-ORDER-436** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_4s^6 - R_4 + s^5\left(C_3C_4L_3L_4L_5R_4g_m - C_3C_5L_3L_4L_5\right) + s^4\left(-C_3C_4L_3L_4R_4 - C_3C_5L_3L_5R_4 + C_3L_3L_4L_5g_m - C_4C_5L_4L_5R_4\right) + s^3}{2R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_4g_m + 2C_3C_4C_5L_3L_4L_5\right) + s^5\left(C_3C_4C_5L_4L_5R_4 + 2C_3C_4L_3L_4L_5g_m + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_4L_3L_4 + C_3C_4L_4L_5R_4g_m + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5 + C_3C_5L_4L_5 + 2C_4C_5L_4L_5R_4g_m + 2C_4C_5L_4L_5\right.}$$

**10.437 INVALID-ORDER-437** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_4g_ms^6 + R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_4R_5g_m - C_3C_4C_5L_3L_4R_4 + C_3C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_4g_m + C_3C_5L_3L_4R_5g_m - C_3C_5L_3L_4 + C_3C_5L_3L_5R_4g_m + C_4C_5L_4\right.}{2C_3C_4C_5L_3L_4L_5g_ms^6 + 2g_m + s^5\left(2C_3C_4C_5L_3L_4R_4g_m + 2C_3C_4C_5L_3L_4R_5g_m + 2C_3C_4C_5L_3L_4 + C_3C_4C_5L_4L_5R_4g_m\right) + s^4\left(C_3C_4C_5L_4R_4R_5g_m + C_3C_4C_5L_4R_4 + 2C_3C_4L_3L_4g_m + 2C_3C_5L_3L_4g_m + 2C_3C_5L_3L_5g_m + C_3C_5L_4L_5g_m + 2C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4\right.}$$

**10.438 INVALID-ORDER-438** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_4R_5s^6 - R_4R_5 + s^5\left(C_3C_4L_3L_4L_5R_4R_5g_m - C_3C_4L\right.}{2R_4R_5g_m + 2R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_5\right) + s^5\left(C_3C_4C_5L_4L_5R_4R_5 + 2C_3C_4L_3L_4L_5R_4g_m + 2C_3C_4L_3L_4L_5R_5g_m + 2C_3C_4L_3L_4L_5 + 2C_3C_5L_3L_4L_5R_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_4R_5g_m + 2C_3C_4L_3L_4R_5 + C_3C_4L_4L_5R_4R_5g_m + C_3C_4L_4\right.}$$

**10.439 INVALID-ORDER-439** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^6\left(C_3C_4C_5L_3L_4L_5R_4R_5g_m - C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(C_3C_4L_3L_4L_5R_4g_m + C_3C_5L_3L_4L_5R_5g_m - C_3C_5L_3L_4\right.}{2R_4g_m + 2R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_4g_m + 2C_3C_4C_5L_3L_4L_5R_5g_m + 2C_3C_4C_5L_3L_4L_5\right) + s^5\left(C_3C_4C_5L_4L_5R_4R_5g_m + C_3C_4C_5L_4L_5R_4 + 2C_3C_4L_3L_4L_5g_m + 2C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_4g_m + 2C_3C_4L_3L_4R_5g_m + 2C_3C_4L_3L_4 + C_3C_4L_4L_5R_4g_m +\right.}$$

**10.440 INVALID-ORDER-440** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5}{2R_4 g_m + 2R_5 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4 + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 C_5 L_4 R_4 R_5 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_4 L_3}$$

**10.441 INVALID-ORDER-441** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m - C_3 C_4 L_3 L_4 R_4\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4 + C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4\right)}{2R_4 g_m + 2R_5 g_m + s^4 \left(2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4\right) + s^3 \left(2C_3 C_4 L_3 R_4 R_5 g_m + 2C_3 C_4 L_3 R_4 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2 \left(2C_3 L_3 R_4 g_m + 2C_3 L_3 R_5 g_m + 2C_3 L_3 + 2C_4 L_4 R_4 g_m + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s\left(C_3 R_4 R_5 g_m + C_3 R_4 + 2}$$

**10.442 INVALID-ORDER-442** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 s^5 + C_3 C_4 L_3 L_4 R_4 g_m s^4 - C_5 R_4 s + R_4 g_m + s^3 \left(-C_3 C_5 L_3 R_4 - C_4 C_5 L_4 R_4\right) + s^2 \left(C_3 L_3 R_4 g_m + C_4 L_4 R_4 g_m\right)}{2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_3 R_4 g_m + 2C_3 C_5 L_3 + 2C_4 C_5 L_4 R_4 g_m + 2C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_4 + 2C_3 L_3 g_m + 2C_4 C_5 R_4 + 2C_4 L_4 g_m\right) + s\left(C}$$

**10.443 INVALID-ORDER-443** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 - C_5 R_4 R_5 s + R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m - C_3 C_4 L_3 L_4 R_4\right) + s^3 \left(-C_3 C}{2R_4 g_m + 2R_5 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 R_5\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 + C_3 C_4 C_5 L_4 R_4 R_5 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4\right) + s^3 \left(2C_3 C_4 L_3 R_4 R_5 g_m + 2C_3 C_4 L_3 R_4 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + 2C_3 C_5 L_3 R_4 R_5 g_m +}$$

**10.444 INVALID-ORDER-444** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 L_3 L_4 R_4 g_m s^4 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 R_4\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m - C_3 C_5 L_3 R_4 + C_4 C_5 L_4 R_4 R_5 g_m - C_4}{2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_3 R_4 g_m + 2C_3 C_5 L_3 R_5 g_m + 2C_3 C_5 L_3 +}$$

**10.445 INVALID-ORDER-445** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 - C_3 C_4 C_5 L_3 L_4 R_4 s^5 - C_5 R_4 s + R_4 g_m + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_5 R_4 g_m + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(-C_3 C}{2C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 + 2C_3 C_4 C_5 L_3 L_5 R_4 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_4 g_m + 2C_3 C_5 L_3 R}$$

**10.446 INVALID-ORDER-446** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 + C_3 C_4 L_3 L_4 L_5 R_4 g_m s^5 + L_5 R_4 g_m s - R_4 + s^4 \left(-C_3 C_4 L_3 L_4 R_4 - C_3 C_5 L_3 L_5 R_4 - C_4}{2R_4 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 + C_3 C_4 C_5 L_4 L_5 R_4 + 2C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_4 L_3 L_4 + 2C_3 C_4 L_3 L_5 R_4 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_5 R_4 g_m + 2C_3 C_5 L_3 L_5 + 2C_4 C_5 L_4 L_5 R_4 g_m + 2C_4}$$

**10.447 INVALID-ORDER-447** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 R_4\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_}{2C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 + 2C_3 C_4 C_5 L_3 L_5 R_4 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_5 g_m}$$

**10.448 INVALID-ORDER-448** $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2 + 1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_4 R}{2R_4 R_5 g_m + 2R_5 + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 + 2C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2C_3 C_4 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 L_3 L_4 L_5\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 L_3 L_4 R_5 + 2C_3 C_4 L_3 L_5 R_4 R_5 g_m + 2C_3 C_4}$$

### 10.449 INVALID-ORDER-449 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 L_3 L_4 L_5 R_4 g_m s^5 + L_5 R_4 g_m s}{2R_4 g_m + 2R_5 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_5 R_4 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4 + 2C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L\right.}$$

### 10.450 INVALID-ORDER-450 $Z(s) = \left(\infty,\ \infty,\ L_3 s + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 g_m + 2R_5 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 R_5 + 2C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_5 R_4 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4\right) + s^4 \left(2C_3 C_4 C_5 L_3 R_4 R_5 + C\right.}$$

### 10.451 INVALID-ORDER-451 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 s^2 + L_3 R_4 g_m s}{C_3 C_5 L_3 R_4 s^3 + R_4 g_m + s^2 \left(C_3 L_3 R_4 g_m + 2C_5 L_3 R_4 g_m + 2C_5 L_3\right) + s\left(C_5 R_4 + 2L_3 g_m\right)}$$

### 10.452 INVALID-ORDER-452 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 R_5 s^2 + s\left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{C_3 C_5 L_3 R_4 R_5 s^3 + R_4 R_5 g_m + R_4 + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2C_5 L_3 R_4 R_5 g_m + 2C_5 L_3 R_5\right) + s\left(C_5 R_4 R_5 + 2L_3 R_4 g_m + 2L_3 R_5 g_m + 2L_3\right)}$$

### 10.453 INVALID-ORDER-453 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 R_4 g_m s + s^2 \left(C_5 L_3 R_4 R_5 g_m - C_5 L_3 R_4\right)}{R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4\right) + s^2 \left(C_3 L_3 R_4 g_m + 2C_5 L_3 R_4 g_m + 2C_5 L_3 R_5 g_m + 2C_5 L_3\right) + s\left(C_5 R_4 R_5 g_m + C_5 R_4 + 2L_3 g_m\right)}$$

### 10.454 INVALID-ORDER-454 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 R_4 g_m s^3 - C_5 L_3 R_4 s^2 + L_3 R_4 g_m s}{C_3 C_5 L_3 L_5 R_4 g_m s^4 + R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 + 2C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_4 g_m + 2C_5 L_3 R_4 g_m + 2C_5 L_3 + C_5 L_5 R_4 g_m\right) + s\left(C_5 R_4 + 2L_3 g_m\right)}$$

### 10.455 INVALID-ORDER-455 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 R_4 s^3 + L_3 L_5 R_4 g_m s^2 - L_3 R_4 s}{C_3 C_5 L_3 L_5 R_4 s^4 + R_4 + s^3 \left(C_3 L_3 L_5 R_4 g_m + 2C_5 L_3 L_5 R_4 g_m + 2C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 + C_5 L_5 R_4 + 2L_3 L_5 g_m\right) + s\left(2L_3 R_4 g_m + 2L_3 + L_5 R_4 g_m\right)}$$

### 10.456 INVALID-ORDER-456 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 R_4 g_m s^3 + L_3 R_4 g_m s + s^2 \left(C_5 L_3 R_4 R_5 g_m - C_5 L_3 R_4\right)}{C_3 C_5 L_3 L_5 R_4 g_m s^4 + R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4 + 2C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_4 g_m + 2C_5 L_3 R_4 g_m + 2C_5 L_3 R_5 g_m + 2C_5 L_3 + C_5 L_5 R_4 g_m\right) + s\left(C_5 R_4 R_5 g_m + C_5 R_4 + 2L_3 g_m\right)}$$

### 10.457 INVALID-ORDER-457 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 R_4 R_5 s^3 - L_3 R_4 R_5 s + s^2 \left(L_3 L_5 R_4 R_5 g_m - L_3 L_5 R_4\right)}{C_3 C_5 L_3 L_5 R_4 R_5 s^4 + R_4 R_5 + s^3 \left(C_3 L_3 L_5 R_4 R_5 g_m + C_3 L_3 L_5 R_4 + 2C_5 L_3 L_5 R_4 R_5 g_m + 2C_5 L_3 L_5 R_5\right) + s^2 \left(C_3 L_3 R_4 R_5 + C_5 L_5 R_4 R_5 + 2L_3 L_5 R_4 g_m + 2L_3 L_5 R_5 g_m + 2L_3 L_5\right) + s\left(2L_3 R_4 R_5 g_m + 2L_3 R_5 + L_5 R_4 R_5 g_m + L_5 R_4\right)}$$

### 10.458 INVALID-ORDER-458 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3 L_5 R_4 g_m s^2 + s^3 \left(C_5 L_3 L_5 R_4 R_5 g_m - C_5 L_3 L_5 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_5 g_m + 2 C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4 + 2 L_3 L_5 g_m\right) + s \left(2 L_3 R_4 g_m + 2 L_3 R_5 g_m + 2 L_3 + L_5 R_4 g_m\right)}$$

### 10.459 INVALID-ORDER-459 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 R_5 s^2 + s^3 \left(C_5 L_3 L_5 R_4 R_5 g_m - C_5 L_3 L_5 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 + 2 C_5 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_5 g_m + 2 C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_5 L_3 R_4 R_5 g_m + 2 C_5 L_3 R_5 + C_5 L_5 R_4 R_5 g_m + C_5 L_5 R_4\right) + s \left(C_5 R_4 R_5 + 2 L_3 R_4 g_m + 2 L_3 R_5 g_m + 2 L_3\right)}$$

### 10.460 INVALID-ORDER-460 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 s^2 + L_3 g_m s}{C_5 s + g_m + s^3 \left(C_3 C_5 L_3 + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m\right)}$$

### 10.461 INVALID-ORDER-461 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_5 s^2 + s \left(L_3 R_5 g_m - L_3\right)}{R_5 g_m + s^3 \left(C_3 C_5 L_3 R_5 + 2 C_4 C_5 L_3 R_5\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + 2 C_4 L_3 R_5 g_m + 2 C_4 L_3 + 2 C_5 L_3 R_5 g_m\right) + s \left(C_5 R_5 + 2 L_3 g_m\right) + 1}$$

### 10.462 INVALID-ORDER-462 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 g_m s + s^2 \left(C_5 L_3 R_5 g_m - C_5 L_3\right)}{g_m + s^3 \left(C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m\right) + s \left(C_5 R_5 g_m + C_5\right)}$$

### 10.463 INVALID-ORDER-463 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 g_m s^3 - C_5 L_3 s^2 + L_3 g_m s}{C_5 s + g_m + s^4 \left(C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_5 L_3 + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m + C_5 L_5 g_m\right)}$$

### 10.464 INVALID-ORDER-464 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 s^3 + L_3 L_5 g_m s^2 - L_3 s}{s^4 \left(C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_5\right) + s^3 \left(C_3 L_3 L_5 g_m + 2 C_4 L_3 L_5 g_m + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 + 2 C_4 L_3 + C_5 L_5\right) + s \left(2 L_3 g_m + L_5 g_m\right) + 1}$$

### 10.465 INVALID-ORDER-465 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 g_m s^3 + L_3 g_m s + s^2 \left(C_5 L_3 R_5 g_m - C_5 L_3\right)}{g_m + s^4 \left(C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m + C_5 L_5 g_m\right) + s \left(C_5 R_5 g_m + C_5\right)}$$

### 10.466 INVALID-ORDER-466 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 R_5 s^3 - L_3 R_5 s + s^2 \left(L_3 L_5 R_5 g_m - L_3 L_5\right)}{R_5 + s^4 \left(C_3 C_5 L_3 L_5 R_5 + 2 C_4 C_5 L_3 L_5 R_5\right) + s^3 \left(C_3 L_3 L_5 R_5 g_m + C_3 L_3 L_5 + 2 C_4 L_3 L_5 R_5 g_m + 2 C_4 L_3 L_5 + 2 C_5 L_3 L_5 R_5 g_m\right) + s^2 \left(C_3 L_3 R_5 + 2 C_4 L_3 R_5 + C_5 L_5 R_5 + 2 L_3 L_5 g_m\right) + s \left(2 L_3 R_5 g_m + L_5 R_5 g_m + L_5\right)}$$

### 10.467 INVALID-ORDER-467 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3 L_5 g_m s^2 + s^3 \left(C_5 L_3 L_5 R_5 g_m - C_5 L_3 L_5\right) + s \left(L_3 R_5 g_m - L_3\right)}{R_5 g_m + s^4 \left(C_3 C_5 L_3 L_5 R_5 g_m + C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_5\right) + s^3 \left(C_3 L_3 L_5 g_m + 2 C_4 L_3 L_5 g_m + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + 2 C_4 L_3 R_5 g_m + 2 C_4 L_3 + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(2 L_3 g_m + L_5 g_m\right) + 1}$$

### 10.468 INVALID-ORDER-468 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_5 s^2 + s^3 \left(C_5 L_3 L_5 R_5 g_m - C_5 L_3 L_5\right) + s \left(L_3 R_5 g_m - L_3\right)}{R_5 g_m + s^4 \left(C_3 C_5 L_3 L_5 R_5 g_m + C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_5\right) + s^3 \left(C_3 C_5 L_3 R_5 + 2 C_4 C_5 L_3 R_5 + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + 2 C_4 L_3 R_5 g_m + 2 C_4 L_3 + 2 C_5 L_3 R_5 g_m + C_5 L_5 R_5 g_m + C_5 L_5\right) + s \left(C_5 R_5 + 2 L_3 g_m\right) + 1}$$

### 10.469 INVALID-ORDER-469 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 s^2 + L_3 R_4 g_m s}{R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4\right) + s^2 \left(C_3 L_3 R_4 g_m + 2 C_4 L_3 R_4 g_m + 2 C_5 L_3 R_4 g_m + 2 C_5 L_3\right) + s \left(C_5 R_4 + 2 L_3 g_m\right)}$$

### 10.470 INVALID-ORDER-470 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 R_5 s^2 + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^3 \left(C_3 C_5 L_3 R_4 R_5 + 2 C_4 C_5 L_3 R_4 R_5\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_4 L_3 R_4 R_5 g_m + 2 C_4 L_3 R_4 + 2 C_5 L_3 R_4 R_5 g_m + 2 C_5 L_3 R_5\right) + s \left(C_5 R_4 R_5 + 2 L_3 R_4 g_m + 2 L_3 R_5 g_m + 2 L_3\right)}$$

### 10.471 INVALID-ORDER-471 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 R_4 g_m s + s^2 \left(C_5 L_3 R_4 R_5 g_m - C_5 L_3 R_4\right)}{R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_4 C_5 L_3 R_4\right) + s^2 \left(C_3 L_3 R_4 g_m + 2 C_4 L_3 R_4 g_m + 2 C_5 L_3 R_4 g_m + 2 C_5 L_3 R_5 g_m + 2 C_5 L_3\right) + s \left(C_5 R_4 R_5 g_m + C_5 R_4 + 2 L_3 g_m\right)}$$

### 10.472 INVALID-ORDER-472 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 R_4 g_m s^3 - C_5 L_3 R_4 s^2 + L_3 R_4 g_m s}{R_4 g_m + s^4 \left(C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_5 R_4 g_m\right) + s^3 \left(C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_4 g_m + 2 C_4 L_3 R_4 g_m + 2 C_5 L_3 R_4 g_m + 2 C_5 L_3 + C_5 L_5 R_4 g_m\right) + s \left(C_5 R_4 + 2 L_3 g_m\right)}$$

### 10.473 INVALID-ORDER-473 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 R_4 s^3 + L_3 L_5 R_4 g_m s^2 - L_3 R_4 s}{R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 L_3 L_5 R_4 g_m + 2 C_4 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 + 2 C_4 L_3 R_4 + C_5 L_5 R_4 + 2 L_3 L_5 g_m\right) + s \left(2 L_3 R_4 g_m + 2 L_3 + L_5 R_4 g_m\right)}$$

### 10.474 INVALID-ORDER-474 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_5 R_4 g_m s^3 + L_3 R_4 g_m s + s^2 \left(C_5 L_3 R_4 R_5 g_m - C_5 L_3 R_4\right)}{R_4 g_m + s^4 \left(C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_5 R_4 g_m\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_4 C_5 L_3 R_4 + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 R_4 g_m + 2 C_4 L_3 R_4 g_m + 2 C_5 L_3 R_4 g_m + 2 C_5 L_3 R_5 g_m + 2 C_5 L_3 + C_5 L_5 R_4 g_m\right) + s \left(C_5 R_4 R_5 g_m + C_5 R_4 + 2 L_3 g_m\right)}$$

### 10.475 INVALID-ORDER-475 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_5 R_4 R_5 s^3 - L_3 R_4 R_5 s + s^2 \left(L_3 L_5 R_4 R_5 g_m - L_3 L_5 R_4\right)}{R_4 R_5 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 + 2 C_4 C_5 L_3 L_5 R_4 R_5\right) + s^3 \left(C_3 L_3 L_5 R_4 R_5 g_m + C_3 L_3 L_5 R_4 + 2 C_4 L_3 L_5 R_4 R_5 g_m + 2 C_4 L_3 L_5 R_4 + 2 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_5 L_3 L_5 R_5\right) + s^2 \left(C_3 L_3 R_4 R_5 + 2 C_4 L_3 R_4 R_5 + C_5 L_5 R_4 R_5 + 2 L_3 L_5 R_4 g_m + 2 L_3 L_5 R_5 g_m + 2 L_3 L_5\right) + s \left(2 L_3 R_4 R_5 g_m\right.$$

**10.476 INVALID-ORDER-476** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3 L_5 R_4 g_m s^2 + s^3 \left(C_5 L_3 L_5 R_4 R_5 g_m - C_5 L_3 L_5 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_4 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 L_3 L_5 R_4 g_m + 2 C_4 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_5 g_m + 2 C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_4 L_3 R_4 R_5 g_m + 2 C_4 L_3 R_4 + C_5 L_5 R_4 R_5 g_m\right.$$

**10.477 INVALID-ORDER-477** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 R_4 R_5 s^2 + s^3 \left(C_5 L_3 L_5 R_4 R_5 g_m - C_5 L_3 L_5 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_4 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 + 2 C_4 C_5 L_3 R_4 R_5 + 2 C_5 L_3 L_5 R_4 g_m + 2 C_5 L_3 L_5 R_5 g_m + 2 C_5 L_3 L_5\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_4 L_3 R_4 R_5 g_m + 2 C_4 L_3 R_4 + 2 C_5 L_3 R_4 R_5 g_m\right.$$

**10.478 INVALID-ORDER-478** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^2 \left(C_4 L_3 R_4 R_5 g_m - C_4 L_3 R_4\right) + s \left(L_3 R_5 g_m - L_3\right)}{R_5 g_m + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m + C_3 C_4 L_3 R_4\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + 2 C_4 L_3 R_4 g_m + 2 C_4 L_3 R_5 g_m + 2 C_4 L_3\right) + s \left(C_4 R_4 R_5 g_m + C_4 R_4 + 2 L_3 g_m\right) + 1}$$

**10.479 INVALID-ORDER-479** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 R_4 s^3 + L_3 g_m s + s^2 \left(C_4 L_3 R_4 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 R_4 s^4 + g_m + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_4 g_m + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m\right) + s \left(C_4 R_4 g_m + C_5\right)}$$

**10.480 INVALID-ORDER-480** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 R_4 R_5 s^3 + s^2 \left(C_4 L_3 R_4 R_5 g_m - C_4 L_3 R_4 - C_5 L_3 R_5\right) + s \left(L_3 R_5 g_m - L_3\right)}{C_3 C_4 C_5 L_3 R_4 R_5 s^4 + R_5 g_m + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m + C_3 C_4 L_3 R_4 + C_3 C_5 L_3 R_5 + 2 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_4 C_5 L_3 R_5\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + C_4 C_5 R_4 R_5 + 2 C_4 L_3 R_4 g_m + 2 C_4 L_3 R_5 g_m + 2 C_4 L_3 + 2 C_5 L_3 R_5 g_m\right) + s \left(C_4 R_4 R_5 g_m + C_4 R_4 + C_5 R_5 + 2 L_3 g_m\right) + 1}$$

**10.481 INVALID-ORDER-481** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 g_m s + s^3 \left(C_4 C_5 L_3 R_4 R_5 g_m - C_4 C_5 L_3 R_4\right) + s^2 \left(C_4 L_3 R_4 g_m + C_5 L_3 R_5 g_m - C_5 L_3\right)}{g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m + C_3 C_4 C_5 L_3 R_4\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_4 g_m + 2 C_4 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_3\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4 + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m\right) + s \left(C_4 R_4 g_m + C_5 R_5 g_m + C_5\right)}$$

**10.482 INVALID-ORDER-482** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_5 R_4 g_m s^4 + L_3 g_m s + s^3 \left(-C_4 C_5 L_3 R_4 + C_5 L_3 L_5 g_m\right) + s^2 \left(C_4 L_3 R_4 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 + C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_4 g_m + 2 C_4 C_5 L_3 + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 + 2 C_4 L_3 g_m + 2 C_5 L_3 g_m + C_5 L_5 g_m\right) + s \left(C_4 R_4 g_m + C_5\right)}$$

**10.483 INVALID-ORDER-483** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_5 R_4 s^4 - L_3 s + s^3 \left(C_4 L_3 L_5 R_4 g_m - C_5 L_3 L_5\right) + s^2 \left(-C_4 L_3 R_4 + L_3 L_5 g_m\right)}{C_3 C_4 C_5 L_3 L_5 R_4 s^5 + s^4 \left(C_3 C_4 L_3 L_5 R_4 g_m + C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_5\right) + s^3 \left(C_3 C_4 L_3 R_4 + C_3 L_3 L_5 g_m + C_4 C_5 L_5 R_4 + 2 C_4 L_3 L_5 g_m + 2 C_5 L_3 L_5 g_m\right) + s^2 \left(C_3 L_3 + 2 C_4 L_3 R_4 g_m + 2 C_4 L_3 + C_4 L_5 R_4 g_m + C_5 L_5\right) + s \left(C_4 R_4 + 2 L_3 g_m + L_5 g_m\right) + 1}$$

**10.484 INVALID-ORDER-484** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_5 R_4 g_m s^4 + L_3 g_m s + s^3 \left(C_4 C_5 L_3 R_4 R_5 g_m - C_4 C_5 L_3 R_4 + C_5 L_3 L_5 g_m\right) + s^2 \left(C_4 L_3 R_4 g_m + C_5 L_3 R_5 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m + C_3 C_4 C_5 L_3 R_4 + C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_4 g_m + 2 C_4 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_3 + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 R_5 g_m + C_4 C_5 R_4 +\right.$$

### 10.485 INVALID-ORDER-485 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_5R_4R_5s^4 - L_3R_5s + s^3\left(C_4L_3L_5R_4R_5g_m - C_4L_3L_5R_4 - C_5L_3L_5R_5\right) + s^2\left(-C_4L_3R_4R_5 + L_3L_5R_5g_m - L_3L_5\right)}{C_3C_4C_5L_3L_5R_4R_5s^5 + R_5 + s^4\left(C_3C_4L_3L_5R_4R_5g_m + C_3C_4L_3L_5R_4 + C_3C_5L_3L_5R_5 + 2C_4C_5L_3L_5R_4R_5g_m + 2C_4C_5L_3L_5R_5\right) + s^3\left(C_3C_4L_3R_4R_5 + C_3L_3L_5R_5g_m + C_3L_3L_5 + C_4C_5L_5R_4R_5 + 2C_4L_3L_5R_4g_m + 2C_4L_3L_5R_5g_m + 2C_4L_3L_5 + 2C_5L_3L_5R_5g_m\right) + s^2}$$

### 10.486 INVALID-ORDER-486 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_4C_5L_3L_5R_4R_5g_m - C_4C_5L_3L_5R_4\right) + s^3\left(C_4L_3L_5R_4g_m + C_5L_3L_5R_5g_m - C_5L_3L_5\right) + s^2\left(C_4L_3R_4R_5g_m - C_4L_3R_4 + }{R_5g_m + s^5\left(C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(C_3C_4L_3L_5R_4g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5R_5g_m + 2C_4C_5L_3L_5\right) + s^3\left(C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + C_3L_3L_5g_m + C_4C_5L_5R_4R_5g_m + C_4C_5L_5R_4 + 2C_4L_3L_5}$$

### 10.487 INVALID-ORDER-487 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_4C_5L_3L_5R_4R_5g_m - C_4C_5L_3L_5R_4\right) + s^3\left(-C_4C_5L_3R_4R_5 + C_5L_3L_5R_5g_m - C_5L_3L_5\right) + s^2\left(C_4L_3R_4R\right.}{R_5g_m + s^5\left(C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(C_3C_4C_5L_3R_4R_5 + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5R_5g_m + 2C_4C_5L_3L_5\right) + s^3\left(C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + C_3C_5L_3R_5 + 2C_4C_5L_3R_4R_5g_m + 2C_4C_5L_3R_5 + C_4C_5L_5\right.}$$

### 10.488 INVALID-ORDER-488 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_4L_3L_4R_5g_m - C_4L_3L_4\right) + s\left(L_3R_5g_m - L_3\right)}{2C_4L_3L_4g_ms^3 + 2L_3g_ms + R_5g_m + s^4\left(C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^2\left(C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_5g_m + 2C_4L_3 + C_4L_4R_5g_m + C_4L_4\right) + 1}$$

### 10.489 INVALID-ORDER-489 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4s^4 + C_4L_3L_4g_ms^3 - C_5L_3s^2 + L_3g_ms}{C_3C_4C_5L_3L_4s^5 + C_5s + g_m + s^4\left(C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(C_3C_5L_3 + 2C_4C_5L_3 + C_4C_5L_4\right) + s^2\left(C_3L_3g_m + 2C_4L_3g_m + C_4L_4g_m + 2C_5L_3g_m\right)}$$

### 10.490 INVALID-ORDER-490 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_5s^4 - C_5L_3R_5s^2 + s^3\left(C_4L_3L_4R_5g_m - C_4L_3L_4\right) + s\left(L_3R_5g_m - L_3\right)}{C_3C_4C_5L_3L_4R_5s^5 + R_5g_m + s^4\left(C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + 2C_4C_5L_3L_4R_5g_m\right) + s^3\left(C_3C_5L_3R_5 + 2C_4C_5L_3R_5 + C_4C_5L_4R_5 + 2C_4L_3L_4g_m\right) + s^2\left(C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_5g_m + 2C_4L_3 + C_4L_4R_5g_m + C_4L_4 + 2C_5L_3R_5g_m\right) + s\left(C_5R_5 + 2L_3g_m\right) + 1}$$

### 10.491 INVALID-ORDER-491 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4L_3L_4g_ms^3 + L_3g_ms + s^4\left(C_4C_5L_3L_4R_5g_m - C_4C_5L_3L_4\right) + s^2\left(C_5L_3R_5g_m - C_5L_3\right)}{g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4\right) + s^4\left(C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5L_3R_5g_m + 2C_4C_5L_3 + C_4C_5L_4R_5g_m + C_4C_5L_4\right) + s^2\left(C_3L_3g_m + 2C_4L_3g_m + C_4L_4g_m + 2C_5L_3g_m\right) + s\left(C_5R_5g_m + C_5\right)}$$

### 10.492 INVALID-ORDER-492 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5g_ms^5 - C_4C_5L_3L_4s^4 - C_5L_3s^2 + L_3g_ms + s^3\left(C_4L_3L_4g_m + C_5L_3L_5g_m\right)}{C_3C_4C_5L_3L_4L_5g_ms^6 + C_3C_4C_5L_3L_4s^5 + C_5s + g_m + s^4\left(C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_4g_m + 2C_4C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_5L_3 + 2C_4C_5L_3 + C_4C_5L_4\right) + s^2\left(C_3L_3g_m + 2C_4L_3g_m + C_4L_4g_m + 2C_5L_3g_m + C_5L_5g_m\right)}$$

### 10.493 INVALID-ORDER-493 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5s^5 + C_4L_3L_4L_5g_ms^4 + L_3L_5g_ms^2 - L_3s + s^3\left(-C_4L_3L_4 - C_5L_3L_5\right)}{C_3C_4C_5L_3L_4L_5s^6 + s^5\left(C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4 + C_3C_5L_3L_5 + 2C_4C_5L_3L_5 + C_4C_5L_4L_5\right) + s^3\left(C_3L_3L_5g_m + 2C_4L_3L_4g_m + 2C_4L_3L_5g_m + C_4L_4L_5g_m + 2C_5L_3L_5g_m\right) + s^2\left(C_3L_3 + 2C_4L_3 + C_4L_4 + C_5L_5\right) + s\left(2L_3g_m + L_5g_m\right) + 1}$$

**10.494 INVALID-ORDER-494** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 g_m s^5 + L_3 g_m s + s^4 \left(C_4 C_5 L_3 L_4 R_5 g_m - C_4 C_5 L_3 L_4\right) + s^3 \left(C_4 L_3 L_4 g_m + C_5 L_3 L_5 g_m\right) + s^2 \left(C_5 L_3 R_5 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_3 L_4 g_m + 2 C_4 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2 C_4 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_3 + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4\right) + s^2 \left(C_3 L_3 g_m\right.$$

**10.495 INVALID-ORDER-495** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 L_5 R_5 s^5 - L_3 R_5 s + s^4 \left(C_4 L_3 L_4 L_5 R_5 g_m - C_4 L_3 L_4 L_5\right) + s^3 \left(-C_4 L_3 L_4 R_5 - C_5 L_3 L_5 R_5\right) + s^2 \left(L_3 L_5 R_5 g_m - L_3 L_5\right.$$

$$C_3 C_4 C_5 L_3 L_4 L_5 R_5 s^6 + R_5 + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_5 g_m + C_3 C_4 L_3 L_4 L_5 + 2 C_4 C_5 L_3 L_4 L_5 R_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_5 + C_3 C_5 L_3 L_5 R_5 + 2 C_4 C_5 L_3 L_5 R_5 + C_4 C_5 L_4 L_5 R_5 + 2 C_4 L_3 L_4 L_5 g_m\right) + s^3 \left(C_3 L_3 L_5 R_5 g_m + C_3 L_3 L_5 + 2 C_4 L_3 L_4 R_5 g_m + 2 C_4 L_3 L_5 R_5 g_m + 2 C_4 L_3 L_5 + (\right.$$

