Filter Summary Report: VLSI,CMMF,Automated,NA,Z1,Z3,Z5,Z6

Generated by MacAnalog-Symbolix

January 20, 2025

Contents

1 Examined $H(z)$ for VLSI CMMF Automated NA Z1 Z3 Z5 Z6: $\frac{Z_1 Z_6}{-Z_3 + Z_5}$

$$H(z) = \frac{Z_1 Z_6}{-Z_3 + Z_5}$$

2 AP

3 BP

3.1 BP-1 $Z(s) = \left(R_1, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{-C_5 C_6 R_3 R_6 s^2 + s\left(-C_5 R_3 + C_6 R_6\right) + 1}$$

Parameters:

Q: $\frac{i\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}{C_5 R_3 - C_6 R_6}$

wo: $\frac{i}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_5 R_3 - C_6 R_6}{C_5 C_6 R_3 R_6}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_5 R_1 R_6}{C_5 R_3 - C_6 R_6}$

Qz: None

Wz: None

3.2 BP-2 $Z(s) = \left(R_1, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{s^2\left(-C_5 C_6 R_3 R_6 + C_5 C_6 R_5 R_6\right) + s\left(-C_5 R_3 + C_5 R_5 + C_6 R_6\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}} - \sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}}}{C_5 R_3 - C_5 R_5 - C_6 R_6}$

wo: $\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}\left(C_5 R_3 - C_5 R_5 - C_6 R_6\right)}{\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}} - \sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_5 R_1 R_6}{C_5 R_3 - C_5 R_5 - C_6 R_6}$

Qz: None

Wz: None

3.3 BP-3 $Z(s) = \left(R_1, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{C_3 C_6 R_5 R_6 s^2 + s\left(C_3 R_5 - C_6 R_6\right) - 1}$$

Parameters:

Q: $\frac{i\sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}{C_3 R_5 - C_6 R_6}$

wo: $\frac{i}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 R_5 - C_6 R_6}{C_3 C_6 R_5 R_6}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3 R_1 R_6}{C_3 R_5 - C_6 R_6}$

Qz: None

3.4 BP-4 $Z(s) = \left(R_1, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 C_5 C_6 R_5 R_6 s^2 + C_3 - C_5 + s\left(C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{C_3 - C_5}}{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}$

wo: $\frac{\sqrt{C_3 - C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}{C_3 C_5 C_6 R_5 R_6}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_6}{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}$

Qz: None

Wz: None

3.5 BP-5 $Z(s) = \left(R_1, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{s^2\left(-C_3 C_6 R_3 R_6 + C_3 C_6 R_5 R_6\right) + s\left(-C_3 R_3 + C_3 R_5 - C_6 R_6\right) - 1}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}}}{C_3 R_3 - C_3 R_5 + C_6 R_6}$

wo: $\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}$

bandwidth: $\frac{(C_3 R_3 - C_3 R_5 + C_6 R_6)\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}}{\sqrt{C_3}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_3 R_1 R_6}{C_3 R_3 - C_3 R_5 + C_6 R_6}$

Qz: None

Wz: None

3.6 BP-6 $Z(s) = \left(R_1, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{-C_3 C_5 C_6 R_3 R_6 s^2 + C_3 - C_5 + s\left(-C_3 C_5 R_3 + C_3 C_6 R_6 - C_5 C_6 R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{-C_3 + C_5}}{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\frac{\sqrt{-C_3 + C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}{C_3 C_5 C_6 R_3 R_6}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_3 C_5 R_1 R_6}{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}$

Qz: None

Wz: None

3.7 BP-7 $Z(s) = \left(R_1, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s^2 \left(-C_3 C_5 C_6 R_3 R_6 + C_3 C_5 C_6 R_5 R_6\right) + s \left(-C_3 C_5 R_3 + C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6\right)}$$

Parameters:

Q: $\dfrac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}{C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\sqrt{\dfrac{-C_3 + C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}$

bandwidth: $\dfrac{\sqrt{\frac{-C_3+C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}\left(C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6\right)}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $-\dfrac{C_3 C_5 R_1 R_6}{C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6}$

