Filter Summary Report: CG,TIA,Automated,NO,L,simple,Z2,Z3,Z4,Z5

Generated by MacAnalog-Symbolix

October 17, 2025

Contents

1 Examined $H(z)$ for CG TIA Automated NO L simple Z2 Z3 Z4 Z5: $\frac{Z_2Z_3Z_4Z_5g_m-Z_2Z_3Z_4+Z_3Z_4Z_5}{2Z_2Z_3Z_4g_m+2Z_2Z_3Z_5g_m+2Z_2Z_3+Z_2Z_4Z_5g_m+Z_2Z_4+4Z_3Z_4+2Z_3Z_5+Z_4Z_5}$

$$H(z) = \frac{Z_2Z_3Z_4Z_5g_m - Z_2Z_3Z_4 + Z_3Z_4Z_5}{2Z_2Z_3Z_4g_m + 2Z_2Z_3Z_5g_m + 2Z_2Z_3 + Z_2Z_4Z_5g_m + Z_2Z_4 + 4Z_3Z_4 + 2Z_3Z_5 + Z_4Z_5}$$

2 AP

3 BP

4 BS

5 GE

6 HP

7 LP

8 X-INVALID-NUMER

8.1 X-INVALID-NUMER-1 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3s + R_2R_3g_m + R_3}{2C_4C_5R_2R_3s^2 + R_2g_m + s\left(2C_4R_2R_3g_m + 2C_4R_3 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_2g_m+1}}{2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
wo: $\frac{\sqrt{2}\sqrt{R_2g_m+1}}{2\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}}$
bandwidth: $\frac{2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}{2C_4C_5R_2R_3}$
K-LP: R_3
K-HP: 0
K-BP: $-\frac{C_5R_2R_3}{2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
Qz: None
Wz: None

8.2 X-INVALID-NUMER-2 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_5s + R_2R_3R_5g_m - R_2R_3 + R_3R_5}{2C_4C_5R_2R_3R_5s^2 + 2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s\left(2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5 + 2C_5R_2R_3R_5g_m + C_5R_2R_5 + 4C_5R_3R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
wo: $\frac{\sqrt{2}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{2\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}}$
bandwidth: $\frac{2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}{2C_4C_5R_2R_3R_5}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $-\frac{C_5R_2R_3R_5}{2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
Qz: None
Wz: None

8.3 X-INVALID-NUMER-3 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 R_3 g_m + R_3 + s\left(C_5 R_2 R_3 R_5 g_m - C_5 R_2 R_3 + C_5 R_3 R_5\right)}{R_2 g_m + s^2\left(2C_4 C_5 R_2 R_3 R_5 g_m + 2C_4 C_5 R_2 R_3 + 2C_4 C_5 R_3 R_5\right) + s\left(2C_4 R_2 R_3 g_m + 2C_4 R_3 + 2C_5 R_2 R_3 g_m + C_5 R_2 R_5 g_m + C_5 R_2 + 4C_5 R_3 + C_5 R_5\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}R_5 g_m\sqrt{\frac{R_2 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{\frac{R_2 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_3}R_5\sqrt{\frac{R_2 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}{2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5}$

wo: $\sqrt{\frac{R_2g_m+1}{2C_4C_5R_2R_3R_5g_m+2C_4C_5R_2R_3+2C_4C_5R_3R_5}}$

bandwidth: $\frac{\sqrt{\frac{R_2g_m+1}{2C_4C_5R_2R_3R_5g_m+2C_4C_5R_2R_3+2C_4C_5R_3R_5}}(2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5)}{\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_3}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}$

K-LP: R_3

K-HP: 0

K-BP: $\frac{C_5R_2R_3R_5g_m-C_5R_2R_3+C_5R_3R_5}{2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5}$

Qz: None

Wz: None

8.4 X-INVALID-NUMER-4 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4s + R_2R_3R_4g_m + R_3R_4}{2C_4C_5R_2R_3R_4s^2 + 2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s\left(2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

wo: $\frac{\sqrt{2}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}}$

bandwidth: $\frac{2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{2C_4C_5R_2R_3R_4}$

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

K-HP: 0

K-BP: $-\frac{C_5R_2R_3R_4}{2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

Qz: None

Wz: None

8.5 X-INVALID-NUMER-5 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2C_4C_5R_2R_3R_4R_5s^2 + 2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s\left(2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R_4 + 2C_4R_3R_4R_5 + 2C_5R_2R_3R_4R_5g_m + 2C_5R_2R_3R_5 + C_5R_2R_4R_5 + 4C_5R_3R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

wo: $\frac{\sqrt{2}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{2\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$

bandwidth: $\frac{2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{2C_4C_5R_2R_3R_4R_5}$

K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$

K-HP: 0

K-BP: $-\frac{C_5R_2R_3R_4R_5}{2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

Qz: None

Wz: None

8.6 X-INVALID-NUMER-6 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(2C_4C_5R_2R_3R_4R_5g_m + 2C_4C_5R_2R_3R_4 + 2C_4C_5R_3R_4R_5\right) + s\left(2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3R_5g_m + 2C_5R_2R_3 + C_5R_2R_4R_5g_m + C_5R_2R_4 + 4C_5R_3R_4 + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}}{2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$

wo: $\sqrt{\frac{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}{2C_4C_5R_2R_3R_4R_5g_m+2C_4C_5R_2R_3R_4+2C_4C_5R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}{2C_4C_5R_2R_3R_4R_5g_m+2C_4C_5R_2R_3R_4+2C_4C_5R_3R_4R_5}}(2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5)}{\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_4}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}}$

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

K-HP: 0

K-BP: $\frac{C_5R_2R_3R_4R_5g_m-C_5R_2R_3R_4+C_5R_3R_4R_5}{2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$

Qz: None

Wz: None

8.7 X-INVALID-NUMER-7 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_4s + R_2R_4g_m + R_4}{C_3C_5R_2R_4s^2 + 2R_2g_m + s\left(C_3R_2R_4g_m + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2 + 4C_5R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_2g_m+1}}{C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$

wo: $\frac{\sqrt{2R_2g_m+2}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{2R_2g_m+2}(C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4)}{2C_3C_5R_2R_4\sqrt{R_2g_m+1}}$

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

K-HP: 0

K-BP: $-\frac{C_5R_2R_4}{C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$

Qz: None

Wz: None

8.8 X-INVALID-NUMER-8 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_4R_5s + R_2R_4R_5g_m - R_2R_4 + R_4R_5}{C_3C_5R_2R_4R_5s^2 + 2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s\left(C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5 + 2C_5R_2R_4R_5g_m + 2C_5R_2R_5 + 4C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$

wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}}$

bandwidth: $\frac{\sqrt{2}\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}(C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5)}{2C_3C_5R_2R_4R_5\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}$

K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$

K-HP: 0

K-BP: $-\frac{C_5R_2R_4R_5}{C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$

Qz: None

Wz: None

8.9 X-INVALID-NUMER-9 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s\left(C_5R_2R_4R_5g_m - C_5R_2R_4 + C_5R_4R_5\right)}{2R_2g_m + s^2\left(C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + C_3C_5R_4R_5\right) + s\left(C_3R_2R_4g_m + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2R_5g_m + 2C_5R_2 + 4C_5R_4 + 2C_5R_5\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_4}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}\sqrt{R_4}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}{C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2R_5g_m+2C_5R_2+4C_5R_4+2C_5R_5}$

wo: $\sqrt{\frac{2R_2g_m+2}{C_3C_5R_2R_4R_5g_m+C_3C_5R_2R_4+C_3C_5R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_2g_m+2}{C_3C_5R_2R_4R_5g_m+C_3C_5R_2R_4+C_3C_5R_4R_5}}(C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2R_5g_m+2C_5R_2+4C_5R_4+2C_5R_5)}{\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_4}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}\sqrt{R_4}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}$

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

K-HP: 0

K-BP: $\frac{C_5R_2R_4R_5g_m-C_5R_2R_4+C_5R_4R_5}{C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2R_5g_m+2C_5R_2+4C_5R_4+2C_5R_5}$

Qz: None

Wz: None

8.10 X-INVALID-NUMER-10 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_2 R_5 s + R_2 R_5 g_m - R_2 + R_5}{2R_2 g_m + s^2\left(C_3 C_5 R_2 R_5 + 2C_4 C_5 R_2 R_5\right) + s\left(C_3 R_2 R_5 g_m + C_3 R_2 + C_3 R_5 + 2C_4 R_2 R_5 g_m + 2C_4 R_2 + 2C_4 R_5 + 2C_5 R_2 R_5 g_m + 4C_5 R_5\right) + 4}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2 g_m+2}}{C_3 R_2 R_5 g_m+C_3 R_2+C_3 R_5+2C_4 R_2 R_5 g_m+2C_4 R_2+2C_4 R_5+2C_5 R_2 R_5 g_m+4C_5 R_5}$
wo: $\frac{\sqrt{2R_2 g_m+4}}{\sqrt{C_3 C_5 R_2 R_5+2C_4 C_5 R_2 R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2 g_m+4}(C_3 R_2 R_5 g_m+C_3 R_2+C_3 R_5+2C_4 R_2 R_5 g_m+2C_4 R_2+2C_4 R_5+2C_5 R_2 R_5 g_m+4C_5 R_5)}{2\sqrt{C_5}\sqrt{R_2}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2 g_m+2}\sqrt{C_3 C_5 R_2 R_5+2C_4 C_5 R_2 R_5}}$
K-LP: $\frac{R_2 R_5 g_m-R_2+R_5}{2R_2 g_m+4}$
K-HP: 0
K-BP: $-\frac{C_5 R_2 R_5}{C_3 R_2 R_5 g_m+C_3 R_2+C_3 R_5+2C_4 R_2 R_5 g_m+2C_4 R_2+2C_4 R_5+2C_5 R_2 R_5 g_m+4C_5 R_5}$
Qz: None
Wz: None

8.11 X-INVALID-NUMER-11 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_2 R_4 s + R_2 R_4 g_m + R_4}{2R_2 g_m + s^2\left(C_3 C_5 R_2 R_4 + 2C_4 C_5 R_2 R_4\right) + s\left(C_3 R_2 R_4 g_m + C_3 R_4 + 2C_4 R_2 R_4 g_m + 2C_4 R_4 + 2C_5 R_2 R_4 g_m + 2C_5 R_2 + 4C_5 R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{C_3+2C_4}\sqrt{R_2 g_m+1}}{C_3 R_2 R_4 g_m+C_3 R_4+2C_4 R_2 R_4 g_m+2C_4 R_4+2C_5 R_2 R_4 g_m+2C_5 R_2+4C_5 R_4}$
wo: $\frac{\sqrt{2R_2 g_m+2}}{\sqrt{C_3 C_5 R_2 R_4+2C_4 C_5 R_2 R_4}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2 g_m+2}(C_3 R_2 R_4 g_m+C_3 R_4+2C_4 R_2 R_4 g_m+2C_4 R_4+2C_5 R_2 R_4 g_m+2C_5 R_2+4C_5 R_4)}{2\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{C_3+2C_4}\sqrt{R_2 g_m+1}\sqrt{C_3 C_5 R_2 R_4+2C_4 C_5 R_2 R_4}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $-\frac{C_5 R_2 R_4}{C_3 R_2 R_4 g_m+C_3 R_4+2C_4 R_2 R_4 g_m+2C_4 R_4+2C_5 R_2 R_4 g_m+2C_5 R_2+4C_5 R_4}$
Qz: None
Wz: None

8.12 X-INVALID-NUMER-12 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_2 R_4 R_5 s + R_2 R_4 R_5 g_m - R_2 R_4 + R_4 R_5}{2R_2 R_4 g_m + 2R_2 R_5 g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(C_3 C_5 R_2 R_4 R_5 + 2C_4 C_5 R_2 R_4 R_5\right) + s\left(C_3 R_2 R_4 R_5 g_m + C_3 R_2 R_4 + C_3 R_4 R_5 + 2C_4 R_2 R_4 R_5 g_m + 2C_4 R_2 R_4 + 2C_4 R_4 R_5 + 2C_5 R_2 R_4 R_5 g_m + 2C_5 R_2 R_5 + 4C_5 R_4 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2 R_4 g_m+R_2 R_5 g_m+R_2+2R_4+R_5}}{C_3 R_2 R_4 R_5 g_m+C_3 R_2 R_4+C_3 R_4 R_5+2C_4 R_2 R_4 R_5 g_m+2C_4 R_2 R_4+2C_4 R_4 R_5+2C_5 R_2 R_4 R_5 g_m+2C_5 R_2 R_5+4C_5 R_4 R_5}$
wo: $\frac{\sqrt{2R_2 R_4 g_m+2R_2 R_5 g_m+2R_2+4R_4+2R_5}}{\sqrt{C_3 C_5 R_2 R_4 R_5+2C_4 C_5 R_2 R_4 R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2 R_4 g_m+2R_2 R_5 g_m+2R_2+4R_4+2R_5}(C_3 R_2 R_4 R_5 g_m+C_3 R_2 R_4+C_3 R_4 R_5+2C_4 R_2 R_4 R_5 g_m+2C_4 R_2 R_4+2C_4 R_4 R_5+2C_5 R_2 R_4 R_5 g_m+2C_5 R_2 R_5+4C_5 R_4 R_5)}{2\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_3 C_5 R_2 R_4 R_5+2C_4 C_5 R_2 R_4 R_5}\sqrt{R_2 R_4 g_m+R_2 R_5 g_m+R_2+2R_4+R_5}}$
K-LP: $\frac{R_2 R_4 R_5 g_m-R_2 R_4+R_4 R_5}{2R_2 R_4 g_m+2R_2 R_5 g_m+2R_2+4R_4+2R_5}$
K-HP: 0
K-BP: $-\frac{C_5 R_2 R_4 R_5}{C_3 R_2 R_4 R_5 g_m+C_3 R_2 R_4+C_3 R_4 R_5+2C_4 R_2 R_4 R_5 g_m+2C_4 R_2 R_4+2C_4 R_4 R_5+2C_5 R_2 R_4 R_5 g_m+2C_5 R_2 R_5+4C_5 R_4 R_5}$
Qz: None
Wz: None

8.13 X-INVALID-NUMER-13 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 R_4 g_m + R_4 + s\left(C_5 R_2 R_4 R_5 g_m - C_5 R_2 R_4 + C_5 R_4 R_5\right)}{2R_2 g_m + s^2\left(C_3 C_5 R_2 R_4 R_5 g_m + C_3 C_5 R_2 R_4 + C_3 C_5 R_4 R_5 + 2C_4 C_5 R_2 R_4 R_5 g_m + 2C_4 C_5 R_2 R_4 + 2C_4 C_5 R_4 R_5\right) + s\left(C_3 R_2 R_4 g_m + C_3 R_4 + 2C_4 R_2 R_4 g_m + 2C_4 R_4 + 2C_5 R_2 R_4 g_m + 2C_5 R_2 R_5 g_m + 2C_5 R_2 + 4C_5 R_4 + 2C_5 R_5\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}C_3\sqrt{C_5}R_2\sqrt{R_4}R_5 g_m\sqrt{\frac{R_2 g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}C_3\sqrt{C_5}R_2\sqrt{R_4}\sqrt{\frac{R_2 g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}C_3\sqrt{C_5}\sqrt{R_4}R_5\sqrt{\frac{R_2 g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+}}}{}$

wo: $\sqrt{\frac{2R_2g_m+2}{C_3C_5R_2R_4R_5g_m+C_3C_5R_2R_4+C_3C_5R_4R_5+2C_4C_5R_2R_4R_5g_m+2C_4C_5R_2R_4+2C_4C_5R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{}{C_3C_5R}}}{\sqrt{2}C_3\sqrt{C_5}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}C_3\sqrt{C_5}R_2\sqrt{R_4}\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}C_3\sqrt{C_5}\sqrt{R_4}R_5\sqrt{\frac{R_2g}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2}}}$

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

K-HP: 0

K-BP: $\frac{C_5R_2R_4R_5g_m-C_5R_2R_4+C_5R_4R_5}{C_3R_2R_4g_m+C_3R_4+2C_4R_2R_4g_m+2C_4R_4+2C_5R_2R_4g_m+2C_5R_2R_5g_m+2C_5R_2+4C_5R_4+2C_5R_5}$

Qz: None

Wz: None

8.14 X-INVALID-NUMER-14 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2 R_5 g_m - R_2 + R_5 + s\left(C_4 R_2 R_4 R_5 g_m - C_4 R_2 R_4 + C_4 R_4 R_5\right)}{2R_2 g_m + s^2\left(C_3 C_4 R_2 R_4 R_5 g_m + C_3 C_4 R_2 R_4 + C_3 C_4 R_4 R_5\right) + s\left(C_3 R_2 R_5 g_m + C_3 R_2 + C_3 R_5 + 2C_4 R_2 R_4 g_m + 2C_4 R_2 R_5 g_m + 2C_4 R_2 + 4C_4 R_4 + 2C_4 R_5\right) + 4}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_4}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_4}\sqrt{R_4}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_4g_m+2C_4R_2R_5g_m+2C_4R_2+4C_4R_4+2C_4R_5}$

wo: $\sqrt{\frac{2R_2g_m+4}{C_3C_4R_2R_4R_5g_m+C_3C_4R_2R_4+C_3C_4R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_2g_m+4}{C_3C_4R_2R_4R_5g_m+C_3C_4R_2R_4+C_3C_4R_4R_5}}(C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_4g_m+2C_4R_2R_5g_m+2C_4R_2+4C_4R_4+2C_4R_5)}{\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_4}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_3}\sqrt{C_4}\sqrt{R_4}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}}$

K-LP: $\frac{R_2R_5g_m-R_2+R_5}{2R_2g_m+4}$

K-HP: 0

K-BP: $\frac{C_4R_2R_4R_5g_m-C_4R_2R_4+C_4R_4R_5}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_4g_m+2C_4R_2R_5g_m+2C_4R_2+4C_4R_4+2C_4R_5}$

Qz: None

Wz: None

8.15 X-INVALID-NUMER-15 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_5 R_2 R_3 R_4 s + R_2 R_3 R_4 g_m + R_3 R_4}{C_3 C_5 R_2 R_3 R_4 s^2 + 2R_2 R_3 g_m + R_2 R_4 g_m + 2R_3 + R_4 + s\left(C_3 R_2 R_3 R_4 g_m + C_3 R_3 R_4 + 2C_5 R_2 R_3 R_4 g_m + 2C_5 R_2 R_3 + C_5 R_2 R_4 + 4C_5 R_3 R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}}$

bandwidth: $\frac{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{C_3C_5R_2R_3R_4}$

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

K-HP: 0

K-BP: $-\frac{C_5R_2R_3R_4}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

Qz: None

Wz: None

8.16 X-INVALID-NUMER-16 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_5 R_2 R_3 R_4 R_5 s + R_2 R_3 R_4 R_5 g_m - R_2 R_3 R_4 + R_3 R_4 R_5}{C_3 C_5 R_2 R_3 R_4 R_5 s^2 + 2R_2 R_3 R_4 g_m + 2R_2 R_3 R_5 g_m + 2R_2 R_3 + R_2 R_4 R_5 g_m + R_2 R_4 + 4R_3 R_4 + 2R_3 R_5 + R_4 R_5 + s\left(C_3 R_2 R_3 R_4 R_5 g_m + C_3 R_2 R_3 R_4 + C_3 R_3 R_4 R_5 + 2C_5 R_2 R_3 R_4 R_5 g_m + 2C_5 R_2 R_3 R_5 + C_5 R_2 R_4 R_5 + 4C_5 R_3 R_4 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{C_3C_5R_2R_3R_4R_5}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $-\frac{C_5R_2R_3R_4R_5}{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
Qz: None
Wz: None

8.17 X-INVALID-NUMER-17 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_3C_5R_2R_3R_4R_5g_m + C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5\right) + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3R_5g_m + 2C_5R_2R_3 + C_5R_2R_4R_5g_m + C_5R_2R_4 + 4C_5R_3R_4 + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$
wo: $\sqrt{\frac{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}{C_3C_5R_2R_3R_4R_5g_m+C_3C_5R_2R_3R_4+C_3C_5R_3R_4R_5}}$
bandwidth: $\frac{\sqrt{\frac{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}{C_3C_5R_2R_3R_4R_5g_m+C_3C_5R_2R_3R_4+C_3C_5R_3R_4R_5}}(C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5)}{\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_5R_2R_3R_4R_5g_m-C_5R_2R_3R_4+C_5R_3R_4R_5}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$
Qz: None
Wz: None

8.18 X-INVALID-NUMER-18 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3s + R_2R_3g_m + R_3}{R_2g_m + s^2\left(C_3C_5R_2R_3 + 2C_4C_5R_2R_3\right) + s\left(C_3R_2R_3g_m + C_3R_3 + 2C_4R_2R_3g_m + 2C_4R_3 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{C_3+2C_4}\sqrt{R_2g_m+1}}{C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
wo: $\frac{\sqrt{R_2g_m+1}}{\sqrt{C_3C_5R_2R_3+2C_4C_5R_2R_3}}$
bandwidth: $\frac{C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{C_3+2C_4}\sqrt{C_3C_5R_2R_3+2C_4C_5R_2R_3}}$
K-LP: R_3
K-HP: 0
K-BP: $-\frac{C_5R_2R_3}{C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
Qz: None
Wz: None

8.19 X-INVALID-NUMER-19 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_5s + R_2R_3R_5g_m - R_2R_3 + R_3R_5}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(C_3C_5R_2R_3R_5 + 2C_4C_5R_2R_3R_5\right) + s\left(C_3R_2R_3R_5g_m + C_3R_2R_3 + C_3R_3R_5 + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5 + 2C_5R_2R_3R_5g_m + C_5R_2R_5 + 4C_5R_3R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{\sqrt{C_3C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
bandwidth: $\frac{C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_3C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $-\frac{C_5R_2R_3R_5}{C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
Qz: None
Wz: None

8.20 X-INVALID-NUMER-20 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s\left(C_5R_2R_3R_5g_m - C_5R_2R_3 + C_5R_3R_5\right)}{R_2g_m + s^2\left(C_3C_5R_2R_3R_5g_m + C_3C_5R_2R_3 + C_3C_5R_3R_5 + 2C_4C_5R_2R_3R_5g_m + 2C_4C_5R_2R_3 + 2C_4C_5R_3R_5\right) + s\left(C_3R_2R_3g_m + C_3R_3 + 2C_4R_2R_3g_m + 2C_4R_3 + 2C_5R_2R_3g_m + C_5R_2R_5g_m + C_5R_2 + 4C_5R_3 + C_5R_5\right) + 1}$$

Parameters:

Q: $\frac{C_3\sqrt{C_5}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}\sqrt{R_3}R_5\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C}}}{}$

wo: $\sqrt{\frac{R_2g_m+1}{C_3C_5R_2R_3R_5g_m+C_3C_5R_2R_3+C_3C_5R_3R_5+2C_4C_5R_2R_3R_5g_m+2C_4C_5R_2R_3+2C_4C_5R_3R_5}}$

bandwidth: $\frac{\sqrt{\frac{C_3C_5R_2R_3R_5g}{}}}{C_3\sqrt{C_5}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}\sqrt{R_3}R_5\sqrt{\frac{R_2g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m}}}$

K-LP: R_3

K-HP: 0

K-BP: $\frac{C_5R_2R_3R_5g_m - C_5R_2R_3 + C_5R_3R_5}{C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5}$

Qz: None

Wz: None

8.21 X-INVALID-NUMER-21 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4s + R_2R_3R_4g_m + R_3R_4}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_3C_5R_2R_3R_4 + 2C_4C_5R_2R_3R_4\right) + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_3+2C_4}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{C_3C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$

bandwidth: $\frac{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_3+2C_4}\sqrt{C_3C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$

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

K-HP: 0

K-BP: $-\frac{C_5R_2R_3R_4}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

Qz: None

Wz: None

8.22 X-INVALID-NUMER-22 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s^2\left(C_3C_5R_2R_3R_4R_5 + 2C_4C_5R_2R_3R_4R_5\right) + s\left(C_3R_2R_3R_4R_5g_m + C_3R_2R_3R_4 + C_3R_3R_4R_5 + 2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R_4 + 2C_4R_3R_4R_5 + 2C_5R_2R_3R_4R_5g_m + 2C_5\right.}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_3C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$

bandwidth: $\frac{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_3C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$

K-LP: $\frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$

K-HP: 0

K-BP: $-\frac{C_5R_2R_3R_4R_5}{C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

Qz: None

Wz: None

8.23 X-INVALID-NUMER-23 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_3C_5R_2R_3R_4R_5g_m + C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5 + 2C_4C_5R_2R_3R_4R_5g_m + 2C_4C_5R_2R_3R_4 + 2C_4C_5R_3R_4R_5\right) + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3R_5g_m + 2C_5R_2R\right.}$$

Parameters:

Q: $\frac{C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_2R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+}}{}$

wo: $\sqrt{\frac{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}{C_3C_5R_2R_3R_4R_5g_m+C_3C_5R_2R_3R_4+C_3C_5R_3R_4R_5+2C_4C_5R_2R_3R_4R_5g_m+2C_4C_5R_2R_3R_4+2C_4C_5R_3R_4R_5}}$

bandwidth: $\frac{}{C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\frac{R_2R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+C_3\sqrt{C_5}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2}}$

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

K-HP: 0

K-BP: $\frac{C_5R_2R_3R_4R_5g_m-C_5R_2R_3R_4+C_5R_3R_4R_5}{C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$

Qz: None

Wz: None

8.24 X-INVALID-NUMER-24 $Z(s)=\left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s)=\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5+s\left(C_4R_2R_3R_4R_5g_m-C_4R_2R_3R_4+C_4R_3R_4R_5\right)}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5+s^2\left(C_3C_4R_2R_3R_4R_5g_m+C_3C_4R_2R_3R_4+C_3C_4R_3R_4R_5\right)+s\left(C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{4R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{4R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{}{}}}{C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5}$

wo: $\sqrt{\frac{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}{C_3C_4R_2R_3R_4R_5g_m+C_3C_4R_2R_3R_4+C_3C_4R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}{C_3C_4R_2R_3R_4R_5g_m+C_3C_4R_2R_3R_4+C_3C_4R_3R_4R_5}}\left(C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5\right)}{\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{4R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{4R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+}}}$

K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$

K-HP: 0

K-BP: $\frac{C_4R_2R_3R_4R_5g_m-C_4R_2R_3R_4+C_4R_3R_4R_5}{C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5}$

Qz: None

Wz: None

8.25 X-INVALID-NUMER-25 $Z(s)=\left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s)=\frac{R_2R_5g_m-R_2+R_5+s\left(C_3R_2R_3R_5g_m-C_3R_2R_3+C_3R_3R_5\right)}{2R_2g_m+s^2\left(2C_3C_4R_2R_3R_5g_m+2C_3C_4R_2R_3+2C_3C_4R_3R_5\right)+s\left(2C_3R_2R_3g_m+C_3R_2R_5g_m+C_3R_2+4C_3R_3+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5\right)+4}$$

Parameters:

Q: $\frac{2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}}{2C_3R_2R_3g_m+C_3R_2R_5g_m+C_3R_2+4C_3R_3+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}$

wo: $\sqrt{\frac{R_2g_m+2}{C_3C_4R_2R_3R_5g_m+C_3C_4R_2R_3+C_3C_4R_3R_5}}$

bandwidth: $\frac{\sqrt{\frac{R_2g_m+2}{C_3C_4R_2R_3R_5g_m+C_3C_4R_2R_3+C_3C_4R_3R_5}}\left(2C_3R_2R_3g_m+C_3R_2R_5g_m+C_3R_2+4C_3R_3+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5\right)}{2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}R_5\sqrt{\frac{R_2g_m}{R_2R_5g_m+R_2+R_5}+\frac{2}{R_2R_5g_m+R_2+R_5}}}$

K-LP: $\frac{R_2R_5g_m-R_2+R_5}{2R_2g_m+4}$

K-HP: 0

K-BP: $\frac{C_3R_2R_3R_5g_m-C_3R_2R_3+C_3R_3R_5}{2C_3R_2R_3g_m+C_3R_2R_5g_m+C_3R_2+4C_3R_3+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}$

Qz: None

Wz: None

8.26 X-INVALID-NUMER-26 $Z(s)=\left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s)=\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5+s\left(C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5\right)}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5+s^2\left(2C_3C_4R_2R_3R_4R_5g_m+2C_3C_4R_2R_3R_4+2C_3C_4R_3R_4R_5\right)+s\left(2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4\right.}$$

Parameters:

Q: $\frac{2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{2R_4}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{2R_4}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+}}{2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5}$

wo: $\sqrt{\frac{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}{C_3C_4R_2R_3R_4R_5g_m+C_3C_4R_2R_3R_4+C_3C_4R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}{C_3C_4R_2R_3R_4R_5g_m+C_3C_4R_2R_3R_4+C_3C_4R_3R_4R_5}}\left(2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5\right)}{2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{2R_4}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+R_2+R_5}+\frac{2R_4}{R_2R_5g_m+R_2+R_5}+\frac{R_5}{R_2R_5g_m+R_2+R_5}}+2\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{R_2R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_2}{R_2R_5g_m+}}}$

K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$

K-HP: 0
K-BP: $\frac{C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5}{2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5}$
Qz: None
Wz: None

8.27 X-INVALID-NUMER-27 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_2R_3R_4 - C_5R_3R_4\right)}{4C_2C_5R_3R_4s^2 + 2R_3g_m + R_4g_m + s\left(2C_2R_3 + C_2R_4 + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}}{2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\frac{\sqrt{2R_3g_m+R_4g_m}}{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}}$
bandwidth: $\frac{\sqrt{2R_3g_m+R_4g_m}(2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{4C_2C_5R_3R_4\sqrt{g_m}\sqrt{2R_3+R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_3R_4-C_5R_3R_4}{2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: None
Wz: None

8.28 X-INVALID-NUMER-28 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_3R_4R_5 - C_5R_3R_4R_5\right)}{4C_2C_5R_3R_4R_5s^2 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}{4C_2C_5R_3R_4R_5}$
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: $\frac{C_2R_3R_4R_5-C_5R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
Qz: None
Wz: None