**10.496 INVALID-ORDER-496** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{C_4 L_3 L_4 L_5 g_m s^4 + L_3 L_5 g_m s^2 + s^5 \left(C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_4 C_5 L_3 L_4 L_5\right) + s^3 \left(C_4 L_3 L_4 R_5 g_m - C_4 L_3 L_4 + C_5 L_3 L_5 R_5 g_m -\right.$$

$$R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(C_3 C_4 L_3 L_4 L_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m + C_3 C_4 L_3 L_4 + C_3 C_5 L_3 L_5 R_5 g_m + C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_5 + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 \left(C_3 L_3 L_5 g_m + 2 C_4 L_3 \right.$$

**10.497 INVALID-ORDER-497** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_5 s^4 - C_5 L_3 R_5 s^2 + s^5 \left(C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_4 C_5 L_3 L_4 L_5\right) + s^3 \left(C_4 L_3 L_4 R_5 g_m - C_4 L_3 L_4\right.$$

$$R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m + C_3 C_4 L_3 L_4 + C_3 C_5 L_3 L_5 R_5 g_m + C_3 C_5 L_3 L_5 + 2 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_5 + C_4 C_5 L_4 L_5 R_5 g_m + C_4 C_5 L_4 L_5\right) + s^3 (\right.$$

**10.498 INVALID-ORDER-498** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 s^2 + L_3 L_4 g_m s}{2 L_3 g_m + L_4 g_m + s^3 \left(C_3 C_5 L_3 L_4 + 2 C_4 C_5 L_3 L_4\right) + s^2 \left(C_3 L_3 L_4 g_m + 2 C_4 L_3 L_4 g_m + 2 C_5 L_3 L_4 g_m\right) + s \left(2 C_5 L_3 + C_5 L_4\right)}$$

**10.499 INVALID-ORDER-499** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 R_5 s^2 + s \left(L_3 L_4 R_5 g_m - L_3 L_4\right)}{2 L_3 R_5 g_m + 2 L_3 + L_4 R_5 g_m + L_4 + s^3 \left(C_3 C_5 L_3 L_4 R_5 + 2 C_4 C_5 L_3 L_4 R_5\right) + s^2 \left(C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + 2 C_4 L_3 L_4 R_5 g_m + 2 C_4 L_3 L_4 + 2 C_5 L_3 L_4 R_5 g_m\right) + s \left(2 C_5 L_3 R_5 + C_5 L_4 R_5 + 2 L_3 L_4 g_m\right)}$$

**10.500 INVALID-ORDER-500** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 L_4 g_m s + s^2 \left(C_5 L_3 L_4 R_5 g_m - C_5 L_3 L_4\right)}{2 L_3 g_m + L_4 g_m + s^3 \left(C_3 C_5 L_3 L_4 R_5 g_m + C_3 C_5 L_3 L_4 + 2 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_4 C_5 L_3 L_4\right) + s^2 \left(C_3 L_3 L_4 g_m + 2 C_4 L_3 L_4 g_m + 2 C_5 L_3 L_4 g_m\right) + s \left(2 C_5 L_3 R_5 g_m + 2 C_5 L_3 + C_5 L_4 R_5 g_m + C_5 L_4\right)}$$

**10.501 INVALID-ORDER-501** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_4 L_5 g_m s^3 - C_5 L_3 L_4 s^2 + L_3 L_4 g_m s}{2 L_3 g_m + L_4 g_m + s^4 \left(C_3 C_5 L_3 L_4 L_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^3 \left(C_3 C_5 L_3 L_4 + 2 C_4 C_5 L_3 L_4\right) + s^2 \left(C_3 L_3 L_4 g_m + 2 C_4 L_3 L_4 g_m + 2 C_5 L_3 L_4 g_m + 2 C_5 L_3 L_5 g_m + C_5 L_4 L_5 g_m\right) + s \left(2 C_5 L_3 + C_5 L_4\right)}$$

**10.502 INVALID-ORDER-502** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 L_5 s^3 + L_3 L_4 L_5 g_m s^2 - L_3 L_4 s}{2 L_3 + L_4 + s^4 \left(C_3 C_5 L_3 L_4 L_5 + 2 C_4 C_5 L_3 L_4 L_5\right) + s^3 \left(C_3 L_3 L_4 L_5 g_m + 2 C_4 L_3 L_4 L_5 g_m + 2 C_5 L_3 L_4 L_5 g_m\right) + s^2 \left(C_3 L_3 L_4 + 2 C_4 L_3 L_4 + 2 C_5 L_3 L_5 + C_5 L_4 L_5\right) + s \left(2 L_3 L_4 g_m + 2 L_3 L_5 g_m + L_4 L_5 g_m\right)}$$

### 10.503 INVALID-ORDER-503 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_4 L_5 g_m s^3 + L_3 L_4 g_m s + s^2 \left(C_5 L_3 L_4 R_5 g_m - C_5 L_3 L_4\right)}{2L_3 g_m + L_4 g_m + s^4 \left(C_3 C_5 L_3 L_4 L_5 g_m + 2C_4 C_5 L_3 L_4 L_5 g_m\right) + s^3 \left(C_3 C_5 L_3 L_4 R_5 g_m + C_3 C_5 L_3 L_4 + 2C_4 C_5 L_3 L_4 R_5 g_m + 2C_4 C_5 L_3 L_4\right) + s^2 \left(C_3 L_3 L_4 g_m + 2C_4 L_3 L_4 g_m + 2C_5 L_3 L_4 g_m + 2C_5 L_3 L_5 g_m + C_5 L_4 L_5 g_m\right) + s \left(2C_5 L_3 R_5 g_m + 2C_5 L_3 + C_5 L_4 R_5 g_m + C_5 L_4\right)}$$

### 10.504 INVALID-ORDER-504 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 L_5 R_5 s^3 - L_3 L_4 R_5 s + s^2 \left(L_3 L_4 L_5 R_5 g_m - L_3 L_4 L_5\right)}{2L_3 R_5 + L_4 R_5 + s^4 \left(C_3 C_5 L_3 L_4 L_5 R_5 + 2C_4 C_5 L_3 L_4 L_5 R_5\right) + s^3 \left(C_3 L_3 L_4 L_5 R_5 g_m + C_3 L_3 L_4 L_5 + 2C_4 L_3 L_4 L_5 R_5 g_m + 2C_4 L_3 L_4 L_5 + 2C_5 L_3 L_4 L_5 R_5 g_m\right) + s^2 \left(C_3 L_3 L_4 R_5 + 2C_4 L_3 L_4 R_5 + 2C_5 L_3 L_5 R_5 + C_5 L_4 L_5 R_5 + 2L_3 L_4 L_5 g_m\right) + s \left(2L_3 L_4 R_5 g_m + 2L_3 L_5 R_5 g_m +\right.$$

### 10.505 INVALID-ORDER-505 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3 L_4 L_5 g_m s^2 + s^3 \left(C_5 L_3 L_4 L_5 R_5 g_m - C_5 L_3 L_4 L_5\right) + s \left(L_3 L_4 R_5 g_m - L_3 L_4\right)}{2L_3 R_5 g_m + 2L_3 + L_4 R_5 g_m + L_4 + s^4 \left(C_3 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_5 L_3 L_4 L_5 + 2C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_4 C_5 L_3 L_4 L_5\right) + s^3 \left(C_3 L_3 L_4 L_5 g_m + 2C_4 L_3 L_4 L_5 g_m + 2C_5 L_3 L_4 L_5 g_m\right) + s^2 \left(C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + 2C_4 L_3 L_4 R_5 g_m + 2C_4 L_3 L_4 + 2C_5 L_3 L_5 R_5 g_m + 2C_5 L_3 L_5\right.$$

### 10.506 INVALID-ORDER-506 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 R_5 s^2 + s^3 \left(C_5 L_3 L_4 L_5 R_5 g_m - C_5 L_3 L_4 L_5\right) + s \left(L_3 L_4 R_5 g_m - L_3 L_4\right)}{2L_3 R_5 g_m + 2L_3 + L_4 R_5 g_m + L_4 + s^4 \left(C_3 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_5 L_3 L_4 L_5 + 2C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_4 C_5 L_3 L_4 L_5\right) + s^3 \left(C_3 C_5 L_3 L_4 R_5 + 2C_4 C_5 L_3 L_4 R_5 + 2C_5 L_3 L_4 L_5 g_m\right) + s^2 \left(C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + 2C_4 L_3 L_4 R_5 g_m + 2C_4 L_3 L_4 + 2C_5 L_3 L_5 R_5 g_m + 2C_5 L_3 L_5\right.$$

### 10.507 INVALID-ORDER-507 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3 \left(C_4 L_3 L_4 R_5 g_m - C_4 L_3 L_4\right) + s^2 \left(C_4 L_3 R_4 R_5 g_m - C_4 L_3 R_4\right) + s \left(L_3 R_5 g_m - L_3\right)}{R_5 g_m + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m + C_3 C_4 L_3 L_4\right) + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m + C_3 C_4 L_3 R_4 + 2C_4 L_3 L_4 g_m\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + 2C_4 L_3 R_4 g_m + 2C_4 L_3 R_5 g_m + 2C_4 L_3 + C_4 L_4 R_5 g_m + C_4 L_4\right) + s \left(C_4 R_4 R_5 g_m + C_4 R_4 + 2L_3 g_m\right) + 1}$$

### 10.508 INVALID-ORDER-508 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 s^4 + L_3 g_m s + s^3 \left(-C_4 C_5 L_3 R_4 + C_4 L_3 L_4 g_m\right) + s^2 \left(C_4 L_3 R_4 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 L_4 s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 + C_3 C_4 L_3 L_4 g_m + 2C_4 C_5 L_3 L_4 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 + 2C_4 C_5 L_3 R_4 g_m + 2C_4 C_5 L_3 + C_4 C_5 L_4\right) + s^2 \left(C_3 L_3 g_m + C_4 C_5 R_4 + 2C_4 L_3 g_m + C_4 L_4 g_m + 2C_5 L_3 g_m\right) + s \left(C_4 R_4 g_m + C_5\right)}$$

### 10.509 INVALID-ORDER-509 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_5 s^4 + s^3 \left(-C_4 C_5 L_3 R_4 R_5 + C_4 L_3 L_4 R_5 g_m - C_4 L_3 L_4\right) + s^2 \left(C_4 L_3 R_4 R_5 g_m - C_4 L_3 R_4 - C_5 L_3 R_5\right) + s \left(L_3 R_5 g_m - L_3\right)}{C_3 C_4 C_5 L_3 L_4 R_5 s^5 + R_5 g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 + C_3 C_4 L_3 L_4 R_5 g_m + C_3 C_4 L_3 L_4 + 2C_4 C_5 L_3 L_4 R_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m + C_3 C_4 L_3 R_4 + C_3 C_5 L_3 R_5 + 2C_4 C_5 L_3 R_4 R_5 g_m + 2C_4 C_5 L_3 R_5 + C_4 C_5 L_4 R_5 + 2C_4 L_3 L_4 g_m\right) + s^2 \left(C_3 L_3 R_5 g_m + C_3 L_3 + C_4 C_5 R_4 R_5 + 2\right.$$

### 10.510 INVALID-ORDER-510 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 g_m s + s^4 \left(C_4 C_5 L_3 L_4 R_5 g_m - C_4 C_5 L_3 L_4\right) + s^3 \left(C_4 C_5 L_3 R_4 R_5 g_m - C_4 C_5 L_3 R_4 + C_4 L_3 L_4 g_m\right) + s^2 \left(C_4 L_3 R_4 g_m + C_5 L_3 R_5 g_m - C_5 L_3\right)}{g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m + C_3 C_4 C_5 L_3 R_4 + C_3 C_4 L_3 L_4 g_m + 2C_4 C_5 L_3 L_4 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m + C_3 C_5 L_3 + 2C_4 C_5 L_3 R_4 g_m + 2C_4 C_5 L_3 R_5 g_m + 2C_4 C_5 L_3 + C_4 C_5 L_4 R_5 g_m + C_4 C_5 L_4\right) + s^2 \left(C_3 L_3 g_m -\right.$$

### 10.511 INVALID-ORDER-511 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 g_m s^5 + L_3 g_m s + s^4 \left(-C_4 C_5 L_3 L_4 + C_4 C_5 L_3 L_5 R_4 g_m\right) + s^3 \left(-C_4 C_5 L_3 R_4 + C_4 L_3 L_4 g_m + C_5 L_3 L_5 g_m\right) + s^2 \left(C_4 L_3 R_4 g_m - C_5 L_3\right)}{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 + C_3 C_4 C_5 L_3 L_5 R_4 g_m\right) + s^4 \left(C_3 C_4 C_5 L_3 R_4 + C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + 2C_4 C_5 L_3 L_4 g_m + 2C_4 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 + 2C_4 C_5 L_3 R_4 g_m + 2C_4 C_5 L_3 + C_4 C_5 L_4 + C_4 C_5 L_5 R_4 g_m\right.$$

### 10.512 INVALID-ORDER-512 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5s^5 - L_3s + s^4\left(-C_4C_5L_3L_5R_4 + C_4L_3L_4L_5g_m\right) + s^3\left(-C_4L_3L_4 + C_4L_3L_5R_4g_m - C_5L_3L_5\right) + s^2\left(-C_4L_3R_4 + L_3L_5g_m\right)}{C_3C_4C_5L_3L_4L_5s^6 + s^5\left(C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4 + C_3C_4L_3L_5R_4g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5 + C_4C_5L_4L_5\right) + s^3\left(C_3C_4L_3R_4 + C_3L_3L_5g_m + C_4C_5L_5R_4 + 2C_4L_3L_4g_m + 2C_4L_3L_5g_m + C_4L\right.}$$

### 10.513 INVALID-ORDER-513 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5g_ms^5 + L_3g_ms + s^4\left(C_4C_5L_3L_4R_5g_m - C_4C_5L_3L_4 + C_4C_5L_3L_5R_4g_m\right) + s^3\left(C_4C_5L_3R_4R_5g_m - C_4C_5L\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4 + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_4g_m + 2C_4C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(C_3C_4L_3R_4g_m + C_3C_5L_3R_5g_m + C_3C\right.}$$

### 10.514 INVALID-ORDER-514 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_5s^5 - L_3R_5s + s^4\left(-C_4C_5L_3L_5R_4R_5 + C_4L_3L_4\right.}{C_3C_4C_5L_3L_4L_5R_5s^6 + R_5 + s^5\left(C_3C_4C_5L_3L_5R_4R_5 + C_3C_4L_3L_4L_5R_5g_m + C_3C_4L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_5g_m\right) + s^4\left(C_3C_4L_3L_4R_5 + C_3C_4L_3L_5R_4R_5g_m + C_3C_4L_3L_5R_4 + C_3C_5L_3L_5R_5 + 2C_4C_5L_3L_5R_4R_5g_m + 2C_4C_5L_3L_5R_5 + C_4C_5L_4L_5R_5 + 2C_4L_3L_4L_5g_m\right.}$$

### 10.515 INVALID-ORDER-515 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{s^5\left(C_4C_5L_3L_4L_5R_5g_m - C_4C_5L_3L_4L_5\right) + s^4\left(C_4C_5L_3L_5R_4R_5g_m\right.}{R_5g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + C_3C_4L_3L_5R_4g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5L_3\right.}$$

### 10.516 INVALID-ORDER-516 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{s^5\left(C_4C_5L_3L_4L_5R_5g_m - C_4C_5L_3L_4L_\right.}{R_5g_m + s^6\left(C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(C_3C_4C_5L_3L_4R_5 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_3R_4R_5 + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_4R_5g_m + 2C_4C_5L_3\right.}$$

### 10.517 INVALID-ORDER-517 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_4s^2 + L_3L_4R_4g_ms}{2L_3R_4g_m + L_4R_4g_m + s^3\left(C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_4\right) + s^2\left(C_3L_3L_4R_4g_m + 2C_4L_3L_4R_4g_m + 2C_5L_3L_4R_4g_m + 2C_5L_3L_4\right) + s\left(2C_5L_3R_4 + C_5L_4R_4 + 2L_3L_4g_m\right)}$$

### 10.518 INVALID-ORDER-518 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_4R_5s^2 + s\left(L_3L_4R_4R_5g_m - L_3L_4R_4\right)}{2L_3R_4R_5g_m + 2L_3R_4 + L_4R_4R_5g_m + L_4R_4 + s^3\left(C_3C_5L_3L_4R_4R_5 + 2C_4C_5L_3L_4R_4R_5\right) + s^2\left(C_3L_3L_4R_4R_5g_m + C_3L_3L_4R_4 + 2C_4L_3L_4R_4R_5g_m + 2C_4L_3L_4R_4 + 2C_5L_3L_4R_4R_5g_m + 2C_5L_3L_4R_5\right) + s\left(2C_5L_3R_4R_5 + C_5L_4R_4R_5 + 2L_3L_4R_4g_m + 2L_3L_4R_5g_m + 2L\right.}$$

### 10.519 INVALID-ORDER-519 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3L_4R_4g_ms + s^2\left(C_5L_3L_4R_4R_5g_m - C_5L_3L_4R_4\right)}{2L_3R_4g_m + L_4R_4g_m + s^3\left(C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_4R_5g_m + 2C_4C_5L_3L_4R_4\right) + s^2\left(C_3L_3L_4R_4g_m + 2C_4L_3L_4R_4g_m + 2C_5L_3L_4R_4g_m + 2C_5L_3L_4R_5g_m + 2C_5L_3L_4\right) + s\left(2C_5L_3R_4R_5g_m + 2C_5L_3R_4 + C_5L_4R_4R_5g_m + C_5L_4R_4 + 2L_3L_4g_m\right.}$$

### 10.520 INVALID-ORDER-520 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_4L_5R_4g_ms^3 - C_5L_3L_4R_4s^2 + L_3L_4R_4g_ms}{2L_3R_4g_m + L_4R_4g_m + s^4\left(C_3C_5L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5R_4g_m\right) + s^3\left(C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_4 + 2C_5L_3L_4L_5g_m\right) + s^2\left(C_3L_3L_4R_4g_m + 2C_4L_3L_4R_4g_m + 2C_5L_3L_4R_4g_m + 2C_5L_3L_4 + 2C_5L_3L_5R_4g_m + C_5L_4L_5R_4g_m\right) + s\left(2C_5L_3R_4 + C_5L_4R_4 + 2L_3L\right.}$$

### 10.521 INVALID-ORDER-521 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 L_5 R_4 s^3 + L_3 L_4 L_5 R_4 g_m s^2 - L_3 L_4 R_4 s}{2L_3 R_4 + L_4 R_4 + s^4 (C_3 C_5 L_3 L_4 L_5 R_4 + 2C_4 C_5 L_3 L_4 L_5 R_4) + s^3 (C_3 L_3 L_4 L_5 R_4 g_m + 2C_4 L_3 L_4 L_5 R_4 g_m + 2C_5 L_3 L_4 L_5 R_4 g_m + 2C_5 L_3 L_4 L_5) + s^2 (C_3 L_3 L_4 R_4 + 2C_4 L_3 L_4 R_4 + 2C_5 L_3 L_5 R_4 + C_5 L_4 L_5 R_4 + 2L_3 L_4 L_5 g_m) + s (2L_3 L_4 R_4 g_m + 2L_3 L_4 + 2L_3 L_5 R_4 g_m + L_4 L$$

### 10.522 INVALID-ORDER-522 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_5 L_3 L_4 L_5 R_4 g_m s^3 + L_3 L_4 R_4 g_m s + s^2 (C_5 L_3 L_4 R_4 R_5 g_m - C_5 L_3 L_4 R_4)}{2L_3 R_4 g_m + L_4 R_4 g_m + s^4 (C_3 C_5 L_3 L_4 L_5 R_4 g_m + 2C_4 C_5 L_3 L_4 L_5 R_4 g_m) + s^3 (C_3 C_5 L_3 L_4 R_4 R_5 g_m + C_3 C_5 L_3 L_4 R_4 + 2C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_4 C_5 L_3 L_4 R_4 + 2C_5 L_3 L_4 L_5 g_m) + s^2 (C_3 L_3 L_4 R_4 g_m + 2C_4 L_3 L_4 R_4 g_m + 2C_5 L_3 L_4 R_4 g_m + 2C_5 L_3 L_4 R_5 g_m + 2C_5 L_3 L_4 + 2C$$

### 10.523 INVALID-ORDER-523 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 L_5 R_4 R_5 s^3 - L_3 L_4 R_4 R_5 s + s^2 (L_3 L_4 L_5 R_4 R_5 g_m - L_3 L_4 L_5 R_4)}{2L_3 R_4 R_5 + L_4 R_4 R_5 + s^4 (C_3 C_5 L_3 L_4 L_5 R_4 R_5 + 2C_4 C_5 L_3 L_4 L_5 R_4 R_5) + s^3 (C_3 L_3 L_4 L_5 R_4 R_5 g_m + C_3 L_3 L_4 L_5 R_4 + 2C_4 L_3 L_4 L_5 R_4 R_5 g_m + 2C_4 L_3 L_4 L_5 R_4 + 2C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_5 L_3 L_4 L_5 R_5) + s^2 (C_3 L_3 L_4 R_4 R_5 + 2C_4 L_3 L_4 R_4 R_5 + 2C_5 L_3 L_5 R_4 R_5 + C_5 L_4 L_5 R_4$$

### 10.524 INVALID-ORDER-524 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3 L_4 L_5 R_4 g_m s^2 + s^3 (C_5 L_3 L_4 L_5 R_4 R_5 g_m - C_5 L_3 L_4 L_5 R_4) + s (L_3 L_4 R_4 R_5}{2L_3 R_4 R_5 g_m + 2L_3 R_4 + L_4 R_4 R_5 g_m + L_4 R_4 + s^4 (C_3 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_4 L_5 R_4 + 2C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_3 L_4 L_5 R_4) + s^3 (C_3 L_3 L_4 L_5 R_4 g_m + 2C_4 L_3 L_4 L_5 R_4 g_m + 2C_5 L_3 L_4 L_5 R_4 g_m + 2C_5 L_3 L_4 L_5 R_5 g_m + 2C_5 L_3 L_4 L_5) + s^2 (C_3 L_3 L_4 R_4 R_5 g_m +$$

### 10.525 INVALID-ORDER-525 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2+L_4 s+R_4},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 L_3 L_4 R_4 R_5 s^2 + s^3 (C_5 L_3 L_4 L_5 R_4 R_5 g_m - C_5 L_3 L_4 L_5 R_4) + s}{2L_3 R_4 R_5 g_m + 2L_3 R_4 + L_4 R_4 R_5 g_m + L_4 R_4 + s^4 (C_3 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_4 L_5 R_4 + 2C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_4 C_5 L_3 L_4 L_5 R_4) + s^3 (C_3 C_5 L_3 L_4 R_4 R_5 + 2C_4 C_5 L_3 L_4 R_4 R_5 + 2C_5 L_3 L_4 L_5 R_4 g_m + 2C_5 L_3 L_4 L_5 R_5 g_m + 2C_5 L_3 L_4 L_5) + s^2 (C_3 L_3 L_4 R_4 R_5 g_m +$$

### 10.526 INVALID-ORDER-526 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3 (C_4 L_3 L_4 R_4 R_5 g_m - C_4 L_3 L_4 R_4) + s^2 (L_3 L_4 R_5 g_m - L_3 L_4) + s (L_3 R_4 R_5 g_m - L_3 R_4)}{R_4 R_5 g_m + R_4 + s^4 (C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4) + s^3 (C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + 2C_4 L_3 L_4 R_4 g_m + 2C_4 L_3 L_4 R_5 g_m + 2C_4 L_3 L_4) + s^2 (C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + C_4 L_4 R_4 R_5 g_m + C_4 L_4 R_4 + 2L_3 L_4 g_m) + s (2L_3 R_4 g_m + 2L_3 R_5 g_m + 2L_3 + L_4 R_5 g_m + L_4)$$

### 10.527 INVALID-ORDER-527 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_4 s^4 + L_3 R_4 g_m s + s^3 (C_4 L_3 L_4 R_4 g_m - C_5 L_3 L_4) + s^2 (-C_5 L_3 R_4 + L_3 L_4 g_m)}{C_3 C_4 C_5 L_3 L_4 R_4 s^5 + R_4 g_m + s^4 (C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_4 + 2C_4 C_5 L_3 L_4 R_4 g_m + 2C_4 C_5 L_3 L_4) + s^3 (C_3 C_5 L_3 R_4 + C_3 L_3 L_4 g_m + C_4 C_5 L_4 R_4 + 2C_4 L_3 L_4 g_m + 2C_5 L_3 L_4 g_m) + s^2 (C_3 L_3 R_4 g_m + C_4 L_4 R_4 g_m + 2C_5 L_3 R_4 g_m + 2C_5 L_3 + C_5 L_4) + s (C_5 R_4 + 2L_3 g_m +$$

### 10.528 INVALID-ORDER-528 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_4 R_5 s^4 + s^3 (C_4 L_3 L_4 R_4 R_5 g_m - C_4 L_3 L_4 R_4 - C_5 L_3 L_4 R_5) + s^2 (-C_5 L_3 R_4 R_5 + L_3 L_4 R_5 g_m - L_3}{C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 + R_4 R_5 g_m + R_4 + s^4 (C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_4 R_5 + 2C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_4 C_5 L_3 L_4 R_5) + s^3 (C_3 C_5 L_3 R_4 R_5 + C_3 L_3 L_4 R_5 g_m + C_3 L_3 L_4 + C_4 C_5 L_4 R_4 R_5 + 2C_4 L_3 L_4 R_4 g_m + 2C_4 L_3 L_4 R_5 g_m + 2C_4 L_3 L_4 + 2C_5 L_3 L_4$$

### 10.529 INVALID-ORDER-529 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_3 R_4 g_m s + s^4 (C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_4 C_5 L_3 L_4 R_4) + s^3 (C_4 L_3 L_4 R_4 g_m + C_5 L_3 L_4 R_5 g_m - C_5 L_3 L_4) + s^2 (C_5 L_3 R_4 R_5 g_m - C}{R_4 g_m + s^5 (C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 R_4) + s^4 (C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_4 R_5 g_m + C_3 C_5 L_3 L_4 + 2C_4 C_5 L_3 L_4 R_4 g_m + 2C_4 C_5 L_3 L_4 R_5 g_m + 2C_4 C_5 L_3 L_4) + s^3 (C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4 + C_3 L_3 L_4 g_m + C_4 C_5 L_4 R_4 R_5 g_m + C_4 C_5 L_4 R_4 + 2C_4 L_3 L_4 g$$

**10.530 INVALID-ORDER-530** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 R_4 g_m s^5 + L_3 R_4 g_m s + s^4 \left(-C_4 C_5 L_3 L_4 R_4 + C_5 L_3 L_4 L_5 g_m\right) + s^3 \left(C_4 L_3 L_4 R_4 g_m - C_5 L_3 L_4 + C_5 L_3 L_5 R_4 g_m\right) + s^2 (}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 + C_3 C_5 L_3 L_4 L_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_4 + C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(C_3 C_5 L_3 R_4 + C_3 L_3 L_4 g_m + C_4 C_5 L_4 R_4 + 2 C_4 L_3 L_4}$$

**10.531 INVALID-ORDER-531** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 L_5 R_4 s^5 - L_3 R_4 s + s^4 \left(C_4 L_3 L_4 L_5 R_4 g_m - C_5 L_3 L_4 L_5\right) + s^3 \left(-C_4 L_3 L_4 R_4 - C_5 L_3 L_5 R_4 + L_3 L_4 L_5 g}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 + R_4 + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 g_m + C_3 C_5 L_3 L_4 L_5 + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_5 R_4 + C_3 L_3 L_4 L_5 g_m + C_4 C_5 L_4 L_5 R_4 + 2 C_4 L_3 L_4 L_5 g_m + 2 C_5 L_3 L_4 L_5 g_m\right) + s^3 \left(C_3 L_3 L_4 + C_3 L_3 L_5 R_4 g_m + 2 C_4 L_3 L_4 R_4 g_m}$$

**10.532 INVALID-ORDER-532** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 R_4 g_m s^5 + L_3 R_4 g_m s + s^4 \left(C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_4 C_5 L_3 L_4 R_4 + C\right.}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 R_4 + C_3 C_5 L_3 L_4 L_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_4 R_5 g_m + C_3 C_5 L_3 L_4 + C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_4 C_5 L_3 L_4 + C_4 C_5 L_4 L\right.}$$

**10.533 INVALID-ORDER-533** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 L_5 R_4 R_5 s^5 -}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 s^6 + R_4 R_5 + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_3 L_4 L_5 R_4 + C_3 C_5 L_3 L_4 L_5 R_5 + 2 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 + C_3 C_5 L_3 L_5 R_4 R_5 + C_3 L_3 L_4 L_5 R_5 g_m + C_3 L_3 L_4 L_5 + C_4 C_5 L_4 L_5 R_4 R_5 + 2 C_4 L_3 L_4 L_5 R_4 g_m +}$$

**10.534 INVALID-ORDER-534** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{s^5 \left(C_4 C_5 L_3 L_4 L_5 R\right.}{R_4 R_5 g_m + R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 g_m + C_3 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_5 L_3 L_4 L_5 + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_5 R_4 R_5 g_m + \right.}$$

**10.535 INVALID-ORDER-535** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{C_4 L_4 R_4 s^2+L_4 s+R_4}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{}{R_4 R_5 g_m + R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 + C_3 C_5 L_3 L_4 L_5 R_5 g_m + C_3 C_5 L_3 L_4 L_5 + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_4 R_5 + C_3 C_5\right.}$$

**10.536 INVALID-ORDER-536** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3 \left(C_4 L_3 L_4 R_4 R_5 g_m - C_4 L_3 L_4 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4\right) + s^3 \left(2 C_4 L_3 L_4 R_4 g_m + 2 C_4 L_3 L_4 R_5 g_m + 2 C_4 L_3 L_4\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_4 L_3 R_4 R_5 g_m + 2 C_4 L_3 R_4 + C_4 L_4 R_4 R_5 g_m + C_4 L_4 R_4\right) + s \left(2 L_3 R_4 g_m + 2 L_3 R_5 g_m + 2 L_3\right)}$$

**10.537 INVALID-ORDER-537** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_4 s^4 + C_4 L_3 L_4 R_4 g_m s^3 - C_5 L_3 R_4 s^2 + L_3 R_4 g_m s}{C_3 C_4 C_5 L_3 L_4 R_4 s^5 + R_4 g_m + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4\right) + s^3 \left(C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 + C_4 C_5 L_4 R_4 + 2 C_4 L_3 L_4 g_m\right) + s^2 \left(C_3 L_3 R_4 g_m + 2 C_4 L_3 R_4 g_m + C_4 L_4 R_4 g_m + 2 C_5 L_3 R_4 g_m + 2 C_5 L_3\right) + s \left(C_5 R_4 + 2 L_3 g_m\right)}$$

**10.538 INVALID-ORDER-538** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 R_4 R_5 s^4 - C_5 L_3 R_4 R_5 s^2 + s^3 \left(C_4 L_3 L_4 R_4 R_5 g_m - C_4 L_3 L_4 R_4\right) + s \left(L_3 R_4 R_5 g_m - L_3 R_4\right)}{C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 + R_4 R_5 g_m + R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + 2 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2 C_4 C_5 L_3 L_4 R_4\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 + 2 C_4 C_5 L_3 R_4 R_5 + C_4 C_5 L_4 R_4 R_5 + 2 C_4 L_3 L_4 R_4 g_m + 2 C_4 L_3 L_4 R_5 g_m + 2 C_4 L_3 L_4\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m + C_3 L_3 R_4 + 2 C_4\right.}$$

**10.539 INVALID-ORDER-539** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ R_5+\frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 L_3 L_4 R_4 g_m s^3 + L_3 R_4 g_m s + s^4 \left(C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_4 C_5 L_3 L_4 R_4\right) + s^2 \left(C_5 L_3 R_4 R_5 g_m - C_5 L_3 R_4\right)}{R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 R_4\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_4 C_5 L_3 L_4\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m + C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_4 C_5 L_3 R_4 + C_4 C_5 L_4 R_4 R_5 g_m + C_4 C_5 L_4 R_4 + 2 C_4 L_3 L_4 g_m\right) + s^2 \left(C\right.}$$