Qz: None

Wz: None

3.8 BP-8 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ R_6\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{-C_1 C_5 R_1 R_3 s^2 + s \left(C_1 R_1 - C_5 R_3\right) + 1}$$

Parameters:

Q: $-\dfrac{i\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}{C_1 R_1 - C_5 R_3}$

wo: $\dfrac{i}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\dfrac{C_1 R_1 - C_5 R_3}{C_1 C_5 R_1 R_3}$

K-LP: 0

K-HP: 0

K-BP: $\dfrac{C_5 R_1 R_6}{C_1 R_1 - C_5 R_3}$

Qz: None

Wz: None

3.9 BP-9 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{s^2 \left(-C_1 C_5 R_1 R_3 + C_1 C_5 R_1 R_5\right) + s \left(C_1 R_1 - C_5 R_3 + C_5 R_5\right) + 1}$$

Parameters:

Q: $\dfrac{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}} + \sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}{C_1 R_1 - C_5 R_3 + C_5 R_5}$

wo: $\sqrt{-\dfrac{1}{C_1 C_5 R_1 R_3 - C_1 C_5 R_1 R_5}}$

bandwidth: $\dfrac{\sqrt{-\frac{1}{C_1 C_5 R_1 R_3 - C_1 C_5 R_1 R_5}}\left(C_1 R_1 - C_5 R_3 + C_5 R_5\right)}{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}} + \sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $\dfrac{C_5 R_1 R_6}{C_1 R_1 - C_5 R_3 + C_5 R_5}$

Qz: None

Wz: None

3.10 BP-10 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6\right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{C_1 C_3 R_1 R_5 s^2 + s \left(-C_1 R_1 + C_3 R_5\right) - 1}$$

Parameters:

Q: $-\dfrac{i\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}{C_1 R_1 - C_3 R_5}$

wo: $\frac{i}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $-\frac{C_1R_1-C_3R_5}{C_1C_3R_1R_5}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_3R_1R_6}{C_1R_1-C_3R_5}$

Qz: None

Wz: None

3.11 BP-11 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ \frac{1}{C_5s}, \ \frac{R_6}{C_6R_6s+1} \right)$

$$H(s) = \frac{C_3C_5R_1R_6s}{C_3 - C_5 + s^2\left(C_1C_3C_6R_1R_6 - C_1C_5C_6R_1R_6\right) + s\left(C_1C_3R_1 - C_1C_5R_1 + C_3C_6R_6 - C_5C_6R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_6}\sqrt{R_1}\sqrt{R_6}}{C_1R_1+C_6R_6}$

wo: $\frac{1}{\sqrt{C_1}\sqrt{C_6}\sqrt{R_1}\sqrt{R_6}}$

bandwidth: $\frac{C_1R_1+C_6R_6}{C_1C_6R_1R_6}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3C_5R_1R_6}{C_1C_3R_1-C_1C_5R_1+C_3C_6R_6-C_5C_6R_6}$

Qz: None

Wz: None

3.12 BP-12 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ R_5 + \frac{1}{C_5s}, \ R_6 \right)$

$$H(s) = \frac{C_3C_5R_1R_6s}{C_1C_3C_5R_1R_5s^2 + C_3 - C_5 + s\left(C_1C_3R_1 - C_1C_5R_1 + C_3C_5R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}\sqrt{C_3-C_5}}{C_1C_3R_1-C_1C_5R_1+C_3C_5R_5}$

wo: $\frac{\sqrt{C_3-C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $\frac{C_1C_3R_1-C_1C_5R_1+C_3C_5R_5}{C_1C_3C_5R_1R_5}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3C_5R_1R_6}{C_1C_3R_1-C_1C_5R_1+C_3C_5R_5}$

Qz: None

Wz: None

3.13 BP-13 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3 + \frac{1}{C_3s}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_3R_1R_6s}{s^2\left(-C_1C_3R_1R_3 + C_1C_3R_1R_5\right) + s\left(-C_1R_1 - C_3R_3 + C_3R_5\right) - 1}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3-R_5}}-\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3-R_5}}}{C_1R_1+C_3R_3-C_3R_5}$

wo: $\sqrt{\frac{1}{C_1C_3R_1R_3-C_1C_3R_1R_5}}$

bandwidth: $\frac{(C_1R_1+C_3R_3-C_3R_5)\sqrt{\frac{1}{C_1C_3R_1R_3-C_1C_3R_1R_5}}}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3-R_5}}-\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3-R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $-\frac{C_3R_1R_6}{C_1R_1+C_3R_3-C_3R_5}$