8.29 X-INVALID-NUMER-29 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_3R_5s + R_3R_5g_m - R_3}{2C_2C_4R_3R_5s^2 + 2R_3g_m + R_5g_m + s\left(4C_2R_3 + C_2R_5 + 2C_4R_3R_5g_m + 2C_4R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_5}\sqrt{2R_3g_m+R_5g_m+1}}{4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3}$
wo: $\frac{\sqrt{2}\sqrt{2R_3g_m+R_5g_m+1}}{2\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_5}}$
bandwidth: $\frac{4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3}{2C_2C_4R_3R_5}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: 0
K-BP: $\frac{C_2R_3R_5}{4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3}$
Qz: None
Wz: None

8.30 X-INVALID-NUMER-30 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 g_m + s\left(C_2 R_3 - C_5 R_3\right)}{g_m + s^2\left(2C_2C_4R_3 + 4C_2C_5R_3 + 2C_4C_5R_3\right) + s\left(C_2 + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_3}\sqrt{g_m}\sqrt{C_2C_4+2C_2C_5+C_4C_5}}{C_2+2C_4R_3g_m+2C_5R_3g_m+C_5}$
wo: $\frac{\sqrt{g_m}}{\sqrt{2C_2C_4R_3+4C_2C_5R_3+2C_4C_5R_3}}$
bandwidth: $\frac{\sqrt{2}(C_2+2C_4R_3g_m+2C_5R_3g_m+C_5)}{2\sqrt{R_3}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_3+4C_2C_5R_3+2C_4C_5R_3}}$
K-LP: R_3
K-HP: 0
K-BP: $\frac{C_2R_3-C_5R_3}{C_2+2C_4R_3g_m+2C_5R_3g_m+C_5}$
Qz: None
Wz: None

8.31 X-INVALID-NUMER-31 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s\left(C_2R_3R_5 - C_5R_3R_5\right)}{2R_3g_m + R_5g_m + s^2\left(2C_2C_4R_3R_5 + 4C_2C_5R_3R_5 + 2C_4C_5R_3R_5\right) + s\left(4C_2R_3 + C_2R_5 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2R_3g_m+R_5g_m+1}}{4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}$
wo: $\frac{\sqrt{2R_3g_m+R_5g_m+1}}{\sqrt{2C_2C_4R_3R_5+4C_2C_5R_3R_5+2C_4C_5R_3R_5}}$
bandwidth: $\frac{\sqrt{2}(4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5)}{2\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_3R_5+4C_2C_5R_3R_5+2C_4C_5R_3R_5}}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: 0
K-BP: $\frac{C_2R_3R_5-C_5R_3R_5}{4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}$
Qz: None
Wz: None

8.32 X-INVALID-NUMER-32 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{2C_2C_4R_3R_4R_5s^2 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
wo: $\frac{\sqrt{2}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{2\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4}{2C_2C_4R_3R_4R_5}$
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: $\frac{C_2R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
Qz: None
Wz: None

8.33 X-INVALID-NUMER-33 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_2R_3R_4 - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(2C_2C_4R_3R_4 + 4C_2C_5R_3R_4 + 2C_4C_5R_3R_4\right) + s\left(2C_2R_3 + C_2R_4 + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_4+2C_2C_5+C_4C_5}}{2C_2R_3+C_2R_4+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\frac{\sqrt{2R_3g_m+R_4g_m}}{\sqrt{2C_2C_4R_3R_4+4C_2C_5R_3R_4+2C_4C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{2R_3g_m+R_4g_m}(2C_2R_3+C_2R_4+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{2\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_3R_4+4C_2C_5R_3R_4+2C_4C_5R_3R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_3R_4-C_5R_3R_4}{2C_2R_3+C_2R_4+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: None
Wz: None

8.34 X-INVALID-NUMER-34 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_3R_4R_5 - C_5R_3R_4R_5\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(2C_2C_4R_3R_4R_5 + 4C_2C_5R_3R_4R_5 + 2C_4C_5R_3R_4R_5\right) + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{\sqrt{2C_2C_4R_3R_4R_5+4C_2C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}$
bandwidth: $\frac{\sqrt{2}(4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5)}{2\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_3R_4R_5+4C_2C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}$
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: $\frac{C_2R_3R_4R_5-C_5R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
Qz: None
Wz: None

8.35 X-INVALID-NUMER-35 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_4R_5s + R_4R_5g_m - R_4}{C_2C_3R_4R_5s^2 + 2R_4g_m + 2R_5g_m + s\left(4C_2R_4 + 2C_2R_5 + C_3R_4R_5g_m + C_3R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{R_4}\sqrt{R_5}\sqrt{R_4g_m+R_5g_m+1}}{4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4}$
wo: $\frac{\sqrt{2R_4g_m+2R_5g_m+2}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_4g_m+2R_5g_m+2}(4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4)}{2C_2C_3R_4R_5\sqrt{R_4g_m+R_5g_m+1}}$
K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$
K-HP: 0
K-BP: $\frac{C_2R_4R_5}{4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4}$
Qz: None
Wz: None

8.36 X-INVALID-NUMER-36 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{1}{C_3s},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s\left(C_2R_4 - C_5R_4\right)}{2g_m + s^2\left(C_2C_3R_4 + 4C_2C_5R_4 + C_3C_5R_4\right) + s\left(2C_2 + C_3R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_4}\sqrt{g_m}\sqrt{C_2C_3+4C_2C_5+C_3C_5}}{2C_2+C_3R_4g_m+2C_5R_4g_m+2C_5}$
wo: $\frac{\sqrt{2}\sqrt{g_m}}{\sqrt{C_2C_3R_4+4C_2C_5R_4+C_3C_5R_4}}$
bandwidth: $\frac{2C_2+C_3R_4g_m+2C_5R_4g_m+2C_5}{\sqrt{R_4}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_4+4C_2C_5R_4+C_3C_5R_4}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_2R_4-C_5R_4}{2C_2+C_3R_4g_m+2C_5R_4g_m+2C_5}$
Qz: None
Wz: None

8.37 X-INVALID-NUMER-37 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s\left(C_2 R_4 R_5 - C_5 R_4 R_5\right)}{2R_4 g_m + 2R_5 g_m + s^2\left(C_2 C_3 R_4 R_5 + 4C_2 C_5 R_4 R_5 + C_3 C_5 R_4 R_5\right) + s\left(4C_2 R_4 + 2C_2 R_5 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2 C_3+4C_2 C_5+C_3 C_5}\sqrt{R_4 g_m+R_5 g_m+1}}{4C_2 R_4+2C_2 R_5+C_3 R_4 R_5 g_m+C_3 R_4+2C_5 R_4 R_5 g_m+2C_5 R_5}$
wo: $\frac{\sqrt{2R_4 g_m+2R_5 g_m+2}}{\sqrt{C_2 C_3 R_4 R_5+4C_2 C_5 R_4 R_5+C_3 C_5 R_4 R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_4 g_m+2R_5 g_m+2}(4C_2 R_4+2C_2 R_5+C_3 R_4 R_5 g_m+C_3 R_4+2C_5 R_4 R_5 g_m+2C_5 R_5)}{2\sqrt{R_4}\sqrt{R_5}\sqrt{C_2 C_3+4C_2 C_5+C_3 C_5}\sqrt{R_4 g_m+R_5 g_m+1}\sqrt{C_2 C_3 R_4 R_5+4C_2 C_5 R_4 R_5+C_3 C_5 R_4 R_5}}$
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: $\frac{C_2 R_4 R_5-C_5 R_4 R_5}{4C_2 R_4+2C_2 R_5+C_3 R_4 R_5 g_m+C_3 R_4+2C_5 R_4 R_5 g_m+2C_5 R_5}$
Qz: None
Wz: None

8.38 X-INVALID-NUMER-38 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 R_5 s + R_5 g_m - 1}{2g_m + s^2\left(C_2 C_3 R_5 + 2C_2 C_4 R_5\right) + s\left(4C_2 + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{R_5}\sqrt{g_m}\sqrt{C_3+2C_4}}{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4}$
wo: $\frac{\sqrt{2}\sqrt{g_m}}{\sqrt{C_2 C_3 R_5+2C_2 C_4 R_5}}$
bandwidth: $\frac{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4}{\sqrt{C_2}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2 C_3 R_5+2C_2 C_4 R_5}}$
K-LP: $\frac{R_5 g_m-1}{2g_m}$
K-HP: 0
K-BP: $\frac{C_2 R_5}{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4}$
Qz: None
Wz: None

8.39 X-INVALID-NUMER-39 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s\left(C_2 R_5 - C_5 R_5\right) - 1}{2g_m + s^2\left(C_2 C_3 R_5 + 2C_2 C_4 R_5 + 4C_2 C_5 R_5 + C_3 C_5 R_5 + 2C_4 C_5 R_5\right) + s\left(4C_2 + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_5}\sqrt{g_m}\sqrt{C_2 C_3+2C_2 C_4+4C_2 C_5+C_3 C_5+2C_4 C_5}}{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4+2C_5 R_5 g_m}$
wo: $\frac{\sqrt{2}\sqrt{g_m}}{\sqrt{C_2 C_3 R_5+2C_2 C_4 R_5+4C_2 C_5 R_5+C_3 C_5 R_5+2C_4 C_5 R_5}}$
bandwidth: $\frac{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4+2C_5 R_5 g_m}{\sqrt{R_5}\sqrt{C_2 C_3+2C_2 C_4+4C_2 C_5+C_3 C_5+2C_4 C_5}\sqrt{C_2 C_3 R_5+2C_2 C_4 R_5+4C_2 C_5 R_5+C_3 C_5 R_5+2C_4 C_5 R_5}}$
K-LP: $\frac{R_5 g_m-1}{2g_m}$
K-HP: 0
K-BP: $\frac{C_2 R_5-C_5 R_5}{4C_2+C_3 R_5 g_m+C_3+2C_4 R_5 g_m+2C_4+2C_5 R_5 g_m}$
Qz: None
Wz: None

8.40 X-INVALID-NUMER-40 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 R_4 R_5 s + R_4 R_5 g_m - R_4}{2R_4 g_m + 2R_5 g_m + s^2\left(C_2 C_3 R_4 R_5 + 2C_2 C_4 R_4 R_5\right) + s\left(4C_2 R_4 + 2C_2 R_5 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_4 g_m+R_5 g_m+1}}{4C_2 R_4+2C_2 R_5+C_3 R_4 R_5 g_m+C_3 R_4+2C_4 R_4 R_5 g_m+2C_4 R_4}$
wo: $\frac{\sqrt{2R_4 g_m+2R_5 g_m+2}}{\sqrt{C_2 C_3 R_4 R_5+2C_2 C_4 R_4 R_5}}$

bandwidth: $\frac{\sqrt{2}\sqrt{2R_4g_m+2R_5g_m+2}(4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4)}{2\sqrt{C_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_4R_5+2C_2C_4R_4R_5}\sqrt{R_4g_m+R_5g_m+1}}$
K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$
K-HP: 0
K-BP: $\frac{C_2R_4R_5}{4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4}$
Qz: None
Wz: None

8.41 X-INVALID-NUMER-41 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s\left(C_2R_4 - C_5R_4\right)}{2g_m + s^2\left(C_2C_3R_4 + 2C_2C_4R_4 + 4C_2C_5R_4 + C_3C_5R_4 + 2C_4C_5R_4\right) + s\left(2C_2 + C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_4}\sqrt{g_m}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{2C_2+C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5}$
wo: $\frac{\sqrt{2}\sqrt{g_m}}{\sqrt{C_2C_3R_4+2C_2C_4R_4+4C_2C_5R_4+C_3C_5R_4+2C_4C_5R_4}}$
bandwidth: $\frac{2C_2+C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5}{\sqrt{R_4}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_4+2C_2C_4R_4+4C_2C_5R_4+C_3C_5R_4+2C_4C_5R_4}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_2R_4-C_5R_4}{2C_2+C_3R_4g_m+2C_4R_4g_m+2C_5R_4g_m+2C_5}$
Qz: None
Wz: None

8.42 X-INVALID-NUMER-42 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s\left(C_2R_4R_5 - C_5R_4R_5\right)}{2R_4g_m + 2R_5g_m + s^2\left(C_2C_3R_4R_5 + 2C_2C_4R_4R_5 + 4C_2C_5R_4R_5 + C_3C_5R_4R_5 + 2C_4C_5R_4R_5\right) + s\left(4C_2R_4 + 2C_2R_5 + C_3R_4R_5g_m + C_3R_4 + 2C_4R_4R_5g_m + 2C_4R_4 + 2C_5R_4R_5g_m + 2C_5R_5\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_4}\sqrt{R_5}\sqrt{R_4g_m+R_5g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4+2C_5R_4R_5g_m+2C_5R_5}$
wo: $\frac{\sqrt{2R_4g_m+2R_5g_m+2}}{\sqrt{C_2C_3R_4R_5+2C_2C_4R_4R_5+4C_2C_5R_4R_5+C_3C_5R_4R_5+2C_4C_5R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_4g_m+2R_5g_m+2}(4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4+2C_5R_4R_5g_m+2C_5R_5)}{2\sqrt{R_4}\sqrt{R_5}\sqrt{R_4g_m+R_5g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_4R_5+2C_2C_4R_4R_5+4C_2C_5R_4R_5+C_3C_5R_4R_5+2C_4C_5R_4R_5}}$
K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$
K-HP: 0
K-BP: $\frac{C_2R_4R_5-C_5R_4R_5}{4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4+2C_5R_4R_5g_m+2C_5R_5}$
Qz: None
Wz: None

8.43 X-INVALID-NUMER-43 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{R_3}{C_3R_3s+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{C_2C_3R_3R_4R_5s^2 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + C_3R_3R_4R_5g_m + C_3R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_3}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4}$
wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4}{C_2C_3R_3R_4R_5}$
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: $\frac{C_2R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4}$
Qz: None
Wz: None

8.44 X-INVALID-NUMER-44 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 R_4 g_m + s\left(C_2 R_3 R_4 - C_5 R_3 R_4\right)}{2R_3 g_m + R_4 g_m + s^2\left(C_2 C_3 R_3 R_4 + 4C_2 C_5 R_3 R_4 + C_3 C_5 R_3 R_4\right) + s\left(2C_2 R_3 + C_2 R_4 + C_3 R_3 R_4 g_m + 2C_5 R_3 R_4 g_m + 2C_5 R_3 + C_5 R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_3+4C_2C_5+C_3C_5}}{2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\frac{\sqrt{2R_3g_m+R_4g_m}}{\sqrt{C_2C_3R_3R_4+4C_2C_5R_3R_4+C_3C_5R_3R_4}}$
bandwidth: $\frac{\sqrt{2R_3g_m+R_4g_m}(2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_3R_4+4C_2C_5R_3R_4+C_3C_5R_3R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_3R_4-C_5R_3R_4}{2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: None
Wz: None

8.45 X-INVALID-NUMER-45 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s\left(C_2 R_3 R_4 R_5 - C_5 R_3 R_4 R_5\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2\left(C_2 C_3 R_3 R_4 R_5 + 4C_2 C_5 R_3 R_4 R_5 + C_3 C_5 R_3 R_4 R_5\right) + s\left(4C_2 R_3 R_4 + 2C_2 R_3 R_5 + C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4 + 2C_5 R_3 R_4 R_5 g_m + 2C_5 R_3 R_5 + C_5 R_4 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{\sqrt{C_2C_3R_3R_4R_5+4C_2C_5R_3R_4R_5+C_3C_5R_3R_4R_5}}$
bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}{\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_3R_4R_5+4C_2C_5R_3R_4R_5+C_3C_5R_3R_4R_5}}$
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: $\frac{C_2R_3R_4R_5-C_5R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$
Qz: None
Wz: None

8.46 X-INVALID-NUMER-46 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 R_3 R_5 s + R_3 R_5 g_m - R_3}{2R_3 g_m + R_5 g_m + s^2\left(C_2 C_3 R_3 R_5 + 2C_2 C_4 R_3 R_5\right) + s\left(4C_2 R_3 + C_2 R_5 + C_3 R_3 R_5 g_m + C_3 R_3 + 2C_4 R_3 R_5 g_m + 2C_4 R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_3g_m+R_5g_m+1}}{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3}$
wo: $\frac{\sqrt{2R_3g_m+R_5g_m+1}}{\sqrt{C_2C_3R_3R_5+2C_2C_4R_3R_5}}$
bandwidth: $\frac{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3}{\sqrt{C_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_3R_5+2C_2C_4R_3R_5}}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: 0
K-BP: $\frac{C_2R_3R_5}{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3}$
Qz: None
Wz: None

8.47 X-INVALID-NUMER-47 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3 g_m + s\left(C_2 R_3 - C_5 R_3\right)}{g_m + s^2\left(C_2 C_3 R_3 + 2C_2 C_4 R_3 + 4C_2 C_5 R_3 + C_3 C_5 R_3 + 2C_4 C_5 R_3\right) + s\left(C_2 + C_3 R_3 g_m + 2C_4 R_3 g_m + 2C_5 R_3 g_m + C_5\right)}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{g_m}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{C_2+C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5}$
wo: $\frac{\sqrt{g_m}}{\sqrt{C_2C_3R_3+2C_2C_4R_3+4C_2C_5R_3+C_3C_5R_3+2C_4C_5R_3}}$

bandwidth: $\frac{C_2+C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5}{\sqrt{R_3}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_3+2C_2C_4R_3+4C_2C_5R_3+C_3C_5R_3+2C_4C_5R_3}}$
K-LP: R_3
K-HP: 0
K-BP: $\frac{C_2R_3-C_5R_3}{C_2+C_3R_3g_m+2C_4R_3g_m+2C_5R_3g_m+C_5}$
Qz: None
Wz: None

8.48 X-INVALID-NUMER-48 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s\left(C_2R_3R_5 - C_5R_3R_5\right)}{2R_3g_m + R_5g_m + s^2\left(C_2C_3R_3R_5 + 2C_2C_4R_3R_5 + 4C_2C_5R_3R_5 + C_3C_5R_3R_5 + 2C_4C_5R_3R_5\right) + s\left(4C_2R_3 + C_2R_5 + C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5R_5\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{R_5}\sqrt{2R_3g_m+R_5g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}$
wo: $\frac{\sqrt{2R_3g_m+R_5g_m+1}}{\sqrt{C_2C_3R_3R_5+2C_2C_4R_3R_5+4C_2C_5R_3R_5+C_3C_5R_3R_5+2C_4C_5R_3R_5}}$
bandwidth: $\frac{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}{\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_3R_5+2C_2C_4R_3R_5+4C_2C_5R_3R_5+C_3C_5R_3R_5+2C_4C_5R_3R_5}}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: 0
K-BP: $\frac{C_2R_3R_5-C_5R_3R_5}{4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3+2C_5R_3R_5g_m+C_5R_5}$
Qz: None
Wz: None

8.49 X-INVALID-NUMER-49 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(C_2C_3R_3R_4R_5 + 2C_2C_4R_3R_4R_5\right) + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + C_3R_3R_4R_5g_m + C_3R_3R_4 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{\sqrt{C_2C_3R_3R_4R_5+2C_2C_4R_3R_4R_5}}$
bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4}{\sqrt{C_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_3R_4R_5+2C_2C_4R_3R_4R_5}}$
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: $\frac{C_2R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
Qz: None
Wz: None

8.50 X-INVALID-NUMER-50 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s\left(C_2R_3R_4 - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(C_2C_3R_3R_4 + 2C_2C_4R_3R_4 + 4C_2C_5R_3R_4 + C_3C_5R_3R_4 + 2C_4C_5R_3R_4\right) + s\left(2C_2R_3 + C_2R_4 + C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\frac{\sqrt{2R_3g_m+R_4g_m}}{\sqrt{C_2C_3R_3R_4+2C_2C_4R_3R_4+4C_2C_5R_3R_4+C_3C_5R_3R_4+2C_4C_5R_3R_4}}$
bandwidth: $\frac{\sqrt{2R_3g_m+R_4g_m}(2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{\sqrt{R_3}\sqrt{R_4}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_3R_4+2C_2C_4R_3R_4+4C_2C_5R_3R_4+C_3C_5R_3R_4+2C_4C_5R_3R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_3R_4-C_5R_3R_4}{2C_2R_3+C_2R_4+C_3R_3R_4g_m+2C_4R_3R_4g_m+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: None
Wz: None

8.51 X-INVALID-NUMER-51 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s\left(C_2 R_3 R_4 R_5 - C_5 R_3 R_4 R_5\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2\left(C_2 C_3 R_3 R_4 R_5 + 2C_2 C_4 R_3 R_4 R_5 + 4C_2 C_5 R_3 R_4 R_5 + C_3 C_5 R_3 R_4 R_5 + 2C_4 C_5 R_3 R_4 R_5\right) + s\left(4C_2 R_3 R_4 + 2C_2 R_3 R_5 + C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4 + 2C_4 R_3 R_4 R_5 g_m + 2C_4 R_3 R_4 + 2C_5 R_3 R_4 R_5 g_m + 2C_5 R_3\right.}$$

Parameters:

Q: $\frac{\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$

wo: $\frac{\sqrt{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}}{\sqrt{C_2C_3R_3R_4R_5+2C_2C_4R_3R_4R_5+4C_2C_5R_3R_4R_5+C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}$

bandwidth: $\frac{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}{\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_3R_4R_5+2C_2C_4R_3R_4R_5+4C_2C_5R_3R_4R_5+C_3C_5R_3R_4R_5+2C_4C_5R_3R_4R_5}}$

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: $\frac{C_2R_3R_4R_5-C_5R_3R_4R_5}{4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4+2C_5R_3R_4R_5g_m+2C_5R_3R_5+C_5R_4R_5}$

Qz: None

Wz: None

8.52 X-INVALID-NUMER-52 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 R_3 R_4 g_m + R_3 R_4 + s\left(C_2 R_2 R_3 R_4 - C_5 R_2 R_3 R_4\right)}{4C_2 C_5 R_2 R_3 R_4 s^2 + 2R_2 R_3 g_m + R_2 R_4 g_m + 2R_3 + R_4 + s\left(2C_2 R_2 R_3 + C_2 R_2 R_4 + 2C_5 R_2 R_3 R_4 g_m + 2C_5 R_2 R_3 + C_5 R_2 R_4 + 4C_5 R_3 R_4\right)}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}}$

bandwidth: $\frac{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{4C_2C_5R_2R_3R_4}$

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

K-HP: 0

K-BP: $\frac{C_2R_2R_3R_4-C_5R_2R_3R_4}{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$

Qz: None

Wz: None

8.53 X-INVALID-NUMER-53 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_2 R_3 R_4 R_5 g_m - R_2 R_3 R_4 + R_3 R_4 R_5 + s\left(C_2 R_2 R_3 R_4 R_5 - C_5 R_2 R_3 R_4 R_5\right)}{4C_2 C_5 R_2 R_3 R_4 R_5 s^2 + 2R_2 R_3 R_4 g_m + 2R_2 R_3 R_5 g_m + 2R_2 R_3 + R_2 R_4 R_5 g_m + R_2 R_4 + 4R_3 R_4 + 2R_3 R_5 + R_4 R_5 + s\left(4C_2 R_2 R_3 R_4 + 2C_2 R_2 R_3 R_5 + C_2 R_2 R_4 R_5 + 2C_5 R_2 R_3 R_4 R_5 g_m + 2C_5 R_2 R_3 R_5 + C_5 R_2 R_4 R_5 + 4C_5 R_3 R_4 R_5\right)}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{2\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$

bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{4C_2C_5R_2R_3R_4R_5}$

K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$

K-HP: 0

K-BP: $\frac{C_2R_2R_3R_4R_5-C_5R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$

Qz: None

Wz: None

8.54 X-INVALID-NUMER-54 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 R_2 R_3 R_5 s + R_2 R_3 R_5 g_m - R_2 R_3 + R_3 R_5}{2C_2 C_4 R_2 R_3 R_5 s^2 + 2R_2 R_3 g_m + R_2 R_5 g_m + R_2 + 4R_3 + R_5 + s\left(4C_2 R_2 R_3 + C_2 R_2 R_5 + 2C_4 R_2 R_3 R_5 g_m + 2C_4 R_2 R_3 + 2C_4 R_3 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}$

wo: $\frac{\sqrt{2}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{2\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}{2C_2C_4R_2R_3R_5}$

K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_5}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}$
Qz: None
Wz: None

8.55 X-INVALID-NUMER-55 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s\left(C_2R_2R_3 - C_5R_2R_3\right)}{R_2g_m + s^2\left(2C_2C_4R_2R_3 + 4C_2C_5R_2R_3 + 2C_4C_5R_2R_3\right) + s\left(C_2R_2 + 2C_4R_2R_3g_m + 2C_4R_3 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_2g_m+1}\sqrt{C_2C_4+2C_2C_5+C_4C_5}}{C_2R_2+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
wo: $\frac{\sqrt{R_2g_m+1}}{\sqrt{2C_2C_4R_2R_3+4C_2C_5R_2R_3+2C_4C_5R_2R_3}}$
bandwidth: $\frac{\sqrt{2}(C_2R_2+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3)}{2\sqrt{R_2}\sqrt{R_3}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_2R_3+4C_2C_5R_2R_3+2C_4C_5R_2R_3}}$
K-LP: R_3
K-HP: 0
K-BP: $\frac{C_2R_2R_3-C_5R_2R_3}{C_2R_2+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
Qz: None
Wz: None

8.56 X-INVALID-NUMER-56 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_2R_2R_3R_5 - C_5R_2R_3R_5\right)}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(2C_2C_4R_2R_3R_5 + 4C_2C_5R_2R_3R_5 + 2C_4C_5R_2R_3R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5 + 2C_5R_2R_3R_5g_m + C_5R_2R_5 + 4C_5R_3R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{\sqrt{2C_2C_4R_2R_3R_5+4C_2C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
bandwidth: $\frac{\sqrt{2}(4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5)}{2\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_2R_3R_5+4C_2C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_5-C_5R_2R_3R_5}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
Qz: None
Wz: None

8.57 X-INVALID-NUMER-57 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2C_2C_4R_2R_3R_4R_5s^2 + 2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + 2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R_4 + 2C_4R_3R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}$
wo: $\frac{\sqrt{2}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{2\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}{2C_2C_4R_2R_3R_4R_5}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}$
Qz: None
Wz: None

8.58 X-INVALID-NUMER-58 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 - C_5R_2R_3R_4\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(2C_2C_4R_2R_3R_4 + 4C_2C_5R_2R_3R_4 + 2C_4C_5R_2R_3R_4\right) + s\left(2C_2R_2R_3 + C_2R_2R_4 + 2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2C_2R_2R_3+C_2R_2R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{2C_2C_4R_2R_3R_4+4C_2C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$
bandwidth: $\frac{\sqrt{2}(2C_2R_2R_3+C_2R_2R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4)}{2\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_2R_3R_4+4C_2C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4-C_5R_2R_3R_4}{2C_2R_2R_3+C_2R_2R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
Qz: None
Wz: None

8.59 X-INVALID-NUMER-59 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5 + s\left(C_2R_2R_3R_4R_5 - C_5R_2R_3R_4R_5\right)}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s^2\left(2C_2C_4R_2R_3R_4R_5 + 4C_2C_5R_2R_3R_4R_5 + 2C_4C_5R_2R_3R_4R_5\right) + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + 2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R_4 + 2C_4R_3R_4R_5 + 2C_5R_2\right.}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{2C_2C_4R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$
bandwidth: $\frac{\sqrt{2}(4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5)}{2\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_4+2C_2C_5+C_4C_5}\sqrt{2C_2C_4R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5-C_5R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
Qz: None
Wz: None

8.60 X-INVALID-NUMER-60 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_4R_5s + R_2R_4R_5g_m - R_2R_4 + R_4R_5}{C_2C_3R_2R_4R_5s^2 + 2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}}$
bandwidth: $\frac{\sqrt{2}(4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5)\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{2C_2C_3R_2R_4R_5\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}$
K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4R_5}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5}$
Qz: None
Wz: None

8.61 X-INVALID-NUMER-61 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s\left(C_2R_2R_4 - C_5R_2R_4\right)}{2R_2g_m + s^2\left(C_2C_3R_2R_4 + 4C_2C_5R_2R_4 + C_3C_5R_2R_4\right) + s\left(2C_2R_2 + C_3R_2R_4g_m + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2 + 4C_5R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_2g_m+1}\sqrt{C_2C_3+4C_2C_5+C_3C_5}}{2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$
wo: $\frac{\sqrt{2R_2g_m+2}}{\sqrt{C_2C_3R_2R_4+4C_2C_5R_2R_4+C_3C_5R_2R_4}}$

bandwidth: $\frac{\sqrt{2}\sqrt{2R_2g_m+2}(2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4)}{2\sqrt{R_2}\sqrt{R_4}\sqrt{R_2g_m+1}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_2R_4+4C_2C_5R_2R_4+C_3C_5R_2R_4}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4-C_5R_2R_4}{2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$
Qz: None
Wz: None

8.62 X-INVALID-NUMER-62 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s\left(C_2R_2R_4R_5 - C_5R_2R_4R_5\right)}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(C_2C_3R_2R_4R_5 + 4C_2C_5R_2R_4R_5 + C_3C_5R_2R_4R_5\right) + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5 + 2C_5R_2R_4R_5g_m + 2C_5R_2R_5 + 4C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$
wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{C_2C_3R_2R_4R_5+4C_2C_5R_2R_4R_5+C_3C_5R_2R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}(4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5)}{2\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_2R_4R_5+4C_2C_5R_2R_4R_5+C_3C_5R_2R_4R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}$
K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4R_5-C_5R_2R_4R_5}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$
Qz: None
Wz: None

8.63 X-INVALID-NUMER-63 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_5s + R_2R_5g_m - R_2 + R_5}{2R_2g_m + s^2\left(C_2C_3R_2R_5 + 2C_2C_4R_2R_5\right) + s\left(4C_2R_2 + C_3R_2R_5g_m + C_3R_2 + C_3R_5 + 2C_4R_2R_5g_m + 2C_4R_2 + 2C_4R_5\right) + 4}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{R_2}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2g_m+2}}{4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}$
wo: $\frac{\sqrt{2R_2g_m+4}}{\sqrt{C_2C_3R_2R_5+2C_2C_4R_2R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2g_m+4}(4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5)}{2\sqrt{C_2}\sqrt{R_2}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2g_m+2}\sqrt{C_2C_3R_2R_5+2C_2C_4R_2R_5}}$
K-LP: $\frac{R_2R_5g_m-R_2+R_5}{2R_2g_m+4}$
K-HP: 0
K-BP: $\frac{C_2R_2R_5}{4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}$
Qz: None
Wz: None