**10.540 INVALID-ORDER-540** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ L_5 s+\frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 R_4 g_m s^5 - C_4 C_5 L_3 L_4 R_4 s^4 - C_5 L_3 R_4 s^2 + L_3 R_4 g_m s + s^3 \left(C_4 L_3 L_4 R_4 g_m + C_5 L_3 L_5 R_4 g_m\right)}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 + 2 C_4 C_5 L_3 L_5 R_4 g_m + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(C_3 C_5 L_3 R_4 + 2 C_4 C_5 L_3 R_4 + C_4 C_5 L_4 R_4 + 2 C_4 L_3 L_4 g_m + 2 C_5 L\right.}$$

**10.541 INVALID-ORDER-541** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 L_5 R_4 s^5 + C_4 L_3 L_4 L_5 R_4 g_m s^4 + L_3 L_5 R_4 g_m s^2 - L_3 R_4 s + s^3 \left(-C_4 L_3 L_4 R_4 - C_5 L_3 L_5 R_4\right)}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 + R_4 + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_5 R_4 + C_4 C_5 L_4 L_5 R_4 + 2 C_4 L_3 L_4 L_5 g_m\right) + s^3 \left(C_3 L_3 L_5 R_4 g_m + 2 C_4 L_3 L_4 R_4 g_m + 2 C_4 L_3 L_4 + 2 C_4 L_3 L_5 R_4 g_m + C_4 L_4 L_5 R\right.}$$

**10.542 INVALID-ORDER-542** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ L_5 s+R_5+\frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_4 C_5 L_3 L_4 L_5 R_4 g_m s^5 + L_3 R_4 g_m s + s^4 \left(C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_4 C_5 L_3 L_4 R_4\right) + s^2}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 R_4 + 2 C_4 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_4 C_5 L_3 L_4 + 2 C_4 C_5 L_3 L_5 R_4 g_m + C_4 C_5 L_4 L_5 R_4 g_m\right) + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m\right.}$$

**10.543 INVALID-ORDER-543** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 L_3 L_4 L_5 R_4 R_5 s^5 - L_3 R_4 R_5 s + s^4}{C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 s^6 + R_4 R_5 + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 L_3 L_4 L_5 R_4 + 2 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 + C_3 C_5 L_3 L_5 R_4 R_5 + 2 C_4 C_5 L_3 L_5 R_4 R_5 + C_4 C_5 L_4 L_5 R_4 R_5 + 2 C_4 L_3 L_4 L_5 R_4 g_m + 2 C_4 L_3 L_4 L_5 R_5 g_m + 2 C_4 L_3 L_4\right.}$$

**10.544 INVALID-ORDER-544** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4 L_3 L_4 L_5 R_4 g_m s^4 +}{R_4 R_5 g_m + R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_5 R_4 R_5 g_m\right.}$$

**10.545 INVALID-ORDER-545** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3 s}{C_3 L_3 s^2+1},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-}{R_4 R_5 g_m + R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 + 2 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_4 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m + C_3 C_4 L_3 L_4 R_4 + C_3 C_5 L_3 L_5 R_4 R_5 g_m + C_3 C_5 L_3 L_5 R_4 + 2 C_4 C_5 L_3 L_4 R_4 R_5 g_m\right.}$$

**10.546 INVALID-ORDER-546** $Z(s) = \left(\infty,\ \infty,\ L_3 s+R_3+\frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 R_4 s^3 + R_4 g_m + s^2 \left(-C_3 C_5 R_3 R_4 + C_3 L_3 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2 g_m + s^3 \left(2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 + 2 C_3 L_3 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5\right)}$$

**10.547 INVALID-ORDER-547** $Z(s) = \left(\infty,\ \infty,\ L_3 s+R_3+\frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 R_4 R_5 s^3 + R_4 R_5 g_m - R_4 + s^2 \left(-C_3 C_5 R_3 R_4 R_5 + C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4\right) + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{2 R_4 g_m + 2 R_5 g_m + s^3 \left(2 C_3 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_5 L_3 R_5\right) + s^2 \left(2 C_3 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5 + 2 C_3 L_3 R_4 g_m + 2 C_3 L_3 R_5 g_m + 2 C_3 L_3\right) + s \left(2 C_3 R_3 R_4 g_m + 2 C_3 R_3 R_5 g_m + 2 C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2 C_5 R_4 R_5 g_m + 2 C_5 R_5\right) + 2}$$

### 10.548 INVALID-ORDER-548 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m - C_3 C_5 L_3 R_4\right) + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4 + C_3 L_3 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2 g_m + s^3 \left(2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3 R_5 g_m + 2 C_3 C_5 L_3\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 R_5 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2 C_3 L_3 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5 R_5 g_m + 2 C_5\right)}$$

### 10.549 INVALID-ORDER-549 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_3 L_5 R_4 g_m s^4 + R_4 g_m + s^3 \left(-C_3 C_5 L_3 R_4 + C_3 C_5 L_5 R_3 R_4 g_m\right) + s^2 \left(-C_3 C_5 R_3 R_4 + C_3 L_3 R_4 g_m + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m - C_5 R_4\right)}{2 C_3 C_5 L_3 L_5 g_m s^4 + 2 g_m + s^3 \left(2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3 + 2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 + 2 C_3 L_3 g_m + 2 C_5 L_5 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5\right)}$$

### 10.550 INVALID-ORDER-550 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_5 R_4 s^4 - R_4 + s^3 \left(-C_3 C_5 L_5 R_3 R_4 + C_3 L_3 L_5 R_4 g_m\right) + s^2 \left(-C_3 L_3 R_4 + C_3 L_5 R_3 R_4 g_m - C_5 L_5 R_4\right) + s \left(-C_3 R_3 R_4 + L_5 R_4 g_m\right)}{2 R_4 g_m + s^4 \left(2 C_3 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_5 L_3 L_5\right) + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 + 2 C_3 L_3 L_5 g_m\right) + s^2 \left(2 C_3 L_3 R_4 g_m + 2 C_3 L_3 + 2 C_3 L_5 R_3 g_m + C_3 L_5 R_4 g_m + 2 C_5 L_5 R_4 g_m + 2 C_5 L_5\right) + s \left(2 C_3 R_3 R_4 g_m + 2 C_3 R_3 + C_3 R_4 + 2 L_5 g_m\right) + 2}$$

### 10.551 INVALID-ORDER-551 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_3 L_5 R_4 g_m s^4 + R_4 g_m + s^3 \left(C_3 C_5 L_3 R_4 R_5 g_m - C_3 C_5 L_3 R_4 + C_3 C_5 L_5 R_3 R_4 g_m\right) + s^2 \left(C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4 + C_3 L_3 R_4 g_m + C_5 L_5 R_4 g_m\right) + s \left(C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2 C_3 C_5 L_3 L_5 g_m s^4 + 2 g_m + s^3 \left(2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3 R_5 g_m + 2 C_3 C_5 L_3 + 2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 R_4 g_m\right) + s^2 \left(2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 R_5 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4 + 2 C_3 L_3 g_m + 2 C_5 L_5 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5 R\right.}$$

### 10.552 INVALID-ORDER-552 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_5 R_4 R_5 s^4 - R_4 R_5 + s^3 \left(-C_3 C_5 L_5 R_3 R_4 R_5 + C_3 L_3 L_5 R_4 R_5 g_m - C_3 L_3 L_5 R_4\right) + s^2 \left(-C_3 L_3 R_4 R_5 + C_3 L_5 R_3 R_4 R_5 g_m - C_3 L_5 R_3 R_4 - C_5 L_5 R_4 R_5\right) + s \left(-C_3 R\right.}{2 R_4 R_5 g_m + 2 R_5 + s^4 \left(2 C_3 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_3 C_5 L_3 L_5 R_5\right) + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 L_5 R_3 R_5 + C_3 C_5 L_5 R_4 R_5 + 2 C_3 L_3 L_5 R_4 g_m + 2 C_3 L_3 L_5 R_5 g_m + 2 C_3 L_3 L_5\right) + s^2 \left(2 C_3 L_3 R_4 R_5 g_m + 2 C_3 L_3 R_5 + 2 C_3 L_5 R_3 R_4 g_m + 2 C_3 L_5 R_3 R_5 g_m + 2 C_3 L_5 R_3 + C_3 L_5 R\right.}$$

### 10.553 INVALID-ORDER-553 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_5 L_3 L_5 R_4\right) + s^3 \left(C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4 + C_3 L_3 L_5 R_4 g_m\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4 + C_3 L_5 R_3 R_4 g_m + C_5 L_5 R_4 R_5 g_m - C_5 L_5 R\right.}{2 R_4 g_m + 2 R_5 g_m + s^4 \left(2 C_3 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_5 L_3 L_5\right) + s^3 \left(2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4 + 2 C_3 L_3 L_5 g_m\right) + s^2 \left(2 C_3 L_3 R_4 g_m + 2 C_3 L_3 R_5 g_m + 2 C_3 L_3 + 2 C_3 L_5 R_3 g_m + C_3 L_5 R_4 g_m + 2 C\right.}$$

### 10.554 INVALID-ORDER-554 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_5 L_3 L_5 R_4\right) + s^3 \left(-C_3 C_5 L_3 R_4 R_5 + C_3 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_5 L_5 R_3 R_4\right) + s^2 \left(-C_3 C_5 R_3 R_4 R_5 + C_3 L_3 R_4 R_5 g_m - C_3 L_3\right.}{2 R_4 g_m + 2 R_5 g_m + s^4 \left(2 C_3 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_5 L_3 L_5\right) + s^3 \left(2 C_3 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_5 L_3 R_5 + 2 C_3 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_5 L_5 R_3 + C_3 C_5 L_5 R_4 R_5 g_m + C_3 C_5 L_5 R_4\right) + s^2 \left(2 C_3 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 R_3 R_5 + C_3 C_5 L_5 R_5\right.}$$

### 10.555 INVALID-ORDER-555 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^2 \left(C_3 L_3 R_5 g_m - C_3 L_3\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3\right) - 1}{2 g_m + s^3 \left(2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3\right) + s^2 \left(2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + 2 C_3 L_3 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4\right)}$$

### 10.556 INVALID-ORDER-556 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 s^3 + g_m + s^2 \left(-C_3 C_5 R_3 + C_3 L_3 g_m\right) + s \left(C_3 R_3 g_m - C_5\right)}{2 C_3 C_4 C_5 L_3 s^4 + s^3 \left(2 C_3 C_4 C_5 R_3 + 2 C_3 C_4 L_3 g_m + 2 C_3 C_5 L_3 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.557 INVALID-ORDER-557** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_5s^3 + R_5g_m + s^2\left(-C_3C_5R_3R_5 + C_3L_3R_5g_m - C_3L_3\right) + s\left(C_3R_3R_5g_m - C_3R_3 - C_5R_5\right) - 1}{2C_3C_4C_5L_3R_5s^4 + 2g_m + s^3\left(2C_3C_4C_5R_3R_5 + 2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_5L_3R_5g_m\right) + s^2\left(2C_3C_4R_3R_5g_m + 2C_3C_4R_3 + 2C_3C_5R_3R_5g_m + C_3C_5R_5 + 2C_3L_3g_m + 2C_4C_5R_5\right) + s\left(2C_3R_3g_m + C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4 + 2C_5R_5g_m\right)}$$

**10.558 INVALID-ORDER-558** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3\right) + s^2\left(C_3C_5R_3R_5g_m - C_3C_5R_3 + C_3L_3g_m\right) + s\left(C_3R_3g_m + C_5R_5g_m - C_5\right)}{s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3\right) + s^3\left(2C_3C_4C_5R_3R_5g_m + 2C_3C_4C_5R_3 + 2C_3C_4L_3g_m + 2C_3C_5L_3g_m\right) + s^2\left(2C_3C_4R_3g_m + 2C_3C_5R_3g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.559 INVALID-ORDER-559** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5g_ms^4 + g_m + s^3\left(-C_3C_5L_3 + C_3C_5L_5R_3g_m\right) + s^2\left(-C_3C_5R_3 + C_3L_3g_m + C_5L_5g_m\right) + s\left(C_3R_3g_m - C_5\right)}{2C_3C_4C_5L_3L_5g_ms^5 + s^4\left(2C_3C_4C_5L_3 + 2C_3C_4C_5L_5R_3g_m\right) + s^3\left(2C_3C_4C_5R_3 + 2C_3C_4L_3g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(2C_3C_4R_3g_m + 2C_3C_5R_3g_m + C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

**10.560 INVALID-ORDER-560** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5s^4 + s^3\left(-C_3C_5L_5R_3 + C_3L_3L_5g_m\right) + s^2\left(-C_3L_3 + C_3L_5R_3g_m - C_5L_5\right) + s\left(-C_3R_3 + L_5g_m\right) - 1}{2C_3C_4C_5L_3L_5s^5 + 2g_m + s^4\left(2C_3C_4C_5L_5R_3 + 2C_3C_4L_3L_5g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3 + 2C_3C_4L_5R_3g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5 + 2C_4C_5L_5\right) + s^2\left(2C_3C_4R_3 + 2C_3L_3g_m + C_3L_5g_m + 2C_4L_5g_m + 2C_5L_5g_m\right) + s\left(2C_3R_3g_m + C_3 + 2C_4\right)}$$

**10.561 INVALID-ORDER-561** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5g_ms^4 + g_m + s^3\left(C_3C_5L_3R_5g_m - C_3C_5L_3 + C_3C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3R_5g_m - C_3C_5R_3 + C_3L_3g_m + C_5L_5g_m\right) + s\left(C_3R_3g_m + C_5R_5g_m - C_5\right)}{2C_3C_4C_5L_3L_5g_ms^5 + s^4\left(2C_3C_4C_5L_3R_5g_m + 2C_3C_4C_5L_3 + 2C_3C_4C_5L_5R_3g_m\right) + s^3\left(2C_3C_4C_5R_3R_5g_m + 2C_3C_4C_5R_3 + 2C_3C_4L_3g_m + 2C_3C_5L_3g_m + C_3C_5L_5g_m + 2C_4C_5L_5g_m\right) + s^2\left(2C_3C_4R_3g_m + 2C_3C_5R_3g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) +$$

**10.562 INVALID-ORDER-562** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_5s^4 - R_5 + s^3\left(-C_3C_5L_5R_3R_5 + C_3L_3L_5R_5g_m - C_3L_3L_5\right) + s^2\left(-C_3L_3R_5 + C_3L_5R_3R_5g_m - C_3L_5R_3 - C_5L_5R_5\right) + s\left(-C_3R_3R_5 + L_5\right.}{2C_3C_4C_5L_3L_5R_5s^5 + 2R_5g_m + s^4\left(2C_3C_4C_5L_5R_3R_5 + 2C_3C_4L_3L_5R_5g_m + 2C_3C_4L_3L_5 + 2C_3C_5L_3L_5R_5g_m\right) + s^3\left(2C_3C_4L_3R_5 + 2C_3C_4L_5R_3R_5g_m + 2C_3C_4L_5R_3 + 2C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_5 + 2C_3L_3L_5g_m + 2C_4C_5L_5R_5\right) + s^2\left(2C_3C_4R_3R_5 + 2C_3L_3R_5g_m\right.}$$

**10.563 INVALID-ORDER-563** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^4\left(C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5\right) + s^3\left(C_3C_5L_5R_3R_5g_m - C_3C_5L_5R_3 + C_3L_3L_5g_m\right) + s^2\left(C_3L_3R_5g_m - C_3L_3 + C_3L_5R_3g_m + C_5L_5R_5g_m - C_5L_5\right) + s\left(C_3\right.}{2g_m + s^5\left(2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5\right) + s^4\left(2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + 2C_3C_4L_3L_5g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_4L_5R_3g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_5g_m + 2C_4C_5L_5\right) + s^2$$

**10.564 INVALID-ORDER-564** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^4\left(C_3C_5L_3L_5R_5g_m - C_3C_5L_3L_5\right) + s^3\left(-C_3C_5L_3R_5 + C_3C_5L_5R_3R_5g_m - C_3C_5L_5R_3\right) + s^2\left(-C_3C_5R_3R_5 + C_3L_3R_5g_m - C_3L_3 + C\right.}{2g_m + s^5\left(2C_3C_4C_5L_3L_5R_5g_m + 2C_3C_4C_5L_3L_5\right) + s^4\left(2C_3C_4C_5L_3R_5 + 2C_3C_4C_5L_5R_3R_5g_m + 2C_3C_4C_5L_5R_3 + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4C_5R_3R_5 + 2C_3C_4L_3R_5g_m + 2C_3C_4L_3 + 2C_3C_5L_3R_5g_m + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_5g_m + C_3C_5L_5 + 2C_4C_5L_5R_5g_m\right.$$

**10.565 INVALID-ORDER-565** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^2\left(C_3L_3R_4R_5g_m - C_3L_3R_4\right) + s\left(C_3R_3R_4R_5g_m - C_3R_3R_4\right)}{2R_4g_m + 2R_5g_m + s^3\left(2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4\right) + s^2\left(2C_3C_4R_3R_4R_5g_m + 2C_3C_4R_3R_4 + 2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3L_3\right) + s\left(2C_3R_3R_4g_m + 2C_3R_3R_5g_m + 2C_3R_3 + C_3R_4R_5g_m + C_3R_4 + 2C_4R_4R_5g_m + 2C_4R_4\right) + 2}$$

**10.566 INVALID-ORDER-566** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4s^3 + R_4g_m + s^2\left(-C_3C_5R_3R_4 + C_3L_3R_4g_m\right) + s\left(C_3R_3R_4g_m - C_5R_4\right)}{2C_3C_4C_5L_3R_4s^4 + 2g_m + s^3\left(2C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_5R_3R_4g_m + 2C_3C_5R_3 + C_3C_5R_4 + 2C_3L_3g_m + 2C_4C_5R_4\right) + s\left(2C_3R_3g_m + C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

**10.567 INVALID-ORDER-567** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_4R_5s^3 + R_4R_5g_m - R_4 + s^2\left(-C_3C_5R_3R_4R_5 + C_3L_3R_4R_5g_m - C_3L_3R_4\right) + s\left(C_3R_3R_4R_5g_m - C_3R_3R_4 - C_5R_4R_5\right)}{2C_3C_4C_5L_3R_4R_5s^4 + 2R_4g_m + 2R_5g_m + s^3\left(2C_3C_4C_5R_3R_4R_5 + 2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4 + 2C_3C_5L_3R_4R_5g_m + 2C_3C_5L_3R_5\right) + s^2\left(2C_3C_4R_3R_4R_5g_m + 2C_3C_4R_3R_4 + 2C_3C_5R_3R_4R_5g_m + 2C_3C_5R_3R_5 + C_3C_5R_4R_5 + 2C_3L_3R_4g_m + 2C_3L_3R_5g_m + 2C_3\right.$$

**10.568 INVALID-ORDER-568** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4\right) + s^2\left(C_3C_5R_3R_4R_5g_m - C_3C_5R_3R_4 + C_3L_3R_4g_m\right) + s\left(C_3R_3R_4g_m + C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_4\right) + s^3\left(2C_3C_4C_5R_3R_4R_5g_m + 2C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_5R_3R_4g_m + 2C_3C_5R_3R_5g_m + 2C_3C_5R_3 + C_3C_5R_4R_5g_m + C_3C_5R_4 + 2\right.$$

**10.569 INVALID-ORDER-569** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_ms^4 + R_4g_m + s^3\left(-C_3C_5L_3R_4 + C_3C_5L_5R_3R_4g_m\right) + s^2\left(-C_3C_5R_3R_4 + C_3L_3R_4g_m + C_5L_5R_4g_m\right) + s\left(C_3R_3R_4g_m - C_5R_4\right)}{2C_3C_4C_5L_3L_5R_4g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_4 + 2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3 + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_4g_m + 2C_4C_5L_5R_4g_m\right) + s^2\left(2C_3C_4R_3R_4g_m + 2C_3C_5R_3R_4g_m + 2C_3C\right.$$

**10.570 INVALID-ORDER-570** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4s^4 - R_4 + s^3\left(-C_3C_5L_5R_3R_4 + C_3L_3L_5R_4g_m\right) + s^2\left(-C_3L_3R_4 + C_3L_5R_3R_4g_m - C_5L_5R_4\right) + s\left(-C_3R_3R_4 + L_5\right.}{2C_3C_4C_5L_3L_5R_4s^5 + 2R_4g_m + s^4\left(2C_3C_4C_5L_5R_3R_4 + 2C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_4 + 2C_3C_4L_5R_3R_4g_m + 2C_3C_5L_5R_3R_4g_m + 2C_3C_5L_5R_3 + C_3C_5L_5R_4 + 2C_3L_3L_5g_m + 2C_4C_5L_5R_4\right) + s^2\left(2C_3C_4R_3R_4 + 2C_3L_3R_4g_m\right.$$

**10.571 INVALID-ORDER-571** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_4g_ms^4 + R_4g_m + s^3\left(C_3C_5L_3R_4R_5g_m - C_3C_5L_3R_4 + C_3C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4R_5g\right.}{2C_3C_4C_5L_3L_5R_4g_ms^5 + 2g_m + s^4\left(2C_3C_4C_5L_3R_4R_5g_m + 2C_3C_4C_5L_3R_4 + 2C_3C_4C_5L_5R_3R_4g_m + 2C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4C_5R_3R_4R_5g_m + 2C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_4g_m + 2C_3C_5L_3R_4g_m + 2C_3C_5L_3R_5g_m + 2C_3C_5L_3 + 2C_3C_5L_5R_3g_m + C_3C_5L_5R_4g_m +\right.$$

**10.572 INVALID-ORDER-572** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_4R_5s^4 - R_4R_5 + s^3\left(-C_3C_5L_5R_3R_4R_5\right.}{2C_3C_4C_5L_3L_5R_4R_5s^5 + 2R_4R_5g_m + 2R_5 + s^4\left(2C_3C_4C_5L_5R_3R_4R_5 + 2C_3C_4L_3L_5R_4R_5g_m + 2C_3C_4L_3L_5R_4 + 2C_3C_5L_3L_5R_4R_5g_m + 2C_3C_5L_3L_5R_5\right) + s^3\left(2C_3C_4L_3R_4R_5 + 2C_3C_4L_5R_3R_4R_5g_m + 2C_3C_4L_5R_3R_4 + 2C_3C_5L_5R_3R_4R_5g_m + 2C_3C_5L_5R_3R_5 + C_3C_5\right.$$

**10.573 INVALID-ORDER-573** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^4\left(C_3C_5L_3L_5R_4R_5g_m - C_3C_5L\right.}{2R_4g_m + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_4R_5g_m + 2C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4C_5L_5R_3R_4R_5g_m + 2C_3C_4C_5L_5R_3R_4 + 2C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4 + 2C_3C_4L_5R_3R_4g_m + 2C_3C\right.$$

**10.574 INVALID-ORDER-574** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^4\left(C\right.}{2R_4g_m + 2R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_4R_5g_m + 2C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4C_5L_3R_4R_5 + 2C_3C_4C_5L_5R_3R_4R_5g_m + 2C_3C_4C_5L_5R_3R_4 + 2C_3C_5L_3L_5R_4g_m + 2C_3C_5L_3L_5R_5g_m + 2C_3C_5L_3L_5\right) + s^3\left(2C_3C_4C_5R_3R_4R_5 + 2C_3C_4L_3R_4R_5g_m + 2C_3C_4L_3R_4 + 2C_3C\right.$$

**10.575 INVALID-ORDER-575** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4\right) + s^2 \left(C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4 + C_3 L_3 R_5 g_m - C_3 L_3\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3 + C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2 g_m + s^3 \left(2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3\right) + s^2 \left(2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2 C_3 L_3 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_4 g_m + 2 C_4 R_5 g_m + 2 C_4\right)}$$

**10.576 INVALID-ORDER-576** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 R_4 s^4 + g_m + s^3 \left(-C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m - C_3 C_5 L_3\right) + s^2 \left(C_3 C_4 R_3 R_4 g_m - C_3 C_5 R_3 + C_3 L_3 g_m - C_4 C_5 R_4\right) + s \left(C_3 R_3 g_m + C_4 R_4 g_m - C_5\right)}{s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + 2 C_3 C_5 L_3 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5 R_4 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

**10.577 INVALID-ORDER-577** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 R_4 R_5 s^4 + R_5 g_m + s^3 \left(-C_3 C_4 C_5 R_3 R_4 R_5 + C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 - C_3 C_5 L_3 R_5\right) + s^2 \left(C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4 - C_3 C_5 R_3 R_5 + C_3 L_3 R_5 g_m - C_3 L_3 - C_4 C_5 R}{2 g_m + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_5\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 R_3 R_5 + C_3 C_4 C_5 R_4 R_5 + 2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_5 L_3 R_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2 C}$$

**10.578 INVALID-ORDER-578** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4\right) + s^3 \left(C_3 C_4 C_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3\right) + s^2 \left(C_3 C_4 R_3 R_4 g_m + C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_3 L_3 g_m + C_4 C_5 R_4 R_5 g_m - C_4 C_5 R_4\right) + s \left(C_3 R_3}{s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + 2 C_3 C_5 L_3 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2 C_4 C_5 R}$$

**10.579 INVALID-ORDER-579** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(-C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_5 R_3 R_4 g_m + C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(-C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m - C_3 C_5 L_3 + C_3 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 C_4 R_3 R_4 g_m - C_3 C_5 R_3 + C_3 L_3 g_m - C_4 C_5 R_4 + C_5 L_5 g}{2 C_3 C_4 C_5 L_3 L_5 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_5 R_3 g_m + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + 2 C_3 C_5 L_3 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2 C_3 C_5 R_3 g_m +}$$

**10.580 INVALID-ORDER-580** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_5 R_4 s^5 + s^4 \left(-C_3 C_4 C_5 L_5 R_3 R_4 + C_3 C_4 L_3 L_5 R_4 g_m - C_3 C_5 L_3 L_5\right) + s^3 \left(-C_3 C_4 L_3 R_4 + C_3 C_4 L_5 R_3 R_4 g_m - C_3 C_5 L_5 R_3 + C_3 L_3 L_5 g_m - C_4 C_5 L_5 R_4\right) + s^2 \left(-C_3 C_4 R_3 R_4 - C_3 L_3}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 C_5 L_5 R_4 + 2 C_3 C_4 L_3 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_5 R_3 g_m + C_3 C_4 L_5 R_4 g_m + 2 C_3 C_5 L_5 R_3 g_m + C_3 C_5 L_5 + 2 C_4 C_5 L_5 R_4 g_m +}$$

**10.581 INVALID-ORDER-581** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_5 R_4 g_m s^5 + g_m + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_5 R_3 R_4 g_m + C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(C_3 C_4 C_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3 + C_3 C_5 L_5 R_3 g_m + C_4 C_5 L_5 R_4 g_m\right) + s^2 \left(C_3 C_4}{2 C_3 C_4 C_5 L_3 L_5 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_5 R_3 g_m + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + 2 C_3 C_5 L_3 g_m + C_3 C_5 L_5 g_m + 2 C}$$

**10.582 INVALID-ORDER-582** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_5 R_4 R_5 s^5 - R_5 + s^4 \left(-C_3 C_4 C_5 L_5 R_3 R_4 R_5 + C_3 C_4 L_3 L_5 R_4 R_5 g_m - C_3 C_4 L_3 L_5 R_4 - C_3 C_5 L_3 L_5 R_5\right) + s^3 \left(-C_3 C_4 L_3 R_4}{2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 R_5 + C_3 C_4 C_5 L_5 R_4 R_5 + 2 C_3 C_4 L_3 L_5 R_4 g_m + 2 C_3 C_4 L_3 L_5 R_5 g_m + 2 C_3 C_4 L_3 L_5 + 2 C_3 C_5 L_3 L_5 R_5 g_m\right) + s^3 \left(2 C_3 C_4 L_3 R_4 R_5 g_m + 2 C_3 C_4 L_3 R_5 + 2 C_3 C_4 L_5 R_3 R_4 g_m}$$

**10.583 INVALID-ORDER-583** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_5 R_4\right) + s^4 \left(C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_5 R_3 R_4 + C_3 C_4 L_3 L_5 R_4 g_m + C_3 C_5 L_3 L_5 R_5 g_m - C_3 C_5 L_3 L_5\right) + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 + C_3 C_4}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4 + 2 C_3 C_4 L_3 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C}$$

**10.584 INVALID-ORDER-584** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_5 R_4\right) + s^4 \left(-C_3 C_4 C_5 L_3 R_4 R_5 + C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_5 R_3 R_4 + C_3 C_5 L_3 L_5 R_5 g_m - C}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5 R_4 + 2 C_3 C_4 L_3 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C}$$

### 10.585 INVALID-ORDER-585 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m - C_3 C_4 L_3 L_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_5 g_m - C_3 C_4 L_4 R_3\right) + s^2 \left(C_3 L_3 R_5 g_m - C_3 L_3 + C_4 L_4 R_5 g_m - C_4 L_4\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3\right) - 1}{2 C_3 C_4 L_3 L_4 g_m s^4 + 2 g_m + s^3 \left(2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4\right) + s^2 \left(2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + 2 C_3 L_3 g_m + 2 C_4 L_4 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_5 g_m + 2 C_4\right)}$$

### 10.586 INVALID-ORDER-586 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 s^5 + g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m - C_3 C_5 L_3 - C_4 C_5 L_4\right) + s^2 \left(-C_3 C_5 R_3 + C_3 L_3 g_m + C_4 L_4 g_m\right) + s \left(C_3 R_3 g_m - C_5\right)}{2 C_3 C_4 C_5 L_3 L_4 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3 C_5 L_3 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m + 2 C_5 g_m\right)}$$

### 10.587 INVALID-ORDER-587 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_5 s^5 + R_5 g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 L_3 L_4 R_5 g_m - C_3 C_4 L_3 L_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_5 g_m - C_3 C_4 L_4 R_3 - C_3 C_5 L_3 R_5 - C_4 C_5 L_4 R_5\right) + s^2 \left(-C_3 C_5 R_3 R_5 + C_3 L_3 R_5 g_m -}{2 C_3 C_4 C_5 L_3 L_4 R_5 g_m s^5 + 2 g_m + s^4 \left(2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L_4 R_5 + 2 C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2 C_3 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_4 R_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 R_5 g_m\right.}$$

### 10.588 INVALID-ORDER-588 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3 + C_4 C_5 L_4 R_5 g_m - C_4 C_5 L_4\right) + s^2 \left(C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3 + C_3 L_3 g_m + C_4 L_4 g_m\right.}{2 C_3 C_4 C_5 L_3 L_4 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3 C_5 L_3 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m +\right.}$$

### 10.589 INVALID-ORDER-589 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(-C_3 C_4 C_5 L_3 L_4 + C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(-C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m - C_3 C_5 L_3 + C_3 C_5 L_5 R_3 g_m - C_4 C_5 L_4\right) + s^2 \left(-C_3 C_5 R_3 + C_3 L_3 g_m + C_4\right.}{s^5 \left(2 C_3 C_4 C_5 L_3 L_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 g_m + C_3 C_4 C_5 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3 C_5 L_3 g_m + C_3 C_5 L_5 g_m + 2 C_4 C_5 L_4 g_m + 2 C_4 C_5 L_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + \right.}$$

### 10.590 INVALID-ORDER-590 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 s^6 + s^5 \left(-C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(-C_3 C_4 L_3 L_4 + C_3 C_4 L_4 L_5 R_3 g_m - C_3 C_5 L_3 L_5 - C_4 C_5 L_4 L_5\right) + s^3 \left(-C_3 C_4 L_4 R_3 - C_3 C_5 L_5 R_3 + C_3 L_3 L_5 g_m + C_4 L_4 L_5 g_m\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_4 L_3 L_5 g_m + C_3 C_4 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 + 2 C_3 C_4 L_5 R_3 g_m + \right.}$$

### 10.591 INVALID-ORDER-591 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 + C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3 + C_3 C_5 L\right.}{s^5 \left(2 C_3 C_4 C_5 L_3 L_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 g_m + C_3 C_4 C_5 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3 C_5 L_3 g_m + C\right.}$$