Qz: None

Wz: None

3.14 BP-14 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{-C_1 C_3 C_5 R_1 R_3 s^2 + C_3 - C_5 + s\left(C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3\right)}$$

Parameters:

Q: $-\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}\sqrt{-C_3+C_5}}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3}$

wo: $\frac{\sqrt{-C_3+C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\frac{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3}{C_1 C_3 C_5 R_1 R_3}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_6}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3}$

Qz: None

Wz: None

3.15 BP-15 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s^2\left(-C_1 C_3 C_5 R_1 R_3 + C_1 C_3 C_5 R_1 R_5\right) + s\left(C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5}$

wo: $\sqrt{\frac{-C_3+C_5}{C_1 C_3 C_5 R_1 R_3 - C_1 C_3 C_5 R_1 R_5}}$

bandwidth: $\frac{\sqrt{\frac{-C_3+C_5}{C_1 C_3 C_5 R_1 R_3 - C_1 C_3 C_5 R_1 R_5}}\left(C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5\right)}{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}$

K-LP: 0

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_6}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5}$

Qz: None

Wz: None

4 BP-UNSTABLE-ZERO

5 BS

6 GE

7 HP

8 LP

8.1 LP-1 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_5 R_6}{-C_1 C_5 C_6 R_3 R_6 s^2 + C_1 + s\left(-C_1 C_5 R_3 + C_1 C_6 R_6\right)}$$

Parameters:

Q: $\frac{i\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}{C_5 R_3 - C_6 R_6}$

wo: $\frac{i}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_5 R_3 - C_6 R_6}{C_5 C_6 R_3 R_6}$

K-LP: $\frac{C_5 R_6}{C_1}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.2 LP-2 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_5 R_6}{C_1 + s^2 \left(-C_1 C_5 C_6 R_3 R_6 + C_1 C_5 C_6 R_5 R_6 \right) + s \left(-C_1 C_5 R_3 + C_1 C_5 R_5 + C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{C_6} R_3 \sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}} - \sqrt{C_5}\sqrt{C_6} R_5 \sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}}}{C_5 R_3 - C_5 R_5 - C_6 R_6}$

wo: $\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}\left(C_5 R_3 - C_5 R_5 - C_6 R_6 \right)}{\sqrt{C_5}\sqrt{C_6} R_3 \sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}} - \sqrt{C_5}\sqrt{C_6} R_5 \sqrt{R_6}\sqrt{-\frac{1}{R_3 - R_5}}}$

K-LP: $\frac{C_5 R_6}{C_1}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.3 LP-3 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_6}{C_1 C_3 C_6 R_5 R_6 s^2 - C_1 + s \left(C_1 C_3 R_5 - C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{i \sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}{C_3 R_5 - C_6 R_6}$

wo: $\frac{i}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 R_5 - C_6 R_6}{C_3 C_6 R_5 R_6}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.4 LP-4 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 C_5 C_6 R_5 R_6 s^2 + C_1 C_3 - C_1 C_5 + s \left(C_1 C_3 C_5 R_5 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{C_3 - C_5}}{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}$

wo: $\frac{\sqrt{C_3 - C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}{C_3 C_5 C_6 R_5 R_6}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.5 LP-5 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_6}{-C_1 + s^2 \left(-C_1 C_3 C_6 R_3 R_6 + C_1 C_3 C_6 R_5 R_6 \right) + s \left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}}}{C_3 R_3 - C_3 R_5 + C_6 R_6}$