8.64 X-INVALID-NUMER-64 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5 + s\left(C_2R_2R_5 - C_5R_2R_5\right)}{2R_2g_m + s^2\left(C_2C_3R_2R_5 + 2C_2C_4R_2R_5 + 4C_2C_5R_2R_5 + C_3C_5R_2R_5 + 2C_4C_5R_2R_5\right) + s\left(4C_2R_2 + C_3R_2R_5g_m + C_3R_2 + C_3R_5 + 2C_4R_2R_5g_m + 2C_4R_2 + 2C_4R_5 + 2C_5R_2R_5g_m + 4C_5R_5\right) + 4}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_5}\sqrt{R_2g_m+2}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5+2C_5R_2R_5g_m+4C_5R_5}$
wo: $\frac{\sqrt{2R_2g_m+4}}{\sqrt{C_2C_3R_2R_5+2C_2C_4R_2R_5+4C_2C_5R_2R_5+C_3C_5R_2R_5+2C_4C_5R_2R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2g_m+4}(4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5+2C_5R_2R_5g_m+4C_5R_5)}{2\sqrt{R_2}\sqrt{R_5}\sqrt{R_2g_m+2}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_5+2C_2C_4R_2R_5+4C_2C_5R_2R_5+C_3C_5R_2R_5+2C_4C_5R_2R_5}}$
K-LP: $\frac{R_2R_5g_m-R_2+R_5}{2R_2g_m+4}$
K-HP: 0
K-BP: $\frac{C_2R_2R_5-C_5R_2R_5}{4C_2R_2+C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5+2C_5R_2R_5g_m+4C_5R_5}$
Qz: None
Wz: None

8.65 X-INVALID-NUMER-65 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_4R_5s + R_2R_4R_5g_m - R_2R_4 + R_4R_5}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(C_2C_3R_2R_4R_5 + 2C_2C_4R_2R_4R_5\right) + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5 + 2C_4R_2R_4R_5g_m + 2C_4R_2R_4 + 2C_4R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5}$
wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{C_2C_3R_2R_4R_5+2C_2C_4R_2R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}(4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5)}{2\sqrt{C_2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_2R_4R_5+2C_2C_4R_2R_4R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}$
K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4R_5}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5}$
Qz: None
Wz: None

8.66 X-INVALID-NUMER-66 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s\left(C_2R_2R_4 - C_5R_2R_4\right)}{2R_2g_m + s^2\left(C_2C_3R_2R_4 + 2C_2C_4R_2R_4 + 4C_2C_5R_2R_4 + C_3C_5R_2R_4 + 2C_4C_5R_2R_4\right) + s\left(2C_2R_2 + C_3R_2R_4g_m + C_3R_4 + 2C_4R_2R_4g_m + 2C_4R_4 + 2C_5R_2R_4g_m + 2C_5R_2 + 4C_5R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_2g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_4R_2R_4g_m+2C_4R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$
wo: $\frac{\sqrt{2R_2g_m+2}}{\sqrt{C_2C_3R_2R_4+2C_2C_4R_2R_4+4C_2C_5R_2R_4+C_3C_5R_2R_4+2C_4C_5R_2R_4}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2g_m+2}(2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_4R_2R_4g_m+2C_4R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4)}{2\sqrt{R_2}\sqrt{R_4}\sqrt{R_2g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_4+2C_2C_4R_2R_4+4C_2C_5R_2R_4+C_3C_5R_2R_4+2C_4C_5R_2R_4}}$
K-LP: $\frac{R_4}{2}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4-C_5R_2R_4}{2C_2R_2+C_3R_2R_4g_m+C_3R_4+2C_4R_2R_4g_m+2C_4R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$
Qz: None
Wz: None

8.67 X-INVALID-NUMER-67 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s\left(C_2R_2R_4R_5 - C_5R_2R_4R_5\right)}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(C_2C_3R_2R_4R_5 + 2C_2C_4R_2R_4R_5 + 4C_2C_5R_2R_4R_5 + C_3C_5R_2R_4R_5 + 2C_4C_5R_2R_4R_5\right) + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5 + 2C_4R_2R_4R_5g_m + 2C_4R_2R_4 + 2C_4R_4R_5 + 2C_5R_2R_4R_5g_m\right.}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$
wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{C_2C_3R_2R_4R_5+2C_2C_4R_2R_4R_5+4C_2C_5R_2R_4R_5+C_3C_5R_2R_4R_5+2C_4C_5R_2R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}(4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5)}{2\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}\sqrt{C_2C_3R_2R_4R_5+2C_2C_4R_2R_4R_5+4C_2C_5R_2R_4R_5+C_3C_5R_2R_4R_5+2C_4C_5R_2R_4R_5}}$
K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_4R_5-C_5R_2R_4R_5}{4C_2R_2R_4+2C_2R_2R_5+C_3R_2R_4R_5g_m+C_3R_2R_4+C_3R_4R_5+2C_4R_2R_4R_5g_m+2C_4R_2R_4+2C_4R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$
Qz: None
Wz: None

8.68 X-INVALID-NUMER-68 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{C_2C_3R_2R_3R_4R_5s^2 + 2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m + C_3R_2R_3R_4 + C_3R_3R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}}$

bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5}{C_2C_3R_2R_3R_4R_5}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5}$
Qz: None
Wz: None

8.69 X-INVALID-NUMER-69 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 - C_5R_2R_3R_4\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_2C_3R_2R_3R_4 + 4C_2C_5R_2R_3R_4 + C_3C_5R_2R_3R_4\right) + s\left(2C_2R_2R_3 + C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{C_2C_3R_2R_3R_4+4C_2C_5R_2R_3R_4+C_3C_5R_2R_3R_4}}$
bandwidth: $\frac{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_2R_3R_4+4C_2C_5R_2R_3R_4+C_3C_5R_2R_3R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4-C_5R_2R_3R_4}{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
Qz: None
Wz: None

8.70 X-INVALID-NUMER-70 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5 + s\left(C_2R_2R_3R_4R_5 - C_5R_2R_3R_4R_5\right)}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s^2\left(C_2C_3R_2R_3R_4R_5 + 4C_2C_5R_2R_3R_4R_5 + C_3C_5R_2R_3R_4R_5\right) + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m + C_3R_2R_3R_4 + C_3R_3R_4R_5 + 2C_5R_2R_3R_4\right.}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_2C_3R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+C_3C_5R_2R_3R_4R_5}}$
bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+4C_2C_5+C_3C_5}\sqrt{C_2C_3R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+C_3C_5R_2R_3R_4R_5}}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5-C_5R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
Qz: None
Wz: None

8.71 X-INVALID-NUMER-71 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_3R_5s + R_2R_3R_5g_m - R_2R_3 + R_3R_5}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(C_2C_3R_2R_3R_5 + 2C_2C_4R_2R_3R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + C_3R_2R_3R_5g_m + C_3R_2R_3 + C_3R_3R_5 + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{\sqrt{C_2C_3R_2R_3R_5+2C_2C_4R_2R_3R_5}}$
bandwidth: $\frac{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}{\sqrt{C_2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_2R_3R_5+2C_2C_4R_2R_3R_5}}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_5}{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5}$
Qz: None
Wz: None

8.72 X-INVALID-NUMER-72 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s\left(C_2R_2R_3 - C_5R_2R_3\right)}{R_2g_m + s^2\left(C_2C_3R_2R_3 + 2C_2C_4R_2R_3 + 4C_2C_5R_2R_3 + C_3C_5R_2R_3 + 2C_4C_5R_2R_3\right) + s\left(C_2R_2 + C_3R_2R_3g_m + C_3R_3 + 2C_4R_2R_3g_m + 2C_4R_3 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_2g_m+1}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{C_2R_2+C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
wo: $\frac{\sqrt{R_2g_m+1}}{\sqrt{C_2C_3R_2R_3+2C_2C_4R_2R_3+4C_2C_5R_2R_3+C_3C_5R_2R_3+2C_4C_5R_2R_3}}$
bandwidth: $\frac{C_2R_2+C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}{\sqrt{R_2}\sqrt{R_3}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_3+2C_2C_4R_2R_3+4C_2C_5R_2R_3+C_3C_5R_2R_3+2C_4C_5R_2R_3}}$
K-LP: R_3
K-HP: 0
K-BP: $\frac{C_2R_2R_3-C_5R_2R_3}{C_2R_2+C_3R_2R_3g_m+C_3R_3+2C_4R_2R_3g_m+2C_4R_3+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$
Qz: None
Wz: None

8.73 X-INVALID-NUMER-73 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_2R_2R_3R_5 - C_5R_2R_3R_5\right)}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(C_2C_3R_2R_3R_5 + 2C_2C_4R_2R_3R_5 + 4C_2C_5R_2R_3R_5 + C_3C_5R_2R_3R_5 + 2C_4C_5R_2R_3R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + C_3R_2R_3R_5g_m + C_3R_2R_3 + C_3R_3R_5 + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5 + 2C_5R_2R_3R_5g_m + C_5\right.}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{\sqrt{C_2C_3R_2R_3R_5+2C_2C_4R_2R_3R_5+4C_2C_5R_2R_3R_5+C_3C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
bandwidth: $\frac{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}{\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_3R_5+2C_2C_4R_2R_3R_5+4C_2C_5R_2R_3R_5+C_3C_5R_2R_3R_5+2C_4C_5R_2R_3R_5}}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_5-C_5R_2R_3R_5}{4C_2R_2R_3+C_2R_2R_5+C_3R_2R_3R_5g_m+C_3R_2R_3+C_3R_3R_5+2C_4R_2R_3R_5g_m+2C_4R_2R_3+2C_4R_3R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
Qz: None
Wz: None

8.74 X-INVALID-NUMER-74 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s^2\left(C_2C_3R_2R_3R_4R_5 + 2C_2C_4R_2R_3R_4R_5\right) + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m + C_3R_2R_3R_4 + C_3R_3R_4R_5 + 2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R\right.}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_2C_3R_2R_3R_4R_5+2C_2C_4R_2R_3R_4R_5}}$
bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}{\sqrt{C_2}\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_3+2C_4}\sqrt{C_2C_3R_2R_3R_4R_5+2C_2C_4R_2R_3R_4R_5}}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5}$
Qz: None
Wz: None

8.75 X-INVALID-NUMER-75 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 - C_5R_2R_3R_4\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_2C_3R_2R_3R_4 + 2C_2C_4R_2R_3R_4 + 4C_2C_5R_2R_3R_4 + C_3C_5R_2R_3R_4 + 2C_4C_5R_2R_3R_4\right) + s\left(2C_2R_2R_3 + C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_4R_2R_3R_4g_m + 2C_4R_3R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R\right.}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}}{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{C_2C_3R_2R_3R_4+2C_2C_4R_2R_3R_4+4C_2C_5R_2R_3R_4+C_3C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$
bandwidth: $\frac{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_3R_4+2C_2C_4R_2R_3R_4+4C_2C_5R_2R_3R_4+C_3C_5R_2R_3R_4+2C_4C_5R_2R_3R_4}}$

K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4-C_5R_2R_3R_4}{2C_2R_2R_3+C_2R_2R_4+C_3R_2R_3R_4g_m+C_3R_3R_4+2C_4R_2R_3R_4g_m+2C_4R_3R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3+C_5R_2R_4+4C_5R_3R_4}$
Qz: None
Wz: None

8.76 X-INVALID-NUMER-76 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5 + s\left(C_2R_2R_3R_4R_5 - C_5R_2R_3R_4R_5\right)}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s^2\left(C_2C_3R_2R_3R_4R_5 + 2C_2C_4R_2R_3R_4R_5 + 4C_2C_5R_2R_3R_4R_5 + C_3C_5R_2R_3R_4R_5 + 2C_4C_5R_2R_3R_4R_5\right) + s\left(4C_2R_2R_3R_4 + 2C_2R_2R_3R_5 + C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m +\right.}$$

Parameters:

Q: $\frac{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}{\sqrt{C_2C_3R_2R_3R_4R_5+2C_2C_4R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+C_3C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$
bandwidth: $\frac{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}{\sqrt{R_2}\sqrt{R_3}\sqrt{R_4}\sqrt{R_5}\sqrt{C_2C_3+2C_2C_4+4C_2C_5+C_3C_5+2C_4C_5}\sqrt{C_2C_3R_2R_3R_4R_5+2C_2C_4R_2R_3R_4R_5+4C_2C_5R_2R_3R_4R_5+C_3C_5R_2R_3R_4R_5+2C_4C_5R_2R_3R_4R_5}}$
K-LP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_4R_5-C_5R_2R_3R_4R_5}{4C_2R_2R_3R_4+2C_2R_2R_3R_5+C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m+C_3R_2R_3R_4+C_3R_3R_4R_5+2C_4R_2R_3R_4R_5g_m+2C_4R_2R_3R_4+2C_4R_3R_4R_5+2C_5R_2R_3R_4R_5g_m+2C_5R_2R_3R_5+C_5R_2R_4R_5+4C_5R_3R_4R_5}$
Qz: None
Wz: None

8.77 X-INVALID-NUMER-77 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2s},\ R_3,\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s\left(C_2R_2R_3R_5g_m - C_2R_2R_3 + C_2R_3R_5\right)}{2R_3g_m + R_5g_m + s^2\left(2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + 2C_2C_4R_3R_5\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_5g_m + C_2R_2 + 4C_2R_3 + C_2R_5 + 2C_4R_3R_5g_m + 2C_4R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}R_5\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}{2C_2R_2R_3g_m+C_2R_2R_5g_m+C_2R_2+4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3}$
wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{2C_2C_4R_2R_3R_5g_m+2C_2C_4R_2R_3+2C_2C_4R_3R_5}}$
bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_5g_m+1}{2C_2C_4R_2R_3R_5g_m+2C_2C_4R_2R_3+2C_2C_4R_3R_5}}\left(2C_2R_2R_3g_m+C_2R_2R_5g_m+C_2R_2+4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3\right)}{\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}R_5g_m\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}R_5\sqrt{\frac{2R_3g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: 0
K-BP: $\frac{C_2R_2R_3R_5g_m-C_2R_2R_3+C_2R_3R_5}{2C_2R_2R_3g_m+C_2R_2R_5g_m+C_2R_2+4C_2R_3+C_2R_5+2C_4R_3R_5g_m+2C_4R_3}$
Qz: None
Wz: None

8.78 X-INVALID-NUMER-78 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_2R_3R_4R_5g_m - C_2R_2R_3R_4 + C_2R_3R_4R_5\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(2C_2C_4R_2R_3R_4R_5g_m + 2C_2C_4R_2R_3R_4 + 2C_2C_4R_3R_4R_5\right) + s\left(2C_2R_2R_3R_4g_m + 2C_2R_2R_3R_5g_m + 2C_2R_2R_3 + C_2R_2R_4R_5g_m + C_2R_2R_4 + 4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + 2C_4R_3R_4R_5g_m + 2C_4R_3R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+}}}{2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{2C_2C_4R_2R_3R_4R_5g_m+2C_2C_4R_2R_3R_4+2C_2C_4R_3R_4R_5}}$
bandwidth: $\frac{\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{2C_2C_4R_2R_3R_4R_5g_m+2C_2C_4R_2R_3R_4+2C_2C_4R_3R_4R_5}}\left(2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4\right)}{\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+R}}$
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: $\frac{C_2R_2R_3R_4R_5g_m-C_2R_2R_3R_4+C_2R_3R_4R_5}{2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$
Qz: None
Wz: None

8.79 X-INVALID-NUMER-79 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s\left(C_2 R_2 R_4 R_5 g_m - C_2 R_2 R_4 + C_2 R_4 R_5\right)}{2R_4 g_m + 2R_5 g_m + s^2\left(C_2 C_3 R_2 R_4 R_5 g_m + C_2 C_3 R_2 R_4 + C_2 C_3 R_4 R_5\right) + s\left(2C_2 R_2 R_4 g_m + 2C_2 R_2 R_5 g_m + 2C_2 R_2 + 4C_2 R_4 + 2C_2 R_5 + C_3 R_4 R_5 g_m + C_3 R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_4}R_5 g_m\sqrt{\frac{R_4 g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_4}\sqrt{\frac{R_4 g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{R_4}R_5\sqrt{\frac{R_4 g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5 g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}{2C_2R_2R_4g_m+2C_2R_2R_5g_m+2C_2R_2+4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4}$

wo: $\sqrt{\frac{2R_4g_m+2R_5g_m+2}{C_2C_3R_2R_4R_5g_m+C_2C_3R_2R_4+C_2C_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_4g_m+2R_5g_m+2}{C_2C_3R_2R_4R_5g_m+C_2C_3R_2R_4+C_2C_3R_4R_5}}(2C_2R_2R_4g_m+2C_2R_2R_5g_m+2C_2R_2+4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4)}{\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_4}\sqrt{\frac{R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}+\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{R_4}R_5\sqrt{\frac{R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{1}{R_2R_5g_m+R_2+R_5}}}$

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

K-HP: 0

K-BP: $\frac{C_2R_2R_4R_5g_m-C_2R_2R_4+C_2R_4R_5}{2C_2R_2R_4g_m+2C_2R_2R_5g_m+2C_2R_2+4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4}$

Qz: None

Wz: None

8.80 X-INVALID-NUMER-80 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s\left(C_2 R_2 R_5 g_m - C_2 R_2 + C_2 R_5\right) - 1}{2g_m + s^2\left(C_2 C_3 R_2 R_5 g_m + C_2 C_3 R_2 + C_2 C_3 R_5 + 2C_2 C_4 R_2 R_5 g_m + 2C_2 C_4 R_2 + 2C_2 C_4 R_5\right) + s\left(2C_2 R_2 g_m + 4C_2 + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}C_3R_2R_5g_m\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_5\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+2\sqrt{2}\sqrt{C_2}C_4R_2R_5g_m\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+2\sqrt{2}\sqrt{C_2}C_4R_2\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}}{2C_2R_2g_m+4C_2+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4}$

wo: $\sqrt{2}\sqrt{\frac{g_m}{C_2C_3R_2R_5g_m+C_2C_3R_2+C_2C_3R_5+2C_2C_4R_2R_5g_m+2C_2C_4R_2+2C_2C_4R_5}}$

bandwidth: $\frac{\sqrt{2}\sqrt{\frac{g_m}{C_2C_3R_2R_5g_m+C_2C_3R_2+C_2C_3R_5+2C_2C_4R_2R_5g_m+2C_2C_4R_2+2C_2C_4R_5}}(2C_2R_2g_m+4C_2+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4)}{\sqrt{2}\sqrt{C_2}C_3R_2R_5g_m\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_5\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+2\sqrt{2}\sqrt{C_2}C_4R_2R_5g_m\sqrt{\frac{g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+2\sqrt{2}\sqrt{C_2}C_4R_2\sqrt{C_3R}}$

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

K-HP: 0

K-BP: $\frac{C_2R_2R_5g_m-C_2R_2+C_2R_5}{2C_2R_2g_m+4C_2+C_3R_5g_m+C_3+2C_4R_5g_m+2C_4}$

Qz: None

Wz: None

8.81 X-INVALID-NUMER-81 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s\left(C_2 R_2 R_4 R_5 g_m - C_2 R_2 R_4 + C_2 R_4 R_5\right)}{2R_4 g_m + 2R_5 g_m + s^2\left(C_2 C_3 R_2 R_4 R_5 g_m + C_2 C_3 R_2 R_4 + C_2 C_3 R_4 R_5 + 2C_2 C_4 R_2 R_4 R_5 g_m + 2C_2 C_4 R_2 R_4 + 2C_2 C_4 R_4 R_5\right) + s\left(2C_2 R_2 R_4 g_m + 2C_2 R_2 R_5 g_m + 2C_2 R_2 + 4C_2 R_4 + 2C_2 R_5 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{R_4}\sqrt{\frac{R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{C_3R}{}}$

wo: $\sqrt{\frac{2R_4g_m+2R_5g_m+2}{C_2C_3R_2R_4R_5g_m+C_2C_3R_2R_4+C_2C_3R_4R_5+2C_2C_4R_2R_4R_5g_m+2C_2C_4R_2R_4+2C_2C_4R_4R_5}}$

bandwidth: $\frac{\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{R_4}R_5g_m\sqrt{\frac{R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{2}\sqrt{C_2}C_3R_2\sqrt{R_4}\sqrt{\frac{R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2}}}{}$

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

K-HP: 0

K-BP: $\frac{C_2R_2R_4R_5g_m-C_2R_2R_4+C_2R_4R_5}{2C_2R_2R_4g_m+2C_2R_2R_5g_m+2C_2R_2+4C_2R_4+2C_2R_5+C_3R_4R_5g_m+C_3R_4+2C_4R_4R_5g_m+2C_4R_4}$

Qz: None

Wz: None

8.82 X-INVALID-NUMER-82 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s\left(C_2 R_2 R_3 R_4 R_5 g_m - C_2 R_2 R_3 R_4 + C_2 R_3 R_4 R_5\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2\left(C_2 C_3 R_2 R_3 R_4 R_5 g_m + C_2 C_3 R_2 R_3 R_4 + C_2 C_3 R_3 R_4 R_5\right) + s\left(2C_2 R_2 R_3 R_4 g_m + 2C_2 R_2 R_3 R_5 g_m + 2C_2 R_2 R_3 + C_2 R_2 R_4 R_5 g_m + C_2 R_2 R_4 + 4C_2 R_3 R_4 + 2C_2 R_3 R_5 + C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m + C_3 R_3 R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_3}\sqrt{R_4}R_5 g_m\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_2}\sqrt{C_3}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+R_2}}{2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4}$

wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_2C_3R_2R_3R_4R_5g_m+C_2C_3R_2R_3R_4+C_2C_3R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_2C_3R_2R_3R_4R_5g_m+C_2C_3R_2R_3R_4+C_2C_3R_3R_4R_5}}(2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4)}{\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_2}\sqrt{C_3}R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R_2+R_5}+\frac{R_4R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{R_4}{R_2R_5g_m+R_2+R_5}}+\sqrt{C_2}\sqrt{C_3}\sqrt{R_3}\sqrt{R_4}R_5\sqrt{\frac{2R_3R_4g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3R_5g_m}{R_2R_5g_m+R_2+R_5}+\frac{2R_3}{R_2R_5g_m+R}}}$

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: $\frac{C_2R_2R_3R_4R_5g_m-C_2R_2R_3R_4+C_2R_3R_4R_5}{2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4}$

Qz: None

Wz: None

8.83 X-INVALID-NUMER-83 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s\left(C_2 R_2 R_3 R_5 g_m - C_2 R_2 R_3 + C_2 R_3 R_5\right)}{2R_3 g_m + R_5 g_m + s^2\left(C_2 C_3 R_2 R_3 R_5 g_m + C_2 C_3 R_2 R_3 + C_2 C_3 R_3 R_5 + 2C_2 C_4 R_2 R_3 R_5 g_m + 2C_2 C_4 R_2 R_3 + 2C_2 C_4 R_3 R_5\right) + s\left(2C_2 R_2 R_3 g_m + C_2 R_2 R_5 g_m + C_2 R_2 + 4C_2 R_3 + C_2 R_5 + C_3 R_3 R_5 g_m + C_3 R_3 + 2C_4 R_3 R_5 g_m + 2C_4 R_3\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_2}C_3R_2\sqrt{R_3}R_5g_m\sqrt{\frac{2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{C_2}C_3R_2\sqrt{R_3}\sqrt{\frac{2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{}{C_3R_2R_5g_m}}$

wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{C_2C_3R_2R_3R_5g_m+C_2C_3R_2R_3+C_2C_3R_3R_5+2C_2C_4R_2R_3R_5g_m+2C_2C_4R_2R_3+2C_2C_4R_3R_5}}$

bandwidth: $\frac{}{\sqrt{C_2}C_3R_2\sqrt{R_3}R_5g_m\sqrt{\frac{2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{1}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{C_2}C_3R_2\sqrt{R_3}\sqrt{\frac{2R_3g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}}$

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

K-HP: 0

K-BP: $\frac{C_2R_2R_3R_5g_m-C_2R_2R_3+C_2R_3R_5}{2C_2R_2R_3g_m+C_2R_2R_5g_m+C_2R_2+4C_2R_3+C_2R_5+C_3R_3R_5g_m+C_3R_3+2C_4R_3R_5g_m+2C_4R_3}$

Qz: None

Wz: None

8.84 X-INVALID-NUMER-84 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3 R_4 R_5 g_m - R_3 R_4 + s\left(C_2 R_2 R_3 R_4 R_5 g_m - C_2 R_2 R_3 R_4 + C_2 R_3 R_4 R_5\right)}{2R_3 R_4 g_m + 2R_3 R_5 g_m + 2R_3 + R_4 R_5 g_m + R_4 + s^2\left(C_2 C_3 R_2 R_3 R_4 R_5 g_m + C_2 C_3 R_2 R_3 R_4 + C_2 C_3 R_3 R_4 R_5 + 2C_2 C_4 R_2 R_3 R_4 R_5 g_m + 2C_2 C_4 R_2 R_3 R_4 + 2C_2 C_4 R_3 R_4 R_5\right) + s\left(2C_2 R_2 R_3 R_4 g_m + 2C_2 R_2 R_3 R_5 g_m + 2C_2 R_2 R_3 + C_2 R_2 R_4 R_5 g_m + C_2 R_2 R_4 + 4C_2 R_3 R_4 + 2C\right.}$$

Parameters:

Q: $\frac{\sqrt{C_2}C_3R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_3R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{C_2}C_3R_2\sqrt{R_3}\sqrt{R_4}\sqrt{\ldots}$

wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{C_2C_3R_2R_3R_4R_5g_m+C_2C_3R_2R_3R_4+C_2C_3R_3R_4R_5+2C_2C_4R_2R_3R_4R_5g_m+2C_2C_4R_2R_3R_4+2C_2C_4R_3R_4R_5}}$

bandwidth: $\frac{}{\sqrt{C_2}C_3R_2\sqrt{R_3}\sqrt{R_4}R_5g_m\sqrt{\frac{2R_3R_4g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{2R_3}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4R_5g_m}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}+\frac{R_4}{C_3R_2R_5g_m+C_3R_2+C_3R_5+2C_4R_2R_5g_m+2C_4R_2+2C_4R_5}}+\sqrt{C_2}C_3R_2\sqrt{\ldots}}$

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: $\frac{C_2R_2R_3R_4R_5g_m-C_2R_2R_3R_4+C_2R_3R_4R_5}{2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+C_3R_3R_4R_5g_m+C_3R_3R_4+2C_4R_3R_4R_5g_m+2C_4R_3R_4}$

Qz: None

Wz: None

9 X-INVALID-ORDER

9.1 X-INVALID-ORDER-1 $Z(s) = (\infty,\ R_2,\ R_3,\ R_4,\ R_5,\ \infty)$

$$H(s) = \frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5}$$

9.2 X-INVALID-ORDER-2 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4s + R_2R_3R_4g_m + R_3R_4}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s\left(2C_5R_2R_3R_4g_m + 2C_5R_2R_3 + C_5R_2R_4 + 4C_5R_3R_4\right)}$$

9.3 X-INVALID-ORDER-3 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_5R_2R_3R_4R_5s + R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s\left(2C_5R_2R_3R_4R_5g_m + 2C_5R_2R_3R_5 + C_5R_2R_4R_5 + 4C_5R_3R_4R_5\right)}$$

9.4 X-INVALID-ORDER-4 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4,\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4g_m + R_3R_4 + s\left(C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s\left(2C_5R_2R_3R_4g_m + 2C_5R_2R_3R_5g_m + 2C_5R_2R_3 + C_5R_2R_4R_5g_m + C_5R_2R_4 + 4C_5R_3R_4 + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

9.5 X-INVALID-ORDER-5 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s\left(2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + 2C_4R_3R_5\right)}$$

9.6 X-INVALID-ORDER-6 $Z(s) = \left(\infty,\ R_2,\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5 + s\left(2C_4R_2R_3R_4R_5g_m + 2C_4R_2R_3R_4 + 2C_4R_3R_4R_5\right)}$$

9.7 X-INVALID-ORDER-7 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_4R_2R_3R_4R_5g_m - C_4R_2R_3R_4 + C_4R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s\left(2C_4R_2R_3R_4g_m + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + C_4R_2R_4R_5g_m + C_4R_2R_4 + 4C_4R_3R_4 + 2C_4R_3R_5 + C_4R_4R_5\right)}$$

9.8 X-INVALID-ORDER-8 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s\left(C_3R_2R_4R_5g_m + C_3R_2R_4 + C_3R_4R_5\right)}$$

9.9 X-INVALID-ORDER-9 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5}{2R_2g_m + s\left(C_3R_2R_5g_m + C_3R_2 + C_3R_5 + 2C_4R_2R_5g_m + 2C_4R_2 + 2C_4R_5\right) + 4}$$

9.10 X-INVALID-ORDER-10 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_5R_2s + R_2g_m + 1}{s^2\left(C_3C_5R_2 + 2C_4C_5R_2\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.11 X-INVALID-ORDER-11 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 g_m + s\left(C_5 R_2 R_5 g_m - C_5 R_2 + C_5 R_5\right) + 1}{s^2\left(C_3 C_5 R_2 R_5 g_m + C_3 C_5 R_2 + C_3 C_5 R_5 + 2C_4 C_5 R_2 R_5 g_m + 2C_4 C_5 R_2 + 2C_4 C_5 R_5\right) + s\left(C_3 R_2 g_m + C_3 + 2C_4 R_2 g_m + 2C_4 + 2C_5 R_2 g_m + 4C_5\right)}$$

9.12 X-INVALID-ORDER-12 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2 R_4 R_5 g_m - R_2 R_4 + R_4 R_5}{2R_2 R_4 g_m + 2R_2 R_5 g_m + 2R_2 + 4R_4 + 2R_5 + s\left(C_3 R_2 R_4 R_5 g_m + C_3 R_2 R_4 + C_3 R_4 R_5 + 2C_4 R_2 R_4 R_5 g_m + 2C_4 R_2 R_4 + 2C_4 R_4 R_5\right)}$$