### 10.592 INVALID-ORDER-592 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_5 s^6 - R_5 + s^5 \left(-C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 L_3 L_4 L_5 R_5 g_m - C_3 C_4 L_3 L_4 L_5\right) + s^4 \left(-C_3 C_4 L_3 L_4 R_5 + C_3 C_4 L_4 L_5 R_3 R_5 g_m - C_3 C_4 L_4 L_5 R_3 - C_3 C_5 L_3 L_5 R_5 g_m - C_4 C_5 L_4 L_5 R_5 g_m - C_4 C_5 L_4 L_5\right) + s^3 \left(-C_3 C_4 L_4 R_3 R_5 - C_3 C_5 L_3 R_5 + C_3 L_3 L_5 R_5 g_m + C_4 L_4 L_5 R_5 g_m - C_4 L_4 L_5 - C_5 L_5\right) + s^2 \left(-C_3 C_5 R_3 R_5 + C_3 L_3 R_5 g_m - C_3 L_3 + C_4 L_4 R_5 g_m - C_4 L_4 - C_5 L_5\right) + s \left(C_3 L_3 g_m + C_4 L_4 g_m - 1\right)}{2 C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m s^6 + 2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_5 + 2 C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L_4 R_5 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_4 L_3 L_5 R_5 g_m + 2 C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_5 g_m + C_3 C_4 L_4 L_5 + 2 C_3 C_5 L_3 L_5 R_5 g_m + 2 C_4 C_5 L_4 L_5 R_5 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_5 + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4 + 2 C_3 C_5 L_3 R_5 g_m + 2 C_4 C_5 L_4 R_5 g_m\right) + s^2 \left(2 C_3 C_4 R_3 R_5 g_m\right.}$$

### 10.593 INVALID-ORDER-593 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m - C_3 C_4 L_3 L_4 + C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_5 L_3 L_5 R_5 g_m - C_3\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_4 L_3 L_5 g_m + C_3 C_4 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_4 L\right.}$$

### 10.594 INVALID-ORDER-594 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(-C_3 C_4 C_5 L_3 L_4 R_5 + C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3\right) + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_5\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L_4 R_5 + 2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_4 L_3 L_5 g_m + C_3 C_4 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_4 L\right.}$$

**10.595 INVALID-ORDER-595** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3 \left(C_3 L_3 L_4 R_5 g_m - C_3 L_3 L_4\right) + s^2 \left(C_3 L_4 R_3 R_5 g_m - C_3 L_4 R_3\right) + s \left(L_4 R_5 g_m - L_4\right)}{2R_5 g_m + s^4 \left(2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + 2C_3 L_3 L_4 g_m\right) + s^2 \left(2C_3 L_3 R_5 g_m + 2C_3 L_3 + 2C_3 L_4 R_3 g_m + C_3 L_4 R_5 g_m + C_3 L_4 + 2C_4 L_4 R_5 g_m + 2C_4 L_4\right) + s \left(2C_3 R_3 R_5 g_m + 2C_3 R_3 + 2L_4 g_m\right) + 2}$$

**10.596 INVALID-ORDER-596** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 s^4 + L_4 g_m s + s^3 \left(-C_3 C_5 L_4 R_3 + C_3 L_3 L_4 g_m\right) + s^2 \left(C_3 L_4 R_3 g_m - C_5 L_4\right)}{2C_3 C_4 C_5 L_3 L_4 s^5 + 2g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_4 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + 2C_3 C_5 L_3 + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4\right) + s^2 \left(2C_3 C_5 R_3 + 2C_3 L_3 g_m + C_3 L_4 g_m + 2C_4 L_4 g_m + 2C_5 L_4 g_m\right) + s \left(2C_3 R_3 g_m + 2C_5\right)}$$

**10.597 INVALID-ORDER-597** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 R_5 s^4 + s^3 \left(-C_3 C_5 L_4 R_3 R_5 + C_3 L_3 L_4 R_5 g_m - C_3 L_3 L_4\right) + s^2 \left(C_3 L_4 R_3 R_5 g_m - C_3 L_4 R_3 - C_5 L_4 R_5\right) + s \left(L_4 R_5 g_m -\right.}{2C_3 C_4 C_5 L_3 L_4 R_5 s^5 + 2R_5 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_5 + 2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4 + 2C_3 C_5 L_3 L_4 R_5 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_5 g_m + 2C_3 C_4 L_4 R_3 + 2C_3 C_5 L_3 R_5 + 2C_3 C_5 L_4 R_3 R_5 g_m + C_3 C_5 L_4 R_5 + 2C_3 L_3 L_4 g_m + 2C_4 C_5 L_4 R_5\right) + s^2 \left(2C_3 C_5 R_3 R_5 + 2C_3 L_3 R_5 g_m\right.}$$

**10.598 INVALID-ORDER-598** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4 g_m s + s^4 \left(C_3 C_5 L_3 L_4 R_5 g_m - C_3 C_5 L_3 L_4\right) + s^3 \left(C_3 C_5 L_4 R_3 R_5 g_m - C_3 C_5 L_4 R_3 + C_3 L_3 L_4 g_m\right) + s^2 \left(C_3 L_4 R_3 g_m + C_5 L_4 R_5 g_m - C_5 L_4\right)}{2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_4 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + 2C_3 C_5 L_3 R_5 g_m + 2C_3 C_5 L_3 + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 R_5 g_m + C_3 C_5 L_4 + 2C_4 C_5 L_4 R_5 g_m + 2C_4 C_5 L_4\right) + s^2$$

**10.599 INVALID-ORDER-599** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_3 L_4 L_5 g_m s^5 + L_4 g_m s + s^4 \left(-C_3 C_5 L_3 L_4 + C_3 C_5 L_4 L_5 R_3 g_m\right) + s^3 \left(-C_3 C_5 L_4 R_3 + C_3 L_3 L_4 g_m + C_5 L_4 L_5 g_m\right) + s^2 \left(C_3 L_4 R_3 g_m - C_5 L_4\right)}{2C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 + 2C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_4 g_m + 2C_3 C_5 L_3 L_5 g_m + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + 2C_3 C_5 L_3 + 2C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2C_3 C_5 L_5 R_3 g_m\right.}$$

**10.600 INVALID-ORDER-600** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 s}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 L_5 s^5 - L_4 s + s^4 \left(-C_3 C_5 L_4 L_5 R_3 + C_3 L_3 L_4 L_5 g_m\right) + s^3 \left(-C_3 L_3 L_4 + C_3 L_4 L_5 R_3 g_m - C_5 L_4 L_5\right) + s^2 \left(-C_3 L_4 R_3 + L_4\right.}{2C_3 C_4 C_5 L_3 L_4 L_5 s^6 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 + 2C_3 C_4 L_3 L_4 L_5 g_m + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 L_3 L_4 + 2C_3 C_4 L_4 L_5 R_3 g_m + 2C_3 C_5 L_3 L_5 + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 + 2C_4 C_5 L_4 L_5\right) + s^3 \left(2C_3 C_4 L_4 R_3 + 2C_3 C_5 L_5 R_3 + 2C_3 L_3 L_4 g_m + 2C_3 L_3 L_5 g_m + C_3 L_4 L_5 g\right.}$$

**10.601 INVALID-ORDER-601** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_3 L_4 L_5 g_m s^5 + L_4 g_m s + s^4 \left(C_3 C_5 L_3 L_4 R_5 g_m - C_3 C_5 L_3 L_4 + C_3 C_5 L_4 L_5 R_3 g_m\right) + s^3 \left(C_3 C_5 L_4 R_3 R_5 g\right.}{2C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 + 2C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 + 2C_3 C_4 L_3 L_4 g_m + 2C_3 C_5 L_3 L_4 g_m + 2C_3 C_5 L_3 L_5 g_m + C_3 C_5 L_4 L_5 g_m + 2C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(2C_3 C_4 L_4 R_3 g_m + 2C_3 C_5 L_s\right.}$$

**10.602 INVALID-ORDER-602** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2+L_5 s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 L_5 R_5 s^5 - L_4 R_5 s + s^4 \left(-C_3 C_5 L_4 L_5 R_3 R_5\right.}{2C_3 C_4 C_5 L_3 L_4 L_5 R_5 s^6 + 2R_5 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_5 + 2C_3 C_4 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 L_3 L_4 L_5 + 2C_3 C_5 L_3 L_4 L_5 R_5 g_m\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_5 + 2C_3 C_4 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 L_4 L_5 R_3 + 2C_3 C_5 L_3 L_5 R_5 + 2C_3 C_5 L_4 L_5 R_3 R_5 g_m + C_3 C_5 L_4 L_5 R_5 + 2C_3 L_3 L_4 L_5 g_m + 2C\right.}$$

**10.603 INVALID-ORDER-603** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{C_5 L_5 R_5 s^2+L_5 s+R_5}{C_5 L_5 s^2+1},\ \infty\right)$

$$H(s) = \frac{s^5 \left(C_3 C_5 L_3 L_4 L_5 R_5 g_m - C_3 C_5 L_3 L_4 L_5\right) + s^4 \left(C_3 C\right.}{2R_5 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + 2C_3 C_4 L_3 L_4 L_5 g_m + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4 + 2C_3 C_4 L_4 L_5 R_3 g_m + 2C_3 C_5 L_3 L_5 R_5 g_m + 2C_3 C_5 L_3 L_5 + 2C_3 C_5 L_4 L_5 R_3 g_m\right.}$$

**10.604 INVALID-ORDER-604** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{s^5 \left(C_3 C_5 L_3 L_4 L_5 R_5 g_m -\right.}{2R_5 g_m + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_5 + 2C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_5 + 2C_3 C_4 L_3 L_4 R_5 g_m + 2C_3 C_4 L_3 L_4 + 2C_3 C_5 L_3 L_4 R_5 g_m + 2C_3 C_5 L_3 L_5 R_5 g_m + 2C_3 C_5 L_3 L_5 + 2C_3 C_5 L_4 L_5 R_3 R_5 g_m\right.}$$

### 10.605 INVALID-ORDER-605 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^4 \left(C_3 C_4 L_3 L_4 R_5 g_m - C_3 C_4 L_3 L_4\right) + s^3 \left(C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 + C_3 C_4 L_4 R_3 R_5 g_m - C_3 C_4 L_4 R_3\right) + s^2 \left(C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4 + C_3 L_3 R_5 g_m - C_3 L_3 + C_4 L_4 R_5 g_m - C_4 L_4\right) + s \left(C_3 R_3 R_5 g_m - C_3 R_3 + C_4 R_4 R_5 g_m - C_4 R_4\right)}{2 C_3 C_4 L_3 L_4 g_m s^4 + 2 g_m + s^3 \left(2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_5 g_m + C_3 C_4 L_4\right) + s^2 \left(2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4 + 2 C_3 L_3 g_m + 2 C_4 L_4 g_m\right) + s \left(2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_4 g_m + C_4\right) + 2}$$

### 10.606 INVALID-ORDER-606 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 s^5 + g_m + s^4 \left(-C_3 C_4 C_5 L_3 R_4 - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(-C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_3 g_m - C_3 C_5 L_3 - C_4 C_5 L_4\right) + s^2 \left(C_3 C_4 R_3 R_4 g_m - C_3 C_5 R_3 + C_3 L_3 g_m - C_4 C_5 R_4 + C_4 L_4 g_m\right) + s \left(C_3\right.}{2 C_3 C_4 C_5 L_3 L_4 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3 C_5 L_3 g_m + 2 C_4 C_5 L_4 g_m\right) + s^2 \left(2 C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5\right.}$$

### 10.607 INVALID-ORDER-607 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_5 s^5 + R_5 g_m + s^4 \left(-C_3 C_4 C_5 L_3 R_4 R_5 - C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 L_3 L_4 R_5 g_m - C_3 C_4 L_3 L_4\right) + s^3 \left(-C_3 C_4 C_5 R_3 R_4 R_5 + C_3 C_4 L_3 R_4 R_5 g_m - C_3 C_4 L_3 R_4 + C_3 C_4 L_4 R_3\right.}{2 C_3 C_4 C_5 L_3 L_4 R_5 g_m s^5 + 2 g_m + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L_4 R_5 + 2 C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 R_3 R_5 + C_3 C_4 C_5 R_4 R_5 + 2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_3 R_5 g_m + 2 C_3 C_4 L_3 + 2 C_3 C_4 L_4 R_3 g_m +\right.}$$

### 10.608 INVALID-ORDER-608 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(C_3 C_4 C_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_3 g_m + C_3 C_5 L_3 R_5 g_m - C_3 C_5 L_3 + C_4 C_5 L\right.}{2 C_3 C_4 C_5 L_3 L_4 g_m s^5 + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4 + 2 C_3 C_4 L_3 g_m + C_3 C_4 L_4 g_m + 2 C_3\right.}$$

### 10.609 INVALID-ORDER-609 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(-C_3 C_4 C_5 L_3 L_4 + C_3 C_4 C_5 L_3 L_5 R_4 g_m + C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(-C_3 C_4 C_5 L_3 R_4 - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_5 R_3 R_4 g_m + C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5 g_m\right) + s^3 \left(-C_3 C_4 C_5 R_3 R_4 + C_3 C_4 L_3 R_4 g_m + C_3 C_4 L_4 R_3 g_m\right.}{s^5 \left(2 C_3 C_4 C_5 L_3 L_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 g_m + C_3 C_4 C_5 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m\right.}$$

### 10.610 INVALID-ORDER-610 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 s^6 + s^5 \left(-C_3 C_4 C_5 L_3 L_5 R_4 - C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(-C_3 C_4 C_5 L_5 R_3 R_4 - C_3 C_4 L_3 L_4 + C_3 C_4 L_3 L_5 R_4 g_m + C_3 C_4 L_4 L_5 R_3 g_m - C_3 C_5 L_3 L_5 - C_4 C_5\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 C_5 L_5 R_4 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_4 L_3 L_5 g_m + C_3 C_4 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_5 g_m + 2 C_4 C_5 L_4 L_5 g_m\right)}$$

### 10.611 INVALID-ORDER-611 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 + C_3 C_4 C_5 L_3 L_5 R_4 g_m + C_3 C_4 C_5 L_4 L_5 R_3 g_m\right) + s^4 \left(C_3 C_4 C_5 L_3 R_4 R_5 g_m - C_3 C_4 C_5 L_3 R_4 + C_3 C_4 C_5 L_4 R_3 R_5 g_m - C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_5 R_3 R_4 g_m + C_3 C_4 L_3 L_4 g_m + C_3 C_5 L_3 L_5 g_m + C_4 C_5 L_4 L_5\right.}{s^5 \left(2 C_3 C_4 C_5 L_3 L_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 g_m + C_3 C_4 C_5 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 g_m + 2 C_3 C_4 C_5 L_3 R_5 g_m + 2 C_3 C_4 C_5 L_3 + 2 C_3 C_4 C_5 L_4 R_3 g_m + C_3 C_4 C_5 L_4 R_5 g_m + C_3 C_4 C_5 L_4 + 2 C_3 C_4 C_5 L_5 R_3 g_m + C_3 C_4 C_5 L_5 R_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 g_m\right.}$$

### 10.612 INVALID-ORDER-612 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_5 s^6 - R_5 + s^5 \left(-C_3 C_4 C_5 L_3 L_5 R_4 R_5 - C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 L_3 L_4 L_5 R_5 g_m - C_3 C_4 L_3 L_4\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m s^6 + 2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_5 + 2 C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 R_5 + C_3 C_4 C_5 L_5 R_4 R_5 + 2 C_3 C_4 L_3 L_4 R_5 g_m + 2 C_3 C_4 L_3 L_5 R_4 g_m -\right.}$$

### 10.613 INVALID-ORDER-613 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_5 R_4 + C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 C_5 L_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_5 R_3 R_4 + C_3 C_4 L_3 L_4 R_5 g_m\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_5 R_3 + C_3 C_4 C_5 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_5\right.}$$

### 10.614 INVALID-ORDER-614 $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ L_4 s + R_4 + \frac{1}{C_4 s},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(-C_3 C_4 C_5 L_3 L_4 R_5 + C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_5 R_4 + C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m -\right.}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_5 g_m + C_3 C_4 C_5 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + C_3 C_4 C_5 L\right.}$$

**10.615 INVALID-ORDER-615** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3 \left(C_3 L_3 L_4 R_4 R_5 g_m - C_3 L_3 L_4 R_4\right) + s^2 \left(C_3 L_4 R_3 R_4 R_5 g_m - C_3 L_4 R_3 R_4\right) + s \left(L_4 R_4 R_5 g_m - L_4 R_4\right)}{2R_4 R_5 g_m + 2R_4 + s^4 \left(2C_3 C_4 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 L_3 L_4 R_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 R_3 R_4 + 2C_3 L_3 L_4 R_4 g_m + 2C_3 L_3 L_4 R_5 g_m + 2C_3 L_3 L_4\right) + s^2 \left(2C_3 L_3 R_4 R_5 g_m + 2C_3 L_3 R_4 + 2C_3 L_4 R_3 R_4 g_m + 2C_3 L_4 R_3 R_5 g_m + 2C_3 L_4 R_3 + C_3 L_4 R_4 R_5 g_m + C_3 L_4 R_4 + 2C_4 L_4 R_4 R_5 g_m + 2C_4 L_4 R_4\right) + s \left(2C_3 L_3 R_4 + 2C_3 L_4 R_3 R_4 + 2C_4 L_4 R_4 R_5 g_m + 2C_4 L_4 R_4\right)}$$

**10.616 INVALID-ORDER-616** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 R_4 s^4 + L_4 R_4 g_m s + s^3 \left(-C_3 C_5 L_4 R_3 R_4 + C_3 L_3 L_4 R_4 g_m\right) + s^2 \left(C_3 L_4 R_3 R_4 g_m - C_5 L_4 R_4\right)}{2C_3 C_4 C_5 L_3 L_4 R_4 s^5 + 2R_4 g_m + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_3 R_4 + 2C_3 C_5 L_4 R_3 R_4 g_m + 2C_3 C_5 L_4 R_3 + C_3 C_5 L_4 R_4 + 2C_3 L_3 L_4 g_m + 2C_4 C_5 L_4 R_4\right) + s^2 \left(2C_3 C_5 R_3 R_4 + 2C_3 L_3 R_4 g_m\right.$$

**10.617 INVALID-ORDER-617** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 R_4 R_5 s^4 + s^3 \left(-C_3 C_5 L_4 R_3\right.}{2C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 + 2R_4 R_5 g_m + 2R_4 + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 + 2C_3 C_4 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 L_3 L_4 R_4 + 2C_3 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_5 L_3 L_4 R_5\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 R_3 R_4 + 2C_3 C_5 L_3 R_4 R_5 + 2C_3 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_5 L_4 R_3 R_5 + C_3 C_5\right.$$

**10.618 INVALID-ORDER-618** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{L_4 R_4 g_m s + s^4 \left(C_3 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_5 L_3 L_4 R_4\right) +}{2R_4 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 R_4\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_5 g_m + 2C_3 C_5 L_3 L_4\right) + s^3 \left(2C_3 C_4 L_4 R_3 R_4 g_m + 2C_3 C_5 L_3 R_4 R_5 g_m + 2C_3 C_5 L_3 R_4 + 2C_3 C_5 L_4 R_3 R_4\right.$$

**10.619 INVALID-ORDER-619** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_5 L_3 L_4 L_5 R_4 g_m s^5 + L_4 R_4 g_m s + s^4 \left(-C_3 C_5 L_3 L_4 R_4\right.}{2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + 2R_4 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 + 2C_3 C_5 L_3 L_5 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 g_m + C_3 C_5 L_4 L_5 R_4 g_m + 2C_4 C_5 L_4 L_5 R_4\right.$$

**10.620 INVALID-ORDER-620** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_5 L_3 L_4 L_5 R_4 s^5 - L_4 R_4 s + s^4 \left(-C_3\right.}{2C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 + 2R_4 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 + 2C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 + 2C_3 C_4 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_3 L_5 R_4 + 2C_3 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_4 L_5 R_3 + C_3 C_5 L_4 L_5 R_4 + 2C_3 L_3 L_4 L_5 g_m + 2C\right.$$

**10.621 INVALID-ORDER-621** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{}{2C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + 2R_4 g_m + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 R_4 + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 R_3 R_4 + 2C_3 C_4 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_4 g_m + 2C_3 C_5 L_3 L_4 R_5 g_m + 2C_3 C_5 L_3 L_4 + 2C\right.$$

**10.622 INVALID-ORDER-622** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{}{2C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 s^6 + 2R_4 R_5 + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 + 2C_3 C_4 L_3 L_4 L_5 R_4 R_5 g_m + 2C_3 C_4 L_3 L_4 L_5 R_4 + 2C_3 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_3 C_5 L_3 L_4 L_5 R_5\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 R_5 + 2C_3 C_4 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 L_4 L_5 R_3 R_4 + 2C_3 C_5 L_3 L_5 R_4 R_5 + 2C_3 C_5 L_4 L_5\right.$$

**10.623 INVALID-ORDER-623** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 R_5 g_m + 2R_4 + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4 + 2C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_5 L_3 L_4 L_5\right) + s^4 \left(2C_3 C_4 L_3 L_4 R_4 R_5 g_m + 2C_3 C_4 L_3 L_4 R_4 +\right.$$

**10.624 INVALID-ORDER-624** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 R_5 g_m + 2R_4 + s^6 \left(2C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(2C_3 C_4 C_5 L_3 L_4 R_4 R_5 + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2C_3 C_4 C_5 L_4 L_5 R_3 R_4 + 2C_3 C_5 L_3 L_4 L_5 R_4 g_m + 2C_3 C_5 L_3 L_4 L_5 R_5 g_m + 2C_3 C_5 L_3 L_4 L_5\right) + s^4 \left(2C_3 C_4 C_5 L_4 R_3 R_4 R_5 + 2C_3 C_4 L_3 L_4 R_4 R_5\right.$$

**10.625 INVALID-ORDER-625** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m - C_3 C_4 L_3 L_4 R_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4 + C_3 L_3 L_4 R_5 g_m - C_3 L_3 L_4\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4 + C_3 L_4 R_3 R_5 g_m - C_3 L_4 R_3 + C_4 L_4 R_4 R_5 g_m - C_4 L_4 R_4 R_5 + C_3 L_3 + C_3 L_4 + C_4 L_4\right) + s \left(C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 + C_4 R_4 R_5 g_m - C_4 R_4 R_5 + C_3 L_3 g_m + C_3 L_4 g_m + C_4 L_4 g_m\right) + R_3 R_4 R_5 g_m - R_3 R_4 + R_4 R_5 g_m - R_4 R_5 + C_3 R_3 g_m + C_4 R_4 g_m + L_3 g_m + L_4 g_m}{2 R_4 g_m + 2 R_5 g_m + s^4 \left(2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 R_5 g_m + 2 C_3 C_4 L_3 L_4\right) + s^3 \left(2 C_3 C_4 L_4 R_3 R_4 g_m + 2 C_3 C_4 L_4 R_3 R_5 g_m + 2 C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4 + 2 C_3 L_3 L_4 g_m\right) + s^2 \left(2 C_3 L_3 R_4 g_m + 2 C_3 L_3 R_5 g_m + 2 C_3 L_3 + 2 C_3 L_4 R_3 g_m + C_3 L_4 R_5 g_m + C_3\right.$$

**10.626 INVALID-ORDER-626** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 s^5 + R_4 g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_4 L_3 L_4 R_4 g_m - C_3 C_5 L_3 L_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m - C_3 C_5 L_3 R_4 - C_3 C_5 L_4 R_3 + C_3 L_3 L_4 g_m - C_4 C_5 L_4 R_4\right) + s^2 \left(-C_3 C_5 R_3 R_4 + C_3\right.$$
$$2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_5 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3 + 2 C_3 C_5 L_4 R_3 g_m + C_3 C_5 L_4 + 2 C_4 C_5 L_4 R_4 g_m +\right.$$

**10.627 INVALID-ORDER-627** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 + R_4 R_5 g_m - R_4 + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_4 R_5 + C_3 C_4 L_3 L_4 R_4 R_5 g_m - C_3 C_4 L_3 L_4 R_4 - C_3 C_5\right.$$
$$2 R_4 g_m + 2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 C_5 L_4 R_4 R_5 + 2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 R_5 g_m + 2 C_3 C_4 L_3 L_4 + 2 C_3 C_5 L_3 L_4 R_5 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 R_4 g_m + 2 C_3 C_4 L_4 R_3 R_5 g_m + 2\right.$$

**10.628 INVALID-ORDER-628** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 R_4\right) + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_4 L_3 L_4 R_4 g_m + C_3 C_5 L_3 L_4 R_5 g_m - C_3 C_5 L_3 L_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m + C_3 C_5 L_3 R_4 R\right.$$
$$2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_5 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2 C_3 C_5\right.$$

**10.629 INVALID-ORDER-629** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(-C_3 C_4 C_5 L_3 L_4 R_4 + C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_4 L_3 L_4 R_4 g_m - C_3 C_5 L_3 L_4 + C_3 C_5 L_3 L_5 R_4 g_m + C_3 C_5 L_4 L_5 R_3\right.$$
$$2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3 L_4 g_m + 2 C_3 C_5 L_3 L_4 g_m + 2 C_3 C_5 L_3 L_5 g_m + C_3 C_5 L_4 L_5 g_m + 2 C_4 C_5 L_4\right.$$

**10.630 INVALID-ORDER-630** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 - R_4 + s^5 \left(-C_3 C_4 C_5 L_4 L_5 R_3 R_4 + C_3 C_4 L_3 L_4 L_5 R_4 g_m - C_3 C_5 L_3 L_4 L_5\right) + s^4 \left(-C_3 C_4 L_3 L_4 R_4\right.$$
$$2 R_4 g_m + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 + 2 C_3 C_4 L_3 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 + 2 C_3 C_4 L_4 L_5 R_3 g_m + C_3 C_4 L_4 L_5 R_4 g_m + 2 C_3 C_5 L_3 L_5 R\right.$$

**10.631 INVALID-ORDER-631** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 R_4 + C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_4 L_3 L_4 R_4 g_m + C\right.$$
$$2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3\right.$$

**10.632 INVALID-ORDER-632** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4$$
$$2 R_4 R_5 g_m + 2 R_5 + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5 R_5\right) + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 + 2 C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 L_3 L_4 L_5 R_5 g_m + 2 C_3 C_4 L_3 L_4 L_5 + 2 C_3 C_5 L_3 L_4 L_5 R_5 g_m\right) + s^4 \left(2 C_3 C_4 L_3 L_4 R_4 R_5 g\right.$$

**10.633 INVALID-ORDER-633** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^6 \left(C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 L_5 R_4\right) + s^5 \left(C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 L_4 L_5 R_3 R_4\right.$$
$$2 R_4 g_m + 2 R_5 g_m + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4 + 2 C_3 C_4 L_3 L_4 L_5 g_m + 2 C_3 C_5 L_3 L_4 L_5 g_m\right) + s^4 \left(2 C\right.$$

**10.634 INVALID-ORDER-634** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{C_4 L_4 R_4 s^2 + L_4 s + R_4}{C_4 L_4 s^2 + 1},\ \frac{R_5\left(C_5 L_5 s^2 + 1\right)}{C_5 L_5 s^2 + C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^6 \left(C_3 C_4 C_5 L$$
$$2 R_4 g_m + 2 R_5 g_m + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4 + 2\right.$$

**10.635 INVALID-ORDER-635** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^4 \left(C_3 C_4 L_3 L_4 R_4 R_5 g_m - C_3 C_4 L_3 L_4 R_4\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 R_5 g_m - C_3 C_4 L_4 R_3 R_4\right) + s^2 \left(C_3 L_3 R_4 R_5 g_m - C_3 L_3 R_4 + C_4 L_4 R_4 R_5 g_m}{2 R_4 g_m + 2 R_5 g_m + s^4 \left(2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 R_5 g_m + 2 C_3 C_4 L_3 L_4\right) + s^3 \left(2 C_3 C_4 L_3 R_4 R_5 g_m + 2 C_3 C_4 L_3 R_4 + 2 C_3 C_4 L_4 R_3 R_4 g_m + 2 C_3 C_4 L_4 R_3 R_5 g_m + 2 C_3 C_4 L_4 R_3 + C_3 C_4 L_4 R_4 R_5 g_m + C_3 C_4 L_4 R_4\right) + s^2 \left(2 C_3 C_4 R_3 R_4 R_5 g_m + 2 C_3 C_4 R_3 R_4 + 2 C_3 L_3 R_4 g_m +}$$

**10.636 INVALID-ORDER-636** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 s^5 + R_4 g_m + s^4 \left(-C_3 C_4 C_5 L_4 R_3 R_4 + C_3 C_4 L_3 L_4 R_4 g_m\right) + s^3 \left(C_3 C_4 L_4 R_3 R_4 g_m - C_3 C_5 L_3 R_4 - C_4 C_5 L_4 R_4\right) + s^2 \left(-C_3 C_5 R_3}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 + 2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 + 2 C_3 C_4 L_3 R_4 g_m + 2 C_3 C_4 L_4 R_3 g_m + C_3 C_4 L_4 R_4 g_m + 2 C_3 C_5 L_3 R_4 g_m + 2 C_3 C_5 L_3 + 2 C_4 C_5 L_4}$$

**10.637 INVALID-ORDER-637** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{R_5}{C_5 R_5 s + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 R_4 R_5 s^5 + R_4 R_5 g_m - R_4 + s^4}{2 R_4 g_m + 2 R_5 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 + 2 C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 + C_3 C_4 C_5 L_4 R_4 R_5 + 2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 R_5 g_m + 2 C_3 C_4 L_3 L_4\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 R_5 + 2 C_3 C_4 L_3 R_4 R_5 g_m + 2\right.$$

**10.638 INVALID-ORDER-638** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^5 \left(C_3 C_4 C_5 L_3 L_4 R_4 R_5 g_m - C_3 C_4 C_5 L_3 L_4 R_4\right) + s^4 \left(C_3 C_4 C_5 L_4 R_3 R_4 R_5 g_m - C_3 C_4 C_5}{2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_4 + 2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 R_5 g_m + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 L_3 L_4 g_m\right) + s^3 \left(2 C_3 C_4 C_5 R_3 R_4 R_5\right.$$

**10.639 INVALID-ORDER-639** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(-C_3 C_4 C_5 L_3 L_4 R_4 + C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m\right) + s^4 \left(-C_3 C_4}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 + 2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 + 2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 + C_3 C_4 C_5 L_4 R_4 + 2 C_3 C_4 C_5 L_5 R_3 R_4 g_m + 2 C_3 C_4 L_3 L_4 g_m\right.$$

**10.640 INVALID-ORDER-640** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 s}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{-C_3 C_4 C_5 L_3 L_4 L_5 R_4 s^6 - R_4 + s^5 \left(-C_3 C_4 C_5 L_4 L_5}{2 R_4 g_m + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 + 2 C_3 C_4 L_3 L_4 L_5 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4 + 2 C_3 C_4 L_3 L_4 R_4 g_m + 2 C_3 C_4 L_3 L_4 + 2 C_3 C_4 L_3 L_5 R_4 g_m + 2 C_3 C_4 L_4 L_5}$$

**10.641 INVALID-ORDER-641** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ L_5 s + R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m s^6 + R_4 g_m + s^5 \left(C_3 C_4 C_5}{2 C_3 C_4 C_5 L_3 L_4 L_5 g_m s^6 + 2 g_m + s^5 \left(2 C_3 C_4 C_5 L_3 L_4 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 + 2 C_3 C_4 C_5 L_3 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 g_m + C_3 C_4 C_5 L_4 L_5 R_4 g_m\right) + s^4 \left(2 C_3 C_4 C_5 L_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 R_4 + 2 C_3 C_4 C_5 L_4 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 R_3 R_5 g_m + 2 C\right.$$

**10.642 INVALID-ORDER-642** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{L_5 R_5 s}{C_5 L_5 R_5 s^2 + L_5 s + R_5},\ \infty\right)$

$$H(s) = \frac{}{2 R_4 R_5 g_m + 2 R_5 + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5 R_5\right) + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 R_5 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 + 2 C_3 C_4 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 L_3 L_4 L_5 R_5 g_m + 2 C_3 C_4 L_3 L_4 L_5\right) + s^4 \left(2 C_3 C_4 C_5 L_5 R_3 R_4\right.$$

**10.643 INVALID-ORDER-643** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2 + C_4 R_4 s + 1},\ \frac{C_5 L_5 R_5 s^2 + L_5 s + R_5}{C_5 L_5 s^2 + 1},\ \infty\right)$

$$H(s) = \frac{}{2 R_4 g_m + 2 R_5 g_m + s^6 \left(2 C_3 C_4 C_5 L_3 L_4 L_5 R_4 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_4 L_5\right) + s^5 \left(2 C_3 C_4 C_5 L_3 L_5 R_4 R_5 g_m + 2 C_3 C_4 C_5 L_3 L_5 R_4 + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 L_4 L_5 R_3 + C_3 C_4 C_5 L_4 L_5 R_4 R_5 g_m + C_3 C_4 C_5 L_4 L_5 R_4 + 2$$