wo: $\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}$

bandwidth: $\frac{(C_3 R_3 - C_3 R_5 + C_6 R_6)\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}}{\sqrt{C_3}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}}}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.6 LP-6 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_6}{-C_1 C_3 C_5 C_6 R_3 R_6 s^2 + C_1 C_3 - C_1 C_5 + s \left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{-C_3 + C_5}}{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\frac{\sqrt{-C_3 + C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}{C_3 C_5 C_6 R_3 R_6}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.7 LP-7 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s^2 \left(-C_1 C_3 C_5 C_6 R_3 R_6 + C_1 C_3 C_5 C_6 R_5 R_6 \right) + s \left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_5 R_5 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}}}{C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\sqrt{\frac{-C_3 + C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{\frac{-C_3 + C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}(C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6)}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}}}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.8 LP-8 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{R_1 R_6}{-R_3 + R_5 + s^2 \left(-C_1 C_6 R_1 R_3 R_6 + C_1 C_6 R_1 R_5 R_6 \right) + s \left(-C_1 R_1 R_3 + C_1 R_1 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_6}\sqrt{R_1}\sqrt{R_6}}{C_1R_1+C_6R_6}$

wo: $\frac{1}{\sqrt{C_1}\sqrt{C_6}\sqrt{R_1}\sqrt{R_6}}$

bandwidth: $\frac{C_1R_1+C_6R_6}{C_1C_6R_1R_6}$

K-LP: $-\frac{R_1R_6}{R_3-R_5}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.9 LP-9 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5s}, \ \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_5R_1}{-C_1C_5C_6R_1R_3s^2 + C_6 + s\left(C_1C_6R_1 - C_5C_6R_3\right)}$$

Parameters:

Q: $-\frac{i\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}{C_1R_1-C_5R_3}$

wo: $\frac{i}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\frac{C_1R_1-C_5R_3}{C_1C_5R_1R_3}$

K-LP: $\frac{C_5R_1}{C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.10 LP-10 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3, \ \infty, \ R_5+\frac{1}{C_5s}, \ \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_5R_1}{C_6 + s^2\left(-C_1C_5C_6R_1R_3 + C_1C_5C_6R_1R_5\right) + s\left(C_1C_6R_1 - C_5C_6R_3 + C_5C_6R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}{C_1R_1-C_5R_3+C_5R_5}$

wo: $\sqrt{-\frac{1}{C_1C_5R_1R_3-C_1C_5R_1R_5}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_1C_5R_1R_3-C_1C_5R_1R_5}}\left(C_1R_1-C_5R_3+C_5R_5\right)}{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}$

K-LP: $\frac{C_5R_1}{C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.11 LP-11 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ R_5, \ \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_3R_1}{C_1C_3C_6R_1R_5s^2 - C_6 + s\left(-C_1C_6R_1 + C_3C_6R_5\right)}$$

Parameters:

Q: $-\frac{i\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}{C_1R_1-C_3R_5}$

wo: $\frac{i}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $-\frac{C_1R_1-C_3R_5}{C_1C_3R_1R_5}$

K-LP: $-\frac{C_3R_1}{C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.12   LP-12 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_1 C_3 C_5 C_6 R_1 R_5 s^2 + C_3 C_6 - C_5 C_6 + s\left(C_1 C_3 C_6 R_1 - C_1 C_5 C_6 R_1 + C_3 C_5 C_6 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}\sqrt{C_3 - C_5}}{C_1 C_3 R_1 - C_1 C_5 R_1 + C_3 C_5 R_5}$

wo: $\frac{\sqrt{C_3 - C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $\frac{C_1 C_3 R_1 - C_1 C_5 R_1 + C_3 C_5 R_5}{C_1 C_3 C_5 R_1 R_5}$

K-LP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.13   LP-13 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5,\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 R_1}{-C_6 + s^2\left(-C_1 C_3 C_6 R_1 R_3 + C_1 C_3 C_6 R_1 R_5\right) + s\left(-C_1 C_6 R_1 - C_3 C_6 R_3 + C_3 C_6 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3 - R_5}}}{C_1 R_1 + C_3 R_3 - C_3 R_5}$

wo: $\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_3 R_1 R_5}}$

bandwidth: $\frac{(C_1 R_1 + C_3 R_3 - C_3 R_5)\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_3 R_1 R_5}}}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3 - R_5}}}$