9.13 X-INVALID-ORDER-13 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_2 R_4 s^2 + R_2 g_m + s\left(C_4 R_2 R_4 g_m + C_4 R_4 - C_5 R_2\right) + 1}{C_3 C_4 C_5 R_2 R_4 s^3 + s^2\left(C_3 C_4 R_2 R_4 g_m + C_3 C_4 R_4 + C_3 C_5 R_2 + 2C_4 C_5 R_2 R_4 g_m + 2C_4 C_5 R_2 + 4C_4 C_5 R_4\right) + s\left(C_3 R_2 g_m + C_3 + 2C_4 R_2 g_m + 2C_4 + 2C_5 R_2 g_m + 4C_5\right)}$$

9.14 X-INVALID-ORDER-14 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_2 R_4 R_5 s^2 + R_2 R_5 g_m - R_2 + R_5 + s\left(C_4 R_2 R_4 R_5 g_m - C_4 R_2 R_4 + C_4 R_4 R_5 - C_5 R_2 R_5\right)}{C_3 C_4 C_5 R_2 R_4 R_5 s^3 + 2R_2 g_m + s^2\left(C_3 C_4 R_2 R_4 R_5 g_m + C_3 C_4 R_2 R_4 + C_3 C_4 R_4 R_5 + C_3 C_5 R_2 R_5 + 2C_4 C_5 R_2 R_4 R_5 g_m + 2C_4 C_5 R_2 R_5 + 4C_4 C_5 R_4 R_5\right) + s\left(C_3 R_2 R_5 g_m + C_3 R_2 + C_3 R_5 + 2C_4 R_2 R_4 g_m + 2C_4 R_2 R_5 g_m + 2C_4 R_2 + 4C_4 R_4 + 2C_4 R_5 + 2C_5 R_2 R_5 g_m + 4C_5 R_5\right.}$$

9.15 X-INVALID-ORDER-15 $Z(s) = \left(\infty,\ R_2,\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 g_m + s^2\left(C_4 C_5 R_2 R_4 R_5 g_m - C_4 C_5 R_2 R_4 + C_4 C_5 R_4 R_5\right) + s\left(C_4 R_2 R_4 g_m + C_4 R_4 + C_5 R_2 R_5 g_m - C_5 R_2 + C_5 R_5\right) + 1}{s^3\left(C_3 C_4 C_5 R_2 R_4 R_5 g_m + C_3 C_4 C_5 R_2 R_4 + C_3 C_4 C_5 R_4 R_5\right) + s^2\left(C_3 C_4 R_2 R_4 g_m + C_3 C_4 R_4 + C_3 C_5 R_2 R_5 g_m + C_3 C_5 R_2 + C_3 C_5 R_5 + 2C_4 C_5 R_2 R_4 g_m + 2C_4 C_5 R_2 R_5 g_m + 2C_4 C_5 R_2 + 4C_4 C_5 R_4 + 2C_4 C_5 R_5\right) + s\left(C_3 R_2 g_m + C_3 + 2C_4 R_2 g_m + 2C_4 + 2C_5 R_2 g_m + 4C_5\right)}$$

9.16 X-INVALID-ORDER-16 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2 R_3 R_4 R_5 g_m - R_2 R_3 R_4 + R_3 R_4 R_5}{2R_2 R_3 R_4 g_m + 2R_2 R_3 R_5 g_m + 2R_2 R_3 + R_2 R_4 R_5 g_m + R_2 R_4 + 4R_3 R_4 + 2R_3 R_5 + R_4 R_5 + s\left(C_3 R_2 R_3 R_4 R_5 g_m + C_3 R_2 R_3 R_4 + C_3 R_3 R_4 R_5\right)}$$

9.17 X-INVALID-ORDER-17 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2 R_3 R_5 g_m - R_2 R_3 + R_3 R_5}{2R_2 R_3 g_m + R_2 R_5 g_m + R_2 + 4R_3 + R_5 + s\left(C_3 R_2 R_3 R_5 g_m + C_3 R_2 R_3 + C_3 R_3 R_5 + 2C_4 R_2 R_3 R_5 g_m + 2C_4 R_2 R_3 + 2C_4 R_3 R_5\right)}$$

9.18 X-INVALID-ORDER-18 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2 R_3 R_4 R_5 g_m - R_2 R_3 R_4 + R_3 R_4 R_5}{2R_2 R_3 R_4 g_m + 2R_2 R_3 R_5 g_m + 2R_2 R_3 + R_2 R_4 R_5 g_m + R_2 R_4 + 4R_3 R_4 + 2R_3 R_5 + R_4 R_5 + s\left(C_3 R_2 R_3 R_4 R_5 g_m + C_3 R_2 R_3 R_4 + C_3 R_3 R_4 R_5 + 2C_4 R_2 R_3 R_4 R_5 g_m + 2C_4 R_2 R_3 R_4 + 2C_4 R_3 R_4 R_5\right)}$$

9.19 X-INVALID-ORDER-19 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_2 R_3 R_4 s^2 + R_2 R_3 g_m + R_3 + s\left(C_4 R_2 R_3 R_4 g_m + C_4 R_3 R_4 - C_5 R_2 R_3\right)}{C_3 C_4 C_5 R_2 R_3 R_4 s^3 + R_2 g_m + s^2\left(C_3 C_4 R_2 R_3 R_4 g_m + C_3 C_4 R_3 R_4 + C_3 C_5 R_2 R_3 + 2C_4 C_5 R_2 R_3 R_4 g_m + 2C_4 C_5 R_2 R_3 + C_4 C_5 R_2 R_4 + 4C_4 C_5 R_3 R_4\right) + s\left(C_3 R_2 R_3 g_m + C_3 R_3 + 2C_4 R_2 R_3 g_m + C_4 R_2 R_4 g_m + 2C_4 R_3 + C_4 R_4 + 2C_5 R_2 R_3 g_m + C_5 R_2 + 4C_5 R_3\right) + 1}$$

9.20 X-INVALID-ORDER-20 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_4 C_5 R_2 R_3 R_4 R_5 s^2 + R_2 R_3 R_5 g_m - R_2 R_3 + R_3 R_5 + s\left(C_4 R_2 R_3 R_4 R_5 g_m - C_4 R_2 R_3 R_4 + C_4 R_3 R_4 R_5 - C_5 R_2 R_3\right.}{C_3 C_4 C_5 R_2 R_3 R_4 R_5 s^3 + 2R_2 R_3 g_m + R_2 R_5 g_m + R_2 + 4R_3 + R_5 + s^2\left(C_3 C_4 R_2 R_3 R_4 R_5 g_m + C_3 C_4 R_2 R_3 R_4 + C_3 C_4 R_3 R_4 R_5 + C_3 C_5 R_2 R_3 R_5 + 2C_4 C_5 R_2 R_3 R_4 R_5 g_m + 2C_4 C_5 R_2 R_3 R_5 + C_4 C_5 R_2 R_4 R_5 + 4C_4 C_5 R_3 R_4 R_5\right) + s\left(C_3 R_2 R_3 R_5 g_m + C_3 R_2 R_3 + C_3 R_3 R_5 + 2\right.}$$

9.21 X-INVALID-ORDER-21 $Z(s) = \left(\infty,\ R_2,\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s^2\left(C_4C_5R_2R_3R_4R_5g_m - C_4C_5R_2R_3R_4 + C_4C_5R_3R_4R_5\right) + s\left(C_4R_2R_3R_4g_m + C_4R_3R_4 + C_5R_2R_3R_5g_m\right.}{R_2g_m + s^3\left(C_3C_4C_5R_2R_3R_4R_5g_m + C_3C_4C_5R_2R_3R_4 + C_3C_4C_5R_3R_4R_5\right) + s^2\left(C_3C_4R_2R_3R_4g_m + C_3C_4R_3R_4 + C_3C_5R_2R_3R_5g_m + C_3C_5R_2R_3 + C_3C_5R_3R_5 + 2C_4C_5R_2R_3R_4g_m + 2C_4C_5R_2R_3R_5g_m + 2C_4C_5R_2R_3 + C_4C_5R_2R_4R_5g_m + C_4C_5R_2R_4 + 4C_4C_5R_3\right.}$$

9.22 X-INVALID-ORDER-22 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s\left(C_3R_2R_3R_4R_5g_m - C_3R_2R_3R_4 + C_3R_3R_4R_5\right)}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s\left(2C_3R_2R_3R_4g_m + 2C_3R_2R_3R_5g_m + 2C_3R_2R_3 + C_3R_2R_4R_5g_m + C_3R_2R_4 + 4C_3R_3R_4 + 2C_3R_3R_5 + C_3R_4R_5\right)}$$

9.23 X-INVALID-ORDER-23 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5R_2R_3s^2 + R_2g_m + s\left(C_3R_2R_3g_m + C_3R_3 - C_5R_2\right) + 1}{2C_3C_4C_5R_2R_3s^3 + s^2\left(2C_3C_4R_2R_3g_m + 2C_3C_4R_3 + 2C_3C_5R_2R_3g_m + C_3C_5R_2 + 4C_3C_5R_3 + 2C_4C_5R_2\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.24 X-INVALID-ORDER-24 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5R_2R_3R_5s^2 + R_2R_5g_m - R_2 + R_5 + s\left(C_3R_2R_3R_5g_m - C_3R_2R_3 + C_3R_3R_5 - C_5R_2R_5\right)}{2C_3C_4C_5R_2R_3R_5s^3 + 2R_2g_m + s^2\left(2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + 2C_3C_4R_3R_5 + 2C_3C_5R_2R_3R_5g_m + C_3C_5R_2R_5 + 4C_3C_5R_3R_5 + 2C_4C_5R_2R_5\right) + s\left(2C_3R_2R_3g_m + C_3R_2R_5g_m + C_3R_2 + 4C_3R_3 + C_3R_5 + 2C_4R_2R_5g_m + 2C_4R_2 + 2C_4R_5 + 2C_5R_2R_5g_m + 4C\right.}$$

9.25 X-INVALID-ORDER-25 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2g_m + s^2\left(C_3C_5R_2R_3R_5g_m - C_3C_5R_2R_3 + C_3C_5R_3R_5\right) + s\left(C_3R_2R_3g_m + C_3R_3 + C_5R_2R_5g_m - C_5R_2 + C_5R_5\right) + 1}{s^3\left(2C_3C_4C_5R_2R_3R_5g_m + 2C_3C_4C_5R_2R_3 + 2C_3C_4C_5R_3R_5\right) + s^2\left(2C_3C_4R_2R_3g_m + 2C_3C_4R_3 + 2C_3C_5R_2R_3g_m + C_3C_5R_2R_5g_m + C_3C_5R_2 + 4C_3C_5R_3 + C_3C_5R_5 + 2C_4C_5R_2R_5g_m + 2C_4C_5R_2 + 2C_4C_5R_5\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C\right.}$$

9.26 X-INVALID-ORDER-26 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_5R_2R_3R_4s^2 + R_2R_4g_m + R_4 + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 - C_5R_2R_4\right)}{2C_3C_4C_5R_2R_3R_4s^3 + 2R_2g_m + s^2\left(2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_3R_4 + 2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4 + 4C_3C_5R_3R_4 + 2C_4C_5R_2R_4\right) + s\left(2C_3R_2R_3g_m + C_3R_2R_4g_m + 2C_3R_3 + C_3R_4 + 2C_4R_2R_4g_m + 2C_4R_4 + 2C_5R_2R_4g_m + 2C_5R_2 + 4C_5R_4\right) +}$$

9.27 X-INVALID-ORDER-27 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_5R_2R_3R_4R_5s^2 + R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s\left(C_3R_2R_3R_4R_5g_m - C_3R_2R_3R_4 + C_3R_3R_4R_5 - C\right.}{2C_3C_4C_5R_2R_3R_4R_5s^3 + 2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(2C_3C_4R_2R_3R_4R_5g_m + 2C_3C_4R_2R_3R_4 + 2C_3C_4R_3R_4R_5 + 2C_3C_5R_2R_3R_4R_5g_m + 2C_3C_5R_2R_3R_5 + C_3C_5R_2R_4R_5 + 4C_3C_5R_3R_4R_5 + 2C_4C_5R_2R_4R_5\right) + s\left(2C_3R_2R_3R_4g_m + 2C_3R_2R_3R_5\right.}$$

9.28 X-INVALID-ORDER-28 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s^2\left(C_3C_5R_2R_3R_4R_5g_m - C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5\right) + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 + C_5R_2\right.}{2R_2g_m + s^3\left(2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_3C_4C_5R_2R_3R_4 + 2C_3C_4C_5R_3R_4R_5\right) + s^2\left(2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_3R_4 + 2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3R_5g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + 4C_3C_5R_3R_4 + 2C_3C_5R_3R_5 + C_3C_5R_4R_5 + 2C_4C_5\right.}$$

9.29 X-INVALID-ORDER-29 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5R_2R_3R_4s^3 + R_2g_m + s^2\left(C_3C_4R_2R_3R_4g_m + C_3C_4R_3R_4 - C_3C_5R_2R_3 - C_4C_5R_2R_4\right) + s\left(C_3R_2R_3g_m + C_3R_3 + C_4R_2R_4g_m + C_4R_4 - C_5R_2\right) + 1}{s^3\left(2C_3C_4C_5R_2R_3R_4g_m + 2C_3C_4C_5R_2R_3 + C_3C_4C_5R_2R_4 + 4C_3C_4C_5R_3R_4\right) + s^2\left(2C_3C_4R_2R_3g_m + C_3C_4R_2R_4g_m + 2C_3C_4R_3 + C_3C_4R_4 + 2C_3C_5R_2R_3g_m + C_3C_5R_2 + 4C_3C_5R_3 + 2C_4C_5R_2R_4g_m + 2C_4C_5R_2 + 4C_4C_5R_4\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4\right.}$$

9.30 X-INVALID-ORDER-30 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_3C_4C_5R_2R_3R_4R_5s^3 + R_2R_5g_m - R_2 + R_5 + s^2\left(C_3C_4R_2R_3R_4R_5g_m - C_3C_4R_2R_3R_4 + C_3C_4R_3R_4R_5 - C_3C_5R_2R_3R_5 - C_4C_5R_2R_4\right.}{2R_2g_m + s^3\left(2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_3C_4C_5R_2R_3R_5 + C_3C_4C_5R_2R_4R_5 + 4C_3C_4C_5R_3R_4R_5\right) + s^2\left(2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + C_3C_4R_2R_4R_5g_m + C_3C_4R_2R_4 + 4C_3C_4R_3R_4 + 2C_3C_4R_3R_5 + C_3C_4R_4R_5 + 2C_3C_5R_2R_3R_5g_m + C_3\right.}$$

9.31 X-INVALID-ORDER-31 $Z(s) = \left(\infty,\ R_2,\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_2 g_m + s^3 \left(C_3C_4C_5R_2R_3R_4R_5g_m - C_3C_4C_5R_2R_3R_4 + C_3C_4C_5R_3R_4R_5\right) + s^2 \left(C_3C_4R_2R_3R_4g_m + C_3C_4R_3R_4 + C_3C_5R_2R_3R_5g_m - C_3C_5R_2R_3 + C_3C_5R_3R_5 + C_4C_5R_2R_4R_5g_m - C_4C_5R_2R_4 + C\right.}{s^3 \left(2C_3C_4C_5R_2R_3R_4g_m + 2C_3C_4C_5R_2R_3R_5g_m + 2C_3C_4C_5R_2R_3 + C_3C_4C_5R_2R_4R_5g_m + C_3C_4C_5R_2R_4 + 4C_3C_4C_5R_3R_4 + 2C_3C_4C_5R_3R_5 + C_3C_4C_5R_4R_5\right) + s^2 \left(2C_3C_4R_2R_3g_m + C_3C_4R_2R_4g_m + 2C_3C_4R_3 + C_3C_4R_4 + 2C_3C_5R_2R_3g_m + C_3C_5R_2R_5g_m + C_3C_5\right.}$$

9.32 X-INVALID-ORDER-32 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2R_3R_4R_5s + R_3R_4R_5g_m - R_3R_4}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5\right)}$$

9.33 X-INVALID-ORDER-33 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_5s^2 + R_3g_m + s\left(C_2R_3 + C_5R_3R_5g_m - C_5R_3\right)}{2C_2C_4C_5R_3R_5s^3 + g_m + s^2\left(2C_2C_4R_3 + 4C_2C_5R_3 + C_2C_5R_5 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3\right) + s\left(C_2 + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

9.34 X-INVALID-ORDER-34 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_4R_5s^2 + R_3R_4g_m + s\left(C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2C_2C_4C_5R_3R_4R_5s^3 + 2R_3g_m + R_4g_m + s^2\left(2C_2C_4R_3R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4\right) + s\left(2C_2R_3 + C_2R_4 + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

9.35 X-INVALID-ORDER-35 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^2\left(C_2C_4R_3R_4 - C_4C_5R_3R_4\right) + s\left(C_2R_3 + C_4R_3R_4g_m - C_5R_3\right)}{4C_2C_4C_5R_3R_4s^3 + g_m + s^2\left(2C_2C_4R_3 + C_2C_4R_4 + 4C_2C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4\right) + s\left(C_2 + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5\right)}$$

9.36 X-INVALID-ORDER-36 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_2C_4R_3R_4R_5 - C_4C_5R_3R_4R_5\right) + s\left(C_2R_3R_5 + C_4R_3R_4R_5g_m - C_4R_3R_4 - C_5R_3R_5\right)}{4C_2C_4C_5R_3R_4R_5s^3 + 2R_3g_m + R_5g_m + s^2\left(4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C_4R_4R_5 + 4C_2C_5R_3R_5 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_5 + C_4C_5R_4R_5\right) + s\left(4C_2R_3 + C_2R_5 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4 + 2C_5R_3R_5g_m + C_5R_5\right) +}$$

9.37 X-INVALID-ORDER-37 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_4C_5R_3R_4R_5s^3 + R_3g_m + s^2\left(C_2C_4R_3R_4 + C_2C_5R_3R_5 + C_4C_5R_3R_4R_5g_m - C_4C_5R_3R_4\right) + s\left(C_2R_3 + C_4R_3R_4g_m + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(4C_2C_4C_5R_3R_4 + 2C_2C_4C_5R_3R_5 + C_2C_4C_5R_4R_5\right) + s^2\left(2C_2C_4R_3 + C_2C_4R_4 + 4C_2C_5R_3 + C_2C_5R_5 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3 + C_4C_5R_4R_5g_m + C_4C_5R_4\right) + s\left(C_2 + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

9.38 X-INVALID-ORDER-38 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_4R_5s^2 + R_4g_m + s\left(C_2R_4 + C_5R_4R_5g_m - C_5R_4\right)}{C_2C_3C_5R_4R_5s^3 + 2g_m + s^2\left(C_2C_3R_4 + 4C_2C_5R_4 + 2C_2C_5R_5 + C_3C_5R_4R_5g_m + C_3C_5R_4\right) + s\left(2C_2 + C_3R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

9.39 X-INVALID-ORDER-39 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s\left(C_2 - C_5\right)}{s^2\left(C_2C_3 + 2C_2C_4 + 4C_2C_5 + C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.40 X-INVALID-ORDER-40 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_5s^2 + g_m + s\left(C_2 + C_5R_5g_m - C_5\right)}{s^3\left(C_2C_3C_5R_5 + 2C_2C_4C_5R_5\right) + s^2\left(C_2C_3 + 2C_2C_4 + 4C_2C_5 + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.41 X-INVALID-ORDER-41 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_4R_5s^2 + R_4g_m + s\left(C_2R_4 + C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^3\left(C_2C_3C_5R_4R_5 + 2C_2C_4C_5R_4R_5\right) + s^2\left(C_2C_3R_4 + 2C_2C_4R_4 + 4C_2C_5R_4 + 2C_2C_5R_5 + C_3C_5R_4R_5g_m + C_3C_5R_4 + 2C_4C_5R_4R_5g_m + 2C_4C_5R_4\right) + s\left(2C_2 + C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

9.42 X-INVALID-ORDER-42 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_4R_5s^2 + R_5g_m + s\left(C_2R_5 + C_4R_4R_5g_m - C_4R_4\right) - 1}{C_2C_3C_4R_4R_5s^3 + 2g_m + s^2\left(C_2C_3R_5 + 4C_2C_4R_4 + 2C_2C_4R_5 + C_3C_4R_4R_5g_m + C_3C_4R_4\right) + s\left(4C_2 + C_3R_5g_m + C_3 + 2C_4R_4g_m + 2C_4R_5g_m + 2C_4\right)}$$

9.43 X-INVALID-ORDER-43 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^2\left(C_2C_4R_4 - C_4C_5R_4\right) + s\left(C_2 + C_4R_4g_m - C_5\right)}{s^3\left(C_2C_3C_4R_4 + 4C_2C_4C_5R_4 + C_3C_4C_5R_4\right) + s^2\left(C_2C_3 + 2C_2C_4 + 4C_2C_5 + C_3C_4R_4g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.44 X-INVALID-ORDER-44 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^2\left(C_2C_4R_4R_5 - C_4C_5R_4R_5\right) + s\left(C_2R_5 + C_4R_4R_5g_m - C_4R_4 - C_5R_5\right) - 1}{2g_m + s^3\left(C_2C_3C_4R_4R_5 + 4C_2C_4C_5R_4R_5 + C_3C_4C_5R_4R_5\right) + s^2\left(C_2C_3R_5 + 4C_2C_4R_4 + 2C_2C_4R_5 + 4C_2C_5R_5 + C_3C_4R_4R_5g_m + C_3C_4R_4 + C_3C_5R_5 + 2C_4C_5R_4R_5g_m + 2C_4C_5R_5\right) + s\left(4C_2 + C_3R_5g_m + C_3 + 2C_4R_4g_m + 2C_4R_5g_m + 2C_4 + 2C_5R_5g_m\right)}$$

9.45 X-INVALID-ORDER-45 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_4C_5R_4R_5s^3 + g_m + s^2\left(C_2C_4R_4 + C_2C_5R_5 + C_4C_5R_4R_5g_m - C_4C_5R_4\right) + s\left(C_2 + C_4R_4g_m + C_5R_5g_m - C_5\right)}{C_2C_3C_4C_5R_4R_5s^4 + s^3\left(C_2C_3C_4R_4 + C_2C_3C_5R_5 + 4C_2C_4C_5R_4 + 2C_2C_4C_5R_5 + C_3C_4C_5R_4R_5g_m + C_3C_4C_5R_4\right) + s^2\left(C_2C_3 + 2C_2C_4 + 4C_2C_5 + C_3C_4R_4g_m + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.46 X-INVALID-ORDER-46 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_4R_5s^2 + R_3R_4g_m + s\left(C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{C_2C_3C_5R_3R_4R_5s^3 + 2R_3g_m + R_4g_m + s^2\left(C_2C_3R_3R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5 + C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4\right) + s\left(2C_2R_3 + C_2R_4 + C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

9.47 X-INVALID-ORDER-47 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_5s^2 + R_3g_m + s\left(C_2R_3 + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(C_2C_3C_5R_3R_5 + 2C_2C_4C_5R_3R_5\right) + s^2\left(C_2C_3R_3 + 2C_2C_4R_3 + 4C_2C_5R_3 + C_2C_5R_5 + C_3C_5R_3R_5g_m + C_3C_5R_3 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3\right) + s\left(C_2 + C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

9.48 X-INVALID-ORDER-48 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_4R_5s^2 + R_3R_4g_m + s\left(C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^3\left(C_2C_3C_5R_3R_4R_5 + 2C_2C_4C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_3R_4 + 2C_2C_4R_3R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5 + C_3C_5R_3R_4R_5g_m + C_3C_5R_3R_4 + 2C_4C_5R_3R_4R_5g_m + 2C_4C_5R_3R_4\right) + s\left(2C_2R_3 + C_2R_4 + C_3R_3R_4g_m + 2C_4R_3R_4g_m + 2C\right.}$$

9.49 X-INVALID-ORDER-49 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_3R_4R_5s^2 + R_3R_5g_m - R_3 + s\left(C_2R_3R_5 + C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{C_2C_3C_4R_3R_4R_5s^3 + 2R_3g_m + R_5g_m + s^2\left(C_2C_3R_3R_5 + 4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C_4R_4R_5 + C_3C_4R_3R_4R_5g_m + C_3C_4R_3R_4\right) + s\left(4C_2R_3 + C_2R_5 + C_3R_3R_5g_m + C_3R_3 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4\right) + 1}$$

9.50 X-INVALID-ORDER-50 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^2\left(C_2C_4R_3R_4 - C_4C_5R_3R_4\right) + s\left(C_2R_3 + C_4R_3R_4g_m - C_5R_3\right)}{g_m + s^3\left(C_2C_3C_4R_3R_4 + 4C_2C_4C_5R_3R_4 + C_3C_4C_5R_3R_4\right) + s^2\left(C_2C_3R_3 + 2C_2C_4R_3 + C_2C_4R_4 + 4C_2C_5R_3 + C_3C_4R_3R_4g_m + C_3C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4\right) + s\left(C_2 + C_3R_3g_m + 2C_4R_3g_m + C_4R_4g_m + 2C_5R_3g_m + C_5\right)}$$

9.51 X-INVALID-ORDER-51 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_3 R_5 g_m - R_3 + s^2 \left(C_2 C_4 R_3 R_4 R_5 - C_4 C_5 R_3 R_4 R_5\right) + s \left(C_2 R_3 R_5 + C_4 R_3 R_4 R_5 g_m - C_4 R_3 R_4 - C_5 R_3 R_5\right)}{2R_3 g_m + R_5 g_m + s^3 \left(C_2 C_3 C_4 R_3 R_4 R_5 + 4C_2 C_4 C_5 R_3 R_4 R_5 + C_3 C_4 C_5 R_3 R_4 R_5\right) + s^2 \left(C_2 C_3 R_3 R_5 + 4C_2 C_4 R_3 R_4 + 2C_2 C_4 R_3 R_5 + C_2 C_4 R_4 R_5 + 4C_2 C_5 R_3 R_5 + C_3 C_4 R_3 R_4 R_5 g_m + C_3 C_4 R_3 R_4 + C_3 C_5 R_3 R_5 + 2C_4 C_5 R_3 R_4 R_5 g_m + 2C_4 C_5 R_3 R_5 + C_4 C_5 R_4 R_5\right) + s \left(4C\right.}$$

9.52 X-INVALID-ORDER-52 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_4 C_5 R_3 R_4 R_5 s^3 + R_3 g_m + s^2 \left(C_2 C_4 R_3 R_4 + C_2 C_5 R_3 R_5 + C_4 C_5 R_3 R_4 R_5 g_m - C_4 C_5 R_3 R_4\right) + s \left(C_2 R_3 + C_4 R_3 R_4 g_m + C_5 R_3\right.}{C_2 C_3 C_4 C_5 R_3 R_4 R_5 s^4 + g_m + s^3 \left(C_2 C_3 C_4 R_3 R_4 + C_2 C_3 C_5 R_3 R_5 + 4C_2 C_4 C_5 R_3 R_4 + 2C_2 C_4 C_5 R_3 R_5 + C_2 C_4 C_5 R_4 R_5 + C_3 C_4 C_5 R_3 R_4 R_5 g_m + C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(C_2 C_3 R_3 + 2C_2 C_4 R_3 + C_2 C_4 R_4 + 4C_2 C_5 R_3 + C_2 C_5 R_5 + C_3 C_4 R_3 R_4 g_m + C_3 C_5 R_3 R_5 g_m + C_3 C_5 R_3\right.}$$

9.53 X-INVALID-ORDER-53 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^2 \left(C_2 C_3 R_3 R_4 - C_3 C_5 R_3 R_4\right) + s \left(C_2 R_4 + C_3 R_3 R_4 g_m - C_5 R_4\right)}{4C_2 C_3 C_5 R_3 R_4 s^3 + 2g_m + s^2 \left(2C_2 C_3 R_3 + C_2 C_3 R_4 + 4C_2 C_5 R_4 + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4\right) + s \left(2C_2 + 2C_3 R_3 g_m + C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5\right)}$$

9.54 X-INVALID-ORDER-54 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^2 \left(C_2 C_3 R_3 R_4 R_5 - C_3 C_5 R_3 R_4 R_5\right) + s \left(C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{4C_2 C_3 C_5 R_3 R_4 R_5 s^3 + 2R_4 g_m + 2R_5 g_m + s^2 \left(4C_2 C_3 R_3 R_4 + 2C_2 C_3 R_3 R_5 + C_2 C_3 R_4 R_5 + 4C_2 C_5 R_4 R_5 + 2C_3 C_5 R_3 R_4 R_5 g_m + 2C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5\right) + s \left(4C_2 R_4 + 2C_2 R_5 + 2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_5 R_4 R_5 g_m + 2C_5 R_5\right.}$$

9.55 X-INVALID-ORDER-55 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_3 C_5 R_3 R_4 R_5 s^3 + R_4 g_m + s^2 \left(C_2 C_3 R_3 R_4 + C_2 C_5 R_4 R_5 + C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4\right) + s \left(C_2 R_4 + C_3 R_3 R_4 g_m + C_5 R_4 R_5 g_m - C_5 R_4\right)}{2g_m + s^3 \left(4C_2 C_3 C_5 R_3 R_4 + 2C_2 C_3 C_5 R_3 R_5 + C_2 C_3 C_5 R_4 R_5\right) + s^2 \left(2C_2 C_3 R_3 + C_2 C_3 R_4 + 4C_2 C_5 R_4 + 2C_2 C_5 R_5 + 2C_3 C_5 R_3 R_4 g_m + 2C_3 C_5 R_3 R_5 g_m + 2C_3 C_5 R_3 + C_3 C_5 R_4 R_5 g_m + C_3 C_5 R_4\right) + s \left(2C_2 + 2C_3 R_3 g_m + C_3 R_4 g_m + 2C_5 R_4 g_m + 2C_5 R_5 g_m + 2C_5\right)}$$

9.56 X-INVALID-ORDER-56 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 C_3 R_3 R_5 s^2 + R_5 g_m + s \left(C_2 R_5 + C_3 R_3 R_5 g_m - C_3 R_3\right) - 1}{2C_2 C_3 C_4 R_3 R_5 s^3 + 2g_m + s^2 \left(4C_2 C_3 R_3 + C_2 C_3 R_5 + 2C_2 C_4 R_5 + 2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3\right) + s \left(4C_2 + 2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4\right)}$$