**10.644 INVALID-ORDER-644** $Z(s) = \left(\infty,\ \infty,\ L_3 s + R_3 + \frac{1}{C_3 s},\ \frac{R_4\left(C_4 L_4 s^2+1\right)}{C_4 L_4 s^2+C_4 R_4 s+1},\ \frac{R_5\left(C_5 L_5 s^2+1\right)}{C_5 L_5 s^2+C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_4 g_m + 2R_5 g_m + s^6 \left(2C_3C_4C_5L_3L_4L_5R_4g_m + 2C_3C_4C_5L_3L_4L_5R_5g_m + 2C_3C_4C_5L_3L_4L_5\right) + s^5 \left(2C_3C_4C_5L_3L_4R_4R_5g_m + 2C_3C_4C_5L_3L_4R_5 + 2C_3C_4C_5L_3L_5R_4R_5g_m + 2C_3C_4C_5L_3L_5R_4 + 2C_3C_4C_5L_4L_5R_3R_4g_m + 2C_3C_4C_5L_4L_5R_3R_5g_m + 2C_3C_4C_5L_4L_5R_3 +}$$

**10.645 INVALID-ORDER-645** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4s^2 + L_3R_3R_4g_m s}{C_3C_5L_3R_3R_4s^3 + R_3R_4g_m + s^2\left(C_3L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3 + C_5L_3R_4\right) + s\left(C_5R_3R_4 + 2L_3R_3g_m + L_3R_4g_m\right)}$$

**10.646 INVALID-ORDER-646** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4R_5s^2 + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{C_3C_5L_3R_3R_4R_5s^3 + R_3R_4R_5g_m + R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + 2C_5L_3R_3R_4R_5g_m + 2C_5L_3R_3R_5 + C_5L_3R_4R_5\right) + s\left(C_5R_3R_4R_5 + 2L_3R_3R_4g_m + 2L_3R_3R_5g_m + 2L_3R_3 + L_3R_4R_5g_m + L_3R_4\right)}$$

**10.647 INVALID-ORDER-647** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3R_4g_m s + s^2\left(C_5L_3R_3R_4R_5g_m - C_5L_3R_3R_4\right)}{R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3R_5g_m + 2C_5L_3R_3 + C_5L_3R_4R_5g_m + C_5L_3R_4\right) + s\left(C_5R_3R_4R_5g_m + C_5R_3R_4 + 2L_3R_3g_m + L_3R_4g_m\right)}$$

**10.648 INVALID-ORDER-648** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3R_4g_m s^3 - C_5L_3R_3R_4s^2 + L_3R_3R_4g_m s}{C_3C_5L_3L_5R_3R_4g_m s^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4 + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3 + C_5L_3R_4 + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4 + 2L_3R_3g_m + L_3R_4g_m\right)}$$

**10.649 INVALID-ORDER-649** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3R_4s^3 + L_3L_5R_3R_4g_m s^2 - L_3R_3R_4s}{C_3C_5L_3L_5R_3R_4s^4 + R_3R_4 + s^3\left(C_3L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3R_4 + C_5L_5R_3R_4 + 2L_3L_5R_3g_m + L_3L_5R_4g_m\right) + s\left(2L_3R_3R_4g_m + 2L_3R_3 + L_3R_4 + L_5R_3R_4g_m\right)}$$

**10.650 INVALID-ORDER-650** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3R_4g_m s^3 + L_3R_3R_4g_m s + s^2\left(C_5L_3R_3R_4R_5g_m - C_5L_3R_3R_4\right)}{C_3C_5L_3L_5R_3R_4g_m s^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3C_5L_3R_3R_4 + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3R_5g_m + 2C_5L_3R_3 + C_5L_3R_4R_5g_m + C_5L_3R_4 + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4R_5g_m + C_5R_3R_4 + 2L_3R\right.}$$

**10.651 INVALID-ORDER-651** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3R_4R_5s^3 - L_3R_3R_4R_5s + s^2\left(L_3L_5R_3R_4R_5g_m - L_3L_5R_3R_4\right)}{C_3C_5L_3L_5R_3R_4R_5s^4 + R_3R_4R_5 + s^3\left(C_3L_3L_5R_3R_4R_5g_m + C_3L_3L_5R_3R_4 + 2C_5L_3L_5R_3R_4R_5g_m + 2C_5L_3L_5R_3R_5 + C_5L_3L_5R_4R_5\right) + s^2\left(C_3L_3R_3R_4R_5 + C_5L_5R_3R_4R_5 + 2L_3L_5R_3R_4g_m + 2L_3L_5R_3R_5g_m + 2L_3L_5R_3 + L_3L_5R_4R_5g_m + L_3L_5R_4\right) + s\left(2L_3R_3R_4R\right.}$$

**10.652 INVALID-ORDER-652** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3L_5R_3R_4g_m s^2 + s^3\left(C_5L_3L_5R_3R_4R_5g_m - C_5L_3L_5R_3R_4\right) + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m + C_3C_5L_3L_5R_3R_4\right) + s^3\left(C_3L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_5g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4R_5g_m + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + C_5L_5R_3R_4R_5g_m + C_5L_5R_3R_4 + 2L_3L_5R\right.}$$

**10.653 INVALID-ORDER-653** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4,\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4R_5s^2 + s^3\left(C_5L_3L_5R_3R_4R_5g_m - C_5L_3L_5R_3R_4\right) + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m + C_3C_5L_3L_5R_3R_4\right) + s^3\left(C_3C_5L_3R_3R_4R_5 + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_5g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4R_5g_m + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + 2C_5L_3R_3R_4R_5g_m + 2C_5L_3R_3R_5 + C_5L_3\right.}$$

**10.654 INVALID-ORDER-654** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3s^2 + L_3R_3g_ms}{R_3g_m + s^3\left(C_3C_5L_3R_3 + 2C_4C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m + 2C_4L_3R_3g_m + 2C_5L_3R_3g_m + C_5L_3\right) + s\left(C_5R_3 + L_3g_m\right)}$$

**10.655 INVALID-ORDER-655** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_5s^2 + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^3\left(C_3C_5L_3R_3R_5 + 2C_4C_5L_3R_3R_5\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + 2C_5L_3R_3R_5g_m + C_5L_3R_5\right) + s\left(C_5R_3R_5 + 2L_3R_3g_m + L_3R_5g_m + L_3\right)}$$

**10.656 INVALID-ORDER-656** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3g_ms + s^2\left(C_5L_3R_3R_5g_m - C_5L_3R_3\right)}{R_3g_m + s^3\left(C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_5g_m + 2C_4C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m + 2C_4L_3R_3g_m + 2C_5L_3R_3g_m + C_5L_3R_5g_m + C_5L_3\right) + s\left(C_5R_3R_5g_m + C_5R_3 + L_3g_m\right)}$$

**10.657 INVALID-ORDER-657** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3g_ms^3 - C_5L_3R_3s^2 + L_3R_3g_ms}{R_3g_m + s^4\left(C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_5R_3g_m\right) + s^3\left(C_3C_5L_3R_3 + 2C_4C_5L_3R_3 + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3g_m + 2C_4L_3R_3g_m + 2C_5L_3R_3g_m + C_5L_3 + C_5L_5R_3g_m\right) + s\left(C_5R_3 + L_3g_m\right)}$$

**10.658 INVALID-ORDER-658** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3s^3 + L_3L_5R_3g_ms^2 - L_3R_3s}{R_3 + s^4\left(C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3\right) + s^3\left(C_3L_3L_5R_3g_m + 2C_4L_3L_5R_3g_m + 2C_5L_3L_5R_3g_m + C_5L_3L_5\right) + s^2\left(C_3L_3R_3 + 2C_4L_3R_3 + C_5L_5R_3 + L_3L_5g_m\right) + s\left(2L_3R_3g_m + L_3 + L_5R_3g_m\right)}$$

**10.659 INVALID-ORDER-659** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3g_ms^3 + L_3R_3g_ms + s^2\left(C_5L_3R_3R_5g_m - C_5L_3R_3\right)}{R_3g_m + s^4\left(C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_5R_3g_m\right) + s^3\left(C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_5g_m + 2C_4C_5L_3R_3 + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3g_m + 2C_4L_3R_3g_m + 2C_5L_3R_3g_m + C_5L_3R_5g_m + C_5L_3 + C_5L_5R_3g_m\right) + s\left(C_5R_3R_5g_m + C_5R_3 + L_3g_m\right)}$$

**10.660 INVALID-ORDER-660** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3R_5s^3 - L_3R_3R_5s + s^2\left(L_3L_5R_3R_5g_m - L_3L_5R_3\right)}{R_3R_5 + s^4\left(C_3C_5L_3L_5R_3R_5 + 2C_4C_5L_3L_5R_3R_5\right) + s^3\left(C_3L_3L_5R_3R_5g_m + C_3L_3L_5R_3 + 2C_4L_3L_5R_3R_5g_m + 2C_4L_3L_5R_3 + 2C_5L_3L_5R_3R_5g_m + C_5L_3L_5R_5\right) + s^2\left(C_3L_3R_3R_5 + 2C_4L_3R_3R_5 + C_5L_5R_3R_5 + 2L_3L_5R_3g_m + L_3L_5R_5g_m + L_3L_5\right) + s\left(2L_3R_3R_5g_m + L\right.}$$

**10.661 INVALID-ORDER-661** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3L_5R_3g_ms^2 + s^3\left(C_5L_3L_5R_3R_5g_m - C_5L_3L_5R_3\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_5g_m + 2C_4C_5L_3L_5R_3\right) + s^3\left(C_3L_3L_5R_3g_m + 2C_4L_3L_5R_3g_m + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_5g_m + C_5L_3L_5\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + C_5L_5R_3R_5g_m + \right.}$$

### 10.662 INVALID-ORDER-662 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_5s^2 + s^3\left(C_5L_3L_5R_3R_5g_m - C_5L_3L_5R_3\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_5g_m + 2C_4C_5L_3L_5R_3R_5\right) + s^3\left(C_3C_5L_3R_3R_5 + 2C_4C_5L_3R_3R_5 + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_5g_m + C_5L_3L_5\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + 2C_5L_3R_3R_5g_m + \right.}$$

### 10.663 INVALID-ORDER-663 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4s^2 + L_3R_3R_4g_ms}{R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_4L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3 + C_5L_3R_4\right) + s\left(C_5R_3R_4 + 2L_3R_3g_m + L_3R_4g_m\right)}$$

### 10.664 INVALID-ORDER-664 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4R_5s^2 + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^3\left(C_3C_5L_3R_3R_4R_5 + 2C_4C_5L_3R_3R_4R_5\right) + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + 2C_4L_3R_3R_4R_5g_m + 2C_4L_3R_3R_4 + 2C_5L_3R_3R_4R_5g_m + 2C_5L_3R_3R_5 + C_5L_3R_4R_5\right) + s\left(C_5R_3R_4R_5 + 2L_3R_3R_4g_m + 2L_3R_3R_5g_m + 2L_3R_3 + L_3R_4R_5g_m + L_3\right.}$$

### 10.665 INVALID-ORDER-665 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3R_4g_ms + s^2\left(C_5L_3R_3R_4R_5g_m - C_5L_3R_3R_4\right)}{R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4R_5g_m + 2C_4C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_4L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3R_5g_m + 2C_5L_3R_3 + C_5L_3R_4R_5g_m + C_5L_3R_4\right) + s\left(C_5R_3R_4R_5g_m + C_5R_3R_4 + 2L_3R_3g_m + L_3R_4g_m\right)}$$

### 10.666 INVALID-ORDER-666 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3R_4g_ms^3 - C_5L_3R_3R_4s^2 + L_3R_3R_4g_ms}{R_3R_4g_m + s^4\left(C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4 + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_4L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3 + C_5L_3R_4 + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4 + 2L_3R_3g_m + L_3R_4\right.}$$

### 10.667 INVALID-ORDER-667 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3R_4s^3 + L_3L_5R_3R_4g_ms^2 - L_3R_3R_4s}{R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4 + 2C_4C_5L_3L_5R_3R_4\right) + s^3\left(C_3L_3L_5R_3R_4g_m + 2C_4L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3R_4 + 2C_4L_3R_3R_4 + C_5L_5R_3R_4 + 2L_3L_5R_3g_m + L_3L_5R_4g_m\right) + s\left(2L_3R_3R_4g_m + 2L_3R_3 + L_3R_4 + L_5R_3\right.}$$

### 10.668 INVALID-ORDER-668 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_5R_3R_4g_ms^3 + L_3R_3R_4g_ms + s^2\left(C_5L_3R_3R_4R_5g_m - C_5L_3R_3R_4\right)}{R_3R_4g_m + s^4\left(C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4R_5g_m + 2C_4C_5L_3R_3R_4 + 2C_5L_3L_5R_3g_m + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_4L_3R_3R_4g_m + 2C_5L_3R_3R_4g_m + 2C_5L_3R_3R_5g_m + 2C_5L_3R_3\right.}$$

### 10.669 INVALID-ORDER-669 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_5R_3R_4R_5s^3 - L_3R_3R_4R_5s + s^2\left(L_3L_5R_3R_4R_5g_m - L_3L_5R_3R_4\right)}{R_3R_4R_5 + s^4\left(C_3C_5L_3L_5R_3R_4R_5 + 2C_4C_5L_3L_5R_3R_4R_5\right) + s^3\left(C_3L_3L_5R_3R_4R_5g_m + C_3L_3L_5R_3R_4 + 2C_4L_3L_5R_3R_4R_5g_m + 2C_4L_3L_5R_3R_4 + 2C_5L_3L_5R_3R_4R_5g_m + 2C_5L_3L_5R_3R_5 + C_5L_3L_5R_4R_5\right) + s^2\left(C_3L_3R_3R_4R_5 + 2C_4L_3R_3R_4R_5 + C_5L_5R_3R_4R_5 + 2L_3L\right.}$$

### 10.670 INVALID-ORDER-670 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3L_5R_3R_4g_ms^2 + s^3\left(C_5L_3L_5R_3R_4R_5g_m - C_5L_3L_5R_3R_4\right) + s\left(L_3R_3R_4R_5\right.}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m + C_3C_5L_3L_5R_3R_4 + 2C_4C_5L_3L_5R_3R_4R_5g_m + 2C_4C_5L_3L_5R_3R_4\right) + s^3\left(C_3L_3L_5R_3R_4g_m + 2C_4L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_5g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4R_5g_m + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3\right.}$$

**10.671 INVALID-ORDER-671** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3R_3R_4R_5s^2 + s^3\left(C_5L_3L_5R_3R_4R_5g_m - C_5L_3L_5R_3R_4\right) + s\left(\right.}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m + C_3C_5L_3L_5R_3R_4 + 2C_4C_5L_3L_5R_3R_4R_5g_m + 2C_4C_5L_3L_5R_3R_4\right) + s^3\left(C_3C_5L_3R_3R_4R_5 + 2C_4C_5L_3R_3R_4R_5 + 2C_5L_3L_5R_3R_4g_m + 2C_5L_3L_5R_3R_5g_m + 2C_5L_3L_5R_3 + C_5L_3L_5R_4R_5g_m + C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3\right.}$$

**10.672 INVALID-ORDER-672** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^2\left(C_4L_3R_3R_4R_5g_m - C_4L_3R_3R_4\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m + C_3C_4L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_4g_m + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + C_4L_3R_4R_5g_m + C_4L_3R_4\right) + s\left(C_4R_3R_4R_5g_m + C_4R_3R_4 + 2L_3R_3g_m + L_3R_5g_m + L_3\right)}$$

**10.673 INVALID-ORDER-673** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3R_3R_4s^3 + L_3R_3g_ms + s^2\left(C_4L_3R_3R_4g_m - C_5L_3R_3\right)}{C_3C_4C_5L_3R_3R_4s^4 + R_3g_m + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L_3R_3 + C_4C_5L_3R_4\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R_3R_4 + 2C_4L_3R_3g_m + C_4L_3R_4g_m + 2C_5L_3R_3g_m + C_5L_3\right) + s\left(C_4R_3R_4g_m + C_5R_3 + L_3g_m\right)}$$

**10.674 INVALID-ORDER-674** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3R_3R_4R_5s^3 + s^2\left(C_4L_3R_3R_4R_5g_m - C_4L_3R_3R_4 - C_5L_3R_3R_5\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{C_3C_4C_5L_3R_3R_4R_5s^4 + R_3R_5g_m + R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m + C_3C_4L_3R_3R_4 + C_3C_5L_3R_3R_5 + 2C_4C_5L_3R_3R_4R_5g_m + 2C_4C_5L_3R_3R_5 + C_4C_5L_3R_4R_5\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + C_4C_5R_3R_4R_5 + 2C_4L_3R_3R_4g_m + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + C_4L_3R\right.}$$

**10.675 INVALID-ORDER-675** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3g_ms + s^3\left(C_4C_5L_3R_3R_4R_5g_m - C_4C_5L_3R_3R_4\right) + s^2\left(C_4L_3R_3R_4g_m + C_5L_3R_3R_5g_m - C_5L_3R_3\right)}{R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m + C_3C_4C_5L_3R_3R_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L_3R_3R_5g_m + 2C_4C_5L_3R_3 + C_4C_5L_3R_4R_5g_m + C_4C_5L_3R_4\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R_3R_4R_5g_m + C_4C_5R_3R_4 + 2C_4L_3R\right.}$$

**10.676 INVALID-ORDER-676** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_5R_3R_4g_ms^4 + L_3R_3g_ms + s^3\left(-C_4C_5L_3R_3R_4 + C_5L_3L_5R_3g_m\right) + s^2\left(C_4L_3R_3R_4g_m - C_5L_3R_3\right)}{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_5R_3g_m + C_4C_5L_3L_5R_4g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L_3R_3 + C_4C_5L_3R_4 + C_4C_5L_5R_3R_4g_m + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R\right.}$$

**10.677 INVALID-ORDER-677** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_5R_3R_4s^4 - L_3R_3s + s^3\left(C_4L_3L_5R_3R_4g_m - C_5L_3L_5R_3\right) + s^2\left(-C_4L_3R_3R_4 + L_3L_5R_3g_m\right)}{C_3C_4C_5L_3L_5R_3R_4s^5 + R_3 + s^4\left(C_3C_4L_3L_5R_3R_4g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3 + C_4C_5L_3L_5R_4\right) + s^3\left(C_3C_4L_3R_3R_4 + C_3L_3L_5R_3g_m + C_4C_5L_5R_3R_4 + 2C_4L_3L_5R_3g_m + C_4L_3L_5R_4g_m + 2C_5L_3L_5R_3g_m + C_5L_3L_5\right) + s^2\left(C_3L_3R_3 + 2\right.}$$

**10.678 INVALID-ORDER-678** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_5R_3R_4g_ms^4 + L_3R_3g_ms + s^3\left(C_4C_5L_3R_3R_4R_5g_m - C_4C_5L_3R_3R_4 + C_5L\right.}{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m + C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_5R_3g_m + C_4C_5L_3L_5R_4g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L_3R_3R_5g_m + 2C_4C_5L_3R_3 + C_4C_5L\right.}$$

**10.679 INVALID-ORDER-679** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_5R_3R_4R_5s^4 - L_3R_3R_5s + s^3\left(C_4\right.}{C_3C_4C_5L_3L_5R_3R_4R_5s^5 + R_3R_5 + s^4\left(C_3C_4L_3L_5R_3R_4R_5g_m + C_3C_4L_3L_5R_3R_4 + C_3C_5L_3L_5R_3R_5 + 2C_4C_5L_3L_5R_3R_4R_5g_m + 2C_4C_5L_3L_5R_3R_5 + C_4C_5L_3L_5R_4R_5\right) + s^3\left(C_3C_4L_3R_3R_4R_5 + C_3L_3L_5R_3R_5g_m + C_3L_3L_5R_3 + C_4C_5L_5R_3R_4R_5 + 2C_4L_3L_5R_3R_4g_m\right.}$$

**10.680 INVALID-ORDER-680** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4 + \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_4C_5L_3L_5R_3R_4R_5g_m -\right.}{R_3R_5g_m + R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(C_3C_4L_3L_5R_3R_4g_m + C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3R_5g_m + 2C_4C_5L_3L_5R_3 + C_4C_5L_3L_5R_4R_5g_m + C_4C_5L_3L_5R_4\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m\right.}$$

**10.681 INVALID-ORDER-681** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ R_4+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{s^4\left(C_4C\right.}{R_3R_5g_m + R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5 + C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3R_5g_m + 2C_4C_5L_3L_5R_3 + C_4C_5L_3L_5R_4R_5g_m + C_4C_5L_3L_5R_4\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m\right.}$$

**10.682 INVALID-ORDER-682** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_4L_3L_4R_3R_5g_m - C_4L_3L_4R_3\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3\right) + s^3\left(2C_4L_3L_4R_3g_m + C_4L_3L_4R_5g_m + C_4L_3L_4\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + C_4L_4R_3R_5g_m + C_4L_4R_3\right) + s\left(2L_3R_3g_m + L_3R_5g_m + L_3\right)}$$

**10.683 INVALID-ORDER-683** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3s^4 + C_4L_3L_4R_3g_ms^3 - C_5L_3R_3s^2 + L_3R_3g_ms}{C_3C_4C_5L_3L_4R_3s^5 + R_3g_m + s^4\left(C_3C_4L_3L_4R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4\right) + s^3\left(C_3C_5L_3R_3 + 2C_4C_5L_3R_3 + C_4C_5L_4R_3 + C_4L_3L_4g_m\right) + s^2\left(C_3L_3R_3g_m + 2C_4L_3R_3g_m + C_4L_4R_3g_m + 2C_5L_3R_3g_m + C_5L_3\right) + s\left(C_5R_3 + L_3g_m\right)}$$

**10.684 INVALID-ORDER-684** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_5s^4 - C_5L_3R_3R_5s^2 + s^3\left(C_4L_3L_4R_3R_5g_m - C_4L_3L_4R_3\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{C_3C_4C_5L_3L_4R_3R_5s^5 + R_3R_5g_m + R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_5\right) + s^3\left(C_3C_5L_3R_3R_5 + 2C_4C_5L_3R_3R_5 + C_4C_5L_4R_3R_5 + 2C_4L_3L_4R_3g_m + C_4L_3L_4R_5g_m + C_4L_3L_4\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3\right.}$$

**10.685 INVALID-ORDER-685** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4L_3L_4R_3g_ms^3 + L_3R_3g_ms + s^4\left(C_4C_5L_3L_4R_3R_5g_m - C_4C_5L_3L_4R_3\right) + s^2\left(C_5L_3R_3R_5g_m - C_5L_3R_3\right)}{R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4L_3L_4R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m + C_4C_5L_3L_4\right) + s^3\left(C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_5g_m + 2C_4C_5L_3R_3 + C_4C_5L_4R_3R_5g_m + C_4C_5L_4R_3 + C_4L_3L_4g_m\right) + s^2\left(C_3L_3\right.}$$

**10.686 INVALID-ORDER-686** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5R_3g_ms^5 - C_4C_5L_3L_4R_3s^4 - C_5L_3R_3s^2 + L_3R_3g_ms + s^3\left(C_4L_3L_4R_3g_m + C_5L_3L_5R_3g_m\right)}{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3 + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4 + 2C_4C_5L_3L_5R_3g_m + C_4C_5L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_3R_3 + 2C_4C_5L_3R_3 + C_4C_5L_4R_3 + C_4L_3L_4g_m + C_5L_3L_5\right.}$$

**10.687 INVALID-ORDER-687** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_3s^5 + C_4L_3L_4L_5R_3g_ms^4 + L_3L_5R_3g_ms^2 - L_3R_3s + s^3\left(-C_4L_3L_4R_3 - C_5L_3L_5R_3\right)}{C_3C_4C_5L_3L_4L_5R_3s^6 + R_3 + s^5\left(C_3C_4L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_3 + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3 + C_4C_5L_4L_5R_3 + C_4L_3L_4L_5g_m\right) + s^3\left(C_3L_3L_5R_3g_m + 2C_4L_3L_4R_3g_m + C_4L_3L_4 + 2C_4L_3L_5R_3g_m + C_4L_4L_5R_3g_m\right.}$$

**10.688 INVALID-ORDER-688** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5R_3g_ms^5 + L_3R_3g_ms + s^4\left(C_4C_5L_3L_4R_3R_5g_m - C_4C_5L_3L_4R_3\right) + s^3\left(C\right.}{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_3 + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m + C_4C_5L_3L_4 + 2C_4C_5L_3L_5R_3g_m + C_4C_5L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_3R_3R_5g_m + C\right.}$$

**10.689 INVALID-ORDER-689** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_3R_5s^5 - L_3R_3R_5s + s^4\left(C_4L\right.}{C_3C_4C_5L_3L_4L_5R_3R_5s^6 + R_3R_5 + s^5\left(C_3C_4L_3L_4L_5R_3R_5g_m + C_3C_4L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_5g_m + C_4C_5L_3L_4L_5R_5\right) + s^4\left(C_3C_4L_3L_4R_3R_5 + C_3C_5L_3L_5R_3R_5 + 2C_4C_5L_3L_5R_3R_5 + C_4C_5L_4L_5R_3R_5 + 2C_4L_3L_4L_5R_3g_m + C_4L_3L_4L_5R_5g_m + C_4L_3L_4L_5\right) +$$

**10.690 INVALID-ORDER-690** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_4L_3L_4L_5R_3g_ms^4 + L_3L_5}{R_3R_5g_m + R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_5g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_5g_m + 2$$

**10.691 INVALID-ORDER-691** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5$$
$$R_3R_5g_m + R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4C_5L_3L_4R_3R_5 + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_5g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_4R_3R_5g_m + C$$

**10.692 INVALID-ORDER-692** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_3s^2 + L_3L_4R_3g_ms}{2L_3R_3g_m + L_4R_3g_m + s^3\left(C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3\right) + s^2\left(C_3L_3L_4R_3g_m + 2C_4L_3L_4R_3g_m + 2C_5L_3L_4R_3g_m + C_5L_3L_4\right) + s\left(2C_5L_3R_3 + C_5L_4R_3 + L_3L_4g_m\right)}$$

**10.693 INVALID-ORDER-693** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_3R_5s^2 + s\left(L_3L_4R_3R_5g_m - L_3L_4R_3\right)}{2L_3R_3R_5g_m + 2L_3R_3 + L_4R_3R_5g_m + L_4R_3 + s^3\left(C_3C_5L_3L_4R_3R_5 + 2C_4C_5L_3L_4R_3R_5\right) + s^2\left(C_3L_3L_4R_3R_5g_m + C_3L_3L_4R_3 + 2C_4L_3L_4R_3R_5g_m + 2C_4L_3L_4R_3 + 2C_5L_3L_4R_3R_5g_m + C_5L_3L_4R_5\right) + s\left(2C_5L_3R_3R_5 + C_5L_4R_3R_5 + 2L_3L_4R_3g_m + L_3L_4R_5g_m + L_3L$$

**10.694 INVALID-ORDER-694** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3L_4R_3g_ms + s^2\left(C_5L_3L_4R_3R_5g_m - C_5L_3L_4R_3\right)}{2L_3R_3g_m + L_4R_3g_m + s^3\left(C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3\right) + s^2\left(C_3L_3L_4R_3g_m + 2C_4L_3L_4R_3g_m + 2C_5L_3L_4R_3g_m + C_5L_3L_4R_5g_m + C_5L_3L_4\right) + s\left(2C_5L_3R_3R_5g_m + 2C_5L_3R_3 + C_5L_4R_3R_5g_m + C_5L_4R_3 + L_3L_4g_m\right)}$$

**10.695 INVALID-ORDER-695** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_4L_5R_3g_ms^3 - C_5L_3L_4R_3s^2 + L_3L_4R_3g_ms}{2L_3R_3g_m + L_4R_3g_m + s^4\left(C_3C_5L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3 + C_5L_3L_4L_5g_m\right) + s^2\left(C_3L_3L_4R_3g_m + 2C_4L_3L_4R_3g_m + 2C_5L_3L_4R_3g_m + C_5L_3L_4 + 2C_5L_3L_5R_3g_m + C_5L_4L_5R_3g_m\right) + s\left(2C_5L_3R_3 + C_5L_4R_3 + L_3L_4g_m$$

**10.696 INVALID-ORDER-696** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4L_5R_3s^3 + L_3L_4L_5R_3g_ms^2 - L_3L_4R_3s}{2L_3R_3 + L_4R_3 + s^4\left(C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3\right) + s^3\left(C_3L_3L_4L_5R_3g_m + 2C_4L_3L_4L_5R_3g_m + 2C_5L_3L_4L_5R_3g_m + C_5L_3L_4L_5\right) + s^2\left(C_3L_3L_4R_3 + 2C_4L_3L_4R_3 + 2C_5L_3L_5R_3 + C_5L_4L_5R_3 + L_3L_4L_5g_m\right) + s\left(2L_3L_4R_3g_m + L_3L_4 + 2L_3L_5R_3g_m + L_4L_5R_3$$

**10.697 INVALID-ORDER-697** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_4L_5R_3g_ms^3 + L_3L_4R_3g_ms + s^2\left(C_5L_3L_4R_3R_5g_m - C_5L_3L_4R_3\right)}{2L_3R_3g_m + L_4R_3g_m + s^4\left(C_3C_5L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m\right) + s^3\left(C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_5L_3L_4L_5g_m\right) + s^2\left(C_3L_3L_4R_3g_m + 2C_4L_3L_4R_3g_m + 2C_5L_3L_4R_3g_m + C_5L_3L_4R_5g_m + C_5L_3L_4 + 2C_5L_3$$

**10.698 INVALID-ORDER-698** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4L_5R_3R_5s^3 - L_3L_4R_3R_5s + s^2\left(L_3L_4L_5R_3R_5g_m - L_3L_4L_5R_3\right)}{2L_3R_3R_5 + L_4R_3R_5 + s^4\left(C_3C_5L_3L_4L_5R_3R_5 + 2C_4C_5L_3L_4L_5R_3R_5\right) + s^3\left(C_3L_3L_4L_5R_3R_5g_m + C_3L_3L_4L_5R_3 + 2C_4L_3L_4L_5R_3R_5g_m + 2C_4L_3L_4L_5R_3 + 2C_5L_3L_4L_5R_3R_5g_m + C_5L_3L_4L_5R_5\right) + s^2\left(C_3L_3L_4R_3R_5 + 2C_4L_3L_4R_3R_5 + 2C_5L_3L_5R_3R_5 + C_5L_4L_5R_3R_5$$

**10.699 INVALID-ORDER-699** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3L_4L_5R_3g_ms^2 + s^3\left(C_5L_3L_4L_5R_3R_5g_m - C_5L_3L_4L_5R_3\right) + s\left(L_3L_4R_3R_5g_m\right.}{2L_3R_3R_5g_m + 2L_3R_3 + L_4R_3R_5g_m + L_4R_3 + s^4\left(C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3\right) + s^3\left(C_3L_3L_4L_5R_3g_m + 2C_4L_3L_4L_5R_3g_m + 2C_5L_3L_4L_5R_3g_m + C_5L_3L_4L_5R_5g_m + C_5L_3L_4L_5\right) + s^2\left(C_3L_3L_4R_3R_5g_m + C$$

**10.700 INVALID-ORDER-700** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_3R_5s^2 + s^3\left(C_5L_3L_4L_5R_3R_5g_m - C_5L_3L_4L_5R_3\right) + s\left(L_3\right.}{2L_3R_3R_5g_m + 2L_3R_3 + L_4R_3R_5g_m + L_4R_3 + s^4\left(C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3\right) + s^3\left(C_3C_5L_3L_4R_3R_5 + 2C_4C_5L_3L_4R_3R_5 + 2C_5L_3L_4L_5R_3g_m + C_5L_3L_4L_5R_5g_m + C_5L_3L_4L_5\right) + s^2\left(C_3L_3L_4R_3R_5g_m + C\right.}$$

**10.701 INVALID-ORDER-701** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_4L_3L_4R_3R_5g_m - C_4L_3L_4R_3\right) + s^2\left(C_4L_3R_3R_4R_5g_m - C_4L_3R_3R_4\right) + s\left(L_3R_3R_5g_m - L_3R_3\right)}{R_3R_5g_m + R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m + C_3C_4L_3R_3R_4 + 2C_4L_3L_4R_3g_m + C_4L_3L_4R_5g_m + C_4L_3L_4\right) + s^2\left(C_3L_3R_3R_5g_m + C_3L_3R_3 + 2C_4L_3R_3R_4g_m + 2C_4L_3R_3R_5g_m + 2C_4L_3R_3 + C_4L_3R_4R_5g_m + C_4L_3R_4 + C_4L_4R\right.}$$