K-LP: $-\frac{C_3 R_1}{C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.14   LP-14 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{-C_1 C_3 C_5 C_6 R_1 R_3 s^2 + C_3 C_6 - C_5 C_6 + s\left(C_1 C_3 C_6 R_1 - C_1 C_5 C_6 R_1 - C_3 C_5 C_6 R_3\right)}$$

Parameters:

Q: $-\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}\sqrt{-C_3 + C_5}}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3}$

wo: $\frac{\sqrt{-C_3 + C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\frac{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3}{C_1 C_3 C_5 R_1 R_3}$

K-LP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

8.15   LP-15 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6 + s^2\left(-C_1 C_3 C_5 C_6 R_1 R_3 + C_1 C_3 C_5 C_6 R_1 R_5\right) + s\left(C_1 C_3 C_6 R_1 - C_1 C_5 C_6 R_1 - C_3 C_5 C_6 R_3 + C_3 C_5 C_6 R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}} + \sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}}}{C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5}$

wo: $\sqrt{\dfrac{-C_3+C_5}{C_1C_3C_5R_1R_3-C_1C_3C_5R_1R_5}}$

bandwidth: $\dfrac{\sqrt{\dfrac{-C_3+C_5}{C_1C_3C_5R_1R_3-C_1C_3C_5R_1R_5}}(C_1C_3R_1-C_1C_5R_1-C_3C_5R_3+C_3C_5R_5)}{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}$

K-LP: $\dfrac{C_3C_5R_1}{C_3C_6-C_5C_6}$

K-HP: 0

K-BP: 0

Qz: None

Wz: None

9 X-INVALID-NUMER

9.1 X-INVALID-NUMER-1 $Z(s)=\left(R_1,\ \infty,\ R_3,\ \infty,\ \dfrac{R_5}{C_5R_5s+1},\ \dfrac{R_6}{C_6R_6s+1}\right)$

$$H(s)=\frac{C_5R_1R_5R_6s+R_1R_6}{-C_5C_6R_3R_5R_6s^2-R_3+R_5+s\left(-C_5R_3R_5-C_6R_3R_6+C_6R_5R_6\right)}$$

Parameters:

Q: $\dfrac{\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{R_3-R_5}}{C_5R_3R_5+C_6R_3R_6-C_6R_5R_6}$

wo: $\dfrac{\sqrt{R_3-R_5}}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\dfrac{C_5R_3R_5+C_6R_3R_6-C_6R_5R_6}{C_5C_6R_3R_5R_6}$

K-LP: $-\dfrac{R_1R_6}{R_3-R_5}$

K-HP: 0

K-BP: $-\dfrac{C_5R_1R_5R_6}{C_5R_3R_5+C_6R_3R_6-C_6R_5R_6}$

Qz: None

Wz: None

9.2 X-INVALID-NUMER-2 $Z(s)=\left(R_1,\ \infty,\ \dfrac{1}{C_3s},\ \infty,\ \dfrac{R_5}{C_5R_5s+1},\ \dfrac{R_6}{C_6R_6s+1}\right)$

$$H(s)=\frac{C_3C_5R_1R_5R_6s^2+C_3R_1R_6s}{s^2\left(C_3C_6R_5R_6-C_5C_6R_5R_6\right)+s\left(C_3R_5-C_5R_5-C_6R_6\right)-1}$$

Parameters:

Q: $\dfrac{C_3\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3-C_5}}-C_5\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3-C_5}}}{C_3R_5-C_5R_5-C_6R_6}$

wo: $\sqrt{-\dfrac{1}{C_3C_6R_5R_6-C_5C_6R_5R_6}}$

bandwidth: $\dfrac{\sqrt{-\frac{1}{C_3C_6R_5R_6-C_5C_6R_5R_6}}(C_3R_5-C_5R_5-C_6R_6)}{C_3\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3-C_5}}-C_5\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3-C_5}}}$

K-LP: 0

K-HP: $\dfrac{C_3C_5R_1}{C_3C_6-C_5C_6}$

K-BP: $\dfrac{C_3R_1R_6}{C_3R_5-C_5R_5-C_6R_6}$

Qz: None

Wz: None

9.3 X-INVALID-NUMER-3 $Z(s)=\left(R_1,\ \infty,\ R_3+\dfrac{1}{C_3s},\ \infty,\ \dfrac{R_5}{C_5R_5s+1},\ R_6\right)$

$$H(s)=\frac{C_3C_5R_1R_5R_6s^2+C_3R_1R_6s}{-C_3C_5R_3R_5s^2+s\left(-C_3R_3+C_3R_5-C_5R_5\right)-1}$$