9.57 X-INVALID-ORDER-57 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^2 \left(C_2 C_3 R_3 - C_3 C_5 R_3\right) + s \left(C_2 + C_3 R_3 g_m - C_5\right)}{s^3 \left(2C_2 C_3 C_4 R_3 + 4C_2 C_3 C_5 R_3 + 2C_3 C_4 C_5 R_3\right) + s^2 \left(C_2 C_3 + 2C_2 C_4 + 4C_2 C_5 + 2C_3 C_4 R_3 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

9.58 X-INVALID-ORDER-58 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^2 \left(C_2 C_3 R_3 R_5 - C_3 C_5 R_3 R_5\right) + s \left(C_2 R_5 + C_3 R_3 R_5 g_m - C_3 R_3 - C_5 R_5\right) - 1}{2g_m + s^3 \left(2C_2 C_3 C_4 R_3 R_5 + 4C_2 C_3 C_5 R_3 R_5 + 2C_3 C_4 C_5 R_3 R_5\right) + s^2 \left(4C_2 C_3 R_3 + C_2 C_3 R_5 + 2C_2 C_4 R_5 + 4C_2 C_5 R_5 + 2C_3 C_4 R_3 R_5 g_m + 2C_3 C_4 R_3 + 2C_3 C_5 R_3 R_5 g_m + C_3 C_5 R_5 + 2C_4 C_5 R_5\right) + s \left(4C_2 + 2C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2C_4 R_5 g_m + 2C_4 + 2C_5 R_5 g_m\right)}$$

9.59 X-INVALID-ORDER-59 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_3 C_5 R_3 R_5 s^3 + g_m + s^2 \left(C_2 C_3 R_3 + C_2 C_5 R_5 + C_3 C_5 R_3 R_5 g_m - C_3 C_5 R_3\right) + s \left(C_2 + C_3 R_3 g_m + C_5 R_5 g_m - C_5\right)}{2C_2 C_3 C_4 C_5 R_3 R_5 s^4 + s^3 \left(2C_2 C_3 C_4 R_3 + 4C_2 C_3 C_5 R_3 + C_2 C_3 C_5 R_5 + 2C_2 C_4 C_5 R_5 + 2C_3 C_4 C_5 R_3 R_5 g_m + 2C_3 C_4 C_5 R_3\right) + s^2 \left(C_2 C_3 + 2C_2 C_4 + 4C_2 C_5 + 2C_3 C_4 R_3 g_m + 2C_3 C_5 R_3 g_m + C_3 C_5 R_5 g_m + C_3 C_5 + 2C_4 C_5 R_5 g_m + 2C_4 C_5\right) + s \left(C_3 g_m + 2C_4 g_m + 2C_5 g_m\right)}$$

9.60 X-INVALID-ORDER-60 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 C_3 R_3 R_4 R_5 s^2 + R_4 R_5 g_m - R_4 + s \left(C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4\right)}{2C_2 C_3 C_4 R_3 R_4 R_5 s^3 + 2R_4 g_m + 2R_5 g_m + s^2 \left(4C_2 C_3 R_3 R_4 + 2C_2 C_3 R_3 R_5 + C_2 C_3 R_4 R_5 + 2C_2 C_4 R_4 R_5 + 2C_3 C_4 R_3 R_4 R_5 g_m + 2C_3 C_4 R_3 R_4\right) + s \left(4C_2 R_4 + 2C_2 R_5 + 2C_3 R_3 R_4 g_m + 2C_3 R_3 R_5 g_m + 2C_3 R_3 + C_3 R_4 R_5 g_m + C_3 R_4 + 2C_4 R_4 R_5 g_m + 2C_4 R_4\right) + 2}$$

9.61 X-INVALID-ORDER-61 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4 g_m + s^2 \left(C_2 C_3 R_3 R_4 - C_3 C_5 R_3 R_4\right) + s \left(C_2 R_4 + C_3 R_3 R_4 g_m - C_5 R_4\right)}{2 g_m + s^3 \left(2 C_2 C_3 C_4 R_3 R_4 + 4 C_2 C_3 C_5 R_3 R_4 + 2 C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(2 C_2 C_3 R_3 + C_2 C_3 R_4 + 2 C_2 C_4 R_4 + 4 C_2 C_5 R_4 + 2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_5 R_3 R_4 g_m + 2 C_3 C_5 R_3 + C_3 C_5 R_4 + 2 C_4 C_5 R_4\right) + s \left(2 C_2 + 2 C_3 R_3 g_m + C_3 R_4 g_m + 2 C_4 R_4 g_m + 2 C_5 R_4 g_m + 2 C_5\right)}$$

9.62 X-INVALID-ORDER-62 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_4 R_5 g_m - R_4 + s^2 \left(C_2 C_3 R_3 R_4 R_5 - C_3 C_5 R_3 R_4 R_5\right) + s \left(C_2 R_4 R_5 + C_3 R_3 R_4 R_5 g_m - C_3 R_3 R_4 - C_5 R_4 R_5\right)}{2 R_4 g_m + 2 R_5 g_m + s^3 \left(2 C_2 C_3 C_4 R_3 R_4 R_5 + 4 C_2 C_3 C_5 R_3 R_4 R_5 + 2 C_3 C_4 C_5 R_3 R_4 R_5\right) + s^2 \left(4 C_2 C_3 R_3 R_4 + 2 C_2 C_3 R_3 R_5 + C_2 C_3 R_4 R_5 + 2 C_2 C_4 R_4 R_5 + 4 C_2 C_5 R_4 R_5 + 2 C_3 C_4 R_3 R_4 R_5 g_m + 2 C_3 C_4 R_3 R_4 + 2 C_3 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_5 R_3 R_5 + C_3 C_5 R_4 R_5 + 2 C_4 C_5 R_4 R_5\right)}$$

9.63 X-INVALID-ORDER-63 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_3 C_5 R_3 R_4 R_5 s^3 + R_4 g_m + s^2 \left(C_2 C_3 R_3 R_4 + C_2 C_5 R_4 R_5 + C_3 C_5 R_3 R_4 R_5 g_m - C_3 C_5 R_3 R_4\right) + s \left(C_2 R_4 + C_3 R_3 R_4 g_m}{2 C_2 C_3 C_4 C_5 R_3 R_4 R_5 s^4 + 2 g_m + s^3 \left(2 C_2 C_3 C_4 R_3 R_4 + 4 C_2 C_3 C_5 R_3 R_4 + 2 C_2 C_3 C_5 R_3 R_5 + C_2 C_3 C_5 R_4 R_5 + 2 C_2 C_4 C_5 R_4 R_5 + 2 C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(2 C_2 C_3 R_3 + C_2 C_3 R_4 + 2 C_2 C_4 R_4 + 4 C_2 C_5 R_4 + 2 C_2 C_5 R_5 + 2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_5 R_3 R_4 g_m}$$

9.64 X-INVALID-ORDER-64 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 C_3 C_4 R_3 R_4 R_5 s^3 + R_5 g_m + s^2 \left(C_2 C_3 R_3 R_5 + C_2 C_4 R_4 R_5 + C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4\right) + s \left(C_2 R_5 + C_3 R_3 R_5 g_m - C_3 R_3 + C_4 R_4 R_5 g_m - C_4 R_4\right) - 1}{2 g_m + s^3 \left(4 C_2 C_3 C_4 R_3 R_4 + 2 C_2 C_3 C_4 R_3 R_5 + C_2 C_3 C_4 R_4 R_5\right) + s^2 \left(4 C_2 C_3 R_3 + C_2 C_3 R_5 + 4 C_2 C_4 R_4 + 2 C_2 C_4 R_5 + 2 C_3 C_4 R_3 R_4 g_m + 2 C_3 C_4 R_3 R_5 g_m + 2 C_3 C_4 R_3 + C_3 C_4 R_4 R_5 g_m + C_3 C_4 R_4\right) + s \left(4 C_2 + 2 C_3 R_3 g_m + C_3 R_5 g_m + C_3 + 2 C_4 R_4 g_m + 2 C_4 R_5 g_m + 2 C_4\right)}$$

9.65 X-INVALID-ORDER-65 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3 \left(C_2 C_3 C_4 R_3 R_4 - C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(C_2 C_3 R_3 + C_2 C_4 R_4 + C_3 C_4 R_3 R_4 g_m - C_3 C_5 R_3 - C_4 C_5 R_4\right) + s \left(C_2 + C_3 R_3 g_m + C_4 R_4 g_m - C_5\right)}{4 C_2 C_3 C_4 C_5 R_3 R_4 s^4 + s^3 \left(2 C_2 C_3 C_4 R_3 + C_2 C_3 C_4 R_4 + 4 C_2 C_3 C_5 R_3 + 4 C_2 C_4 C_5 R_4 + 2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4\right) + s^2 \left(C_2 C_3 + 2 C_2 C_4 + 4 C_2 C_5 + 2 C_3 C_4 R_3 g_m + C_3 C_4 R_4 g_m + 2 C_3 C_5 R_3 g_m + C_3 C_5 + 2 C_4 C_5 R_4 g_m + 2 C_4 C_5\right) + s \left(C_3 g_m + 2 C_4 g_m\right.}$$

9.66 X-INVALID-ORDER-66 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_2 C_3 C_4 R_3 R_4 R_5 - C_3 C_4 C_5 R_3 R_4 R_5\right) + s^2 \left(C_2 C_3 R_3 R_5 + C_2 C_4 R_4 R_5 + C_3 C_4 R_3 R_4 R_5 g_m - C_3 C_4 R_3 R_4 - C_3 C_5 R_3 R_5 - C_4 C_5\right.}{4 C_2 C_3 C_4 C_5 R_3 R_4 R_5 s^4 + 2 g_m + s^3 \left(4 C_2 C_3 C_4 R_3 R_4 + 2 C_2 C_3 C_4 R_3 R_5 + C_2 C_3 C_4 R_4 R_5 + 4 C_2 C_3 C_5 R_3 R_5 + 4 C_2 C_4 C_5 R_4 R_5 + 2 C_3 C_4 C_5 R_3 R_4 R_5 g_m + 2 C_3 C_4 C_5 R_3 R_5 + C_3 C_4 C_5 R_4 R_5\right) + s^2 \left(4 C_2 C_3 R_3 + C_2 C_3 R_5 + 4 C_2 C_4 R_4 + 2 C_2 C_4 R_5 + 4 C_2 C_5 R_5 + 2 C_3 C_4 R_3 R_4 g_m\right.}$$

9.67 X-INVALID-ORDER-67 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_3 C_4 C_5 R_3 R_4 R_5 s^4 + g_m + s^3 \left(C_2 C_3 C_4 R_3 R_4 + C_2 C_3 C_5 R_3 R_5 + C_2 C_4 C_5 R_4 R_5 + C_3 C_4 C_5 R_3 R_4 R_5 g_m - C_3 C_4 C_5 R_3 R_4\right) + s^2 \left(C_2 C_3 R_3 + C_2 C_4 R_4 + C_2 C_5 R_5 + C_3 C_4 R_3 R_4 g_m + C_3 C_5 R_3 R_5 g_m - C\right.}{s^4 \left(4 C_2 C_3 C_4 C_5 R_3 R_4 + 2 C_2 C_3 C_4 C_5 R_3 R_5 + C_2 C_3 C_4 C_5 R_4 R_5\right) + s^3 \left(2 C_2 C_3 C_4 R_3 + C_2 C_3 C_4 R_4 + 4 C_2 C_3 C_5 R_3 + C_2 C_3 C_5 R_5 + 4 C_2 C_4 C_5 R_4 + 2 C_2 C_4 C_5 R_5 + 2 C_3 C_4 C_5 R_3 R_4 g_m + 2 C_3 C_4 C_5 R_3 R_5 g_m + 2 C_3 C_4 C_5 R_3 + C_3 C_4 C_5 R_4 R_5 g_m + C_3 C_4 C_5 R_4\right) + s^2 \left(C_2 C_3 + 2 C_2\right.}$$

9.68 X-INVALID-ORDER-68 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2 R_2 R_3 R_4 R_5 s + R_2 R_3 R_4 R_5 g_m - R_2 R_3 R_4 + R_3 R_4 R_5}{2 R_2 R_3 R_4 g_m + 2 R_2 R_3 R_5 g_m + 2 R_2 R_3 + R_2 R_4 R_5 g_m + R_2 R_4 + 4 R_3 R_4 + 2 R_3 R_5 + R_4 R_5 + s \left(4 C_2 R_2 R_3 R_4 + 2 C_2 R_2 R_3 R_5 + C_2 R_2 R_4 R_5\right)}$$

9.69 X-INVALID-ORDER-69 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_5 R_2 R_3 R_5 s^2 + R_2 R_3 g_m + R_3 + s \left(C_2 R_2 R_3 + C_5 R_2 R_3 R_5 g_m - C_5 R_2 R_3 + C_5 R_3 R_5\right)}{2 C_2 C_4 C_5 R_2 R_3 R_5 s^3 + R_2 g_m + s^2 \left(2 C_2 C_4 R_2 R_3 + 4 C_2 C_5 R_2 R_3 + C_2 C_5 R_2 R_5 + 2 C_4 C_5 R_2 R_3 R_5 g_m + 2 C_4 C_5 R_2 R_3 + 2 C_4 C_5 R_3 R_5\right) + s \left(C_2 R_2 + 2 C_4 R_2 R_3 g_m + 2 C_4 R_3 + 2 C_5 R_2 R_3 g_m + C_5 R_2 R_5 g_m + C_5 R_2 + 4 C_5 R_3 + C_5 R_5\right) + 1}$$

9.70 X-INVALID-ORDER-70 $Z(s) = \left(\infty,\ \frac{R_2}{C_2 R_2 s+1},\ R_3,\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2 C_5 R_2 R_3 R_4 R_5 s^2 + R_2 R_3 R_4 g_m + R_3 R_4 + s \left(C_2 R_2 R_3 R_4 + C_5 R_2 R_3 R_4 R_5 g_m - C_5 R_2 R_3 R_4 + C_5 R_3 R_4 R_5\right)}{2 C_2 C_4 C_5 R_2 R_3 R_4 R_5 s^3 + 2 R_2 R_3 g_m + R_2 R_4 g_m + 2 R_3 + R_4 + s^2 \left(2 C_2 C_4 R_2 R_3 R_4 + 4 C_2 C_5 R_2 R_3 R_4 + 2 C_2 C_5 R_2 R_3 R_5 + C_2 C_5 R_2 R_4 R_5 + 2 C_4 C_5 R_2 R_3 R_4 R_5 g_m + 2 C_4 C_5 R_2 R_3 R_4 + 2 C_4 C_5 R_3 R_4 R_5\right) + s \left(2 C_2 R_2 R_3 + C_2 R_2 R_4 + 2 C_4 R_2 R_3 R_4 g_m + 2 C_4 R_3 R_4 + 2 C_5 R_2 R_3\right.}$$

9.71 X-INVALID-ORDER-71 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s^2\left(C_2C_4R_2R_3R_4 - C_4C_5R_2R_3R_4\right) + s\left(C_2R_2R_3 + C_4R_2R_3R_4g_m + C_4R_3R_4 - C_5R_2R_3\right)}{4C_2C_4C_5R_2R_3R_4s^3 + R_2g_m + s^2\left(2C_2C_4R_2R_3 + C_2C_4R_2R_4 + 4C_2C_5R_2R_3 + 2C_4C_5R_2R_3R_4g_m + 2C_4C_5R_2R_3 + C_4C_5R_2R_4 + 4C_4C_5R_3R_4\right) + s\left(C_2R_2 + 2C_4R_2R_3g_m + C_4R_2R_4g_m + 2C_4R_3 + C_4R_4 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

9.72 X-INVALID-ORDER-72 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s^2\left(C_2C_4R_2R_3R_4R_5 - C_4C_5R_2R_3R_4R_5\right) + s\left(C_2R_2R_3R_5 + C_4R_2R_3R_4R_5g_m - C_4R_2R_3R_4 + C_4R_3R_4R_5 - \right.}{4C_2C_4C_5R_2R_3R_4R_5s^3 + 2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(4C_2C_4R_2R_3R_4 + 2C_2C_4R_2R_3R_5 + C_2C_4R_2R_4R_5 + 4C_2C_5R_2R_3R_5 + 2C_4C_5R_2R_3R_4R_5g_m + 2C_4C_5R_2R_3R_5 + C_4C_5R_2R_4R_5 + 4C_4C_5R_3R_4R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + 2C_4R_2R_3R_4g_m + \right.}$$

9.73 X-INVALID-ORDER-73 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_4C_5R_2R_3R_4R_5s^3 + R_2R_3g_m + R_3 + s^2\left(C_2C_4R_2R_3R_4 + C_2C_5R_2R_3R_5 + C_4C_5R_2R_3R_4R_5g_m - C_4C_5R_2R_3R_4 + C_4C_5R_3R_4R_5\right) + s\left(C_2R_2R_3 + C_4R_2R_3R_4g_m + C_4R_3R_4 + \right.}{R_2g_m + s^3\left(4C_2C_4C_5R_2R_3R_4 + 2C_2C_4C_5R_2R_3R_5 + C_2C_4C_5R_2R_4R_5\right) + s^2\left(2C_2C_4R_2R_3 + C_2C_4R_2R_4 + 4C_2C_5R_2R_3 + C_2C_5R_2R_5 + 2C_4C_5R_2R_3R_4g_m + 2C_4C_5R_2R_3R_5g_m + 2C_4C_5R_2R_3 + C_4C_5R_2R_4R_5g_m + C_4C_5R_2R_4 + 4C_4C_5R_3R_4 + 2C_4C_5R_3R_5 + C_4C_5R\right.}$$

9.74 X-INVALID-ORDER-74 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_4R_5s^2 + R_2R_4g_m + R_4 + s\left(C_2R_2R_4 + C_5R_2R_4R_5g_m - C_5R_2R_4 + C_5R_4R_5\right)}{C_2C_3C_5R_2R_4R_5s^3 + 2R_2g_m + s^2\left(C_2C_3R_2R_4 + 4C_2C_5R_2R_4 + 2C_2C_5R_2R_5 + C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + C_3C_5R_4R_5\right) + s\left(2C_2R_2 + C_3R_2R_4g_m + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2R_5g_m + 2C_5R_2 + 4C_5R_4 + 2C_5R_5\right) + 2}$$

9.75 X-INVALID-ORDER-75 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2g_m + s\left(C_2R_2 - C_5R_2\right) + 1}{s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + C_3C_5R_2 + 2C_4C_5R_2\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.76 X-INVALID-ORDER-76 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_5s^2 + R_2g_m + s\left(C_2R_2 + C_5R_2R_5g_m - C_5R_2 + C_5R_5\right) + 1}{s^3\left(C_2C_3C_5R_2R_5 + 2C_2C_4C_5R_2R_5\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + C_3C_5R_2R_5g_m + C_3C_5R_2 + C_3C_5R_5 + 2C_4C_5R_2R_5g_m + 2C_4C_5R_2 + 2C_4C_5R_5\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.77 X-INVALID-ORDER-77 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_4R_5s^2 + R_2R_4g_m + R_4 + s\left(C_2R_2R_4 + C_5R_2R_4R_5g_m - C_5R_2R_4 + C_5R_4R_5\right)}{2R_2g_m + s^3\left(C_2C_3C_5R_2R_4R_5 + 2C_2C_4C_5R_2R_4R_5\right) + s^2\left(C_2C_3R_2R_4 + 2C_2C_4R_2R_4 + 4C_2C_5R_2R_4 + 2C_2C_5R_2R_5 + C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + C_3C_5R_4R_5 + 2C_4C_5R_2R_4R_5g_m + 2C_4C_5R_2R_4 + 2C_4C_5R_4R_5\right) + s\left(2C_2R_2 + C_3R_2R_4g_m + C_3R_4 + 2C_4R_2R_4g_m\right.}$$

9.78 X-INVALID-ORDER-78 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_2R_4R_5s^2 + R_2R_5g_m - R_2 + R_5 + s\left(C_2R_2R_5 + C_4R_2R_4R_5g_m - C_4R_2R_4 + C_4R_4R_5\right)}{C_2C_3C_4R_2R_4R_5s^3 + 2R_2g_m + s^2\left(C_2C_3R_2R_5 + 4C_2C_4R_2R_4 + 2C_2C_4R_2R_5 + C_3C_4R_2R_4R_5g_m + C_3C_4R_2R_4 + C_3C_4R_4R_5\right) + s\left(4C_2R_2 + C_3R_2R_5g_m + C_3R_2 + C_3R_5 + 2C_4R_2R_4g_m + 2C_4R_2R_5g_m + 2C_4R_2 + 4C_4R_4 + 2C_4R_5\right) + 4}$$

9.79 X-INVALID-ORDER-79 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2g_m + s^2\left(C_2C_4R_2R_4 - C_4C_5R_2R_4\right) + s\left(C_2R_2 + C_4R_2R_4g_m + C_4R_4 - C_5R_2\right) + 1}{s^3\left(C_2C_3C_4R_2R_4 + 4C_2C_4C_5R_2R_4 + C_3C_4C_5R_2R_4\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + C_3C_4R_2R_4g_m + C_3C_4R_4 + C_3C_5R_2 + 2C_4C_5R_2R_4g_m + 2C_4C_5R_2 + 4C_4C_5R_4\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.80 X-INVALID-ORDER-80 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5 + s^2\left(C_2C_4R_2R_4R_5 - C_4C_5R_2R_4R_5\right) + s\left(C_2R_2R_5 + C_4R_2R_4R_5g_m - C_4R_2R_4 + C_4R_4R_5 - C_5R_2R_5\right)}{2R_2g_m + s^3\left(C_2C_3C_4R_2R_4R_5 + 4C_2C_4C_5R_2R_4R_5 + C_3C_4C_5R_2R_4R_5\right) + s^2\left(C_2C_3R_2R_5 + 4C_2C_4R_2R_4 + 2C_2C_4R_2R_5 + 4C_2C_5R_2R_5 + C_3C_4R_2R_4R_5g_m + C_3C_4R_2R_4 + C_3C_4R_4R_5 + C_3C_5R_2R_5 + 2C_4C_5R_2R_4R_5g_m + 2C_4C_5R_2R_5 + 4C_4C_5R_4R_5\right) + s\left(4C_2R_2 + \right.}$$

9.81 X-INVALID-ORDER-81 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_4C_5R_2R_4R_5s^3 + R_2g_m + s^2\left(C_2C_4R_2R_4 + C_2C_5R_2R_5 + C_4C_5R_2R_4R_5g_m - C_4C_5R_2R_4 + C_4C_5R_4R_5\right) + s\left(C_2R_2 + C_4R_2R_4g_m + C_4R_4 + C_5R_2R_5g_m -\right.}{C_2C_3C_4C_5R_2R_4R_5s^4 + s^3\left(C_2C_3C_4R_2R_4 + C_2C_3C_5R_2R_5 + 4C_2C_4C_5R_2R_4 + 2C_2C_4C_5R_2R_5 + C_3C_4C_5R_2R_4R_5g_m + C_3C_4C_5R_2R_4 + C_3C_4C_5R_4R_5\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + C_3C_4R_2R_4g_m + C_3C_4R_4 + C_3C_5R_2R_5g_m + C_3C_5R_2 + C_3C_5R_5 + 2C\right.}$$

9.82 X-INVALID-ORDER-82 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_3R_4R_5s^2 + R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 + C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{C_2C_3C_5R_2R_3R_4R_5s^3 + 2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(C_2C_3R_2R_3R_4 + 4C_2C_5R_2R_3R_4 + 2C_2C_5R_2R_3R_5 + C_2C_5R_2R_4R_5 + C_3C_5R_2R_3R_4R_5g_m + C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5\right) + s\left(2C_2R_2R_3 + C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R_4 + 2C_5R_2R_3R_4g_m +\right.}$$

9.83 X-INVALID-ORDER-83 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_3R_5s^2 + R_2R_3g_m + R_3 + s\left(C_2R_2R_3 + C_5R_2R_3R_5g_m - C_5R_2R_3 + C_5R_3R_5\right)}{R_2g_m + s^3\left(C_2C_3C_5R_2R_3R_5 + 2C_2C_4C_5R_2R_3R_5\right) + s^2\left(C_2C_3R_2R_3 + 2C_2C_4R_2R_3 + 4C_2C_5R_2R_3 + C_2C_5R_2R_5 + C_3C_5R_2R_3R_5g_m + C_3C_5R_2R_3 + C_3C_5R_3R_5 + 2C_4C_5R_2R_3R_5g_m + 2C_4C_5R_2R_3 + 2C_4C_5R_3R_5\right) + s\left(C_2R_2 + C_3R_2R_3g_m + C_3R_3 + 2C_4R_2R_3g_m +\right.}$$

9.84 X-INVALID-ORDER-84 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_3R_4R_5s^2 + R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 + C_5R_2R_3R\right.}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^3\left(C_2C_3C_5R_2R_3R_4R_5 + 2C_2C_4C_5R_2R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_4 + 2C_2C_4R_2R_3R_4 + 4C_2C_5R_2R_3R_4 + 2C_2C_5R_2R_3R_5 + C_2C_5R_2R_4R_5 + C_3C_5R_2R_3R_4R_5g_m + C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5 + 2C_4C_5R_2R_3R_4R_5g_m + 2C_4C\right.}$$

9.85 X-INVALID-ORDER-85 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_2R_3R_4R_5s^2 + R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_2R_2R_3R_5 + C_4R_2R_3R_4R_5g_m - C_4R_2R_3R_4 + C_4R_3R_4R_5\right)}{C_2C_3C_4R_2R_3R_4R_5s^3 + 2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(C_2C_3R_2R_3R_5 + 4C_2C_4R_2R_3R_4 + 2C_2C_4R_2R_3R_5 + C_2C_4R_2R_4R_5 + C_3C_4R_2R_3R_4R_5g_m + C_3C_4R_2R_3R_4 + C_3C_4R_3R_4R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + C_3R_2R_3R_5g_m + C_3R_2R_3 + C_3R_3R_5 + 2\right.}$$

9.86 X-INVALID-ORDER-86 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_3g_m + R_3 + s^2\left(C_2C_4R_2R_3R_4 - C_4C_5R_2R_3R_4\right) + s\left(C_2R_2R_3 + C_4R_2R_3R_4g_m + C_4R_3R_4 - C_5R_2R_3\right)}{R_2g_m + s^3\left(C_2C_3C_4R_2R_3R_4 + 4C_2C_4C_5R_2R_3R_4 + C_3C_4C_5R_2R_3R_4\right) + s^2\left(C_2C_3R_2R_3 + 2C_2C_4R_2R_3 + C_2C_4R_2R_4 + 4C_2C_5R_2R_3 + C_3C_4R_2R_3R_4g_m + C_3C_4R_3R_4 + C_3C_5R_2R_3 + 2C_4C_5R_2R_3R_4g_m + 2C_4C_5R_2R_3 + C_4C_5R_2R_4 + 4C_4C_5R_3R_4\right) + s\left(C_2R_2 + C_3R\right.}$$

9.87 X-INVALID-ORDER-87 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s^2\left(C_2C_4R_2R_3R_4R_5\right.}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^3\left(C_2C_3C_4R_2R_3R_4R_5 + 4C_2C_4C_5R_2R_3R_4R_5 + C_3C_4C_5R_2R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_5 + 4C_2C_4R_2R_3R_4 + 2C_2C_4R_2R_3R_5 + C_2C_4R_2R_4R_5 + 4C_2C_5R_2R_3R_5 + C_3C_4R_2R_3R_4R_5g_m + C_3C_4R_2R_3R_4 + C_3C_4R_3R_4R_5 + C\right.}$$

9.88 X-INVALID-ORDER-88 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ \frac{R_3}{C_3R_3s+1},\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_4C_5R_2R_3R_4R_5s^3 + R_2R_3g_m + R_3 + s^2\left(C_2C_4R\right.}{C_2C_3C_4C_5R_2R_3R_4R_5s^4 + R_2g_m + s^3\left(C_2C_3C_4R_2R_3R_4 + C_2C_3C_5R_2R_3R_5 + 4C_2C_4C_5R_2R_3R_4 + 2C_2C_4C_5R_2R_3R_5 + C_2C_4C_5R_2R_4R_5 + C_3C_4C_5R_2R_3R_4R_5g_m + C_3C_4C_5R_2R_3R_4 + C_3C_4C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3 + 2C_2C_4R_2R_3 + C_2C_4R_2R_4 + 4C_2C_5R_2R\right.}$$

9.89 X-INVALID-ORDER-89 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s^2\left(C_2C_3R_2R_3R_4 - C_3C_5R_2R_3R_4\right) + s\left(C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R_4 - C_5R_2R_4\right)}{4C_2C_3C_5R_2R_3R_4s^3 + 2R_2g_m + s^2\left(2C_2C_3R_2R_3 + C_2C_3R_2R_4 + 4C_2C_5R_2R_4 + 2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4 + 4C_3C_5R_3R_4\right) + s\left(2C_2R_2 + 2C_3R_2R_3g_m + C_3R_2R_4g_m + 2C_3R_3 + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2 + 4C_5R_4\right) + 2}$$

9.90 X-INVALID-ORDER-90 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s^2\left(C_2C_3R_2R_3R_4R_5 - C_3C_5R_2R_3R_4R_5\right) + s\left(C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m - C_3R_2R_3R_4 + C_3R_3R_4R_5\right.}{4C_2C_3C_5R_2R_3R_4R_5s^3 + 2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(4C_2C_3R_2R_3R_4 + 2C_2C_3R_2R_3R_5 + C_2C_3R_2R_4R_5 + 4C_2C_5R_2R_4R_5 + 2C_3C_5R_2R_3R_4R_5g_m + 2C_3C_5R_2R_3R_5 + C_3C_5R_2R_4R_5 + 4C_3C_5R_3R_4R_5\right) + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + 2C_3R_2R_3R_4\right.}$$

9.91 X-INVALID-ORDER-91 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_3C_5R_2R_3R_4R_5s^3 + R_2R_4g_m + R_4 + s^2\left(C_2C_3R_2R_3R_4 + C_2C_5R_2R_4R_5 + C_3C_5R_2R_3R_4R_5g_m - C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5\right) + s\left(C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R\right.}{2R_2g_m + s^3\left(4C_2C_3C_5R_2R_3R_4 + 2C_2C_3C_5R_2R_3R_5 + C_2C_3C_5R_2R_4R_5\right) + s^2\left(2C_2C_3R_2R_3 + C_2C_3R_2R_4 + 4C_2C_5R_2R_4 + 2C_2C_5R_2R_5 + 2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3R_5g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + 4C_3C_5R_3R_4 + 2C_3C_5R_3R_5 + C_3C\right.}$$