**10.702 INVALID-ORDER-702** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3s^4 + L_3R_3g_ms + s^3\left(-C_4C_5L_3R_3R_4 + C_4L_3L_4R_3g_m\right) + s^2\left(C_4L_3R_3R_4g_m - C_5L_3R_3\right)}{C_3C_4C_5L_3L_4R_3s^5 + R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L_3R_3 + C_4C_5L_3R_4 + C_4C_5L_4R_3 + C_4L_3L_4g_m\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R_3R_4 + 2C_4L_3R_3g\right.}$$

**10.703 INVALID-ORDER-703** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_5s^4 + s^3\left(-C_4C_5L_3R_3R_4R_5 + C_4L_3\right.}{C_3C_4C_5L_3L_4R_3R_5s^5 + R_3R_5g_m + R_3 + s^4\left(C_3C_4C_5L_3R_3R_4R_5 + C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_5\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m + C_3C_4L_3R_3R_4 + C_3C_5L_3R_3R_5 + 2C_4C_5L_3R_3R_4R_5g_m + 2C_4C_5L_3R_3R_5 + C_4C_5L_3R_4R_5 + \right.}$$

**10.704 INVALID-ORDER-704** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3g_ms + s^4\left(C_4C_5L_3L_4R_3R_5g_m - C_4C_5L_3L_4R_3\right) + s^3\left(C_4C_5L_3R\right.}{R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m + C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m + C_4C_5L_3L_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_3 + 2C_4C_5L_3R_3R_4g_m + 2C_4C_5L\right.}$$

**10.705 INVALID-ORDER-705** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5R_3g_ms^5 + L_3R_3g_ms + s^4\left(-C_4C_5L_3L_4R_3 + C_4C_5L_3L_5R_3\right.}{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_5R_3R_4g_m + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4 + 2C_4C_5L_3L_5R_3g_m + C_4C_5L_3L_5R_4g_m + C_4C_5L_4L_5R_3g_m\right) + s^3\left(C\right.}$$

**10.706 INVALID-ORDER-706** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_3s^5 - L_3R_3s + s^4\left(-C_4C_5L_3L_5R_3R_4 - \right.}{C_3C_4C_5L_3L_4L_5R_3s^6 + R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4 + C_3C_4L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_3 + C_3C_4L_3L_5R_3R_4g_m + C_3C_5L_3L_5R_3 + 2C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_5R_3 + C_4C_5L_3L_5R_4 + C_4C_5L_4L_5R_3 + C_4L_3L_4L_5g_m\right.}$$

**10.707 INVALID-ORDER-707** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C}{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_5R_3R_4g_m + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m + C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m + C_4C_5L_3\right.}$$

**10.708 INVALID-ORDER-708** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{C_3C_4C_5L_3L_4L_5R_3R_5s^6 + R_3R_5 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5 + C_3C_4L_3L_4L_5R_3R_5g_m + C_3C_4L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_5g_m + C_4C_5L_3L_4L_5R_5\right) + s^4\left(C_3C_4L_3L_4R_3R_5 + C_3C_4L_3L_5R_3R_4R_5g_m + C_3C_4L_3L_5R_3R_4 + C_3C_5L_3L_5R_3R_5 + 2C_4C_5L_3L_5R_3R_4R_5g_m\right.}$$

**10.709 INVALID-ORDER-709** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_5g_m + R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_5R_3R_4 + C_3C_4L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_5g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + C_3C_4L_3L_5R\right.}$$

### 10.710 INVALID-ORDER-710 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_5g_m + R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_5R_3R_4 + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_5g_m + C_4C_5L_3L_4L_5\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5 + C_3C_4L_3L_4R_3R_5g_m + C_3C_4L\right.}$$

### 10.711 INVALID-ORDER-711 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_3R_4s^2 + L_3L_4R_3R_4g_ms}{2L_3R_3R_4g_m + L_4R_3R_4g_m + s^3\left(C_3C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4R_3R_4\right) + s^2\left(C_3L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3 + C_5L_3L_4R_4\right) + s\left(2C_5L_3R_3R_4 + C_5L_4R_3R_4 + 2L_3L_4R_3g_m + L_3L_4R_4g_m\right)}$$

### 10.712 INVALID-ORDER-712 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4R_3R_4R_5s^2 + s\left(L_3L_4R_3R_4R_5g_m - L_3L_4R_3R_4\right)}{2L_3R_3R_4R_5g_m + 2L_3R_3R_4 + L_4R_3R_4R_5g_m + L_4R_3R_4 + s^3\left(C_3C_5L_3L_4R_3R_4R_5 + 2C_4C_5L_3L_4R_3R_4R_5\right) + s^2\left(C_3L_3L_4R_3R_4R_5g_m + C_3L_3L_4R_3R_4 + 2C_4L_3L_4R_3R_4R_5g_m + 2C_4L_3L_4R_3R_4 + 2C_5L_3L_4R_3R_4R_5g_m + 2C_5L_3L_4R_3R_5 + C_5L_3L_4R_4R_5\right) + s\left(2C_5L_3R_3R\right.}$$

### 10.713 INVALID-ORDER-713 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3L_4R_3R_4g_ms + s^2\left(C_5L_3L_4R_3R_4R_5g_m - C_5L_3L_4R_3R_4\right)}{2L_3R_3R_4g_m + L_4R_3R_4g_m + s^3\left(C_3C_5L_3L_4R_3R_4R_5g_m + C_3C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4R_3R_4R_5g_m + 2C_4C_5L_3L_4R_3R_4\right) + s^2\left(C_3L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3R_5g_m + 2C_5L_3L_4R_3 + C_5L_3L_4R_4R_5g_m + C_5L_3L_4R_4\right) + s\left(2C\right.}$$

### 10.714 INVALID-ORDER-714 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_4L_5R_3R_4g_ms^3 - C_5L_3L_4R_3R_4s^2 + L_3L_4R_3R_4g_ms}{2L_3R_3R_4g_m + L_4R_3R_4g_m + s^4\left(C_3C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4R_3R_4 + 2C_5L_3L_4L_5R_3g_m + C_5L_3L_4L_5R_4g_m\right) + s^2\left(C_3L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3R_4g_m + 2C_5L_3L_4R_3 + C_5L_3L_4R_4 + 2C\right.}$$

### 10.715 INVALID-ORDER-715 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4L_5R_3R_4s^3 + L_3L_4L_5R_3R_4g_ms^2 - L_3L_4R_3R_4s}{2L_3R_3R_4 + L_4R_3R_4 + s^4\left(C_3C_5L_3L_4L_5R_3R_4 + 2C_4C_5L_3L_4L_5R_3R_4\right) + s^3\left(C_3L_3L_4L_5R_3R_4g_m + 2C_4L_3L_4L_5R_3R_4g_m + 2C_5L_3L_4L_5R_3R_4g_m + 2C_5L_3L_4L_5R_3 + C_5L_3L_4L_5R_4\right) + s^2\left(C_3L_3L_4R_3R_4 + 2C_4L_3L_4R_3R_4 + 2C_5L_3L_5R_3R_4 + C_5L_4L_5R_3R_4 + 2L_3L_4L_5R_3\right.}$$

### 10.716 INVALID-ORDER-716 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_5L_3L_4L_5R_3R_4g_ms^3 + L_3L_4R_3R_4g_ms + s^2\left(C_5L_3L_4R_3R_4\right.}{2L_3R_3R_4g_m + L_4R_3R_4g_m + s^4\left(C_3C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_4g_m\right) + s^3\left(C_3C_5L_3L_4R_3R_4R_5g_m + C_3C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4R_3R_4R_5g_m + 2C_4C_5L_3L_4R_3R_4 + 2C_5L_3L_4L_5R_3g_m + C_5L_3L_4L_5R_4g_m\right) + s^2\left(C_3L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_4g_m + \right.}$$

### 10.717 INVALID-ORDER-717 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_5L_3L_4L_5R_3R_4R_5s^3 - L_3L_4R_3R_4}{2L_3R_3R_4R_5 + L_4R_3R_4R_5 + s^4\left(C_3C_5L_3L_4L_5R_3R_4R_5 + 2C_4C_5L_3L_4L_5R_3R_4R_5\right) + s^3\left(C_3L_3L_4L_5R_3R_4R_5g_m + C_3L_3L_4L_5R_3R_4 + 2C_4L_3L_4L_5R_3R_4R_5g_m + 2C_4L_3L_4L_5R_3R_4 + 2C_5L_3L_4L_5R_3R_4R_5g_m + 2C_5L_3L_4L_5R_3R_5 + C_5L_3L_4L_5R_4R_5\right) + s^2\left(C_3L_3L_4R_3R_4R\right.}$$

### 10.718 INVALID-ORDER-718 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{L_3}{2L_3R_3R_4R_5g_m + 2L_3R_3R_4 + L_4R_3R_4R_5g_m + L_4R_3R_4 + s^4\left(C_3C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_5L_3L_4L_5R_3R_4 + 2C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_4C_5L_3L_4L_5R_3R_4\right) + s^3\left(C_3L_3L_4L_5R_3R_4g_m + 2C_4L_3L_4L_5R_3R_4g_m + 2C_5L_3L_4L_5R_3R_4g_m + 2C_5L_3L_4L_5R_3R_5g_m + 2C_5\right.}$$

### 10.719 INVALID-ORDER-719 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2L_3R_3R_4R_5g_m + 2L_3R_3R_4 + L_4R_3R_4R_5g_m + L_4R_3R_4 + s^4\left(C_3C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_5L_3L_4L_5R_3R_4 + 2C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_4C_5L_3L_4L_5R_3R_4\right) + s^3\left(C_3C_5L_3L_4R_3R_4R_5 + 2C_4C_5L_3L_4R_3R_4R_5 + 2C_5L_3L_4L_5R_3R_4g_m + 2C_5L_3L_4L_5R_3R_5g_m + 2C_5\right.}$$

### 10.720 INVALID-ORDER-720 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_4L_3L_4R_3R_4R_5g_m - C_4L_3L_4R_3R_4\right) + s^2\left(L_3L_4R_3R_5g_m - L_3L_4R_3\right) + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L_3L_4R_3R_4\right) + s^3\left(C_3L_3L_4R_3R_5g_m + C_3L_3L_4R_3 + 2C_4L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_5g_m + 2C_4L_3L_4R_3 + C_4L_3L_4R_4R_5g_m + C_4L_3L_4R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + C_4L_4R_3R_4R_5g_m + C_4L_4R_3\right.}$$

### 10.721 INVALID-ORDER-721 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_4s^4 + L_3R_3R_4g_ms + s^3\left(C_4L_3L_4R_3R_4g_m - C_5L_3L_4R_3\right) + s^2\left(-C_5L_3R_3R_4 + L_3L_4R_3g_m\right)}{C_3C_4C_5L_3L_4R_3R_4s^5 + R_3R_4g_m + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3R_3R_4 + C_3L_3L_4R_3g_m + C_4C_5L_4R_3R_4 + 2C_4L_3L_4R_3g_m + C_4L_3L_4R_4g_m + 2C_5L_3L_4R_3g_m + C_5L_3L_4\right) + s^2\left(C_3L_3\right.}$$

### 10.722 INVALID-ORDER-722 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_4}{C_3C_4C_5L_3L_4R_3R_4R_5s^5 + R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L_3L_4R_3R_4 + C_3C_5L_3L_4R_3R_5 + 2C_4C_5L_3L_4R_3R_4R_5g_m + 2C_4C_5L_3L_4R_3R_5 + C_4C_5L_3L_4R_4R_5\right) + s^3\left(C_3C_5L_3R_3R_4R_5 + C_3L_3L_4R_3R_5g_m + C_3L_3L_4R_3 + C_4C_5L_4R_3R_4R_5 + 2C_4\right.}$$

### 10.723 INVALID-ORDER-723 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_3R_3R_4g_ms + s^4\left(C_4C_5L_3L_4R_3R\right.}{R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m + C_3C_4C_5L_3L_4R_3R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3\right.}$$

### 10.724 INVALID-ORDER-724 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5R_3R_4g_ms^5 + L_3R_3R_4g}{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4 + C_3C_5L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_4R_3 + C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4 + C_4C_5L\right.}$$

### 10.725 INVALID-ORDER-725 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_3R}{C_3C_4C_5L_3L_4L_5R_3R_4s^6 + R_3R_4 + s^5\left(C_3C_4L_3L_4L_5R_3R_4g_m + C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4 + C_3C_5L_3L_5R_3R_4 + C_3L_3L_4L_5R_3g_m + C_4C_5L_4L_5R_3R_4 + 2C_4L_3L_4L_5R_3g_m + C_4L_3L_4L_5R_4\right.}$$

### 10.726 INVALID-ORDER-726 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m + C_3C_4C_5L_3L_4R_3R_4 + C_3C_5L_3L_4L_5R_3g_m + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4R_3\right.}$$

### 10.727 INVALID-ORDER-727 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{C_3C_4C_5L_3L_4L_5R_3R_4R_5s^6 + R_3R_4R_5 + s^5\left(C_3C_4L_3L_4L_5R_3R_4R_5g_m + C_3C_4L_3L_4L_5R_3R_4 + C_3C_5L_3L_4L_5R_3R_5 + 2C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_4C_5L_3L_4L_5R_3R_5 + C_4C_5L_3L_4L_5R_4R_5\right) + s^4\left(C_3C_4L_3L_4R_3R_4R_5 + C_3C_5L_3L_5R_3R_4R_5 + C_3L_3L_4L_5R_3R_5g_m + C_3\right.}$$

### 10.728 INVALID-ORDER-728 $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_4R_5g_m + R_3R_4 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(C_3C_4L_3L_4L_5R_3R_4g_m + C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4R_5g_m + C_4C_5L_3L_4L\right.}$$

**10.729 INVALID-ORDER-729** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_4R_5g_m + R_3R_4 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5 + C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_3 + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4R_5g_m + C_4C_5L_3L_4L$$

**10.730 INVALID-ORDER-730** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_4L_3L_4R_3R_4R_5g_m - C_4L_3L_4R_3R_4\right) + s\left(L_3R_3R_4R_5g_m - L_3R_3R_4\right)}{R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L_3L_4R_3R_4\right) + s^3\left(2C_4L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_5g_m + 2C_4L_3L_4R_3 + C_4L_3L_4R_4R_5g_m + C_4L_3L_4R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m + C_3L_3R_3R_4 + 2C_4L_3R_3R_4R_5g_m + 2C_4L_3R_3R_4 + C_4L_4R_3R_4R_5g_m + C_4L_4$$

**10.731 INVALID-ORDER-731** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_4s^4 + C_4L_3L_4R_3R_4g_ms^3 - C_5L_3R_3R_4s^2 + L_3R_3R_4g_ms}{C_3C_4C_5L_3L_4R_3R_4s^5 + R_3R_4g_m + s^4\left(C_3C_4L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4 + C_4C_5L_4R_3R_4 + 2C_4L_3L_4R_3g_m + C_4L_3L_4R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + 2C_4L_3R_3R_4g_m + C_4L_4R_3R_4g_m +$$

**10.732 INVALID-ORDER-732** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4R_3R_4R_5s^4 - C_5L_3R_3R_4R_5s^2 + s}{C_3C_4C_5L_3L_4R_3R_4R_5s^5 + R_3R_4R_5g_m + R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L_3L_4R_3R_4 + 2C_4C_5L_3L_4R_3R_4R_5g_m + 2C_4C_5L_3L_4R_3R_5 + C_4C_5L_3L_4R_4R_5\right) + s^3\left(C_3C_5L_3R_3R_4R_5 + 2C_4C_5L_3R_3R_4R_5 + C_4C_5L_4R_3R_4R_5 + 2C_4L_3L_4R_3R_4g_m + 2C_4L_3L_4R_3R_5$$

**10.733 INVALID-ORDER-733** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4L_3L_4R_3R_4g_ms^3 + L_3R_3R_4g_ms + s^4\left(C_4C_5L_3L_4R_3R\right.}{R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m + C_3C_4C_5L_3L_4R_3R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3R_3R_4R_5g_m + C_3C_5L_3R_3R_4 + 2C_4C_5L_3R_3R_4R_5g_m + 2C$$

**10.734 INVALID-ORDER-734** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_4C_5L_3L_4L_5R_3R_4g_ms^5 - C_4C_5L_3L_4R_3R_4s^4 - C_5L_3}{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4 + 2C_4C_5L_3L_5R_3R_4g_m + C_4C_5L_4L_5R_3R_4g_m\right) +$$

**10.735 INVALID-ORDER-735** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5L_3L_4L_5R_3R_4s^5 + C_4L_3L_4L_5R_3R_4g_ms}{C_3C_4C_5L_3L_4L_5R_3R_4s^6 + R_3R_4 + s^5\left(C_3C_4L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4 + C_3C_5L_3L_5R_3R_4 + 2C_4C_5L_3L_5R_3R_4 + C_4C_5L_4L_5R_3R_4 + 2C_4L_3L_4L_5R_3g_m + C_4L_3L_4L_5R_4g_m\right) + s^3\left(C_3L_3L_5$$

**10.736 INVALID-ORDER-736** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m + C_3C_4C_5L_3L_4R_3R_4 + 2C_4C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4R_3R_4g_m + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4$$

**10.737 INVALID-ORDER-737** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{C_3C_4C_5L_3L_4L_5R_3R_4R_5s^6 + R_3R_4R_5 + s^5\left(C_3C_4L_3L_4L_5R_3R_4R_5g_m + C_3C_4L_3L_4L_5R_3R_4 + 2C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_4C_5L_3L_4L_5R_3R_5 + C_4C_5L_3L_4L_5R_4R_5\right) + s^4\left(C_3C_4L_3L_4R_3R_4R_5 + C_3C_5L_3L_5R_3R_4R_5 + 2C_4C_5L_3L_5R_3R_4R_5 + C_4C_5L_4L_5R_3R_4R_5 + 2C$$

**10.738 INVALID-ORDER-738** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_4R_5g_m + R_3R_4 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(C_3C_4L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4R_5g_m + C_4C_5L_3L_4L_5R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L\right.}$$

**10.739 INVALID-ORDER-739** $Z(s) = \left(\infty,\ \infty,\ \frac{L_3R_3s}{C_3L_3R_3s^2+L_3s+R_3},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{R_3R_4R_5g_m + R_3R_4 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5 + 2C_4C_5L_3L_4L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5R_3R_5g_m + 2C_4C_5L_3L_4L_5R_3 + C_4C_5L_3L_4L_5R_4R_5g_m + C_4C_5L_3L_4L_5R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m + C_3C_4L\right.}$$

**10.740 INVALID-ORDER-740** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4s^3 + R_3R_4g_m + s^2\left(C_3L_3R_3R_4g_m - C_5L_3R_4\right) + s\left(-C_5R_3R_4 + L_3R_4g_m\right)}{2R_3g_m + R_4g_m + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_3R_4g_m + 2C_5L_3\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4 + 2L_3g_m\right)}$$

**10.741 INVALID-ORDER-741** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4R_5s^3 + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4 - C_5L_3R_4R_5\right) + s\left(-C_5R_3R_4R_5 + L_3R_4R_5g_m - L_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m + C_3L_3R_4 + 2C_5L_3R_4R_5g_m + 2C_5L_3R_5\right) + s\left(2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right.}$$

**10.742 INVALID-ORDER-742** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + C_5L_3R_4R_5g_m - C_5L_3R_4\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4 + L_3R_4g_m\right)}{2R_3g_m + R_4g_m + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_3R_4g_m + 2C_5L_3R_5g_m + 2C_5L_3\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4 + 2L_3g_m\right)}$$

**10.743 INVALID-ORDER-743** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(-C_3C_5L_3R_3R_4 + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m - C_5L_3R_4 + C_5L_5R_3R_4g_m\right) + s\left(-C_5R_3R_4 + L_3R_4g_m\right)}{2R_3g_m + R_4g_m + s^4\left(2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + 2C_5L_3L_5g_m\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_3R_4g_m + 2C_5L_3 + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4 + 2L_3g_m\right)}$$

**10.744 INVALID-ORDER-744** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4s^4 - R_3R_4 + s^3\left(C_3L_3L_5R_3R_4g_m - C_5L_3L_5R_4\right) + s^2\left(-C_3L_3R_3R_4 - C_5L_5R_3R_4 + L_3L_5R_4g_m\right) + s\left(-L_3R_4 + L_5R_3R_4g_m\right)}{2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m + 2C_5L_3L_5R_4g_m + 2C_5L_3L_5\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3 + C_3L_3R_4 + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3 + C_5L_5R_4 + 2L_3L_5g_m\right) + s\left(2L_3R_4\right.}$$

**10.745 INVALID-ORDER-745** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4 + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m + C_5L_3R_4R_5g_m - C_5L_3R_4 + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4 - \right.}{2R_3g_m + R_4g_m + s^4\left(2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4 + 2C_5L_3L_5g_m\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_3R_4g_m + 2C_5L_3R_5g_m + 2C_5L_3 + 2C_5L_5R_3g_m + C_5L\right.}$$

**10.746 INVALID-ORDER-746** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4R_5s^4 - R_3R_4R_5 + s^3\left(C_3L_3L_5R_3R_4R_5g_m - C_3L_3L_5R_3R_4 - C_5L_3L_5R_4R_5\right) + s^2\left(-C_3L_3R_3R_4R_5 - C_5L_5R_3R_4R_5 - \right.}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_3C_5L_3L_5R_3R_4R_5g_m + 2C_3C_5L_3L_5R_3R_5 + C_3C_5L_3L_5R_4R_5\right) + s^3\left(2C_3L_3L_5R_3R_4g_m + 2C_3L_3L_5R_3R_5g_m + 2C_3L_3L_5R_3 + C_3L_3L_5R_4R_5g_m + C_3L_3L_5R_4 + 2C_5L_3L_5R_4R_5g_m + 2C_5L_3L_5R_5\right) + s^2\left(2C_3L_3R_3R_4R_5g_m + 2C_3L_\right.}$$

### 10.747 INVALID-ORDER-747 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m - C_3C_5L_3L_5R_3R_4\right) + s^3\left(C_3L_3L_5R_3R_4g_m + C_5L_3L_5R_4R_5g_m - C_5L_3L_5R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4 + C_3C_5L_3L_5R_3R_4R_5 - C_3C_5L_3L_5R_3R_4\right) + s\left(C_3L_3R_3R_4g_m + C_5L_3R_4R_5g_m - C_5L_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m + 2C_5L_3L_5R_4g_m + 2C_5L_3L_5R_5g_m + 2C_5L_3L_5\right) + s^2\left(2C_3L_3R_3R_4g_m + \right.}$$

### 10.748 INVALID-ORDER-748 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4,\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m - C_3C_5L_3L_5R_3R_4\right) + s^3\left(-C_3C_5L_3R_3R_4R_5 + C_5L_3L_5R_4R_5g_m - C_5L_3L_5R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5 + 2C_5L_3L_5R_4g_m + 2C_5L_3L_5R_5g_m + 2C_5L_3L_5\right)}$$

### 10.749 INVALID-ORDER-749 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3\right) + s\left(L_3R_5g_m - L_3\right)}{2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_5g_m + 2C_4L_3\right) + s\left(2C_4R_3R_5g_m + 2C_4R_3 + 2L_3g_m\right) + 1}$$

### 10.750 INVALID-ORDER-750 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3s^3 + R_3g_m + s^2\left(C_3L_3R_3g_m - C_5L_3\right) + s\left(-C_5R_3 + L_3g_m\right)}{2C_3C_4C_5L_3R_3s^4 + g_m + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3 + 2C_4L_3g_m + 2C_5L_3g_m\right) + s\left(2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.751 INVALID-ORDER-751 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_5s^3 + R_3R_5g_m - R_3 + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 - C_5L_3R_5\right) + s\left(-C_5R_3R_5 + L_3R_5g_m - L_3\right)}{2C_3C_4C_5L_3R_3R_5s^4 + 2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5 + 2C_4C_5L_3R_5\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4C_5R_3R_5 + 2C_4L_3R_5g_m + 2C_4L_3 + 2C_5L_3R_5g_m\right) + s\left(2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5\right.}$$

### 10.752 INVALID-ORDER-752 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m + C_5L_3R_5g_m - C_5L_3\right) + s\left(C_5R_3R_5g_m - C_5R_3 + L_3g_m\right)}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5L_3R_5g_m + 2C_4C_5L_3\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + 2C_4L_3g_m + 2C_5L_3g_m\right) + s\left(2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

### 10.753 INVALID-ORDER-753 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3g_ms^4 + R_3g_m + s^3\left(-C_3C_5L_3R_3 + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3g_m - C_5L_3 + C_5L_5R_3g_m\right) + s\left(-C_5R_3 + L_3g_m\right)}{2C_3C_4C_5L_3L_5R_3g_ms^5 + g_m + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3 + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3 + 2C_4L_3g_m + 2C_5L_3g_m + C_5L_5g_m\right) + s\left(2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

### 10.754 INVALID-ORDER-754 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3s^4 - R_3 + s^3\left(C_3L_3L_5R_3g_m - C_5L_3L_5\right) + s^2\left(-C_3L_3R_3 - C_5L_5R_3 + L_3L_5g_m\right) + s\left(-L_3 + L_5R_3g_m\right)}{2C_3C_4C_5L_3L_5R_3s^5 + 2R_3g_m + s^4\left(2C_3C_4L_3L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3 + C_3L_3L_5g_m + 2C_4C_5L_5R_3 + 2C_4L_3L_5g_m + 2C_5L_3L_5g_m\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3 + 2C_4L_3 + 2C_4L_5R_3g_m + 2C_5L_5R_3g_m + C_5L_5\right) + s\left(2\right.}$$

### 10.755 INVALID-ORDER-755 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3g_ms^4 + R_3g_m + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3 + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3g_m + C_5L_3R_5g_m - C_5L_3 + C_5L_5R_3g_m\right) + s\left(C_5R_3R_5g_m - C_5R_3 + L_3g_m\right)}{2C_3C_4C_5L_3L_5R_3g_ms^5 + g_m + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5L_3R_5g_m + 2C_4C_5L_3 + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3R_5g_m + 2C_4\right.}$$

### 10.756 INVALID-ORDER-756 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_5s^4 - R_3R_5 + s^3\left(C_3L_3L_5R_3R_5g_m - C_3L_3L_5R_3 - C_5L_3L_5R_5\right) + s^2\left(-C_3L_3R_3R_5 - C_5L_5R_3R_5 + L_3L_5R_5\right)}{2C_3C_4C_5L_3L_5R_3R_5s^5 + 2R_3R_5g_m + R_5 + s^4\left(2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5R_3 + 2C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_5 + 2C_4C_5L_3L_5R_5\right) + s^3\left(2C_3C_4L_3R_3R_5 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_5g_m + C_3L_3L_5 + 2C_4C_5L_5R_3R_5 + 2C_4L_3L_5R_5g_m + 2C_4L_3L_5 + 2C\right.}$$

### 10.757 INVALID-ORDER-757 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m - C_3C_5L_3L_5R_3\right) + s^3\left(C_3L_3L_5R_3g_m + C_5L_3L_5R_5g_m - C_5L_3L_5\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3\right) + s^4\left(2C_3C_4L_3L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_5g_m + 2C_4C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3L_3L_5g_m + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5\right.}$$

### 10.758 INVALID-ORDER-758 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m - C_3C_5L_3L_5R_3\right) + s^3\left(-C_3C_5L_3R_3R_5 + C_5L_3L_5R_5g_m - C_5L_3L_5\right) +}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_5g_m + 2C_4C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5 + 2C_4C_5\right.}$$

### 10.759 INVALID-ORDER-759 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4\right) + s\left(L_3R_4R_5g_m - L_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m + C_3L_3R_4 + 2C_4L_3R_4R_5g_m + 2C_4L_3R_4\right) + s\left(2C_4R_3R_4R_5g_m + 2C_4R_3R_4 + 2L_3R_4g_m + 2L_3R_5g_m +\right.}$$

### 10.760 INVALID-ORDER-760 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4s^3 + R_3R_4g_m + s^2\left(C_3L_3R_3R_4g_m - C_5L_3R_4\right) + s\left(-C_5R_3R_4 + L_3R_4g_m\right)}{2C_3C_4C_5L_3R_3R_4s^4 + 2R_3g_m + R_4g_m + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + 2C_4C_5L_3R_4\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_4C_5R_3R_4 + 2C_4L_3R_4g_m + 2C_5L_3R_4g_m + 2C_5L_3\right) + s\left(2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C\right.}$$

### 10.761 INVALID-ORDER-761 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4R_5s^3 + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4 - C_5L_3R_4R_5\right) + s\left(-\right.}{2C_3C_4C_5L_3R_3R_4R_5s^4 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4 + 2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5 + 2C_4C_5L_3R_4R_5\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m +\right.}$$

### 10.762 INVALID-ORDER-762 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + C_5L_3R_4R_5g_m - C_5L_3R_4\right) + s\left(C_5R_3R_4R_5g\right.}{2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4 + 2C_4C_5L_3R_4R_5g_m + 2C_4C_5L_3R_4\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_4C_5R_3R\right.}$$

### 10.763 INVALID-ORDER-763 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(-C_3C_5L_3R_3R_4 + C_5L_3L_5R_4g_m\right) + s^2\left(C_3L_3R_3R_4g_m - C_5L_3R_4 + C_5L_5R_3R_4g_m\right)}{2C_3C_4C_5L_3L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + 2C_4C_5L_3R_4 + 2C_4C_5L_5R_3R_4g_m + 2C_5L_3L_5g_m\right) + s^2\left(2C\right.}$$

### 10.764 INVALID-ORDER-764 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4s^4 - R_3R_4 + s^3\left(C_3L_3L_5R_3R_4g_m - C_5L_3L_5R_4\right) + s^2\left(-C_3L_3R_3R_4 - C_5L_5R_3R_4 + L\right.}{2C_3C_4C_5L_3L_5R_3R_4s^5 + 2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4 + 2C_4C_5L_3L_5R_4\right) + s^3\left(2C_3C_4L_3R_3R_4 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m + 2C_4C_5L_5R_3R_4 + 2C_4L_3L_5R_4g_m + 2C_5L_3L_5R_4g_m + 2\right.}$$

### 10.765 INVALID-ORDER-765 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R\right.}{2C_3C_4C_5L_3L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5\right.}$$

### 10.766 INVALID-ORDER-766 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3}{2C_3C_4C_5L_3L_5R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_3C_4L_3L_5R_3R_4R_5g_m + 2C_3C_4L_3L_5R_3R_4 + 2C_3C_5L_3L_5R_3R_4R_5g_m + 2C_3C_5L_3L_5R_3R_5 + C_3C_5L_3L_5R_4R_5 + 2C_4C_5L_3L_5R_4R_5\right) + s^3\left(2C_3C_4L_3R_3R_4R_5 + 2C_3L_3L_5R_3R_4g_m + 2C_3L_3L_5R_3R_5g_m + \right.}$$

### 10.767 INVALID-ORDER-767 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4 + 2C_4C_5L_3L_5R_4R_5g_m + 2C_4$$

### 10.768 INVALID-ORDER-768 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5 + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4 + 2C_4C_5L_3L_5R_4R_5g_m + 2C_4$$

### 10.769 INVALID-ORDER-769 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 + C_4L_3R_4R_5g_m - C_4L_3R_4\right) + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4 + L_3R_5g_m - L_3\right)}{2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_4g_m + 2C_4L_3R_5g_m + 2C_4L_3\right) + s\left(2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4 + 2L_3$$

### 10.770 INVALID-ORDER-770 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3R_3R_4s^4 + R_3g_m + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3 - C_4C_5L_3R_4\right) + s^2\left(C_3L_3R_3g_m - C_4C_5R_3R_4 + C_4L_3R_4g_m - C_5L_3\right) + s\left(C_4R_3R_4g_m - C_5R_3 + L_3g_m\right)}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3R_4g_m + 2C_4C_5L_3\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4 + 2C_4L_3g_m + 2C_5L_3g_m\right) + s\left(2C_4R_3g_m + C\right.}$$

### 10.771 INVALID-ORDER-771 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3R_3R_4R_5s^4 + R_3R_5g_m - R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4 - C_3C_5L_3R_3R_5 - C_4C_5L_3R_4R_5\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3\right.}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5 + 2C_4C_5L_3R_4R_5g_m + 2C_4C_5L_3R_5\right) + s^2\left(2C_3L_3\right.}$$

### 10.772 INVALID-ORDER-772 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3 + C_4C_5L_3R_4R_5g_m - C_4C_5L_3R_4\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R_3R_4R_5g_m - C_4C_5R_3R_4\right.}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5L_3R_4g_m + 2C_4C_5L_3R_5g_m + 2C_4C_5L_3\right) + s^2\left(C_3L_3g_m + 2C\right.}$$

### 10.773 INVALID-ORDER-773 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(-C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m + C_4C_5L_3L_5R_4g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3 - C_4C_5L_3R_4 + C_4C_5L_5R_3R_4g_m + C_5L_3L_5g_m\right) + s^2\left(C_3L_3R_3\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3R_4g_m + 2C_4C_5L_3 + 2C_4C_5L_5R_3g_m\right.}$$

### 10.774 INVALID-ORDER-774 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_5R_3R_4s^5 - R_3 + s^4\left(C_3C_4L_3L_5R_3R_4g_m - C_3C_5L_3L_5R_3 - C_4C_5L_3L_5R_4\right) + s^3\left(-C_3C_4L_3R_3R_4 + C_3L_3L_5R_3g_m - C_4C_5L_5R_3R_4 + C_4}{2R_3g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4 + C_3L_3L_5g_m + 2C\right.}$$

### 10.775 INVALID-ORDER-775 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m + C_4C_5L_3L_5R_4g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3 + C_4C_5L_3}{g_m + s^5\left(2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R\right.}$$

### 10.776 INVALID-ORDER-776 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_5R_3R_4R_5s^5 - R_3R_5 + s^4\left(C_3C_4L_3L_5R_3R_4R_5g_m - C_3C_4L\right.}{2R_3R_5g_m + R_5 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_5 + C_3C_4C_5L_3L_5R_4R_5\right) + s^4\left(2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5R_3 + C_3C_4L_3L_5R_4R_5g_m + C_3C_4L_3L_5R_4 + 2C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_5 + 2C_4C_5L_3L_5R_4R_5g_m\right.}$$

### 10.777 INVALID-ORDER-777 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m - C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(C_3C_4L_3L_5R_3R_4g_m + C_3C_5L_3L_5R_3R_5g_m - C_3C_5L_3L_5R_3\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5R_4g_m + 2C_4C_5\right.}$$

### 10.778 INVALID-ORDER-778 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ R_4+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m - C_3C_4C_5L_3L_5R_3R_4\right) + s^4\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5 + 2\right.}$$

### 10.779 INVALID-ORDER-779 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3\right) + s^3\left(C_4L_3L_4R_5g_m - C_4L_3L_4\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 + C_4L_4R_3R_5g_m - C_4L_4R_3\right) + s\left(L_3R_5g_m - L_3\right)}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_4L_3L_4g_m\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_5g_m + 2C_4L_3 + 2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4L_4\right) + s\left(2C_4R_3R_5g_m + 2C_4R_3 + 2\right.}$$

### 10.780 INVALID-ORDER-780 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3s^5 + R_3g_m + s^4\left(C_3C_4L_3L_4R_3g_m - C_4C_5L_3L_4\right) + s^3\left(-C_3C_5L_3R_3 - C_4C_5L_4R_3 + C_4L_3L_4g_m\right) + s^2\left(C_3L_3R_3g_m + C_4L_4R_3g_m - C_5L_3\right) + s\left(-C_5R_3 + L_3g_m\right)}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3 + 2C_4C_5L_4R_3g_m + C_4C_5L_4\right) + s^2\left(C_3L_3g_m + 2C_4C_5R_3 + 2C_4L_3g_m + C_4L_4g_m + 2C_5L_3g_m\right) + s\right.}$$

### 10.781 INVALID-ORDER-781 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_5s^5 + R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3 - C_4C_5L_3L_4R_5\right) + s^3\left(-C_3C_5L_3R_3R_5 - C_4C_5L_4R_3R_5 + C_4L_3L\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + 2C_4C_5L_3L_4R_5g_m\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5 + 2C_4C_5L_3R_5 + 2C_4C_5L\right.}$$

### 10.782 INVALID-ORDER-782 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m - C_4C_5L_3L_4\right) + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3 + C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3 + C_4L_3L_4g_m\right)}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5L_3R_5g_m + 2C_4C_5L_3 + 2C_4C_5L_4R_3g_m\right.}$$

**10.783 INVALID-ORDER-783** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(-C_3C_4C_5L_3L_4R_3 + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m - C_4C_5L_3L_4 + C_4C_5L_4L_5R_3g_m\right) + s^3\left(-C_3C_5L_3R_3 - C_4C_5L_4R_3 + C_4L_3L_4g_m\right)}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_4g_m + 2C_4C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3\right.$$

**10.784 INVALID-ORDER-784** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3s^6 - R_3 + s^5\left(C_3C_4L_3L_4L_5R_3g_m - C_4C_5L_3L_4L_5\right) + s^4\left(-C_3C_4L_3L_4R_3 - C_3C_5L_3L_5R_3 - C_4C_5L_4L_5R_3 + C_4L_3L_4L_5g_m\right) + s^3\left(\right.}{2R_3g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4 + 2C_3C_4L_3L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5 + 2C_4C_5L_3L_5 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L_5\right)$

**10.785 INVALID-ORDER-785** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3 + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + C_4C_5L_3L_4R_5g_m - C_4C_5L_3L_4 + C_4C_5L_4L_5\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_4g_m + 2C_4C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_3\right.$

**10.786 INVALID-ORDER-786** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3R_5s^6 - R_3R_5 + s^5\left(C_3C_4L_3L_4L_5R_3R_5g_m - C_3C_4L_3\right.}{2R_3R_5g_m + R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_5 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_5g_m + C_3C_4L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_5 + 2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5\right.$

**10.787 INVALID-ORDER-787** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m - C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_5g_m - C_4C_5L_3L_4L_5\right.}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + 2C_3C_4L_3L_5R_3g_m + 2C_3C_5\right.$

**10.788 INVALID-ORDER-788** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m - C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(-\right.}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5 + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4\right.$

**10.789 INVALID-ORDER-789** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3\right) + s^2\left(L_3L_4R_5g_m - L_3L_4\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3\right) + s^3\left(2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4 + 2C_4L_3L_4R_5g_m + 2C_4L_3L_4\right) + s^2\left(2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3 + 2L_3L_4g_m\right) + s\left(2L_3R_5g_m + 2L_3 + 2L_4R_3g_m + L_4R_5g_m\right.$

**10.790 INVALID-ORDER-790** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3s^4 + L_4R_3g_ms + s^3\left(C_3L_3L_4R_3g_m - C_5L_3L_4\right) + s^2\left(-C_5L_4R_3 + L_3L_4g_m\right)}{2C_3C_4C_5L_3L_4R_3s^5 + 2R_3g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C_4C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3 + 2C_4L_3L_4g_m + 2C_5L_3L_4g_m\right) + s^2\left(2C_3L_3R_3g_m + 2C_4L_4R_3g_m + 2C_5L_3 + 2C_5L_4R_3g_m + C_5L_4\right) + s\left(2C_5R_3 +\right.$

**10.791 INVALID-ORDER-791** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_5s^4 + s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3 - C_5L_3L_4R_5\right) + s^2\left(-C_5L_4R_3R_5 + L_3L_4R_5g\right.}{2C_3C_4C_5L_3L_4R_3R_5s^5 + 2R_3R_5g_m + 2R_3 + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_5 + 2C_4C_5L_3L_4R_5\right) + s^3\left(2C_3C_5L_3R_3R_5 + 2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4 + 2C_4C_5L_4R_3R_5 + 2C_4L_3L_4R_5g_m + 2C_4L_3L_4 + 2C\right.$

**10.792 INVALID-ORDER-792** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_4R_3g_ms + s^4\left(C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3L_4R_3\right) + s^3\left(C_3L_3L_4R_3g_m + C_5L_3L_4R_5g_m - C_5L_3L_4\right) + s^2\left(C_5L_4R_3R_5\right.}{2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m + C_3C_5L_3L_4 + 2C_4C_5L_3L_4R_5g_m + 2C_4C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3 + 2\right.}$$

**10.793 INVALID-ORDER-793** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3g_ms^5 + L_4R_3g_ms + s^4\left(-C_3C_5L_3L_4R_3 + C_5L_3L_4L_5g_m\right) + s^3\left(C_3L_3L_4R_3g_m - C_5L_3L_4 + C_5L_4L_5R_3g_m\right)}{2C_3C_4C_5L_3L_4L_5R_3g_ms^6 + 2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3 + C_3C_5L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4 + 2C_4C_5L_4L_5R_3g_m\right) + s^3\left(2C_3C_5L_3R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3 + \right.}$$

**10.794 INVALID-ORDER-794** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_3s^5 - L_4R_3s + s^4\left(C_3L_3L_4L_5R_3g_m - C_5L_3L_4L_5\right) + s^3\left(-C_3L_3L_4R_3 - C_5L_4L_5R_3 + L\right.}{2C_3C_4C_5L_3L_4L_5R_3s^6 + 2R_3 + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5 + 2C_4C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_5R_3 + C_3L_3L_4L_5g_m + 2C_4C_5L_4L_5R_3 + 2C_4L_3L_4L_5g_m + 2C_5L_3L_4L_5g_m\right) + s^3\left(2C_3L_3L_4R_3g_m + C_3L_3L_4 + 2C_3L_\right.}$$

**10.795 INVALID-ORDER-795** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3g_ms^5 + L_4R_3g_ms + s^4\left(C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3\right.}{2C_3C_4C_5L_3L_4L_5R_3g_ms^6 + 2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_5L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m + C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_3g_m + 2C_4C_5L_3L_4R_5g_m + 2C_4C_5L_3L_4 + 2C\right.}$$

**10.796 INVALID-ORDER-796** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5.}{2C_3C_4C_5L_3L_4L_5R_3R_5s^6 + 2R_3R_5 + s^5\left(2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + 2C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_5 + 2C_4C_5L_3L_4L_5R_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5 + 2C_3C_5L_3L_5R_3R_5 + 2C_3L_3L_4L_5R_3g_m + C_3L_3L_4L_5R_5g_m + C_3L_3L_4L_5 + 2C_4C_5L_4L_5\right.}$$

**10.797 INVALID-ORDER-797** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{s^5\left(C_3\right.}{2R_3R_5g_m + 2R_3 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_5g_m + C_3C_5L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_5g_m + 2C_4C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_5R\right.}$$

**10.798 INVALID-ORDER-798** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_5g_m + 2R_3 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_5g_m + C_3C_5L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_5g_m + 2C_4C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_4R\right.}$$

**10.799 INVALID-ORDER-799** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4 + C_4L_3L_4R_5g_m - C_4L_3L_4\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 + C_4L_3R_4R_5g_m - C_4L_3R_4 + C_4L_4R_3R_5g_m\right.}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + 2C_4L_3L_4g_m\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4L_3R_4g_m + 2C_4L_3R_5g_m + 2C_4L_3\right.}$$

**10.800 INVALID-ORDER-800** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3s^5 + R_3g_m + s^4\left(-C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m - C_4C_5L_3L_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3 - C_4C_5L_3R_4 - C_4C_5L_4R_3 + C_4L_3L_4g_m\right) + s^2\left(C_3L_3R_3g_m - C_4C_5R\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_3R_4g_m + 2C_4C_5L_3 + 2C_4C_5L_4R_3g_m + C_4\right.}$$

**10.801 INVALID-ORDER-801** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_5s^5 + R_3R_5g_m - R_3 + s^4\left(-C_3C_4C_5L_3R_3R_4R_5 + C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3 - C_4C_5L_3\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + 2C_4C_5L_3L_4R_5g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_\right.}$$

**10.802 INVALID-ORDER-802** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + C_4C_5L_3L_4R_5g_m - C_4C_5L_3L_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3\right.}$$

**10.803 INVALID-ORDER-803** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(-C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_5R_3R_4g_m + C_4C_5L_3L_4L_5g_m\right) + s^4\left(-C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m - C_4C_5L_3L_4 + C_4C_5L_3L_5R_4g_m +\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + 2C_4C_5L_3L_4g_m + 2C_4C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right)$$

**10.804 INVALID-ORDER-804** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3s^6 - R_3 + s^5\left(-C_3C_4C_5L_3L_5R_3R_4 + C_3C_4L_3L_4L_5R_3g_m - C_4C_5L_3L_4L_5\right) + s^4\left(-C_3C_4L_3L_4R_3 + C_3\right.}{2R_3g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4 + 2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_3g_m\right.}$$

**10.805 INVALID-ORDER-805** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_5R_3R_4g_m + C_4C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m + C_3C_5L_3\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_4L_3L_4g_m + 2C_4C_5L_3L_4g_m\right)$$

**10.806 INVALID-ORDER-806** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3R_5s^6 - R_3R_5g_ms^4 - R_3R_5g_m - R_3 + s^5\left(-C_3C_4C_5L_3L_4L_5R_3R_5 + C_3C_4C_5L_3L_4L_5R_3R_5g_m - C_3C_4C_5L_3L_4L_5R_3\right.}{2R_3R_5g_m + R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_5 + C_3C_4C_5L_3L_5R_4R_5 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_5g_m + C_3C_4L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + \right.}$$

**10.807 INVALID-ORDER-807** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^6\left(C_3C_4C_5L_3L_4L_5R_3R_5g_m - C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m - C_3C_4C_5L_3L_5R_3R_4 + C_3C\right.}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + C_3C_4L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4\right.}$$

**10.808 INVALID-ORDER-808** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^6\left(C_3C_4C_5L_3L_4L_5\right.}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5 + 2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + 2C_4C\right.}$$

**10.809 INVALID-ORDER-809** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_3R_4R_5g_m - C_3L_3L_4R_3R_4\right) + s^2\left(L_3L_4R_4R_5g_m - L_3L_4R_4\right) + s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + 2C_3C_4L_3L_4R_3R_4\right) + s^3\left(2C_3L_3L_4R_3R_4g_m + 2C_3L_3L_4R_3R_5g_m + 2C_3L_3L_4R_3 + C_3L_3L_4R_4R_5g_m + C_3L_3L_4R_4 + 2C_4L_3L_4R_4R_5g_m + 2C_4L_3L_4R_4\right) + s^2\left(2C_3L_3R_3R_4R_5g_m + 2C_3L_3R_3R_4 + 2C_4L_4R_3R_4R_5g_m\right.}$$

**10.810 INVALID-ORDER-810** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_4s^4 + L_4R_3R_4g_ms + s^3\left(C_3L_3L_4R_3R_4g_m - C_5L_3L_4R_4\right) + s^2\left(-C_5L_4R_3R_4 + L_3L_4R_4g_m\right)}{2C_3C_4C_5L_3L_4R_3R_4s^5 + 2R_3R_4g_m + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_4\right) + s^3\left(2C_3C_5L_3R_3R_4 + 2C_3L_3L_4R_3g_m + C_3L_3L_4R_4g_m + 2C_4C_5L_4R_3R_4 + 2C_4L_3L_4R_4g_m + 2C_5L_3L_4R_4g_m + 2C_5L_3L_4\right) + s\right.}$$

**10.811 INVALID-ORDER-811** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C}{2C_3C_4C_5L_3L_4R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + 2C_3C_4L_3L_4R_3R_4 + 2C_3C_5L_3L_4R_3R_4R_5g_m + 2C_3C_5L_3L_4R_3R_5 + C_3C_5L_3L_4R_4R_5 + 2C_4C_5L_3L_4R_4R_5\right) + s^3\left(2C_3C_5L_3R_3R_4R_5 + 2C_3L_3L_4R_3R_4g_m + 2C_3L_3L_4R_3R_5g_m + 2C_3L_3\right.}$$

**10.812 INVALID-ORDER-812** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{L_4R_3R_4g_ms + s^4\left(C_3\right.}{2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_5g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_4R_5g_m + 2C_4C_5L_3L_4R_4\right) + s^3\left(2C_3C_5L_3R_3R_4R_5g\right.}$$

**10.813 INVALID-ORDER-813** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3R_4g_ms^5}{2C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + 2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4 + 2C_3C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4R_4 +\right.}$$

**10.814 INVALID-ORDER-814** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5}{2C_3C_4C_5L_3L_4L_5R_3R_4s^6 + 2R_3R_4 + s^5\left(2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4 + 2C_4C_5L_3L_4L_5R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4 + 2C_3C_5L_3L_5R_3R_4 + 2C_3L_3L_4L_5R_3g_m + C_3L_3L_4L_5R_4g_m + 2C_4C_5L_4L_5R_3R_4 + 2C_4L\right.}$$

**10.815 INVALID-ORDER-815** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{2C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + 2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_4 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_5g_m + 2C_3C_5L_3L_4R_3 + C_3C\right.}$$

**10.816 INVALID-ORDER-816** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{2C_3C_4C_5L_3L_4L_5R_3R_4R_5s^6 + 2R_3R_4R_5 + s^5\left(2C_3C_4L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4L_3L_4L_5R_3R_4 + 2C_3C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_5L_3L_4L_5R_3R_5 + C_3C_5L_3L_4L_5R_4R_5 + 2C_4C_5L_3L_4L_5R_4R_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4R_5 + 2C_3C_5L_3L_5R_3R_4R_5 + 2C_3L_3L_4L_5R_3R\right.}$$

**10.817 INVALID-ORDER-817** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_5g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4R_5g_m + C_3C_5L_3L_4L_5R_4 + 2C_4C_5L_3L_4L_5R_4R_5g_m + 2C_4C\right.}$$

**10.818 INVALID-ORDER-818** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5 + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_5g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4R_5g_m + C_3C_5L_3L_4L_5R_4 + 2C_4C_5L_3L_4L_5R_4R_5g_m + 2C_4C\right.}$$

### 10.819 INVALID-ORDER-819 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m - C_3C_4L_3L_4R_3R_4\right) + s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3 + C_4L_3L_4R_4R_5g_m - C_4L_3L_4R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4\right) + s^3\left(2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4 + 2C_4L_3L_4R_4g_m + 2C_4L_3L_4R_5g_m + 2C_4L_3L_4\right) + s^2\left(2C_3L_3\right.}$$

### 10.820 INVALID-ORDER-820 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_4s^5 + R_3R_4g_m + s^4\left(C_3C_4L_3L_4R_3R_4g_m - C_3C_5L_3L_4R_3 - C_4C_5L_3L_4R_4\right) + s^3\left(-C_3C_5L_3R_3R_4 + C_3L_3L_4R_3g_m - C_4C_5L_4R_3R_4 +\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C_4C_5L_3L_4R_4g_m + 2C_4C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + C_3L_3L_4\right.}$$

### 10.821 INVALID-ORDER-821 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_4R_5s^5 + R_3R_4R_5g_m - R_3R}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4 + 2C_3C_5L_3L_4R_3R_5g_m + C_3C_5\right.}$$

### 10.822 INVALID-ORDER-822 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m - C_3C_4C_5L_3L_4R_3R_4\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3L_4R_3\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m + C_3C_5L_3L_4 + 2C_4C_5L_3L_4R_4g_m + 2C_4C_5\right.}$$

### 10.823 INVALID-ORDER-823 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(-C_3C_4C_5L_3L_4R_3R_4 + C_3C_5L_3L_4L_5R_3g_m + C_4C_5L_3L_4L_5R_4g_m\right) + s^4\left(C_3C_4L_3L_4\right.}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4 + C_3C_5L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C\right.}$$

### 10.824 INVALID-ORDER-824 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3R_4s^6 - R_3R_4 + s^5\left(C_3C_4L_3L_4\right.}{2R_3R_4g_m + 2R_3 + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5 + 2C_4C_5L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3\right.}$$

### 10.825 INVALID-ORDER-825 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m - C_3C_4C_5L_3L_4R_3R_4 + C_3C_5L_3L_4L_5R_3R_4g_m + C_4C_5L_3L_4L_5R_4R_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4g_m + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_4g_m + C_4C_5L_3L_4R_3R_5g_m - C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4g_m + C_4C_5L_3L_4\right) + s^2\left(C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_4g_m + C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_4g_m\right)}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4 + C_3C_5L_3L_4L_5g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C_4C_5L_3L_4R_4g_m + 2C_4C_5L_3L_4\right) + s^3\left(2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_4g_m + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4g_m + C_4C_5L_3L_4\right) + s^2\left(2C_3C_5L_3L_4R_3R_5g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4 + 2C_4C_5L_3L_4R_3R_5g_m + 2C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s\left(2C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_4R_5g_m\right)}$$

### 10.826 INVALID-ORDER-826 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3R_4R_5g_ms^6 + R_3R_4R_5g_m + s^5\left(-C_3C_4C_5L_3L_4R_3R_4R_5 + C_3C_4C_5L_3L_4L_5R_3R_4g_m + C_3C_5L_3L_4L_5R_3R_5g_m + C_4C_5L_3L_4L_5R_4R_5g_m\right) + s^4\left(C_3C_4L_3L_4R_3R_4g_m + C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4 + C_3C_5L_3L_4L_5g_m + C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4g_m + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s^3\left(C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_4g_m + C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4g_m + C_4C_5L_3L_4\right) + s^2\left(C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4 + C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_3 + C_4C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_4\right) + s\left(C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_4R_5g_m + C_4C_5L_3L_4R_3R_5g_m + C_4C_5L_3L_4R_4R_5g_m\right)}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5 + C_3C_4C_5L_3L_4L_5R_4R_5\right) + s^5\left(2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + C_3C_4L_3L_4L_5R_4R_5g_m + C_3C_4L_3L_4L_5R_4 + 2C_3C_5L_3L_4L_5R_3R_5g_m\right.}$$

### 10.827 INVALID-ORDER-827 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5\right.}$$

### 10.828 INVALID-ORDER-828 $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5 + 2C\right.}$$

**10.829 INVALID-ORDER-829** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m - C_3C_4L_3L_4R_3R_4\right) + s^3\left(C_4L_3L_4R_4R_5g_m - C_4L_3L_4R_4\right) + s^2\left(C_3\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4\right) + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4 + 2C_4L_3L_4R_4g_m + 2C_4L_3L_4R_5g_m + 2C_4L_3L_4\right) + s^2\left(2C_3L_3R_3R_4\right.}$$

**10.830 INVALID-ORDER-830** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_4s^5 + R_3R_4g_m + s^4\left(C_3C_4L_3L_4R_3R_4g_m - C_4C_5L_3L_4R_4\right) + s^3\left(-C_3C_5L_3R_3R_4 - C_4C_5L\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_4C_5L_3L_4R_4g_m + 2C_4C_5L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + 2\right.}$$

**10.831 INVALID-ORDER-831** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5 + 2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4 + 2C_4C\right.}$$

**10.832 INVALID-ORDER-832** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_4C_5L_3L_4R_4g_m + 2C_4C_5L_3L_4R\right.}$$

**10.833 INVALID-ORDER-833** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4 + 2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3\right.}$$

**10.834 INVALID-ORDER-834** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3 + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5R_4g_m + 2C_4C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3 + C_3\right.}$$

**10.835 INVALID-ORDER-835** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4 + 2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_4C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4\right.}$$

**10.836 INVALID-ORDER-836** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5 + C_3C_4C_5L_3L_4L_5R_4R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5 + 2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + C_3C_4L_3L_4L_5R_4R_5g_m + C_3C_4L_3L_4L_5R_4\right.}$$

**10.837 INVALID-ORDER-837** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4 + 2C_3C_4L_3L_4L_5R_3g_m + C\right.}$$

**10.838 INVALID-ORDER-838** $Z(s) = \left(\infty,\ \infty,\ \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5 + 2C\right.}$$

**10.839 INVALID-ORDER-839** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4s^3 + C_3L_3R_3R_4g_ms^2 - C_5R_3R_4s + R_3R_4g_m}{2R_3g_m + R_4g_m + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4\right) + s^2\left(C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**10.840 INVALID-ORDER-840** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5\right) + s^2\left(C_3C_5R_3R_4R_5 + 2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m + C_3L_3R_4\right) + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_5R_3R_4R_5g_m + 2C_5R\right.}$$

**10.841 INVALID-ORDER-841** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3R_3R_4g_ms^2 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

**10.842 INVALID-ORDER-842** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 - C_3C_5L_3R_3R_4s^3 - C_5R_3R_4s + R_3R_4g_m + s^2\left(C_3L_3R_3R_4g_m + C_5L_5R_3R_4g_m\right)}{2R_3g_m + R_4g_m + s^4\left(2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + C_3C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_5R_3g_m + C_5L_5R_4g_m\right) + s\left(C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**10.843 INVALID-ORDER-843** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4s^4 + C_3L_3L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms - R_3R_4 + s^2\left(-C_3L_3R_3R_4 - C_5L_5R_3R_4\right)}{2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4\right) + s^3\left(C_3C_5L_5R_3R_4 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3 + C_3L_3R_4 + C_3L_5R_3R_4g_m + 2C_5L_5R_3R_4g_m + 2C_5L_5R_3 + C_5L_5R_4\right) + s\left(C_3R_3R_4 + 2L_5\right.}$$

**10.844 INVALID-ORDER-844** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_4g_m + C_5L_5R_3R_4g_m\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^4\left(2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4 + C_3C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_5L_5R_3g_m + C_5L_5.\right.}$$

**10.845 INVALID-ORDER-845** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4R_5s^4 - R_3R_4R_5 + s^3\left(C_3L_3L_5R_3R_4R_5g_m - C_3L_3L_5R_3R_4\right) + s^2\left(-C_3L_3R_3R_4R_5 - C_5L_5R_3R_4R_5\right) + s}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_3C_5L_3L_5R_3R_4R_5g_m + 2C_3C_5L_3L_5R_3R_5 + C_3C_5L_3L_5R_4R_5\right) + s^3\left(C_3C_5L_5R_3R_4R_5 + 2C_3L_3L_5R_3R_4g_m + 2C_3L_3L_5R_3R_5g_m + 2C_3L_3L_5R_3 + C_3L_3L_5R_4R_5g_m + C_3L_3L_5R_4\right) + s^2\left(2C_3L_3R_3R_4R_5g_m + 2C_3L_3R_3R_5 + C_3L_3R\right.}$$

**10.846 INVALID-ORDER-846** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms + R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m - C_3C_5L_3L_5R_3R_4\right) + s^2\left(C_3L_3R_3R\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(C_3C_5L_5R_3R_4R_5g_m + C_3C_5L_5R_3R_4 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R\right.}$$

**10.847 INVALID-ORDER-847** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4,\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_5L_3L_5R_3R_4R_5g_m - C_3C_5L_3L_5R_3\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5 + C_3C_5L_5R_3R_4R_5g_m + C_3C_5L_5R_3R_4\right) + s^2\left(C_3\right.}$$

**10.848 INVALID-ORDER-848** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3\right)}{2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3\right) + 1}$$

**10.849 INVALID-ORDER-849** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3s^3 + C_3L_3R_3g_ms^2 - C_5R_3s + R_3g_m}{2C_3C_4C_5L_3R_3s^4 + g_m + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3\right) + s^2\left(C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

**10.850 INVALID-ORDER-850** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_5s^3 - C_5R_3R_5s + R_3R_5g_m - R_3 + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3\right)}{2C_3C_4C_5L_3R_3R_5s^4 + 2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5\right) + s^2\left(C_3C_5R_3R_5 + 2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4C_5R_3R_5\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

**10.851 INVALID-ORDER-851** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3R_3g_ms^2 + R_3g_m + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3\right) + s\left(C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3\right) + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

**10.852 INVALID-ORDER-852** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3g_ms^4 - C_3C_5L_3R_3s^3 - C_5R_3s + R_3g_m + s^2\left(C_3L_3R_3g_m + C_5L_5R_3g_m\right)}{2C_3C_4C_5L_3L_5R_3g_ms^5 + g_m + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3 + C_5L_5g_m\right) + s\left(C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

**10.853 INVALID-ORDER-853** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3s^4 + C_3L_3L_5R_3g_ms^3 + L_5R_3g_ms - R_3 + s^2\left(-C_3L_3R_3 - C_5L_5R_3\right)}{2C_3C_4C_5L_3L_5R_3s^5 + 2R_3g_m + s^4\left(2C_3C_4L_3L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3 + C_3C_5L_5R_3 + C_3L_3L_5g_m + 2C_4C_5L_5R_3\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3 + C_3L_5R_3g_m + 2C_4L_5R_3g_m + 2C_5L_5R_3g_m + C_5L_5\right) + s\left(C_3R_3 + 2C_4R_3 + L_5g_m\right) +}$$

**10.854 INVALID-ORDER-854** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3g_ms^4 + R_3g_m + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m + C_5L_5R_3g_m\right) + s\left(C_5R_3R_5g_m - C_5R_3\right)}{2C_3C_4C_5L_3L_5R_3g_ms^5 + g_m + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_5L_3L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + C_3C_5L_5R_3g_m + 2C_4C_5L_5R_3g_m\right) + s^2\left(C_3C_5R_3R_5g_m + C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5\right.}$$

**10.855 INVALID-ORDER-855** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_5s^4 - R_3R_5 + s^3\left(C_3L_3L_5R_3R_5g_m - C_3L_3L_5R_3\right) + s^2\left(-C_3L_3R_3R_5 - C_5L_5R_3R_5\right) + s\left(L_5R_3R_5g_m - L_5R\right.}{2C_3C_4C_5L_3L_5R_3R_5s^5 + 2R_3R_5g_m + R_5 + s^4\left(2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5R_3 + 2C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_5\right) + s^3\left(2C_3C_4L_3R_3R_5 + C_3C_5L_5R_3R_5 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_5g_m + C_3L_3L_5 + 2C_4C_5L_5R_3R_5\right) + s^2\left(2C_3L_3R_3R_5g_m + C_3L_3R_5 + \right.}$$

**10.856 INVALID-ORDER-856** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5R_3g_ms^3 + L_5R_3g_ms + R_3R_5g_m - R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m - C_3C_5L_3L_5R_3\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3\right) + s^4\left(2C_3C_4L_3L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + C_3L_3L_5g_m + 2C_4C_5L_5R_3R_5g_m + 2C_4C_5L_5}$$

**10.857 INVALID-ORDER-857** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_5s^3 - C_5R_3R_5s + R_3R_5g_m - R_3 + s^4\left(C_3C_5L_3L_5R_3R_5g_m - C_3C_5L_3L_5R_3\right) + s^2\left(C_3L}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m + C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5 + C_3C_5L_5R_3R_5g_m + C_3C_5L_5R_3 + 2C_4C_5L_5}$$

**10.858 INVALID-ORDER-858** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m + C_3L_3R_4\right) + s\left(C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

**10.859 INVALID-ORDER-859** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4s^3 + C_3L_3R_3R_4g_ms^2 - C_5R_3R_4s + R_3R_4g_m}{2C_3C_4C_5L_3R_3R_4s^4 + 2R_3g_m + R_4g_m + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4\right) + s^2\left(C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_4C_5R_3R_4\right) + s\left(C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

**10.860 INVALID-ORDER-860** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3R_3R_4R_5s^3 - C_5R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4 + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4\right)}{2C_3C_4C_5L_3R_3R_4R_5s^4 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4 + 2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_5 + C_3C_5L_3R_4R_5\right) + s^2\left(C_3C_5R_3R_4R_5 + 2C_3L_3R_3R_4g_m + 2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_3R_4R_5g_m +}$$

**10.861 INVALID-ORDER-861** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3R_3R_4g_ms^2 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) + s\left(C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4\right) + s^2\left(C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_4g_m + 2C_4C_5R_3R_4}$$

**10.862 INVALID-ORDER-862** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 - C_3C_5L_3R_3R_4s^3 - C_5R_3R_4s + R_3R_4g_m + s^2\left(C_3L_3R_3R_4g_m + C_5L_5R_3R_4g_m\right)}{2C_3C_4C_5L_3L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + C_3C_5L_5R_3R_4g_m + 2C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_3C_5R_3R_4 + 2C_3L_3R_3g_m + C_3L}$$

**10.863 INVALID-ORDER-863** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4s^4 + C_3L_3L_5R_3R_4g_ms^3 + L_5R_3R_4g_ms - R_3R_4 + s^2\left(-C_3L_3R_3R_4 - C_5L_5R_3R_4\right)}{2C_3C_4C_5L_3L_5R_3R_4s^5 + 2R_3R_4g_m + 2R_3 + R_4 + s^4\left(2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3C_4L_3R_3R_4 + C_3C_5L_5R_3R_4 + 2C_3L_3L_5R_3g_m + C_3L_3L_5R_4g_m + 2C_4C_5L_5R_3R_4\right) + s^2\left(2C_3L_3R_3R_4g_m + 2C_3L_3R_3 + C_3}$$