9.92 X-INVALID-ORDER-92 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_3R_2R_3R_5s^2 + R_2R_5g_m - R_2 + R_5 + s\left(C_2R_2R_5 + C_3R_2R_3R_5g_m - C_3R_2R_3 + C_3R_3R_5\right)}{2C_2C_3C_4R_2R_3R_5s^3 + 2R_2g_m + s^2\left(4C_2C_3R_2R_3 + C_2C_3R_2R_5 + 2C_2C_4R_2R_5 + 2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + 2C_3C_4R_3R_5\right) + s\left(4C_2R_2 + 2C_3R_2R_3g_m + C_3R_2R_5g_m + C_3R_2 + 4C_3R_3 + C_3R_5 + 2C_4R_2R_5g_m + 2C_4R_2 + 2C_4R_5\right) + 4}$$

9.93 X-INVALID-ORDER-93 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2g_m + s^2\left(C_2C_3R_2R_3 - C_3C_5R_2R_3\right) + s\left(C_2R_2 + C_3R_2R_3g_m + C_3R_3 - C_5R_2\right) + 1}{s^3\left(2C_2C_3C_4R_2R_3 + 4C_2C_3C_5R_2R_3 + 2C_3C_4C_5R_2R_3\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + 2C_3C_4R_2R_3g_m + 2C_3C_4R_3 + 2C_3C_5R_2R_3g_m + C_3C_5R_2 + 4C_3C_5R_3 + 2C_4C_5R_2\right) + s\left(C_3R_2g_m + C_3 + 2C_4R_2g_m + 2C_4 + 2C_5R_2g_m + 4C_5\right)}$$

9.94 X-INVALID-ORDER-94 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5 + s^2\left(C_2C_3R_2R_3R_5 - C_3C_5R_2R_3R_5\right) + s\left(C_2R_2R_5 + C_3R_2R_3R_5g_m - C_3R_2R_3 + C_3R_3R_5 - C_5R_2R_5\right)}{2R_2g_m + s^3\left(2C_2C_3C_4R_2R_3R_5 + 4C_2C_3C_5R_2R_3R_5 + 2C_3C_4C_5R_2R_3R_5\right) + s^2\left(4C_2C_3R_2R_3 + C_2C_3R_2R_5 + 2C_2C_4R_2R_5 + 4C_2C_5R_2R_5 + 2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + 2C_3C_4R_3R_5 + 2C_3C_5R_2R_3R_5g_m + C_3C_5R_2R_5 + 4C_3C_5R_3R_5 + 2C_4C_5R_2R_5\right) + s\left(4C_2\right.}$$

9.95 X-INVALID-ORDER-95 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_3C_5R_2R_3R_5s^3 + R_2g_m + s^2\left(C_2C_3R_2R_3 + C_2C_5R_2R_5 + C_3C_5R_2R_3R_5g_m - C_3C_5R_2R_3 + C_3C_5R_3R_5\right) + s\left(C_2R_2 + C_3R_2R_3g_m + C_3R_3 + C_5R_2R_5\right.}{2C_2C_3C_4C_5R_2R_3R_5s^4 + s^3\left(2C_2C_3C_4R_2R_3 + 4C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_5 + 2C_2C_4C_5R_2R_5 + 2C_3C_4C_5R_2R_3R_5g_m + 2C_3C_4C_5R_2R_3 + 2C_3C_4C_5R_3R_5\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + 2C_3C_4R_2R_3g_m + 2C_3C_4R_3 + 2C_3C_5R_2R_3g_m + C_3C_5R_2R_5g_m\right.}$$

9.96 X-INVALID-ORDER-96 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_3R_2R_3R_4R_5s^2 + R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s\left(C_2R_2R_4R_5 + C_3R_2R_3R_4R_5g_m - C_3R_2R_3R_4 + C_3R_3R_4R_5\right)}{2C_2C_3C_4R_2R_3R_4R_5s^3 + 2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^2\left(4C_2C_3R_2R_3R_4 + 2C_2C_3R_2R_3R_5 + C_2C_3R_2R_4R_5 + 2C_2C_4R_2R_4R_5 + 2C_3C_4R_2R_3R_4R_5g_m + 2C_3C_4R_2R_3R_4 + 2C_3C_4R_3R_4R_5\right) + s\left(4C_2R_2R_4 + 2C_2R_2R_5 + 2C_3R_2R_3R_4g_m + 2C_3R_2R_3R\right.}$$

9.97 X-INVALID-ORDER-97 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s^2\left(C_2C_3R_2R_3R_4 - C_3C_5R_2R_3R_4\right) + s\left(C_2R_2R_4 + C_3R_2R_3R_4g_m + C_3R_3R_4 - C_5R_2R_4\right)}{2R_2g_m + s^3\left(2C_2C_3C_4R_2R_3R_4 + 4C_2C_3C_5R_2R_3R_4 + 2C_3C_4C_5R_2R_3R_4\right) + s^2\left(2C_2C_3R_2R_3 + C_2C_3R_2R_4 + 2C_2C_4R_2R_4 + 4C_2C_5R_2R_4 + 2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_3R_4 + 2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4 + 4C_3C_5R_3R_4 + 2C_4C_5R_2R_4\right) + s\left(2C_2\right.}$$

9.98 X-INVALID-ORDER-98 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_4R_5g_m - R_2R_4 + R_4R_5 + s^2\left(C_2C_3R_2\right.}{2R_2R_4g_m + 2R_2R_5g_m + 2R_2 + 4R_4 + 2R_5 + s^3\left(2C_2C_3C_4R_2R_3R_4R_5 + 4C_2C_3C_5R_2R_3R_4R_5 + 2C_3C_4C_5R_2R_3R_4R_5\right) + s^2\left(4C_2C_3R_2R_3R_4 + 2C_2C_3R_2R_3R_5 + C_2C_3R_2R_4R_5 + 2C_2C_4R_2R_4R_5 + 4C_2C_5R_2R_4R_5 + 2C_3C_4R_2R_3R_4R_5g_m + 2C_3C_4R_2R_3R_4 + 2C_3C_4R\right.}$$

9.99 X-INVALID-ORDER-99 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_3C_5R_2R_3R_4R_5s^3 + R_2R_4g_m + R_4 +}{2C_2C_3C_4C_5R_2R_3R_4R_5s^4 + 2R_2g_m + s^3\left(2C_2C_3C_4R_2R_3R_4 + 4C_2C_3C_5R_2R_3R_4 + 2C_2C_3C_5R_2R_3R_5 + C_2C_3C_5R_2R_4R_5 + 2C_2C_4C_5R_2R_4R_5 + 2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_3C_4C_5R_2R_3R_4 + 2C_3C_4C_5R_3R_4R_5\right) + s^2\left(2C_2C_3R_2R_3 + C_2C_3R_2R_4 + 2C_2C_4R_2R_4 + 4C\right.}$$

9.100 X-INVALID-ORDER-100 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_3C_4R_2R_3R_4R_5s^3 + R_2R_5g_m - R_2 + R_5 + s^2\left(C_2C_3R_2R_3R_5 + C_2C_4R_2R_4R_5 + C_3C_4R_2R_3R_4R_5g_m - C_3C_4R_2R_3R_4 + C_3C_4R_3R_4R_5\right) + s\left(C_2R_2R_5 + C_3R_2R_3R_5g_m - C_3R_2\right.}{2R_2g_m + s^3\left(4C_2C_3C_4R_2R_3R_4 + 2C_2C_3C_4R_2R_3R_5 + C_2C_3C_4R_2R_4R_5\right) + s^2\left(4C_2C_3R_2R_3 + C_2C_3R_2R_5 + 4C_2C_4R_2R_4 + 2C_2C_4R_2R_5 + 2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + C_3C_4R_2R_4R_5g_m + C_3C_4R_2R_4 + 4C_3C_4R_3R_4 + 2C_3C_4R_3R_5 + C_3C\right.}$$

9.101 X-INVALID-ORDER-101 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2g_m + s^3\left(C_2C_3C_4R_2R_3R_4 - C_3C_4C_5R_2R_3R_4\right) + s^2\left(C_2C_3R_2R_3 + C_2C_4R_2R_4 + C_3C_4R_2R_3R_4g_m + C_3C_4R_3R_4 - C_3C_5R_2R_3 - C_4C_5R_2R_4\right) + s\left(C_2R_2 + C_3R_2\right.}{4C_2C_3C_4C_5R_2R_3R_4s^4 + s^3\left(2C_2C_3C_4R_2R_3 + C_2C_3C_4R_2R_4 + 4C_2C_3C_5R_2R_3 + 4C_2C_4C_5R_2R_4 + 2C_3C_4C_5R_2R_3R_4g_m + 2C_3C_4C_5R_2R_3 + C_3C_4C_5R_2R_4 + 4C_3C_4C_5R_3R_4\right) + s^2\left(C_2C_3R_2 + 2C_2C_4R_2 + 4C_2C_5R_2 + 2C_3C_4R_2R_3g_m + C_3C_4R_2R_4g_m + 2C_3C_4R_3 + \right.}$$

9.102 X-INVALID-ORDER-102 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5 + s^3\left(C_2C_3C_4R_2R_3R_4R_5 - C_3C_4C_5R_2R_3\right.}{4C_2C_3C_4C_5R_2R_3R_4R_5s^4 + 2R_2g_m + s^3\left(4C_2C_3C_4R_2R_3R_4 + 2C_2C_3C_4R_2R_3R_5 + C_2C_3C_4R_2R_4R_5 + 4C_2C_3C_5R_2R_3R_5 + 4C_2C_4C_5R_2R_4R_5 + 2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_3C_4C_5R_2R_3R_5 + C_3C_4C_5R_2R_4R_5 + 4C_3C_4C_5R_3R_4R_5\right) + s^2\left(4C_2C_3R_2R_3 + C_2C_3R_2R_5 - \right.}$$

9.103 X-INVALID-ORDER-103 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_3C_4C_5R_2R_3R_4R_5s^4 + R_2g_m + s^3\left(C_2C_3C_4R_2R_3R_4 + C_2C_3C_5R_2R_3R_5 + C_2C_4C_5R_2R_4R_5 + C_3C_4C_5R_2R_3R_4R_5g_m - C_3C_4C_5R_2R_3R_4 + C_3C_4C_5R_3R_4R_5\right.}{s^4\left(4C_2C_3C_4C_5R_2R_3R_4 + 2C_2C_3C_4C_5R_2R_3R_5 + C_2C_3C_4C_5R_2R_4R_5\right) + s^3\left(2C_2C_3C_4R_2R_3 + C_2C_3C_4R_2R_4 + 4C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_5 + 4C_2C_4C_5R_2R_4 + 2C_2C_4C_5R_2R_5 + 2C_3C_4C_5R_2R_3R_4g_m + 2C_3C_4C_5R_2R_3R_5g_m + 2C_3C_4C_5R_2R_3 + C_3C_4C_5R_2R_4R_5\right.}$$

9.104 X-INVALID-ORDER-104 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_2R_3R_4R_5g_m - C_2R_2R_3R_4 + C_2R_3R_4R_5\right)}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s\left(2C_2R_2R_3R_4g_m + 2C_2R_2R_3R_5g_m + 2C_2R_2R_3 + C_2R_2R_4R_5g_m + C_2R_2R_4 + 4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5\right)}$$

9.105 X-INVALID-ORDER-105 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{1}{C_4s},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3s^2 + R_3g_m + s\left(C_2R_2R_3g_m + C_2R_3 - C_5R_3\right)}{2C_2C_4C_5R_2R_3s^3 + g_m + s^2\left(2C_2C_4R_2R_3g_m + 2C_2C_4R_3 + 2C_2C_5R_2R_3g_m + C_2C_5R_2 + 4C_2C_5R_3 + 2C_4C_5R_3\right) + s\left(C_2R_2g_m + C_2 + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

9.106 X-INVALID-ORDER-106 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{1}{C_4s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_5s^2 + R_3R_5g_m - R_3 + s\left(C_2R_2R_3R_5g_m - C_2R_2R_3 + C_2R_3R_5 - C_5R_3R_5\right)}{2C_2C_4C_5R_2R_3R_5s^3 + 2R_3g_m + R_5g_m + s^2\left(2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + 2C_2C_4R_3R_5 + 2C_2C_5R_2R_3R_5g_m + C_2C_5R_2R_5 + 4C_2C_5R_3R_5 + 2C_4C_5R_3R_5\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_5g_m + C_2R_2 + 4C_2R_3 + C_2R_5 + 2C_4R_3R_5g_m + 2C_4R_3 + 2C_5R_3R_5g_m + C_5\right.}$$

9.107 X-INVALID-ORDER-107 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^2\left(C_2C_5R_2R_3R_5g_m - C_2C_5R_2R_3 + C_2C_5R_3R_5\right) + s\left(C_2R_2R_3g_m + C_2R_3 + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(2C_2C_4C_5R_2R_3R_5g_m + 2C_2C_4C_5R_2R_3 + 2C_2C_4C_5R_3R_5\right) + s^2\left(2C_2C_4R_2R_3g_m + 2C_2C_4R_3 + 2C_2C_5R_2R_3g_m + C_2C_5R_2R_5g_m + C_2C_5R_2 + 4C_2C_5R_3 + C_2C_5R_5 + 2C_4C_5R_3R_5g_m + 2C_4C_5R_3\right) + s\left(C_2R_2g_m + C_2 + 2C_4R_3g_m + 2C_5R_3g_m + C_5R_5g_m + C_5\right)}$$

9.108 X-INVALID-ORDER-108 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4s^2 + R_3R_4g_m + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 - C_5R_3R_4\right)}{2C_2C_4C_5R_2R_3R_4s^3 + 2R_3g_m + R_4g_m + s^2\left(2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + 2C_4C_5R_3R_4\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_4g_m + 2C_2R_3 + C_2R_4 + 2C_4R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

9.109 X-INVALID-ORDER-109 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4R_5s^2 + R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_2R_3R_4R_5g_m - C_2R_2R_3R_4 + C_2R_3R_4R_5 - C_5R_3R_4R_5\right.}{2C_2C_4C_5R_2R_3R_4R_5s^3 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(2C_2C_4R_2R_3R_4R_5g_m + 2C_2C_4R_2R_3R_4 + 2C_2C_4R_3R_4R_5 + 2C_2C_5R_2R_3R_4R_5g_m + 2C_2C_5R_2R_3R_5 + C_2C_5R_2R_4R_5 + 4C_2C_5R_3R_4R_5 + 2C_4C_5R_3R_4R_5\right) + s\left(2C_2R_2R_3R_4g_m + 2C_2R_2R_3\right.}$$

9.110 X-INVALID-ORDER-110 $Z(s) = \left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ \frac{R_4}{C_4R_4s+1},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^2\left(C_2C_5R_2R_3R_4R_5g_m - C_2C_5R_2R_3R_4 + C_2C_5R_3R_4R_5\right) + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 + C_5R_3R_4R_5\right.}{2R_3g_m + R_4g_m + s^3\left(2C_2C_4C_5R_2R_3R_4R_5g_m + 2C_2C_4C_5R_2R_3R_4 + 2C_2C_4C_5R_3R_4R_5\right) + s^2\left(2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3R_5g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4R_5g_m + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5 - \right.}$$

9.111 X-INVALID-ORDER-111 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_4C_5R_2R_3R_4s^3 + R_3g_m + s^2\left(C_2C_4R_2R_3R_4g_m + C_2C_4R_3R_4 - C_2C_5R_2R_3 - C_4C_5R_3R_4\right) + s\left(C_2R_2R_3g_m + C_2R_3 + C_4R_3R_4g_m - C_5R_3\right)}{g_m + s^3\left(2C_2C_4C_5R_2R_3R_4g_m + 2C_2C_4C_5R_2R_3 + C_2C_4C_5R_2R_4 + 4C_2C_4C_5R_3R_4\right) + s^2\left(2C_2C_4R_2R_3g_m + C_2C_4R_2R_4g_m + 2C_2C_4R_3 + C_2C_4R_4 + 2C_2C_5R_2R_3g_m + C_2C_5R_2 + 4C_2C_5R_3 + 2C_4C_5R_3R_4g_m + 2C_4C_5R_3 + C_4C_5R_4\right) + s\left(C_2R_2g_m + C_2 + 2C_4R_3g_m +\right.}$$

9.112 X-INVALID-ORDER-112 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_4C_5R_2R_3R_4R_5s^3 + R_3R_5g_m - R_3 + s^2\left(C_2C_4R_2R_3R_4R_5g_m - C_2C_4R_2R_3R_4 + C_2C_4R_3R_4R_5 - C_2C_5R_2R_3R_5 - C_4C\right.}{2R_3g_m + R_5g_m + s^3\left(2C_2C_4C_5R_2R_3R_4R_5g_m + 2C_2C_4C_5R_2R_3R_5 + C_2C_4C_5R_2R_4R_5 + 4C_2C_4C_5R_3R_4R_5\right) + s^2\left(2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + C_2C_4R_2R_4R_5g_m + C_2C_4R_2R_4 + 4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C_4R_4R_5 + 2C_2C_5R_2R_3R_5\right.}$$

9.113 X-INVALID-ORDER-113 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^3\left(C_2C_4C_5R_2R_3R_4R_5g_m - C_2C_4C_5R_2R_3R_4 + C_2C_4C_5R_3R_4R_5\right) + s^2\left(C_2C_4R_2R_3R_4g_m + C_2C_4R_3R_4 + C_2C_5R_2R_3R_5g_m - C_2C_5R_2R_3 + C_2C_5R_3R_5 + C_4C_5\right.}{g_m + s^3\left(2C_2C_4C_5R_2R_3R_4g_m + 2C_2C_4C_5R_2R_3R_5g_m + 2C_2C_4C_5R_2R_3 + C_2C_4C_5R_2R_4R_5g_m + C_2C_4C_5R_2R_4 + 4C_2C_4C_5R_3R_4 + 2C_2C_4C_5R_3R_5 + C_2C_4C_5R_4R_5\right) + s^2\left(2C_2C_4R_2R_3g_m + C_2C_4R_2R_4g_m + 2C_2C_4R_3 + C_2C_4R_4 + 2C_2C_5R_2R_3g_m + C_2C_5R_2R_5g_m +\right.}$$

9.114 X-INVALID-ORDER-114 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_4s^2 + R_4g_m + s\left(C_2R_2R_4g_m + C_2R_4 - C_5R_4\right)}{C_2C_3C_5R_2R_4s^3 + 2g_m + s^2\left(C_2C_3R_2R_4g_m + C_2C_3R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2 + 4C_2C_5R_4 + C_3C_5R_4\right) + s\left(2C_2R_2g_m + 2C_2 + C_3R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

9.115 X-INVALID-ORDER-115 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_4R_5s^2 + R_4R_5g_m - R_4 + s\left(C_2R_2R_4R_5g_m - C_2R_2R_4 + C_2R_4R_5 - C_5R_4R_5\right)}{C_2C_3C_5R_2R_4R_5s^3 + 2R_4g_m + 2R_5g_m + s^2\left(C_2C_3R_2R_4R_5g_m + C_2C_3R_2R_4 + C_2C_3R_4R_5 + 2C_2C_5R_2R_4R_5g_m + 2C_2C_5R_2R_5 + 4C_2C_5R_4R_5 + C_3C_5R_4R_5\right) + s\left(2C_2R_2R_4g_m + 2C_2R_2R_5g_m + 2C_2R_2 + 4C_2R_4 + 2C_2R_5 + C_3R_4R_5g_m + C_3R_4 + 2C_5R_4R_5g_m + 2C_5R\right.}$$

9.116 X-INVALID-ORDER-116 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s^2\left(C_2C_5R_2R_4R_5g_m - C_2C_5R_2R_4 + C_2C_5R_4R_5\right) + s\left(C_2R_2R_4g_m + C_2R_4 + C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^3\left(C_2C_3C_5R_2R_4R_5g_m + C_2C_3C_5R_2R_4 + C_2C_3C_5R_4R_5\right) + s^2\left(C_2C_3R_2R_4g_m + C_2C_3R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2R_5g_m + 2C_2C_5R_2 + 4C_2C_5R_4 + 2C_2C_5R_5 + C_3C_5R_4R_5g_m + C_3C_5R_4\right) + s\left(2C_2R_2g_m + 2C_2 + C_3R_4g_m + 2C_5R_4g_m + 2C_5R_5g_m + 2C_5\right)}$$

9.117 X-INVALID-ORDER-117 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2s^2 + g_m + s\left(C_2R_2g_m + C_2 - C_5\right)}{s^3\left(C_2C_3C_5R_2 + 2C_2C_4C_5R_2\right) + s^2\left(C_2C_3R_2g_m + C_2C_3 + 2C_2C_4R_2g_m + 2C_2C_4 + 2C_2C_5R_2g_m + 4C_2C_5 + C_3C_5 + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.118 X-INVALID-ORDER-118 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_5s^2 + R_5g_m + s\left(C_2R_2R_5g_m - C_2R_2 + C_2R_5 - C_5R_5\right) - 1}{2g_m + s^3\left(C_2C_3C_5R_2R_5 + 2C_2C_4C_5R_2R_5\right) + s^2\left(C_2C_3R_2R_5g_m + C_2C_3R_2 + C_2C_3R_5 + 2C_2C_4R_2R_5g_m + 2C_2C_4R_2 + 2C_2C_4R_5 + 2C_2C_5R_2R_5g_m + 4C_2C_5R_5 + C_3C_5R_5 + 2C_4C_5R_5\right) + s\left(2C_2R_2g_m + 4C_2 + C_3R_5g_m + C_3 + 2C_4R_5g_m + 2C_4 + 2C_5R_5g_m\right)}$$

9.119 X-INVALID-ORDER-119 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^2\left(C_2C_5R_2R_5g_m - C_2C_5R_2 + C_2C_5R_5\right) + s\left(C_2R_2g_m + C_2 + C_5R_5g_m - C_5\right)}{s^3\left(C_2C_3C_5R_2R_5g_m + C_2C_3C_5R_2 + C_2C_3C_5R_5 + 2C_2C_4C_5R_2R_5g_m + 2C_2C_4C_5R_2 + 2C_2C_4C_5R_5\right) + s^2\left(C_2C_3R_2g_m + C_2C_3 + 2C_2C_4R_2g_m + 2C_2C_4 + 2C_2C_5R_2g_m + 4C_2C_5 + C_3C_5R_5g_m + C_3C_5 + 2C_4C_5R_5g_m + 2C_4C_5\right) + s\left(C_3g_m + 2C_4g_m + 2C_5g_m\right)}$$

9.120 X-INVALID-ORDER-120 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4R_4s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_4s^2 + R_4g_m + s\left(C_2R_2R_4g_m + C_2R_4 - C_5R_4\right)}{2g_m + s^3\left(C_2C_3C_5R_2R_4 + 2C_2C_4C_5R_2R_4\right) + s^2\left(C_2C_3R_2R_4g_m + C_2C_3R_4 + 2C_2C_4R_2R_4g_m + 2C_2C_4R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2 + 4C_2C_5R_4 + C_3C_5R_4 + 2C_4C_5R_4\right) + s\left(2C_2R_2g_m + 2C_2 + C_3R_4g_m + 2C_4R_4g_m + 2C_5R_4g_m + 2C_5\right)}$$

9.121 X-INVALID-ORDER-121 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_4R_5s^2 + R_4R_5g_m - R_4 + s\left(C_2R_2R_4R_5g_m - C_2R_2R_4 + C_2R_4R_5 - C_5R_4R_5\right)}{2R_4g_m + 2R_5g_m + s^3\left(C_2C_3C_5R_2R_4R_5 + 2C_2C_4C_5R_2R_4R_5\right) + s^2\left(C_2C_3R_2R_4R_5g_m + C_2C_3R_2R_4 + C_2C_3R_4R_5 + 2C_2C_4R_2R_4R_5g_m + 2C_2C_4R_2R_4 + 2C_2C_4R_4R_5 + 2C_2C_5R_2R_4R_5g_m + 2C_2C_5R_2R_5 + 4C_2C_5R_4R_5 + C_3C_5R_4R_5 + 2C_4C_5R_4R_5\right) + s\left(2C_2R_2R_4g_m\right.}$$

9.122 X-INVALID-ORDER-122 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s^2\left(C_2C_5R_2R_4R_5g_m - C_2C_5R_2R_4 + C_2C_5R_4R_5\right) + s\left(C_2R_2R_4g_m + C_2R_4 + C_5R_4R_5g_m - C_5R_4\right)}{2g_m + s^3\left(C_2C_3C_5R_2R_4R_5g_m + C_2C_3C_5R_2R_4 + C_2C_3C_5R_4R_5 + 2C_2C_4C_5R_2R_4R_5g_m + 2C_2C_4C_5R_2R_4 + 2C_2C_4C_5R_4R_5\right) + s^2\left(C_2C_3R_2R_4g_m + C_2C_3R_4 + 2C_2C_4R_2R_4g_m + 2C_2C_4R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2R_5g_m + 2C_2C_5R_2 + 4C_2C_5R_4 + 2C_2C_5R_5 + C\right.}$$

9.123 X-INVALID-ORDER-123 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^2\left(C_2C_4R_2R_4R_5g_m - C_2C_4R_2R_4 + C_2C_4R_4R_5\right) + s\left(C_2R_2R_5g_m - C_2R_2 + C_2R_5 + C_4R_4R_5g_m - C_4R_4\right) - 1}{2g_m + s^3\left(C_2C_3C_4R_2R_4R_5g_m + C_2C_3C_4R_2R_4 + C_2C_3C_4R_4R_5\right) + s^2\left(C_2C_3R_2R_5g_m + C_2C_3R_2 + C_2C_3R_5 + 2C_2C_4R_2R_4g_m + 2C_2C_4R_2R_5g_m + 2C_2C_4R_2 + 4C_2C_4R_4 + 2C_2C_4R_5 + C_3C_4R_4R_5g_m + C_3C_4R_4\right) + s\left(2C_2R_2g_m + 4C_2 + C_3R_5g_m + C_3 + 2C_4R_4g_m + \right.}$$

9.124 X-INVALID-ORDER-124 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_4C_5R_2R_4s^3 + g_m + s^2\left(C_2C_4R_2R_4g_m + C_2C_4R_4 - C_2C_5R_2 - C_4C_5R_4\right) + s\left(C_2R_2g_m + C_2 + C_4R_4g_m - C_5\right)}{C_2C_3C_4C_5R_2R_4s^4 + s^3\left(C_2C_3C_4R_2R_4g_m + C_2C_3C_4R_4 + C_2C_3C_5R_2 + 2C_2C_4C_5R_2R_4g_m + 2C_2C_4C_5R_2 + 4C_2C_4C_5R_4 + C_3C_4C_5R_4\right) + s^2\left(C_2C_3R_2g_m + C_2C_3 + 2C_2C_4R_2g_m + 2C_2C_4 + 2C_2C_5R_2g_m + 4C_2C_5 + C_3C_4R_4g_m + C_3C_5 + 2C_4C_5R_4g_m + 2C_4C_5\right) + s\left(\right.}$$

9.125 X-INVALID-ORDER-125 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_4C_5R_2R_4R_5s^3 + R_5g_m + s^2\left(C_2C_4R_2R_4R_5g_m - C_2C_4R_2R_4 + C_2C_4R_4R_5 - C_2C_5R_2R_5 - C_4C_5R_4R_5\right) +}{C_2C_3C_4C_5R_2R_4R_5s^4 + 2g_m + s^3\left(C_2C_3C_4R_2R_4R_5g_m + C_2C_3C_4R_2R_4 + C_2C_3C_4R_4R_5 + C_2C_3C_5R_2R_5 + 2C_2C_4C_5R_2R_4R_5g_m + 2C_2C_4C_5R_2R_5 + 4C_2C_4C_5R_4R_5 + C_3C_4C_5R_4R_5\right) + s^2\left(C_2C_3R_2R_5g_m + C_2C_3R_2 + C_2C_3R_5 + 2C_2C_4R_2R_4g_m + 2C_2C_4R_2R_5g_m + \right.}$$

9.126 X-INVALID-ORDER-126 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3\left(C_2C_4C_5R_2R_4R_5g_m - C_2C_4C_5R_2R_4 + C_2C_4C_5R_4R_5\right) + s^2\left(C_2C_4R_2R_4g_m + C_2C_4R_4 + C_2C_5R_2R_5g_m - C_2C_5R_2 + C_2C_5R_5 + C_4C_5\right.}{s^4\left(C_2C_3C_4C_5R_2R_4R_5g_m + C_2C_3C_4C_5R_2R_4 + C_2C_3C_4C_5R_4R_5\right) + s^3\left(C_2C_3C_4R_2R_4g_m + C_2C_3C_4R_4 + C_2C_3C_5R_2R_5g_m + C_2C_3C_5R_2 + C_2C_3C_5R_5 + 2C_2C_4C_5R_2R_4g_m + 2C_2C_4C_5R_2R_5g_m + 2C_2C_4C_5R_2 + 4C_2C_4C_5R_4 + 2C_2C_4C_5R_5 + C_3C_4C_5R_4R_5g_m + C_3C\right.}$$

9.127 X-INVALID-ORDER-127 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4s^2 + R_3R_4g_m + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 - C_5R_3R_4\right)}{C_2C_3C_5R_2R_3R_4s^3 + 2R_3g_m + R_4g_m + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + C_3C_5R_3R_4\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_4g_m + 2C_2R_3 + C_2R_4 + C_3R_3R_4g_m + 2C_5R_3R_4g_m + 2C_5R_3 + C_5R_4\right)}$$