**10.864 INVALID-ORDER-864** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_5R_3R_4g_ms^4 + R_3R_4g_m + s^3\left(C_3C_5L_3R_3R_4R_5g_m - C_3C_5L_3R_3R_4\right) +}{2C_3C_4C_5L_3L_5R_3R_4g_ms^5 + 2R_3g_m + R_4g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_4g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4R_5g_m + C_3C_5L_3R_4 + C_3C_5L_5R_3R_3}$$

**10.865 INVALID-ORDER-865** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_5R_3R_4R_5s^4 - R_3R_4R_5 + s}{2C_3C_4C_5L_3L_5R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^4\left(2C_3C_4L_3L_5R_3R_4R_5g_m + 2C_3C_4L_3L_5R_3R_4 + 2C_3C_5L_3L_5R_3R_4R_5g_m + 2C_3C_5L_3L_5R_3R_5 + C_3C_5L_3L_5R_4R_5\right) + s^3\left(2C_3C_4L_3R_3R_4R_5 + C_3C_5L_5R_3R_4R_5 + 2C_3L_3L_5R_3R_4g_m + 2C_3L_3L_5R_3R_5g_m +\right.}$$

**10.866 INVALID-ORDER-866** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_5R_3R_4g_m}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3C_4L_3R_3R_4R_5g_m +\right.}$$

**10.867 INVALID-ORDER-867** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5 + 2C_3C_5L_3L_5R_3R_4g_m + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_3L_5R_4R_5g_m + C_3C_5L_3L_5R_4\right) + s^3\left(2C_3C_4L_3R_3R_4R_5g_m +\right.}$$

**10.868 INVALID-ORDER-868** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3\right) + s\left(C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{2R_3g_m + R_5g_m + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m\right.}$$

**10.869 INVALID-ORDER-869** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3R_3R_4s^4 + R_3g_m + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m - C_4C_5R_3R_4\right) + s\left(C_4R_3R_4g_m - C_5R_3\right)}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4\right) + s^3\left(C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4\right) + s\left(C_3R_3g_m + 2C_4R_3g_m +\right.}$$

**10.870 INVALID-ORDER-870** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3R_3R_4R_5s^4 + R_3R_5g_m - R_3 + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4 - C_3C_5L_3R_3R_5\right) + s^2\left(C_3L_3R_3\right.}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5\right) + s^3\left(C_3C_4C_5R_3R_4R_5 + 2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + 2C_3C_5L_3R_3R_5g_m + C_3C_5L_3R_5\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C\right.}$$

**10.871 INVALID-ORDER-871** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4\right) + s^3\left(C_3C_4L_3R_3R_4g_m + C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3\right) + s^2\left(C_3L_3R_3g_m + C_4C_5R_3R_4R_5\right.}{g_m + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3\right) + s^2\left(C_3C_4R_3R_4g_m + C_3C_5\right.}$$

**10.872 INVALID-ORDER-872** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(-C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3 + C_4C_5L_5R_3R_4g_m\right) + s^2\left(C_3L_5\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_4C_5L_5R_3R_4g_m + C_3C_5L_3L_5g_m\right) + s^3\left(C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + C_3C_5L_5R_3g_m + 2C_4C_5\right.}$$

**10.873 INVALID-ORDER-873** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_5R_3R_4s^5 - R_3 + s^4\left(C_3C_4L_3L_5R_3R_4g_m - C_3C_5L_3L_5R_3\right) + s^3\left(-C_3C_4L_3R_3R_4 + C_3L_3L_5R_3g_m - C_4C_5\right.}{2R_3g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4\right) + s^4\left(C_3C_4C_5L_5R_3R_4 + 2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4 + C_3C_4L_5R_3R_4g_m + C_3C_5L_5R_3 +\right.}$$

**10.874 INVALID-ORDER-874** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_5R_3R_4g_ms^5 + R_3g_m + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4 + C_3C_5L_3L_5R_3g_m\right) + s^3\left(C_3}{g_m + s^5\left(2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_4C_5L_5R_3R_4g_m + C_3C_5L_3L_5g_m\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_3g_m + C\right.}$$

**10.875 INVALID-ORDER-875** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_5R_3R_4R_5s^5 - R_3}{2R_3R_5g_m + R_5 + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_5 + C_3C_4C_5L_3L_5R_4R_5\right) + s^4\left(C_3C_4C_5L_5R_3R_4R_5 + 2C_3C_4L_3L_5R_3R_4g_m + 2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5R_3 + C_3C_4L_3L_5R_4R_5g_m + C_3C_4L_3L_5R_4 + 2C_3C_5L_3L_5R_3R_5g_m + C_3C_5L_3L_5R_5\right)}$$

**10.876 INVALID-ORDER-876** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^5\left(C_3C_4C_5L_3L_5R_3R_4R_5g_m\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4 + 2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5R_5g_m\right.}$$

**10.877 INVALID-ORDER-877** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5 + C_3C_4C_5L_5R_3R_4R_5g_m + C_3C_4C_5L_5R_3R_4 + 2C_3C_5L_3\right.}$$

**10.878 INVALID-ORDER-878** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 + C_4L_4R_3R_5g_m - C_4L_4R_3\right)}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3\right) + s^2\left(2C_3L_3R_3g_m + C_3L_3R_5g_m + C_3L_3 + 2C_4L_4R_3g_m + C_4L_4R_5g_m + C_4L_4\right) + s\left(C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5\right.}$$

**10.879 INVALID-ORDER-879** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3s^5 + C_3C_4L_3L_4R_3g_ms^4 - C_5R_3s + R_3g_m + s^3\left(-C_3C_5L_3R_3 - C_4C_5L_4R_3\right) + s^2\left(C_3L_3R_3g_m + C_4L_4R_3g_m\right)}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_4R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_4R_3g_m + C_4C_5L_4\right) + s^2\left(C_3C_5R_3 + C_3L_3g_m + 2C_4C_5R_3 + C_4L_4g_m\right) + s\left(C_3R_3g_m\right.}$$

**10.880 INVALID-ORDER-880** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_5s^5 - C_5R_3R_5s + R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3\right) + s^3\left(-C_3C_5L_3R_3\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_4R_3R_5 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3 + 2C_3C_5L_3R_3R_5g_m + C_3C\right.}$$

**10.881 INVALID-ORDER-881** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4L_3L_4R_3g_ms^4 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3\right) + s^3\left(C_3C_5L_3R_3R_5g_m - C_3C_5L_3R_3 + C_4C_5L_4R_3R_5g_m - C_4C_5L_4R_3\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_4R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3R_5g_m + C_3C_5L_3 + 2C_4C_5\right.}$$

**10.882 INVALID-ORDER-882** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 - C_3C_4C_5L_3L_4R_3s^5 - C_5R_3s + R_3g_m + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5L_3L_5R_3g_m + C_4C_5L_4L_5R_3g_m\right) + s^3\left(-C_3C_5L_3R_3\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_4L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3 + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5L_4L_5g_m\right) + s^3\left(2C_3C_4L_3R_3g_m + C_3C_4L_4R_3g_m + 2C_3C_5L_3R_3g_m + \right.}$$

**10.883 INVALID-ORDER-883** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3s^6 + C_3C_4L_3L_4L_5R_3g_ms^5 + L_5R_3g_ms - R_3 + s^4\left(-C_3C_4L_3L_4R_3 - C_3C_5L_3L_5R_3 - C_4C_5L_4L\right.}{2R_3g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_4L_5R_3 + C_3C_4L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4 + 2C_3C_4L_3L_5R_3g_m + C_3C_4L_4L_5R_3g_m + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_3L_5 + 2C_4C_5L_4L_5R_3g_m + C_4C_5L_4L\right.}$$

**10.884 INVALID-ORDER-884** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4L_3L_4R_3g_m + C_3C_5\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_4L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m + C_3C_5L_3L_5g_m + C_4C_5\right.}$$

**10.885 INVALID-ORDER-885** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3R_5s^6 - R_3}{2R_3R_5g_m + R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_5 + C_3C_4C_5L_4L_5R_3R_5 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_5g_m + C_3C_4L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + C_3C_4L_3L_4R_5 + 2C_3C_4L_3L_5R_3R_5g_m + 2C_3C_4L_3L_5\right.}$$

**10.886 INVALID-ORDER-886** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3C_4L_3L_4L_5R_3g_ms^5 + L_5R_3g_ms + R_3R_5g_m}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3 + C_3C_4L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4 + \right.}$$

**10.887 INVALID-ORDER-887** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+\frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3}{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5 + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3\right) + s^4\left(2C_3C_4C_5L_3R_3R_5 + C_3C_4C_\right.}$$

**10.888 INVALID-ORDER-888** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2R_3R_5g_m + 2R_3 + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3\right) + s^3\left(2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4\right) + s^2\left(2C_3L_3R_3R_5g_m + 2C_3L_3R_3 + C_3L_4R_3R_5g_m + C_3L_4R_3 + 2C_4L_4R_3R_5g_m + 2C_4L_4R_3\right) + s\left(2L_4R_3g_m + L_4R_5g_m + L_4\right)}$$

**10.889 INVALID-ORDER-889** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3s^4 + C_3L_3L_4R_3g_ms^3 - C_5L_4R_3s^2 + L_4R_3g_ms}{2C_3C_4C_5L_3L_4R_3s^5 + 2R_3g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_3 + C_3C_5L_4R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3\right) + s^2\left(2C_3L_3R_3g_m + C_3L_4R_3g_m + 2C_4L_4R_3g_m + 2C_5L_4R_3g_m + C_5L_4\right) + s\left(2C_5R_3 + L_4g_m\right)}$$

**10.890 INVALID-ORDER-890** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_5s^4 - C_5L_4R_3R_5s^2 + s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3\right) + s\left(L_4R_3R_5g_m - L_4R_3\right)}{2C_3C_4C_5L_3L_4R_3R_5s^5 + 2R_3R_5g_m + 2R_3 + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_5\right) + s^3\left(2C_3C_5L_3R_3R_5 + C_3C_5L_4R_3R_5 + 2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4 + 2C_4C_5L_4R_3R_5\right) + s^2\left(2C_3L_3R_3R_5g_m + 2C_3L_3R_3\right.}$$

**10.891 INVALID-ORDER-891** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4R_3g_ms^3 + L_4R_3g_ms + s^4\left(C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3L_4R_3\right) + s^2\left(C_5L_4R_3R_5g_m - C_5L_4R_3\right)}{2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m + C_3C_5L_3L_4\right) + s^3\left(2C_3C_5L_3R_3R_5g_m + 2C_3C_5L_3R_3 + C_3C_5L_4R_3R_5g_m + C_3C_5L_4R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3R_5g_m + 2C_4C_5L_4R_3\right) + s^2\right.}$$

**10.892 INVALID-ORDER-892** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3g_ms^5 - C_3C_5L_3L_4R_3s^4 - C_5L_4R_3s^2 + L_4R_3g_ms + s^3\left(C_3L_3L_4R_3g_m + C_5L_4L_5R_3g_m\right)}{2C_3C_4C_5L_3L_4L_5R_3g_ms^6 + 2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3 + C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m\right) + s^3\left(2C_3C_5L_3R_3 + C_3C_5L_4R_3 + C_3L_3L_4g_m + 2C_4C_5L_4R_3 + C\right.}$$

**10.893 INVALID-ORDER-893** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_3s^5 + C_3L_3L_4L_5R_3g_ms^4 + L_4L_5R_3g_ms^2 - L_4R_3s + s^3\left(-C_3L_3L_4R_3 - C_5L_4L_5R_3\right)}{2C_3C_4C_5L_3L_4L_5R_3s^6 + 2R_3 + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_5R_3 + C_3C_5L_4L_5R_3 + C_3L_3L_4L_5g_m + 2C_4C_5L_4L_5R_3\right) + s^3\left(2C_3L_3L_4R_3g_m + C_3L_3L_4 + 2C_3L_3L_5R_3g_m + C_3L_4L_5R_3g_m + 2C_4L_4\right.}$$

**10.894 INVALID-ORDER-894** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ L_5s+R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3g_ms^5 + L_4R_3g_ms + s^4\left(C_3C_5L_3L_4R_3R_5g_m - C_3C_5L_3L_4R_3\right) +}{2C_3C_4C_5L_3L_4L_5R_3g_ms^6 + 2R_3g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_5L_3L_4L_5g_m\right) + s^4\left(2C_3C_4L_3L_4R_3g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m + C_3C_5L_3L_4 + 2C_3C_5L_3L_5R_3g_m + C_3C_5L_4L_5R_3g_m + 2C_4C_5L_4L_5R_3g_m\right) + s^3\left(2C_3C_5L_3R_3R\right.}$$

**10.895 INVALID-ORDER-895** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_3R_5s^5 - L_4R_3R_5s + s}{2C_3C_4C_5L_3L_4L_5R_3R_5s^6 + 2R_3R_5 + s^5\left(2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + 2C_3C_5L_3L_4L_5R_3R_5g_m + C_3C_5L_3L_4L_5R_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5 + 2C_3C_5L_3L_5R_3R_5 + C_3C_5L_4L_5R_3R_5 + 2C_3L_3L_4L_5R_3g_m + C_3L_3L_4L_5R_5g_m + C_3L_3L_4L_5 + 2C_4C_5L_4L_5R\right.}$$

**10.896 INVALID-ORDER-896** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4L_5R_3g_ms^6}{2R_3R_5g_m + 2R_3 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(2C_3C_4L_3L_4L_5R_3g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_5g_m + C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_5R_3R_5g_m + 2C_3C_5L_3L_5R_3 + C_3C_5L_4L_5R_3\right.}$$

**10.897 INVALID-ORDER-897** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4s}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_5g_m + 2R_3 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_5g_m + C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + 2C_3C_5L_3L_4R_3R_5g_m + C_3C_5L_3L_4R_5 + 2C_3C_5L_3L_5R_3\right.}$$

**10.898 INVALID-ORDER-898** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^4\left(C_3C_4L_3L_4R_3R_5g_m - C_3C_4L_3L_4R_3\right) + s^3\left(C_3C_4L_3R_3R_4R_5g_m - C_3C_4L_3R_3R_4\right) + s^2\left(C_3L_3R_3R_5g_m - C_3L_3R_3 + C_4L_4R_3R_5g_m - C_4L_4\right.}{2R_3g_m + R_5g_m + s^4\left(2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + 2C_3C_4L_3R_3R_5g_m + 2C_3C_4L_3R_3 + C_3C_4L_3R_4R_5g_m + C_3C_4L_3R_4 + C_3C_4L_4R_3R_5g_m + C_3C_4L_4R_3\right) + s^2\left(C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4 + 2C_3L_3R_3g_m + C_3L_3R\right.}$$

**10.899 INVALID-ORDER-899** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3s^5 + R_3g_m + s^4\left(-C_3C_4C_5L_3R_3R_4 + C_3C_4L_3L_4R_3g_m\right) + s^3\left(C_3C_4L_3R_3R_4g_m - C_3C_5L_3R_3 - C_4C_5L_4R_3\right) + s^2\left(C_3L_3R_3g_m - C_4C\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m\right) + s^3\left(C_3C_4C_5R_3R_4 + 2C_3C_4L_3R_3g_m + C_3C_4L_3R_4g_m + C_3C_4L_4R_3g_m + 2C_3C_5L_3R_3g_m + C_3C_5L_3 + 2C_4C_5L_4R_3g_m + C\right.}$$

**10.900 INVALID-ORDER-900** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s+R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_5s^5 + R_3R_5g_m - R_3 + s^4\left(-C_3C_4C_5\right.}{2R_3g_m + R_5g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_5 + C_3C_4C_5L_3R_4R_5 + C_3C_4C_5L_4R_3R_5 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_5g_m + C_3C_4L_3L_4\right) + s^3\left(C_3C_4C_5R_3R_4R_5 + 2C_3C_4L_3R_3R_4g_m + 2C_3C_4L\right.}$$

**10.901 INVALID-ORDER-901** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - C_3C_4C_5L_3L_4R_3\right) + s^4\left(C_3C_4C_5L_3R_3R_4R_5g_m - C_3C_4C_5L_3R_3R_4 + C\right.}{g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L_3R_4 + C_3C_4C_5L_4R_3R_5g_m + C_3C_4C_5L_4R_3 + C_3C_4L_3L_4g_m\right) + s^3\left(C_3C_4C_5R_3R_4R_5g_m + C_3\right.}$$

**10.902 INVALID-ORDER-902** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(-C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_5R_3R_4g_m\right) + s^4\left(-C_3C_4C_5L_3R_3R_4\right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m + C_3C_4C_5L_4L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4 + C_3C_4C_5L_4R_3 + C_3C_4C_5L_5R_3R_4g_m + C_3C_4L_3L_4g_m + C_3C_5\right.}$$

**10.903 INVALID-ORDER-903** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3s^6 - R_3 + s^5\left(-C_3C_4C_5L_3L_5R_3R_4 + C_3\right.}{2R_3g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4 + C_3C_4C_5L_4L_5R_3 + C_3C_4L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_5R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4 + 2C_3C_4L_3L_5R_3g_m + C_3C_4L_3L_5R_4g_m + \right.}$$

**10.904 INVALID-ORDER-904** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3g_ms^6 + R_3g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_5g_m - \right.}{C_3C_4C_5L_3L_4L_5g_ms^6 + g_m + s^5\left(2C_3C_4C_5L_3L_4R_3g_m + C_3C_4C_5L_3L_4R_5g_m + C_3C_4C_5L_3L_4 + 2C_3C_4C_5L_3L_5R_3g_m + C_3C_4C_5L_3L_5R_4g_m + C_3C_4C_5L_4L_5R_3g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4g_m + 2C_3C_4C_5L_3R_3R_5g_m + 2C_3C_4C_5L_3R_3 + C_3C_4C_5L_3R_4R_5g_m + C_3C_4C_5L\right.}$$

**10.905 INVALID-ORDER-905** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_4s^4 + C_3L_3L_4R_3R_4g_ms^3 - C_5L_4R_3R_4s^2 + L_4R_3R_4g_ms}{2R_3R_5g_m + R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_5g_m + C_3C_4C_5L_3L_4L_5R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_5 + C_3C_4C_5L_3L_5R_4R_5 + C_3C_4C_5L_4L_5R_3R_5 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_5g_m + C_3C_4L_3L_4L_5\right) + s^4\left(C_3C_4C_5L_5R_3R_4R_5 + 2C\right.}$$

**10.906 INVALID-ORDER-906** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + C_3C_4C_5L_4L_5R_3R_5g_m + C_3C_4C_5L_4L_5R_3 + C_3C_4L\right.}{}$$

**10.907 INVALID-ORDER-907** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ L_4s + R_4 + \frac{1}{C_4s},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{2R_3g_m + R_5g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_5g_m + C_3C_4C_5L_3L_4L_5\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_5g_m + C_3C_4C_5L_3L_4R_5 + 2C_3C_4C_5L_3L_5R_3R_4g_m + 2C_3C_4C_5L_3L_5R_3R_5g_m + 2C_3C_4C_5L_3L_5R_3 + C_3C_4C_5L_3L_5R_4R_5g_m + C_3C_4C_5L_3L_5R_4 + C_3C_4\right.}{}$$

**10.908 INVALID-ORDER-908** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5,\ \infty\right)$

$$H(s) = \frac{s^3\left(C_3L_3L_4R_3R_4R_5g_m - C_3L_3L_4R_3R_4\right) + s\left(L_4R_3R_4R_5g_m - L_4R_3R_4\right)}{2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + 2C_3C_4L_3L_4R_3R_4\right) + s^3\left(2C_3L_3L_4R_3R_4g_m + 2C_3L_3L_4R_3R_5g_m + 2C_3L_3L_4R_3 + C_3L_3L_4R_4R_5g_m + C_3L_3L_4R_4\right) + s^2\left(2C_3L_3R_3R_4R_5g_m + 2C_3L_3R_3R_4 + C_3L_4R_3R_4R_5g_m + C_3L_4R_3R_4 + 2C_4L_4R_3R_4R_5g_m + \right.}$$

**10.909 INVALID-ORDER-909** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_4s^4 + C_3L_3L_4R_3R_4g_ms^3 - C_5L_4R_3R_4s^2 + L_4R_3R_4g_ms}{2C_3C_4C_5L_3L_4R_3R_4s^5 + 2R_3R_4g_m + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4\right) + s^3\left(2C_3C_5L_3R_3R_4 + C_3C_5L_4R_3R_4 + 2C_3L_3L_4R_3g_m + C_3L_3L_4R_4g_m + 2C_4C_5L_4R_3R_4\right) + s^2\left(2C_3L_3R_3R_4g_m + C_3L_4R_3R_4g_m + 2C_4L_4R_3R\right.}$$

**10.910 INVALID-ORDER-910** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4R_3R_4R_5s^4 - C_5L_4R_3R_4R_5s^4}{2C_3C_4C_5L_3L_4R_3R_4R_5s^5 + 2R_3R_4R_5g_m + 2R_3R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + 2C_3C_4L_3L_4R_3R_4 + 2C_3C_5L_3L_4R_3R_4R_5g_m + 2C_3C_5L_3L_4R_3R_5 + C_3C_5L_3L_4R_4R_5\right) + s^3\left(2C_3C_5L_3R_3R_4R_5 + C_3C_5L_4R_3R_4R_5 + 2C_3L_3L_4R_3R_4g_m + 2C_3L_3L_4R_3R_5g_m + 2C_3L_3L\right.}$$

**10.911 INVALID-ORDER-911** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4R_3R_4g_ms^3 + L_4R_3R_4g_ms + s^4\left(C_3C_5L_3L\right.}{2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_5g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4\right) + s^3\left(2C_3C_5L_3R_3R_4R_5g_m + 2C_3C_5L_3R_3R_4 + C_3C_5L_4R_3R_4R_5g_m\right.}$$

**10.912 INVALID-ORDER-912** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_5L_3L_4L_5R_3R_4g_ms^5 - C_3C_5L_3L_4R_3R_4s^4 - C}{2C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + 2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_4g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4 + 2C_3C_5L_3L_5R_3R_4g_m + C_3C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4\right.}$$

**10.913 INVALID-ORDER-913** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5L_3L_4L_5R_3R_4s^5 + C_3L_3L_4L_5R_3R}{2C_3C_4C_5L_3L_4L_5R_3R_4s^6 + 2R_3R_4 + s^5\left(2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4 + 2C_3C_5L_3L_5R_3R_4 + C_3C_5L_4L_5R_3R_4 + 2C_3L_3L_4L_5R_3g_m + C_3L_3L_4L_5R_4g_m + 2C_4C_5L_4L_5R_3R_4\right) + s^3\left(2C\right.}$$

**10.914 INVALID-ORDER-914** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3L_3L_4L_5R_3R_4g_ms^5 + L_4L_5R_3R_4g_ms^2 + L_5R_3R_4g_ms + s^4\left(C_3C_5L_3L_4L_5R_3R_4R_5g_m\right.}{2C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + 2R_3R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_4 + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5R_4g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_5L_3L_4R_3R_5g_m + 2C_3C_5L_3L_4R_3 + C_3C_5L_3L_4R_4R_5g_m + C_3C_5L_3L_4R_4 + 2C_3C_5L_3L_5R_3R_4g_m + C_3C_5L_4L_5R_3R_4g_m + 2C_4C_5L_4L_5R_3R_4\right.}$$

**10.915 INVALID-ORDER-915** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{2C_3C_4C_5L_3L_4L_5R_3R_4R_5s^6 + 2R_3R_4R_5 + s^5\left(2C_3C_4L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4L_3L_4L_5R_3R_4 + 2C_3C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_5L_3L_4L_5R_3R_5 + C_3C_5L_3L_4L_5R_4R_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4R_5 + 2C_3C_5L_3L_5R_3R_4R_5 + C_3C_5L_4L_5R_3R_4R_5 + 2C_3L_3L_4L_5R_3R_4\right.}$$

**10.916 INVALID-ORDER-916** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_5g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4R_5g_m + C_3C_5L_3L_4L_5R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + \right.}$$

**10.917 INVALID-ORDER-917** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{L_4R_4s}{C_4L_4R_4s^2+L_4s+R_4},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5 + 2C_3C_5L_3L_4L_5R_3R_4g_m + 2C_3C_5L_3L_4L_5R_3R_5g_m + 2C_3C_5L_3L_4L_5R_3 + C_3C_5L_3L_4L_5R_4R_5g_m + C_3C_5L_3L_4L_5R_4\right) + s^4\left(2C_3C_4L_3L_4R_3R_4R_5g_m + \right.}$$

**10.918 INVALID-ORDER-918** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m - C_3C_4L_3L_4R_3R_4\right) + s^3\left(C_3L_3L_4R_3R_5g_m - C_3L_3L_4R_3\right) + s^2\left(C_3L_3R_3\right.}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4\right) + s^3\left(C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4 + 2C_3L_3L_4R_3g_m + C_3L_3L_4R_5g_m + C_3L_3L_4\right) + s^2\left(2C_3L_3R_3R_4g_m\right.}$$

**10.919 INVALID-ORDER-919** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_4s^5 + R_3R_4g_m + s^4\left(C_3C_4L_3L_4R_3R_4g_m - C_3C_5L_3L_4R_3\right) + s^3\left(-C_3C_5L_3R_3R_4 + C_3L_3L_4R_3g_m\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4\right) + s^4\left(C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4\right) + s^3\left(C_3C_4L_4R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4 + C_3C_5\right.}$$

**10.920 INVALID-ORDER-920** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5\right) + s^4\left(C_3C_4C_5L_4R_3R_4R_5 + 2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4 + 2C_3C_5\right.}$$

**10.921 INVALID-ORDER-921** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^5\left(C_3C_4C_5L_3L_4R_3R_4R_5g_m - C_3C_4\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4\right) + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4R_3g_m + C_3C_5L_3L_4R_5g_m\right.}$$

**10.922 INVALID-ORDER-922** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3R_4g_ms^6 + R_3R_4g_m + s^5\left(-C_3C\right.}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4 + C_3C_4C_5L_4L_5R_3R_4g_m + C_3C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m + 2C_3C_5L_3L_4\right.}$$

**10.923 INVALID-ORDER-923** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4L_5R_3R_4s^6 + R_3R_4g_m + s^5\left(-C_3C_4C_5L_3L_4L_5R_3\right.}{2R_3R_4g_m + 2R_3 + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(C_3C_4C_5L_4L_5R_3R_4 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_4g_m + 2C_3C_5L_3L_4L_5R_3g_m + C_3C_5L_3L_4L_5\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3 + C_3C\right.}$$

**10.924 INVALID-ORDER-924** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4 + C_3C_4C_5L_4L_5R_3R_4g_m + C_3C_5L_3L_4L_5g_m\right) + s^4\left(C_3C_4C_5L_4R_3R_4R_5g_m\right.}$$

**10.925 INVALID-ORDER-925** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5 + C_3C_4C_5L_3L_4L_5R_4R_5\right) + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5 + 2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + C_3C_4L_3L_4L_5R_4R_5g_m + C_3C_4L_3L_4L_5R_4 +\right.}$$

**10.926 INVALID-ORDER-926** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(C_3C_4C_5L_4L_5R_3R_4R_5g_m + C_3C_4C_5L_4L_5R_3R_4 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C\right.}$$

**10.927 INVALID-ORDER-927** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{C_4L_4R_4s^2+L_4s+R_4}{C_4L_4s^2+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5 + C_3\right.}$$

**10.928 INVALID-ORDER-928** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s^4\left(C_3C_4L_3L_4R_3R_4R_5g_m - C_3C_4L_3L_4R_3R_4\right) + s^2\left(C_3L_3R_3R_4R_5g_m - C_3L_3R_3R_4\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m + C_3C_4L_3L_4R_4\right) + s^3\left(2C_3C_4L_3R_3R_4R_5g_m + 2C_3C_4L_3R_3R_4 + C_3C_4L_4R_3R_4R_5g_m + C_3C_4L_4R_3R_4\right) + s^2\left(2C_3L_3R_3R_4g_m + 2\right.}$$

**10.929 INVALID-ORDER-929** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5L_3L_4R_3R_4s^5 + C_3C_4L_3L_4R_3R_4g_ms^4 - C_5R_3R_4s + R_3R_4g_m + s^3\left(-C_3C_5L_3R_3R_4 - C_4C_5L_3\right.}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4 + C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3L_4R_4g_m\right) + s^3\left(2C_3C_4L_3R_3R_4g_m + C_3C_4L_4R_3R_4g_m + 2C_3C_5L_3R_3R_4g_m + 2C_3C_5L_3R_3 + C_3C_5L_3R_4\right.}$$

**10.930 INVALID-ORDER-930** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5 + C_3C_4C_5L_4R_3R_4R_5 + 2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3R_5g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4R_5g_m +}$$

**10.931 INVALID-ORDER-931** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4L_3L_4R_3R_4g_ms^4}{2R_3g_m + R_4g_m + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4\right) + s^4\left(2C_3C_4C_5L_3R_3R_4R_5g_m + 2C_3C_4C_5L_3R_3R_4 + C_3C_4C_5L_4R_3R_4R_5g_m + C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4L_3}$$

**10.932 INVALID-ORDER-932** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_3C_4C_5L_3L_4L_5R_3}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4 + 2C_3C_4C_5L_3L_5R_3R_4g_m + C_3C_4C_5L_4L_5R_3R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3R_4 + C_3C_4C_5L_4R_3R_4 + 2C_3C_4L_3L_4R_3g_m + C_3C_4}$$

**10.933 INVALID-ORDER-933** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5s}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3 + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4 + C_3C_4C_5L_4L_5R_3R_4 + 2C_3C_4L_3L_4L_5R_3g_m + C_3C_4L_3L_4L_5R_4g_m\right) + s^4\left(2C_3C_4L_3L_4R_3R_4g_m + 2C_3C_4L_3L_4R_3 + C_3C_4L_3L_4R_4 + 2C_3C\right.}$$

**10.934 INVALID-ORDER-934** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ L_5s + R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{}{2R_3g_m + R_4g_m + s^6\left(2C_3C_4C_5L_3L_4L_5R_3g_m + C_3C_4C_5L_3L_4L_5R_4g_m\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4g_m + 2C_3C_4C_5L_3L_4R_3R_5g_m + 2C_3C_4C_5L_3L_4R_3 + C_3C_4C_5L_3L_4R_4R_5g_m + C_3C_4C_5L_3L_4R_4 + 2C_3C_4C_5L_3L_5R_3R_4g_m + C_3C_4C_5L_4L_5R_3R_4g_m\right) + s^4\left(2C_3C_4C_5L_3R_3\right.}$$

**10.935 INVALID-ORDER-935** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{L_5R_5s}{C_5L_5R_5s^2+L_5s+R_5},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4R_5g_m + 2R_3R_5 + R_4R_5 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5 + C_3C_4C_5L_3L_4L_5R_4R_5\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5 + C_3C_4C_5L_4L_5R_3R_4R_5 + 2C_3C_4L_3L_4L_5R_3R_4g_m + 2C_3C_4L_3L_4L_5R_3R_5g_m + 2C_3C_4L_3L_4L_5R_3 + C_3C_4L_3L_4L_5R_4}$$

**10.936 INVALID-ORDER-936** $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{C_5L_5R_5s^2+L_5s+R_5}{C_5L_5s^2+1},\ \infty\right)$

$$H(s) = \frac{}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_5R_3R_4R_5g_m + 2C_3C_4C_5L_3L_5R_3R_4 + C_3C_4C_5L_4L_5R_3R_4R_5g_m\right.}$$

### 10.937 INVALID-ORDER-937 $Z(s) = \left(\infty,\ \infty,\ \frac{R_3\left(C_3L_3s^2+1\right)}{C_3L_3s^2+C_3R_3s+1},\ \frac{R_4\left(C_4L_4s^2+1\right)}{C_4L_4s^2+C_4R_4s+1},\ \frac{R_5\left(C_5L_5s^2+1\right)}{C_5L_5s^2+C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^6\left(2C_3C_4C_5L_3L_4L_5R_3R_4g_m + 2C_3C_4C_5L_3L_4L_5R_3R_5g_m + 2C_3C_4C_5L_3L_4L_5R_3 + C_3C_4C_5L_3L_4L_5R_4R_5g_m + C_3C_4C_5L_3L_4L_5R_4\right) + s^5\left(2C_3C_4C_5L_3L_4R_3R_4R_5g_m + 2C_3C_4C_5L_3L_4R_3R_5 + C_3C_4C_5L_3L_4R_4R_5 + 2C\right.$$

## 11 PolynomialError