9.128 X-INVALID-ORDER-128 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4R_5s^2 + R_3R_4R_5g_m - R_3R_4 + s\left(C_2R_2R_3R_4R_5g_m - C_2R_2R_3R_4 + C_2R_3R_4R_5 - C_5R_3R_4R_5\right)}{C_2C_3C_5R_2R_3R_4R_5s^3 + 2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^2\left(C_2C_3R_2R_3R_4R_5g_m + C_2C_3R_2R_3R_4 + C_2C_3R_3R_4R_5 + 2C_2C_5R_2R_3R_4R_5g_m + 2C_2C_5R_2R_3R_5 + C_2C_5R_2R_4R_5 + 4C_2C_5R_3R_4R_5 + C_3C_5R_3R_4R_5\right) + s\left(2C_2R_2R_3R_4g_m + 2C_2R_2R_3R_5g_m\right.}$$

9.129 X-INVALID-ORDER-129 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^2\left(C_2C_5R_2R_3R_4R_5g_m - C_2C_5R_2R_3R_4 + C_2C_5R_3R_4R_5\right) + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 + C_5R_3R_4R_5g_m -\right.}{2R_3g_m + R_4g_m + s^3\left(C_2C_3C_5R_2R_3R_4R_5g_m + C_2C_3C_5R_2R_3R_4 + C_2C_3C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3R_5g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4R_5g_m + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5 + C_3C\right.}$$

9.130 X-INVALID-ORDER-130 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3s^2 + R_3g_m + s\left(C_2R_2R_3g_m + C_2R_3 - C_5R_3\right)}{g_m + s^3\left(C_2C_3C_5R_2R_3 + 2C_2C_4C_5R_2R_3\right) + s^2\left(C_2C_3R_2R_3g_m + C_2C_3R_3 + 2C_2C_4R_2R_3g_m + 2C_2C_4R_3 + 2C_2C_5R_2R_3g_m + C_2C_5R_2 + 4C_2C_5R_3 + C_3C_5R_3 + 2C_4C_5R_3\right) + s\left(C_2R_2g_m + C_2 + C_3R_3g_m + 2C_4R_3g_m + 2C_5R_3g_m + C_5\right)}$$

9.131 X-INVALID-ORDER-131 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_5s^2 + R_3R_5g_m - R_3 + s\left(C_2R_2R_3R_5g_m - C_2R_2R_3 + C_2R_3R_5 - C_5R_3R_5\right)}{2R_3g_m + R_5g_m + s^3\left(C_2C_3C_5R_2R_3R_5 + 2C_2C_4C_5R_2R_3R_5\right) + s^2\left(C_2C_3R_2R_3R_5g_m + C_2C_3R_2R_3 + C_2C_3R_3R_5 + 2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + 2C_2C_4R_3R_5 + 2C_2C_5R_2R_3R_5g_m + C_2C_5R_2R_5 + 4C_2C_5R_3R_5 + C_3C_5R_3R_5 + 2C_4C_5R_3R_5\right) + s\left(2C_2R_2R_3g_m + \right.}$$

9.132 X-INVALID-ORDER-132 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^2\left(C_2C_5R_2R_3R_5g_m - C_2C_5R_2R_3 + C_2C_5R_3R_5\right) + s\left(C_2R_2R_3g_m + C_2R_3 + C_5R_3R_5g_m - C_5R_3\right)}{g_m + s^3\left(C_2C_3C_5R_2R_3R_5g_m + C_2C_3C_5R_2R_3 + C_2C_3C_5R_3R_5 + 2C_2C_4C_5R_2R_3R_5g_m + 2C_2C_4C_5R_2R_3 + 2C_2C_4C_5R_3R_5\right) + s^2\left(C_2C_3R_2R_3g_m + C_2C_3R_3 + 2C_2C_4R_2R_3g_m + 2C_2C_4R_3 + 2C_2C_5R_2R_3g_m + C_2C_5R_2R_5g_m + C_2C_5R_2 + 4C_2C_5R_3 + C_2C_5R_5 + C_3C_5\right.}$$

9.133 X-INVALID-ORDER-133 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4s^2 + R_3R_4g_m + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^3\left(C_2C_3C_5R_2R_3R_4 + 2C_2C_4C_5R_2R_3R_4\right) + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 + 2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + C_3C_5R_3R_4 + 2C_4C_5R_3R_4\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_4g_m + \right.}$$

9.134 X-INVALID-ORDER-134 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_5R_2R_3R_4R_5s^2 + R_3R_4R_5g_m - R_3R_4 +}{2R_3R_4g_m + 2R_3R_5g_m + 2R_3 + R_4R_5g_m + R_4 + s^3\left(C_2C_3C_5R_2R_3R_4R_5 + 2C_2C_4C_5R_2R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_4R_5g_m + C_2C_3R_2R_3R_4 + C_2C_3R_3R_4R_5 + 2C_2C_4R_2R_3R_4R_5g_m + 2C_2C_4R_2R_3R_4 + 2C_2C_4R_3R_4R_5 + 2C_2C_5R_2R_3R_4R_5g_m + 2C_2C_5R_2R_3R_5 + C_2\right.}$$

9.135 X-INVALID-ORDER-135 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^2\left(C_2C_5R_2R_3R_4R_5g_m - C_2\right.}{2R_3g_m + R_4g_m + s^3\left(C_2C_3C_5R_2R_3R_4R_5g_m + C_2C_3C_5R_2R_3R_4 + C_2C_3C_5R_3R_4R_5 + 2C_2C_4C_5R_2R_3R_4R_5g_m + 2C_2C_4C_5R_2R_3R_4 + 2C_2C_4C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 + 2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_3R_4 + 2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3R\right.}$$

9.136 X-INVALID-ORDER-136 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_2C_4R_2R_3R_4R_5g_m - C_2C_4R_2R_3R_4 + C_2C_4R_3R_4R_5\right) + s\left(C_2R_2R_3R_5g_m - C_2R_2R_3 + C\right.}{2R_3g_m + R_5g_m + s^3\left(C_2C_3C_4R_2R_3R_4R_5g_m + C_2C_3C_4R_2R_3R_4 + C_2C_3C_4R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_5g_m + C_2C_3R_2R_3 + C_2C_3R_3R_5 + 2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + C_2C_4R_2R_4R_5g_m + C_2C_4R_2R_4 + 4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C\right.}$$

9.137 X-INVALID-ORDER-137 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_4C_5R_2R_3R_4s^3 + R_3g_m + s^2\left(C_2C_4R_2R_3R_4g_m + C_2C_4R_3R_4 - C_2C_5R_2R_3 - C_4C_5R_3R_4\right) + s\left(C_2R_2\right.}{C_2C_3C_4C_5R_2R_3R_4s^4 + g_m + s^3\left(C_2C_3C_4R_2R_3R_4g_m + C_2C_3C_4R_3R_4 + C_2C_3C_5R_2R_3 + 2C_2C_4C_5R_2R_3R_4g_m + 2C_2C_4C_5R_2R_3 + C_2C_4C_5R_2R_4 + 4C_2C_4C_5R_3R_4 + C_3C_4C_5R_3R_4\right) + s^2\left(C_2C_3R_2R_3g_m + C_2C_3R_3 + 2C_2C_4R_2R_3g_m + C_2C_4R_2R_4g_m + 2C_2C_4R_3 + C\right.}$$

9.138 X-INVALID-ORDER-138 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{}{C_2C_3C_4C_5R_2R_3R_4R_5s^4 + 2R_3g_m + R_5g_m + s^3\left(C_2C_3C_4R_2R_3R_4R_5g_m + C_2C_3C_4R_2R_3R_4 + C_2C_3C_4R_3R_4R_5 + C_2C_3C_5R_2R_3R_5 + 2C_2C_4C_5R_2R_3R_4R_5g_m + 2C_2C_4C_5R_2R_3R_5 + C_2C_4C_5R_2R_4R_5 + 4C_2C_4C_5R_3R_4R_5 + C_3C_4C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_5g_m + \right.}$$

9.139 X-INVALID-ORDER-139 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ \frac{R_3}{C_3 R_3 s+1},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_3g_m + s^3\left(C_2C_4C_5\right.}{g_m + s^4\left(C_2C_3C_4C_5R_2R_3R_4R_5g_m + C_2C_3C_4C_5R_2R_3R_4 + C_2C_3C_4C_5R_3R_4R_5\right) + s^3\left(C_2C_3C_4R_2R_3R_4g_m + C_2C_3C_4R_3R_4 + C_2C_3C_5R_2R_3R_5g_m + C_2C_3C_5R_2R_3 + C_2C_3C_5R_3R_5 + 2C_2C_4C_5R_2R_3R_4g_m + 2C_2C_4C_5R_2R_3R_5g_m + 2C_2C_4C_5R_2R_3 + C_2C_4C_5R_2R_4R_5\right.}$$

9.140 X-INVALID-ORDER-140 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_5R_2R_3R_4s^3 + R_4g_m + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 - C_2C_5R_2R_4 - C_3C_5R_3R_4\right) + s\left(C_2R_2R_4g_m + C_2R_4 + C_3R_3R_4g_m - C_5R_4\right)}{2g_m + s^3\left(2C_2C_3C_5R_2R_3R_4g_m + 2C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_4 + 4C_2C_3C_5R_3R_4\right) + s^2\left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_4g_m + 2C_2C_3R_3 + C_2C_3R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2 + 4C_2C_5R_4 + 2C_3C_5R_3R_4g_m + 2C_3C_5R_3 + C_3C_5R_4\right) + s\left(2C_2R_2g_m + 2C_2 + 2C_3R_3\right.}$$

9.141 X-INVALID-ORDER-141 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_5R_2R_3R_4R_5s^3 + R_4R_5g_m - R_4 + s^2\left(C_2C_3R_2R_3R_4R_5g_m - C_2C_3R_2R_3R_4 + C_2C_3R_3R_4R_5 - C_2C_5R_2R_4R_5 - \right.}{2R_4g_m + 2R_5g_m + s^3\left(2C_2C_3C_5R_2R_3R_4R_5g_m + 2C_2C_3C_5R_2R_3R_5 + C_2C_3C_5R_2R_4R_5 + 4C_2C_3C_5R_3R_4R_5\right) + s^2\left(2C_2C_3R_2R_3R_4g_m + 2C_2C_3R_2R_3R_5g_m + 2C_2C_3R_2R_3 + C_2C_3R_2R_4R_5g_m + C_2C_3R_2R_4 + 4C_2C_3R_3R_4 + 2C_2C_3R_3R_5 + C_2C_3R_4R_5 + 2C_2C_5R_2R_4R\right.}$$

9.142 X-INVALID-ORDER-142 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m + s^3\left(C_2C_3C_5R_2R_3R_4R_5g_m - C_2C_3C_5R_2R_3R_4 + C_2C_3C_5R_3R_4R_5\right) + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 + C_2C_5R_2R_4R_5g_m - C_2C_5R_2R_4 + C_2C_5R_4R_5 + C\right.}{2g_m + s^3\left(2C_2C_3C_5R_2R_3R_4g_m + 2C_2C_3C_5R_2R_3R_5g_m + 2C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_4R_5g_m + C_2C_3C_5R_2R_4 + 4C_2C_3C_5R_3R_4 + 2C_2C_3C_5R_3R_5 + C_2C_3C_5R_4R_5\right) + s^2\left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_4g_m + 2C_2C_3R_3 + C_2C_3R_4 + 2C_2C_5R_2R_4g_m + 2C_2C_5R_2R_5g_m\right.}$$

9.143 X-INVALID-ORDER-143 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5g_m + s^2\left(C_2C_3R_2R_3R_5g_m - C_2C_3R_2R_3 + C_2C_3R_3R_5\right) + s\left(C_2R_2R_5g_m - C_2R_2 + C_2R_5 + C_3R_3R_5g_m - C_3R_3\right) - 1}{2g_m + s^3\left(2C_2C_3C_4R_2R_3R_5g_m + 2C_2C_3C_4R_2R_3 + 2C_2C_3C_4R_3R_5\right) + s^2\left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_5g_m + C_2C_3R_2 + 4C_2C_3R_3 + C_2C_3R_5 + 2C_2C_4R_2R_5g_m + 2C_2C_4R_2 + 2C_2C_4R_5 + 2C_3C_4R_3R_5g_m + 2C_3C_4R_3\right) + s\left(2C_2R_2g_m + 4C_2 + 2C_3R_3g_m + C_3R_5g_m + \right.}$$

9.144 X-INVALID-ORDER-144 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_5R_2R_3s^3 + g_m + s^2\left(C_2C_3R_2R_3g_m + C_2C_3R_3 - C_2C_5R_2 - C_3C_5R_3\right) + s\left(C_2R_2g_m + C_2 + C_3R_3g_m - C_5\right)}{2C_2C_3C_4C_5R_2R_3s^4 + s^3\left(2C_2C_3C_4R_2R_3g_m + 2C_2C_3C_4R_3 + 2C_2C_3C_5R_2R_3g_m + C_2C_3C_5R_2 + 4C_2C_3C_5R_3 + 2C_2C_4C_5R_2 + 2C_3C_4C_5R_3\right) + s^2\left(C_2C_3R_2g_m + C_2C_3 + 2C_2C_4R_2g_m + 2C_2C_4 + 2C_2C_5R_2g_m + 4C_2C_5 + 2C_3C_4R_3g_m + 2C_3C_5R_3g_m + C_3C_5 + 2C_4C_5\right.}$$

9.145 X-INVALID-ORDER-145 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_5R_2R_3R_5s^3 + R_5g_m + s^2\left(C_2C_3R_2R_3R_5g_m - C_2C_3R_2R_3 + C_2C_3R_3R_5 - C_2C_5R_2R_5 - C_3C_5R_3R\right.}{2C_2C_3C_4C_5R_2R_3R_5s^4 + 2g_m + s^3\left(2C_2C_3C_4R_2R_3R_5g_m + 2C_2C_3C_4R_2R_3 + 2C_2C_3C_4R_3R_5 + 2C_2C_3C_5R_2R_3R_5g_m + C_2C_3C_5R_2R_5 + 4C_2C_3C_5R_3R_5 + 2C_2C_4C_5R_2R_5 + 2C_3C_4C_5R_3R_5\right) + s^2\left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_5g_m + C_2C_3R_2 + 4C_2C_3R_3 + C_2C_3R_5 + \right.}$$

9.146 X-INVALID-ORDER-146 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^3\left(C_2C_3C_5R_2R_3R_5g_m - C_2C_3C_5R_2R_3 + C_2C_3C_5R_3R_5\right) + s^2\left(C_2C_3R_2R_3g_m + C_2C_3R_3 + C_2C_5R_2R_5g_m - C_2C_5R_2 + C_2C_5R_5 + \right.}{s^4\left(2C_2C_3C_4C_5R_2R_3R_5g_m + 2C_2C_3C_4C_5R_2R_3 + 2C_2C_3C_4C_5R_3R_5\right) + s^3\left(2C_2C_3C_4R_2R_3g_m + 2C_2C_3C_4R_3 + 2C_2C_3C_5R_2R_3g_m + C_2C_3C_5R_2R_5g_m + C_2C_3C_5R_2 + 4C_2C_3C_5R_3 + C_2C_3C_5R_5 + 2C_2C_4C_5R_2R_5g_m + 2C_2C_4C_5R_2 + 2C_2C_4C_5R_5 + 2C_3C_4C_5R_3R_5g_m\right.}$$

9.147 X-INVALID-ORDER-147 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^2\left(C_2C_3R_2R_3R_4R_5g_m - C_2C_3R_2R_3R_4 + C_2C_3R_3R_4R_5\right) + s\left(C_2R_2R_4R_5g_m - C_2R\right.}{2R_4g_m + 2R_5g_m + s^3\left(2C_2C_3C_4R_2R_3R_4R_5g_m + 2C_2C_3C_4R_2R_3R_4 + 2C_2C_3C_4R_3R_4R_5\right) + s^2\left(2C_2C_3R_2R_3R_4g_m + 2C_2C_3R_2R_3R_5g_m + 2C_2C_3R_2R_3 + C_2C_3R_2R_4R_5g_m + C_2C_3R_2R_4 + 4C_2C_3R_3R_4 + 2C_2C_3R_3R_5 + C_2C_3R_4R_5 + 2C_2C_4R_2R_4R_5g_m + 2C_2C_4R_2R_4\right.}$$

9.148 X-INVALID-ORDER-148 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_5R_2R_3R_4s^3 + R_4g_m + s^2\left(C_2C_3R_2R_3R_4g_m + C_2C_3R_3R_4 - C_2C_5R_2R_4 - C_3C_5R_3R_4\right) + s}{2C_2C_3C_4C_5R_2R_3R_4s^4 + 2g_m + s^3\left(2C_2C_3C_4R_2R_3R_4g_m + 2C_2C_3C_4R_3R_4 + 2C_2C_3C_5R_2R_3R_4g_m + 2C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_4 + 4C_2C_3C_5R_3R_4 + 2C_2C_4C_5R_2R_4 + 2C_3C_4C_5R_3R_4\right) + s^2\left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_4g_m + 2C_2C_3R_3 + C_2C_3R_4 + 2C_2C_4R_2R\right.}$$

9.149 X-INVALID-ORDER-149 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ \frac{R_5}{C_5 R_5 s+1},\ \infty\right)$

$$H(s) = \frac{}{2C_2C_3C_4C_5R_2R_3R_4R_5s^4 + 2R_4g_m + 2R_5g_m + s^3\left(2C_2C_3C_4R_2R_3R_4R_5g_m + 2C_2C_3C_4R_2R_3R_4 + 2C_2C_3C_4R_3R_4R_5 + 2C_2C_3C_5R_2R_3R_4R_5g_m + 2C_2C_3C_5R_2R_3R_5 + C_2C_3C_5R_2R_4R_5 + 4C_2C_3C_5R_3R_4R_5 + 2C_2C_4C_5R_2R_4R_5 + 2C_3C_4C_5R_3R_4R_5\right) + s^2\left(2C_2C_3R_2R\right.}$$

9.150 X-INVALID-ORDER-150 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ \frac{R_4}{C_4 R_4 s+1},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{R_4g_m}{2g_m + s^4\left(2C_2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_2C_3C_4C_5R_2R_3R_4 + 2C_2C_3C_4C_5R_3R_4R_5\right) + s^3\left(2C_2C_3C_4R_2R_3R_4g_m + 2C_2C_3C_4R_3R_4 + 2C_2C_3C_5R_2R_3R_4g_m + 2C_2C_3C_5R_2R_3R_5g_m + 2C_2C_3C_5R_2R_3 + C_2C_3C_5R_2R_4R_5g_m + C_2C_3C_5R_2R_4 + 4C_2C_3C_5R_3R_4 + 2C_2C_3C_5\right.}$$

9.151 X-INVALID-ORDER-151 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_5 g_m + s^3 \left(C_2C_3C_4R_2R_3R_4R_5g_m - C_2C_3C_4R_2R_3R_4 + C_2C_3C_4R_3R_4R_5\right) + s^2 \left(C_2C_3R_2R_3R_5g_m - C_2C_3R_2R_3 + C_2C_3R_3R_5 + C_2C_4R_2R_4R_5g_m - C_2C_4R_2R_4 + C_2C_4R_4R_5\right.}{2g_m + s^3 \left(2C_2C_3C_4R_2R_3R_4g_m + 2C_2C_3C_4R_2R_3R_5g_m + 2C_2C_3C_4R_2R_3 + C_2C_3C_4R_2R_4R_5g_m + C_2C_3C_4R_2R_4 + 4C_2C_3C_4R_3R_4 + 2C_2C_3C_4R_3R_5 + C_2C_3C_4R_4R_5\right) + s^2 \left(2C_2C_3R_2R_3g_m + C_2C_3R_2R_5g_m + C_2C_3R_2 + 4C_2C_3R_3 + C_2C_3R_5 + 2C_2C_4R_2R_4g_m + 2C_2\right.}$$

9.152 X-INVALID-ORDER-152 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_4C_5R_2R_3R_4s^4 + g_m + s^3 \left(C_2C_3C_4R_2R_3R_4g_m + C_2C_3C_4R_3R_4 - C_2C_3C_5R_2R_3 - C_2C_4C_5R_2R_4 - C_3C_4C_5R_3R_4\right) + s^2 \left(C_2C_3R_2R_3g_m + C_2C_3R_3 +\right.}{s^4 \left(2C_2C_3C_4C_5R_2R_3R_4g_m + 2C_2C_3C_4C_5R_2R_3 + C_2C_3C_4C_5R_2R_4 + 4C_2C_3C_4C_5R_3R_4\right) + s^3 \left(2C_2C_3C_4R_2R_3g_m + C_2C_3C_4R_2R_4g_m + 2C_2C_3C_4R_3 + C_2C_3C_4R_4 + 2C_2C_3C_5R_2R_3g_m + C_2C_3C_5R_2 + 4C_2C_3C_5R_3 + 2C_2C_4C_5R_2R_4g_m + 2C_2C_4C_5R_2 + 4C_2C_4C_5R_4 +\right.}$$

9.153 X-INVALID-ORDER-153 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_2C_3C_4C_5R_2R_3R_4R_5s^4 + R_5g_m + s^3 \left(C_2C_3C_4R_\right.}{2g_m + s^4 \left(2C_2C_3C_4C_5R_2R_3R_4R_5g_m + 2C_2C_3C_4C_5R_2R_3R_5 + C_2C_3C_4C_5R_2R_4R_5 + 4C_2C_3C_4C_5R_3R_4R_5\right) + s^3 \left(2C_2C_3C_4R_2R_3R_4g_m + 2C_2C_3C_4R_2R_3R_5g_m + 2C_2C_3C_4R_2R_3 + C_2C_3C_4R_2R_4R_5g_m + C_2C_3C_4R_2R_4 + 4C_2C_3C_4R_3R_4 + 2C_2C_3C_4R_3R_5 + C_2C_3C_4\right.}$$

9.154 X-INVALID-ORDER-154 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4 + \frac{1}{C_4 s},\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{g_m + s^4 \left(C_2C_3C_4C_5R_2R_3R_4R_5g_m - C_2C_3C_4C_5R_2R_3R_4 + C_2C_3C_4C_5R_3R_4R_5\right) + s^3 \left(C_2C_3C_4R_2R_3R_4g_m + C_2C_3C_4R_3R_4 + C_2C_3C_5R_2R_3R_5g_m - C_2C\right.}{s^4 \left(2C_2C_3C_4C_5R_2R_3R_4g_m + 2C_2C_3C_4C_5R_2R_3R_5g_m + 2C_2C_3C_4C_5R_2R_3 + C_2C_3C_4C_5R_2R_4R_5g_m + C_2C_3C_4C_5R_2R_4 + 4C_2C_3C_4C_5R_3R_4 + 2C_2C_3C_4C_5R_3R_5 + C_2C_3C_4C_5R_4R_5\right) + s^3 \left(2C_2C_3C_4R_2R_3g_m + C_2C_3C_4R_2R_4g_m + 2C_2C_3C_4R_3 + C_2C_3C_4R_4 + 2C_2C_3\right.}$$

10 X-INVALID-WZ

10.1 X-INVALID-WZ-1 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{-C_4C_5R_2R_3R_4s^2 + R_2R_3g_m + R_3 + s\left(C_4R_2R_3R_4g_m + C_4R_3R_4 - C_5R_2R_3\right)}{R_2g_m + s^2\left(2C_4C_5R_2R_3R_4g_m + 2C_4C_5R_2R_3 + C_4C_5R_2R_4 + 4C_4C_5R_3R_4\right) + s\left(2C_4R_2R_3g_m + C_4R_2R_4g_m + 2C_4R_3 + C_4R_4 + 2C_5R_2R_3g_m + C_5R_2 + 4C_5R_3\right) + 1}$$

Parameters:

Q: $\frac{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+\sqrt{C_4}\sqrt{C_5}R_2R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+4\sqrt{C_4}\sqrt{C_5}R_3R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4}}}{2C_4R_2R_3g_m+C_4R_2R_4g_m+2C_4R_3+C_4R_4+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$

wo: $\sqrt{\frac{R_2g_m+1}{2C_4C_5R_2R_3R_4g_m+2C_4C_5R_2R_3+C_4C_5R_2R_4+4C_4C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{R_2g_m+1}{2C_4C_5R_2R_3R_4g_m+2C_4C_5R_2R_3+C_4C_5R_2R_4+4C_4C_5R_3R_4}}\left(2C_4R_2R_3g_m+C_4R_2R_4g_m+2C_4R_3+C_4R_4+2C_5R_2R_3g_m+C_5R_2+4C_5R_3\right)}{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+\sqrt{C_4}\sqrt{C_5}R_2R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+4\sqrt{C_4}\sqrt{C_5}R_3R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2}}}$

K-LP: R_3

K-HP: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$

K-BP: $\frac{C_4R_2R_3R_4g_m+C_4R_3R_4-C_5R_2R_3}{2C_4R_2R_3g_m+C_4R_2R_4g_m+2C_4R_3+C_4R_4+2C_5R_2R_3g_m+C_5R_2+4C_5R_3}$

Qz: None

Wz: $\frac{\sqrt{-R_2g_m-1}}{\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}}$

10.2 X-INVALID-WZ-2 $Z(s) = \left(\infty,\ R_2,\ R_3,\ R_4 + \frac{1}{C_4 s},\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s) = \frac{-C_4C_5R_2R_3R_4R_5s^2 + R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_4R_2R_3R_4R_5g_m - C_4R_2R_3R_4 + C_4R_3R_4R_5 - C_5R_2R_3R_5\right)}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(2C_4C_5R_2R_3R_4R_5g_m + 2C_4C_5R_2R_3R_5 + C_4C_5R_2R_4R_5 + 4C_4C_5R_3R_4R_5\right) + s\left(2C_4R_2R_3R_4g_m + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + C_4R_2R_4R_5g_m + C_4R_2R_4 + 4C_4R_3R_4 + 2C_4R_3R_5 + C_4R_4R_5 + 2C_5R_2R_3R_5g_m + C_5R_2\right.}$$

Parameters:

Q: $\frac{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{2R_2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{4R_3}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_5}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{2R_2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2}{2R_2R_3R_4g_m+2R_2R_3}}}$

wo: $\sqrt{\frac{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}{2C_4C_5R_2R_3R_4R_5g_m+2C_4C_5R_2R_3R_5+C_4C_5R_2R_4R_5+4C_4C_5R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{\frac{}{2C_4C_5R}}}{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{2R_2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{4R_3}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_5}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{2R_2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{}{2R_2R_3}}}$

K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$

K-HP: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$
K-BP: $\frac{C_4R_2R_3R_4R_5g_m-C_4R_2R_3R_4+C_4R_3R_4R_5-C_5R_2R_3R_5}{2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5+2C_5R_2R_3R_5g_m+C_5R_2R_5+4C_5R_3R_5}$
Qz: None
Wz: $\frac{\sqrt{-R_2R_5g_m+R_2-R_5}}{\sqrt{C_4}\sqrt{C_5}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}}$

10.3 X-INVALID-WZ-3 $Z(s)=\left(\infty,\ R_2,\ R_3,\ R_4+\frac{1}{C_4s},\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s)=\frac{R_2R_3g_m+R_3+s^2\left(C_4C_5R_2R_3R_4R_5g_m-C_4C_5R_2R_3R_4+C_4C_5R_3R_4R_5\right)+s\left(C_4R_2R_3R_4g_m+C_4R_3R_4+C_5R_2R_3R_5g_m-C_5R_2R_3+C_5R_3R_5\right)}{R_2g_m+s^2\left(2C_4C_5R_2R_3R_4g_m+2C_4C_5R_2R_3R_5g_m+2C_4C_5R_2R_3+C_4C_5R_2R_4R_5g_m+C_4C_5R_2R_4+4C_4C_5R_3R_4+2C_4C_5R_3R_5+C_4C_5R_4R_5\right)+s\left(2C_4R_2R_3g_m+C_4R_2R_4g_m+2C_4R_3+C_4R_4+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5\right)+1}$$

Parameters:

Q: $\frac{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4}}}{}$

wo: $\sqrt{\frac{R_2g_m+1}{2C_4C_5R_2R_3R_4g_m+2C_4C_5R_2R_3R_5g_m+2C_4C_5R_2R_3+C_4C_5R_2R_4R_5g_m+C_4C_5R_2R_4+4C_4C_5R_3R_4+2C_4C_5R_3R_5+C_4C_5R_4R_5}}$

bandwidth: $\frac{}{2\sqrt{C_4}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{C_4}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2}}}$

K-LP: R_3
K-HP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_4R_2R_3R_4g_m+C_4R_3R_4+C_5R_2R_3R_5g_m-C_5R_2R_3+C_5R_3R_5}{2C_4R_2R_3g_m+C_4R_2R_4g_m+2C_4R_3+C_4R_4+2C_5R_2R_3g_m+C_5R_2R_5g_m+C_5R_2+4C_5R_3+C_5R_5}$
Qz: None
Wz: $\sqrt{\frac{R_2g_m+1}{C_4C_5R_2R_4R_5g_m-C_4C_5R_2R_4+C_4C_5R_4R_5}}$

10.4 X-INVALID-WZ-4 $Z(s)=\left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s)=\frac{-C_3C_5R_2R_3R_4s^2+R_2R_4g_m+R_4+s\left(C_3R_2R_3R_4g_m+C_3R_3R_4-C_5R_2R_4\right)}{2R_2g_m+s^2\left(2C_3C_5R_2R_3R_4g_m+2C_3C_5R_2R_3+C_3C_5R_2R_4+4C_3C_5R_3R_4\right)+s\left(2C_3R_2R_3g_m+C_3R_2R_4g_m+2C_3R_3+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4\right)+2}$$

Parameters:

Q: $\frac{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+4\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_3R_4\sqrt{\frac{R_2}{2R_2R_3R_4g_m+2R_2}}}{2C_3R_2R_3g_m+C_3R_2R_4g_m+2C_3R_3+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$

wo: $\sqrt{\frac{2R_2g_m+2}{2C_3C_5R_2R_3R_4g_m+2C_3C_5R_2R_3+C_3C_5R_2R_4+4C_3C_5R_3R_4}}$

bandwidth: $\frac{\sqrt{\frac{2R_2g_m+2}{2C_3C_5R_2R_3R_4g_m+2C_3C_5R_2R_3+C_3C_5R_2R_4+4C_3C_5R_3R_4}}\left(2C_3R_2R_3g_m+C_3R_2R_4g_m+2C_3R_3+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4\right)}{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_4\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+4\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_3R_4\sqrt{\frac{}{2R_2R}}}$

K-LP: $\frac{R_4}{2}$
K-HP: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$
K-BP: $\frac{C_3R_2R_3R_4g_m+C_3R_3R_4-C_5R_2R_4}{2C_3R_2R_3g_m+C_3R_2R_4g_m+2C_3R_3+C_3R_4+2C_5R_2R_4g_m+2C_5R_2+4C_5R_4}$
Qz: None
Wz: $\frac{\sqrt{-R_2g_m-1}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}}$

10.5 X-INVALID-WZ-5 $Z(s)=\left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s)=\frac{-C_3C_5R_2R_3R_4R_5s^2+R_2R_4R_5g_m-R_2R_4+R_4R_5+s\left(C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5-C_5R_2R_4R_5\right)}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5+s^2\left(2C_3C_5R_2R_3R_4R_5g_m+2C_3C_5R_2R_3R_5+C_3C_5R_2R_4R_5+4C_3C_5R_3R_4R_5\right)+s\left(2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C\right.}$$

Parameters:

Q: $\frac{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{R_2R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_5}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{R_2R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{}{2R_2R_3R_4g_m+}}}{}$

wo: $\sqrt{\frac{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}{2C_3C_5R_2R_3R_4R_5g_m+2C_3C_5R_2R_3R_5+C_3C_5R_2R_4R_5+4C_3C_5R_3R_4R_5}}$

bandwidth: $\frac{\sqrt{2}}{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{R_2R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_5}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{R_2R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_2R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{}{2}}}$

K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$
K-BP: $\frac{C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5-C_5R_2R_4R_5}{2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5+2C_5R_2R_4R_5g_m+2C_5R_2R_5+4C_5R_4R_5}$
Qz: None

Wz: $\frac{\sqrt{-R_2R_5g_m+R_2-R_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}}$

10.6 X-INVALID-WZ-6 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_2R_4g_m + R_4 + s^2\left(C_3C_5R_2R_3R_4R_5g_m - C_3C_5R_2R_3R_4 + C_3C_5R_3R_4R_5\right) + s\left(C_3R_2R_3R_4g_m + C_3R_3R_4 + C_5R_2R_4R_5g_m - C_5R_2R_4 + C_5R_4R_5\right)}{2R_2g_m + s^2\left(2C_3C_5R_2R_3R_4g_m + 2C_3C_5R_2R_3R_5g_m + 2C_3C_5R_2R_3 + C_3C_5R_2R_4R_5g_m + C_3C_5R_2R_4 + 4C_3C_5R_3R_4 + 2C_3C_5R_3R_5 + C_3C_5R_4R_5\right) + s\left(2C_3R_2R_3g_m + C_3R_2R_4g_m + 2C_3R_3 + C_3R_4 + 2C_5R_2R_4g_m + 2C_5R_2R_5g_m + 2C_5R_2 + 4C_5R_4 + 2C_5R_5\right) + 2}$$

Parameters:

Q: $\frac{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5}}}{\text{[illegible]}}$

wo: $\sqrt{\frac{2R_2g_m+2}{2C_3C_5R_2R_3R_4g_m+2C_3C_5R_2R_3R_5g_m+2C_3C_5R_2R_3+C_3C_5R_2R_4R_5g_m+C_3C_5R_2R_4+4C_3C_5R_3R_4+2C_3C_5R_3R_5+C_3C_5R_4R_5}}$

bandwidth: $\frac{\text{[illegible]}}{2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5}}}$

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

K-HP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$

K-BP: $\frac{C_3R_2R_3R_4g_m+C_3R_3R_4+C_5R_2R_4R_5g_m-C_5R_2R_4+C_5R_4R_5}{2C_3R_2R_3g_m+C_3R_2R_4g_m+2C_3R_3+C_3R_4+2C_5R_2R_4g_m+2C_5R_2R_5g_m+2C_5R_2+4C_5R_4+2C_5R_5}$

Qz: None

Wz: $\sqrt{\frac{R_2g_m+1}{C_3C_5R_2R_3R_5g_m-C_3C_5R_2R_3+C_3C_5R_3R_5}}$

10.7 X-INVALID-WZ-7 $Z(s) = \left(\infty,\ R_2,\ R_3+\frac{1}{C_3s},\ R_4+\frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_2R_5g_m - R_2 + R_5 + s^2\left(C_3C_4R_2R_3R_4R_5g_m - C_3C_4R_2R_3R_4 + C_3C_4R_3R_4R_5\right) + s\left(C_3R_2R_3R_5g_m - C_3R_2R_3 + C_3R_3R_5 + C_4R_2R_4R_5g_m - C_4R_2R_4 + C_4R_4R_5\right)}{2R_2g_m + s^2\left(2C_3C_4R_2R_3R_4g_m + 2C_3C_4R_2R_3R_5g_m + 2C_3C_4R_2R_3 + C_3C_4R_2R_4R_5g_m + C_3C_4R_2R_4 + 4C_3C_4R_3R_4 + 2C_3C_4R_3R_5 + C_3C_4R_4R_5\right) + s\left(2C_3R_2R_3g_m + C_3R_2R_5g_m + C_3R_2 + 4C_3R_3 + C_3R_5 + 2C_4R_2R_4g_m + 2C_4R_2R_5g_m + 2C_4R_2 + 4C_4R_4 + 2C_4R_{\text{[illegible]}}\right.}$$

Parameters:

Q: $\frac{2\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{2}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{2}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5}}}{\text{[illegible]}}$

wo: $\sqrt{\frac{2R_2g_m+4}{2C_3C_4R_2R_3R_4g_m+2C_3C_4R_2R_3R_5g_m+2C_3C_4R_2R_3+C_3C_4R_2R_4R_5g_m+C_3C_4R_2R_4+4C_3C_4R_3R_4+2C_3C_4R_3R_5+C_3C_4R_4R_5}}$

bandwidth: $\frac{\text{[illegible]}}{2\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2R_3R_4g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{2}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_3}\sqrt{C_4}R_2R_3R_5g_m\sqrt{\frac{R_2g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{2}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5}}}$

K-LP: $\frac{R_2R_5g_m-R_2+R_5}{2R_2g_m+4}$

K-HP: $\frac{R_2R_3R_4R_5g_m-R_2R_3R_4+R_3R_4R_5}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}$

K-BP: $\frac{C_3R_2R_3R_5g_m-C_3R_2R_3+C_3R_3R_5+C_4R_2R_4R_5g_m-C_4R_2R_4+C_4R_4R_5}{2C_3R_2R_3g_m+C_3R_2R_5g_m+C_3R_2+4C_3R_3+C_3R_5+2C_4R_2R_4g_m+2C_4R_2R_5g_m+2C_4R_2+4C_4R_4+2C_4R_5}$

Qz: None

Wz: $\frac{1}{\sqrt{C_3}\sqrt{C_4}\sqrt{R_3}\sqrt{R_4}}$

10.8 X-INVALID-WZ-8 $Z(s) = \left(\infty,\ \frac{1}{C_2s},\ R_3,\ R_4,\ R_5+\frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_3R_4R_5s^2 + R_3R_4g_m + s\left(C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5\right) + s\left(2C_2R_3 + C_2R_4 + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_5}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}}{2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4}$

wo: $\frac{\sqrt{2R_3g_m+R_4g_m}}{\sqrt{4C_2C_5R_3R_4+2C_2C_5R_3R_5+C_2C_5R_4R_5}}$

bandwidth: $\frac{\sqrt{2R_3g_m+R_4g_m}\left(2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4\right)}{\sqrt{C_2}\sqrt{C_5}\sqrt{g_m}\sqrt{2R_3+R_4}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{4C_2C_5R_3R_4+2C_2C_5R_3R_5+C_2C_5R_4R_5}}$

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

K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$

K-BP: $\frac{C_2R_3R_4+C_5R_3R_4R_5g_m-C_5R_3R_4}{2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3R_5g_m+2C_5R_3+C_5R_4R_5g_m+C_5R_4}$

Qz: None

Wz: $\frac{\sqrt{g_m}}{\sqrt{C_2}\sqrt{C_5}\sqrt{R_5}}$

10.9 X-INVALID-WZ-9 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_3R_4R_5s^2 + R_3R_5g_m - R_3 + s\left(C_2R_3R_5 + C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{2R_3g_m + R_5g_m + s^2\left(4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C_4R_4R_5\right) + s\left(4C_2R_3 + C_2R_5 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_4}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{2R_3g_m+R_5g_m+1}}{4C_2R_3+C_2R_5+2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4}$
wo: $\frac{\sqrt{2R_3g_m+R_5g_m+1}}{\sqrt{4C_2C_4R_3R_4+2C_2C_4R_3R_5+C_2C_4R_4R_5}}$
bandwidth: $\frac{4C_2R_3+C_2R_5+2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4}{\sqrt{C_2}\sqrt{C_4}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{4C_2C_4R_3R_4+2C_2C_4R_3R_5+C_2C_4R_4R_5}}$
K-LP: $\frac{R_3R_5g_m-R_3}{2R_3g_m+R_5g_m+1}$
K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_2R_3R_5+C_4R_3R_4R_5g_m-C_4R_3R_4}{4C_2R_3+C_2R_5+2C_4R_3R_4g_m+2C_4R_3R_5g_m+2C_4R_3+C_4R_4R_5g_m+C_4R_4}$
Qz: None
Wz: $\frac{\sqrt{R_5g_m-1}}{\sqrt{C_2}\sqrt{C_4}\sqrt{R_4}\sqrt{R_5}}$

10.10 X-INVALID-WZ-10 $Z(s) = \left(\infty,\ \frac{1}{C_2 s},\ R_3 + \frac{1}{C_3 s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_3R_3R_4R_5s^2 + R_4R_5g_m - R_4 + s\left(C_2R_4R_5 + C_3R_3R_4R_5g_m - C_3R_3R_4\right)}{2R_4g_m + 2R_5g_m + s^2\left(4C_2C_3R_3R_4 + 2C_2C_3R_3R_5 + C_2C_3R_4R_5\right) + s\left(4C_2R_4 + 2C_2R_5 + 2C_3R_3R_4g_m + 2C_3R_3R_5g_m + 2C_3R_3 + C_3R_4R_5g_m + C_3R_4\right) + 2}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{R_4g_m+R_5g_m+1}}{4C_2R_4+2C_2R_5+2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4}$
wo: $\frac{\sqrt{2R_4g_m+2R_5g_m+2}}{\sqrt{4C_2C_3R_3R_4+2C_2C_3R_3R_5+C_2C_3R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_4g_m+2R_5g_m+2}(4C_2R_4+2C_2R_5+2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4)}{2\sqrt{C_2}\sqrt{C_3}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{R_4g_m+R_5g_m+1}\sqrt{4C_2C_3R_3R_4+2C_2C_3R_3R_5+C_2C_3R_4R_5}}$
K-LP: $\frac{R_4R_5g_m-R_4}{2R_4g_m+2R_5g_m+2}$
K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_2R_4R_5+C_3R_3R_4R_5g_m-C_3R_3R_4}{4C_2R_4+2C_2R_5+2C_3R_3R_4g_m+2C_3R_3R_5g_m+2C_3R_3+C_3R_4R_5g_m+C_3R_4}$
Qz: None
Wz: $\frac{\sqrt{R_5g_m-1}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_3}\sqrt{R_5}}$

10.11 X-INVALID-WZ-11 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ R_4,\ R_5 + \frac{1}{C_5 s},\ \infty\right)$

$$H(s) = \frac{C_2C_5R_2R_3R_4R_5s^2 + R_2R_3R_4g_m + R_3R_4 + s\left(C_2R_2R_3R_4 + C_5R_2R_3R_4R_5g_m - C_5R_2R_3R_4 + C_5R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_4g_m + 2R_3 + R_4 + s^2\left(4C_2C_5R_2R_3R_4 + 2C_2C_5R_2R_3R_5 + C_2C_5R_2R_4R_5\right) + s\left(2C_2R_2R_3 + C_2R_2R_4 + 2C_5R_2R_3R_4g_m + 2C_5R_2R_3R_5g_m + 2C_5R_2R_3 + C_5R_2R_4R_5g_m + C_5R_2R_4 + 4C_5R_3R_4 + 2C_5R_3R_5 + C_5R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$
wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_4g_m+2R_3+R_4}}{\sqrt{4C_2C_5R_2R_3R_4+2C_2C_5R_2R_3R_5+C_2C_5R_2R_4R_5}}$
bandwidth: $\frac{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}{\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{4C_2C_5R_2R_3R_4+2C_2C_5R_2R_3R_5+C_2C_5R_2R_4R_5}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_2R_2R_3R_4+C_5R_2R_3R_4R_5g_m-C_5R_2R_3R_4+C_5R_3R_4R_5}{2C_2R_2R_3+C_2R_2R_4+2C_5R_2R_3R_4g_m+2C_5R_2R_3R_5g_m+2C_5R_2R_3+C_5R_2R_4R_5g_m+C_5R_2R_4+4C_5R_3R_4+2C_5R_3R_5+C_5R_4R_5}$
Qz: None
Wz: $\frac{\sqrt{R_2g_m+1}}{\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_5}}$

10.12 X-INVALID-WZ-12 $Z(s) = \left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3,\ R_4 + \frac{1}{C_4 s},\ R_5,\ \infty\right)$

$$H(s) = \frac{C_2C_4R_2R_3R_4R_5s^2 + R_2R_3R_5g_m - R_2R_3 + R_3R_5 + s\left(C_2R_2R_3R_5 + C_4R_2R_3R_4R_5g_m - C_4R_2R_3R_4 + C_4R_3R_4R_5\right)}{2R_2R_3g_m + R_2R_5g_m + R_2 + 4R_3 + R_5 + s^2\left(4C_2C_4R_2R_3R_4 + 2C_2C_4R_2R_3R_5 + C_2C_4R_2R_4R_5\right) + s\left(4C_2R_2R_3 + C_2R_2R_5 + 2C_4R_2R_3R_4g_m + 2C_4R_2R_3R_5g_m + 2C_4R_2R_3 + C_4R_2R_4R_5g_m + C_4R_2R_4 + 4C_4R_3R_4 + 2C_4R_3R_5 + C_4R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5}$

wo: $\frac{\sqrt{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}}{\sqrt{4C_2C_4R_2R_3R_4+2C_2C_4R_2R_3R_5+C_2C_4R_2R_4R_5}}$
bandwidth: $\frac{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5}{\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{4C_2C_4R_2R_3R_4+2C_2C_4R_2R_3R_5+C_2C_4R_2R_4R_5}}$
K-LP: $\frac{R_2R_3R_5g_m-R_2R_3+R_3R_5}{2R_2R_3g_m+R_2R_5g_m+R_2+4R_3+R_5}$
K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_2R_2R_3R_5+C_4R_2R_3R_4R_5g_m-C_4R_2R_3R_4+C_4R_3R_4R_5}{4C_2R_2R_3+C_2R_2R_5+2C_4R_2R_3R_4g_m+2C_4R_2R_3R_5g_m+2C_4R_2R_3+C_4R_2R_4R_5g_m+C_4R_2R_4+4C_4R_3R_4+2C_4R_3R_5+C_4R_4R_5}$
Qz: None
Wz: $\frac{\sqrt{R_2R_5g_m-R_2+R_5}}{\sqrt{C_2}\sqrt{C_4}\sqrt{R_2}\sqrt{R_4}\sqrt{R_5}}$

10.13 X-INVALID-WZ-13 $Z(s)=\left(\infty,\ \frac{R_2}{C_2R_2s+1},\ R_3+\frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s)=\frac{C_2C_3R_2R_3R_4R_5s^2+R_2R_4R_5g_m-R_2R_4+R_4R_5+s\left(C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5\right)}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5+s^2\left(4C_2C_3R_2R_3R_4+2C_2C_3R_2R_3R_5+C_2C_3R_2R_4R_5\right)+s\left(4C_2R_2R_4+2C_2R_2R_5+2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{2}\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}{4C_2R_2R_4+2C_2R_2R_5+2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5}$
wo: $\frac{\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}}{\sqrt{4C_2C_3R_2R_3R_4+2C_2C_3R_2R_3R_5+C_2C_3R_2R_4R_5}}$
bandwidth: $\frac{\sqrt{2}\sqrt{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}(4C_2R_2R_4+2C_2R_2R_5+2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5)}{2\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{4R_3R_4+2R_3R_5+R_4R_5}\sqrt{4C_2C_3R_2R_3R_4+2C_2C_3R_2R_3R_5+C_2C_3R_2R_4R_5}\sqrt{R_2R_4g_m+R_2R_5g_m+R_2+2R_4+R_5}}$
K-LP: $\frac{R_2R_4R_5g_m-R_2R_4+R_4R_5}{2R_2R_4g_m+2R_2R_5g_m+2R_2+4R_4+2R_5}$
K-HP: $\frac{R_3R_4R_5}{4R_3R_4+2R_3R_5+R_4R_5}$
K-BP: $\frac{C_2R_2R_4R_5+C_3R_2R_3R_4R_5g_m-C_3R_2R_3R_4+C_3R_3R_4R_5}{4C_2R_2R_4+2C_2R_2R_5+2C_3R_2R_3R_4g_m+2C_3R_2R_3R_5g_m+2C_3R_2R_3+C_3R_2R_4R_5g_m+C_3R_2R_4+4C_3R_3R_4+2C_3R_3R_5+C_3R_4R_5}$
Qz: None
Wz: $\frac{\sqrt{R_2R_5g_m-R_2+R_5}}{\sqrt{C_2}\sqrt{C_3}\sqrt{R_2}\sqrt{R_3}\sqrt{R_5}}$

10.14 X-INVALID-WZ-14 $Z(s)=\left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ R_4,\ \frac{1}{C_5s},\ \infty\right)$

$$H(s)=\frac{-C_2C_5R_2R_3R_4s^2+R_3R_4g_m+s\left(C_2R_2R_3R_4g_m+C_2R_3R_4-C_5R_3R_4\right)}{2R_3g_m+R_4g_m+s^2\left(2C_2C_5R_2R_3R_4g_m+2C_2C_5R_2R_3+C_2C_5R_2R_4+4C_2C_5R_3R_4\right)+s\left(2C_2R_2R_3g_m+C_2R_2R_4g_m+2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4\right)}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+\sqrt{C_2}\sqrt{C_5}R_2R_4\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+4\sqrt{C_2}\sqrt{C_5}R_3R_4\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}}{2C_2R_2R_3g_m+C_2R_2R_4g_m+2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{2C_2C_5R_2R_3R_4g_m+2C_2C_5R_2R_3+C_2C_5R_2R_4+4C_2C_5R_3R_4}}$
bandwidth: $\frac{\sqrt{\frac{2R_3g_m+R_4g_m}{2C_2C_5R_2R_3R_4g_m+2C_2C_5R_2R_3+C_2C_5R_2R_4+4C_2C_5R_3R_4}}(2C_2R_2R_3g_m+C_2R_2R_4g_m+2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4)}{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+\sqrt{C_2}\sqrt{C_5}R_2R_4\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}+4\sqrt{C_2}\sqrt{C_5}R_3R_4\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}\sqrt{2R_3+R_4}}$
K-LP: $\frac{R_3R_4}{2R_3+R_4}$
K-HP: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$
K-BP: $\frac{C_2R_2R_3R_4g_m+C_2R_3R_4-C_5R_3R_4}{2C_2R_2R_3g_m+C_2R_2R_4g_m+2C_2R_3+C_2R_4+2C_5R_3R_4g_m+2C_5R_3+C_5R_4}$
Qz: None
Wz: $\frac{\sqrt{-g_m}}{\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}}$

10.15 X-INVALID-WZ-15 $Z(s)=\left(\infty,\ R_2+\frac{1}{C_2s},\ R_3,\ R_4,\ \frac{R_5}{C_5R_5s+1},\ \infty\right)$

$$H(s)=\frac{-C_2C_5R_2R_3R_4R_5s^2+R_3R_4R_5g_m-R_3R_4+s\left(C_2R_2R_3R_4R_5g_m-C_2R_2R_3R_4+C_2R_3R_4R_5-C_5R_3R_4R_5\right)}{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4+s^2\left(2C_2C_5R_2R_3R_4R_5g_m+2C_2C_5R_2R_3R_5+C_2C_5R_2R_4R_5+4C_2C_5R_3R_4R_5\right)+s\left(2C_2R_2R_3R_4g_m+2C_2R_2R_3R_5g_m+2C_2R_2R_3+C_2R_2R_4R_5g_m+C_2R_2R_4+4C_2R_3R_4+2C_2R_3R_5+C_2R_4R_5+2C_5R_3R_4R_5g_m+\right.}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{2R_3R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_4R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{2R_3R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3}{2R_2R_3R_4g_m+2R_2R_3}}$
wo: $\sqrt{\frac{2R_3R_4g_m+2R_3R_5g_m+2R_3+R_4R_5g_m+R_4}{2C_2C_5R_2R_3R_4R_5g_m+2C_2C_5R_2R_3R_5+C_2C_5R_2R_4R_5+4C_2C_5R_3R_4R_5}}$
bandwidth: $\frac{\sqrt{\frac{2C_2C_5R}{}}}{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4\sqrt{R_5}g_m\sqrt{\frac{2R_3R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_4R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{R_5}\sqrt{\frac{2R_3R_4g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3R_5g_m}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}+\frac{2R_3}{2R_2R_3}}}$
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: $-\frac{R_2R_3R_4}{2R_2R_3R_4g_m+2R_2R_3+R_2R_4+4R_3R_4}$

K-BP: $\frac{C_2R_2R_3R_4R_5g_m - C_2R_2R_3R_4 + C_2R_3R_4R_5 - C_5R_3R_4R_5}{2C_2R_2R_3R_4g_m + 2C_2R_2R_3R_5g_m + 2C_2R_2R_3 + C_2R_2R_4R_5g_m + C_2R_2R_4 + 4C_2R_3R_4 + 2C_2R_3R_5 + C_2R_4R_5 + 2C_5R_3R_4R_5g_m + 2C_5R_3R_5 + C_5R_4R_5}$

Qz: None

Wz: $\frac{\sqrt{-R_5g_m+1}}{\sqrt{C_2}\sqrt{C_5}\sqrt{R_2}\sqrt{R_5}}$

10.16 X-INVALID-WZ-16 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2s},\ R_3,\ R_4,\ R_5 + \frac{1}{C_5s},\ \infty\right)$

$$H(s) = \frac{R_3R_4g_m + s^2\left(C_2C_5R_2R_3R_4R_5g_m - C_2C_5R_2R_3R_4 + C_2C_5R_3R_4R_5\right) + s\left(C_2R_2R_3R_4g_m + C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4\right)}{2R_3g_m + R_4g_m + s^2\left(2C_2C_5R_2R_3R_4g_m + 2C_2C_5R_2R_3R_5g_m + 2C_2C_5R_2R_3 + C_2C_5R_2R_4R_5g_m + C_2C_5R_2R_4 + 4C_2C_5R_3R_4 + 2C_2C_5R_3R_5 + C_2C_5R_4R_5\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_4g_m + 2C_2R_3 + C_2R_4 + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C\right.}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}\sqrt{2R_3+R_4}$

wo: $\sqrt{\frac{2R_3g_m+R_4g_m}{2C_2C_5R_2R_3R_4g_m+2C_2C_5R_2R_3R_5g_m+2C_2C_5R_2R_3+C_2C_5R_2R_4R_5g_m+C_2C_5R_2R_4+4C_2C_5R_3R_4+2C_2C_5R_3R_5+C_2C_5R_4R_5}}$

bandwidth: $\frac{}{2\sqrt{C_2}\sqrt{C_5}R_2R_3R_4g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3R_5g_m\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}\sqrt{2R_3+R_4}+2\sqrt{C_2}\sqrt{C_5}R_2R_3\sqrt{\frac{g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}}$

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

K-HP: $\frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5}$

K-BP: $\frac{C_2R_2R_3R_4g_m + C_2R_3R_4 + C_5R_3R_4R_5g_m - C_5R_3R_4}{2C_2R_2R_3g_m + C_2R_2R_4g_m + 2C_2R_3 + C_2R_4 + 2C_5R_3R_4g_m + 2C_5R_3R_5g_m + 2C_5R_3 + C_5R_4R_5g_m + C_5R_4}$

Qz: None

Wz: $\sqrt{\frac{g_m}{C_2C_5R_2R_5g_m - C_2C_5R_2 + C_2C_5R_5}}$

10.17 X-INVALID-WZ-17 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2s},\ R_3,\ R_4 + \frac{1}{C_4s},\ R_5,\ \infty\right)$

$$H(s) = \frac{R_3R_5g_m - R_3 + s^2\left(C_2C_4R_2R_3R_4R_5g_m - C_2C_4R_2R_3R_4 + C_2C_4R_3R_4R_5\right) + s\left(C_2R_2R_3R_5g_m - C_2R_2R_3 + C_2R_3R_5 + C_4R_3R_4R_5g_m - C_4R_3R_4\right)}{2R_3g_m + R_5g_m + s^2\left(2C_2C_4R_2R_3R_4g_m + 2C_2C_4R_2R_3R_5g_m + 2C_2C_4R_2R_3 + C_2C_4R_2R_4R_5g_m + C_2C_4R_2R_4 + 4C_2C_4R_3R_4 + 2C_2C_4R_3R_5 + C_2C_4R_4R_5\right) + s\left(2C_2R_2R_3g_m + C_2R_2R_5g_m + C_2R_2 + 4C_2R_3 + C_2R_5 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4\right.}$$

Parameters:

Q: $\frac{2\sqrt{C_2}\sqrt{C_4}R_2R_3R_4g_m\sqrt{\frac{2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{R_5g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{C_2}\sqrt{C_4}R_2R_3R_5g_m\sqrt{\frac{2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+}}$

wo: $\sqrt{\frac{2R_3g_m+R_5g_m+1}{2C_2C_4R_2R_3R_4g_m+2C_2C_4R_2R_3R_5g_m+2C_2C_4R_2R_3+C_2C_4R_2R_4R_5g_m+C_2C_4R_2R_4+4C_2C_4R_3R_4+2C_2C_4R_3R_5+C_2C_4R_4R_5}}$

bandwidth: $\frac{}{2\sqrt{C_2}\sqrt{C_4}R_2R_3R_4g_m\sqrt{\frac{2R_3g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{R_5g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{C_2}\sqrt{C_4}R_2R_3R_5g_m\sqrt{\frac{2R_3}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2}}}$

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

K-HP: $\frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5}$

K-BP: $\frac{C_2R_2R_3R_5g_m - C_2R_2R_3 + C_2R_3R_5 + C_4R_3R_4R_5g_m - C_4R_3R_4}{2C_2R_2R_3g_m + C_2R_2R_5g_m + C_2R_2 + 4C_2R_3 + C_2R_5 + 2C_4R_3R_4g_m + 2C_4R_3R_5g_m + 2C_4R_3 + C_4R_4R_5g_m + C_4R_4}$

Qz: None

Wz: $\sqrt{\frac{R_5g_m - 1}{C_2C_4R_2R_4R_5g_m - C_2C_4R_2R_4 + C_2C_4R_4R_5}}$

10.18 X-INVALID-WZ-18 $Z(s) = \left(\infty,\ R_2 + \frac{1}{C_2s},\ R_3 + \frac{1}{C_3s},\ R_4,\ R_5,\ \infty\right)$

$$H(s) = \frac{R_4R_5g_m - R_4 + s^2\left(C_2C_3R_2R_3R_4R_5g_m - C_2C_3R_2R_3R_4 + C_2C_3R_3R_4R_5\right) + s\left(C_2R_2R_4R_5g_m - C_2R_2R_4 + C_2R_4R_5 + C_3R_3R_4R_5g_m - C_3R_3R_4\right)}{2R_4g_m + 2R_5g_m + s^2\left(2C_2C_3R_2R_3R_4g_m + 2C_2C_3R_2R_3R_5g_m + 2C_2C_3R_2R_3 + C_2C_3R_2R_4R_5g_m + C_2C_3R_2R_4 + 4C_2C_3R_3R_4 + 2C_2C_3R_3R_5 + C_2C_3R_4R_5\right) + s\left(2C_2R_2R_4g_m + 2C_2R_2R_5g_m + 2C_2R_2 + 4C_2R_4 + 2C_2R_5 + 2C_3R_3R_4g_m + 2C_3R_3R_5g_m + 2C_3R_3 + C_3\right.}$$

Parameters:

Q: $\frac{2\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2R_3R_4g_m\sqrt{\frac{R_4g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{R_5g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2R_3R_5g_m\sqrt{\frac{R_4g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5}}$

wo: $\sqrt{\frac{2R_4g_m+2R_5g_m+2}{2C_2C_3R_2R_3R_4g_m+2C_2C_3R_2R_3R_5g_m+2C_2C_3R_2R_3+C_2C_3R_2R_4R_5g_m+C_2C_3R_2R_4+4C_2C_3R_3R_4+2C_2C_3R_3R_5+C_2C_3R_4R_5}}$

bandwidth: $\frac{}{2\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2R_3R_4g_m\sqrt{\frac{R_4g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{R_5g_m}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}+\frac{1}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2R_3+R_2R_4R_5g_m+R_2R_4+4R_3R_4+2R_3R_5+R_4R_5}}+2\sqrt{2}\sqrt{C_2}\sqrt{C_3}R_2R_3R_5g_m\sqrt{\frac{}{2R_2R_3R_4g_m+2R_2R_3R_5g_m+2R_2}}}$

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

K-HP: $\frac{R_2R_3R_4R_5g_m - R_2R_3R_4 + R_3R_4R_5}{2R_2R_3R_4g_m + 2R_2R_3R_5g_m + 2R_2R_3 + R_2R_4R_5g_m + R_2R_4 + 4R_3R_4 + 2R_3R_5 + R_4R_5}$

K-BP: $\frac{C_2R_2R_4R_5g_m - C_2R_2R_4 + C_2R_4R_5 + C_3R_3R_4R_5g_m - C_3R_3R_4}{2C_2R_2R_4g_m + 2C_2R_2R_5g_m + 2C_2R_2 + 4C_2R_4 + 2C_2R_5 + 2C_3R_3R_4g_m + 2C_3R_3R_5g_m + 2C_3R_3 + C_3R_4R_5g_m + C_3R_4}$

Qz: None

Wz: $\sqrt{\frac{R_5g_m - 1}{C_2C_3R_2R_3R_5g_m - C_2C_3R_2R_3 + C_2C_3R_3R_5}}$

11 X-PolynomialError