Parameters:

Q: $\dfrac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3R_3-C_3R_5+C_5R_5}$

wo: $\dfrac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\dfrac{C_3R_3-C_3R_5+C_5R_5}{C_3C_5R_3R_5}$

K-LP: 0

K-HP: $-\dfrac{R_1R_6}{R_3}$

K-BP: $-\frac{C_3 R_1 R_6}{C_3 R_3 - C_3 R_5 + C_5 R_5}$
Qz: None
Wz: None

9.4 X-INVALID-NUMER-4 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 s + C_3 R_1}{-C_3 C_5 C_6 R_3 R_5 s^2 - C_6 + s\left(-C_3 C_6 R_3 + C_3 C_6 R_5 - C_5 C_6 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_3 R_5 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_3 R_5 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $-\frac{C_3 R_1}{C_6}$

K-HP: 0

K-BP: $-\frac{C_3 C_5 R_1 R_5}{C_3 C_6 R_3 - C_3 C_6 R_5 + C_5 C_6 R_5}$

Qz: None
Wz: None

9.5 X-INVALID-NUMER-5 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ R_5,\ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 R_1 R_3 R_6 s + R_1 R_6}{C_3 C_6 R_3 R_5 R_6 s^2 - R_3 + R_5 + s\left(C_3 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{-R_3 + R_5}}{C_3 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6}$

wo: $\frac{\sqrt{-R_3 + R_5}}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6}{C_3 C_6 R_3 R_5 R_6}$

K-LP: $-\frac{R_1 R_6}{R_3 - R_5}$

K-HP: 0

K-BP: $\frac{C_3 R_1 R_3 R_6}{C_3 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6}$

Qz: None
Wz: None

9.6 X-INVALID-NUMER-6 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \frac{1}{C_5 s},\ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{s^2\left(C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6\right) + s\left(C_3 R_3 - C_5 R_3 + C_6 R_6\right) + 1}$$

Parameters:

Q: $\frac{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}}}{C_3 R_3 - C_5 R_3 + C_6 R_6}$

wo: $\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6}}$

bandwidth: $\frac{(C_3 R_3 - C_5 R_3 + C_6 R_6)\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6}}}{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}}}$

K-LP: 0

K-HP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-BP: $\frac{C_5 R_1 R_6}{C_3 R_3 - C_5 R_3 + C_6 R_6}$

Qz: None
Wz: None

9.7 X-INVALID-NUMER-7 $Z(s) = \left(R_1, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{C_3 C_5 R_3 R_5 s^2 + s\left(C_3 R_3 - C_5 R_3 + C_5 R_5\right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_5 R_3 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_5 R_3 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: 0

K-HP: $\frac{R_1 R_6}{R_5}$

K-BP: $\frac{C_5 R_1 R_6}{C_3 R_3 - C_5 R_3 + C_5 R_5}$

Qz: None

Wz: None

9.8 X-INVALID-NUMER-8 $Z(s) = \left(R_1, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 s + C_5 R_1}{C_3 C_5 C_6 R_3 R_5 s^2 + C_6 + s\left(C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_5 R_3 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_5 R_3 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $\frac{C_5 R_1}{C_6}$

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_3}{C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5}$

Qz: None

Wz: None

9.9 X-INVALID-NUMER-9 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 C_5 R_5 R_6 s + C_3 R_6}{-C_1 + s^2\left(C_1 C_3 C_6 R_5 R_6 - C_1 C_5 C_6 R_5 R_6\right) + s\left(C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6\right)}$$

Parameters:

Q: $\frac{C_3\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}} - C_5\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}}}{C_3 R_5 - C_5 R_5 - C_6 R_6}$

wo: $\sqrt{-\frac{1}{C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6}}\left(C_3 R_5 - C_5 R_5 - C_6 R_6\right)}{C_3\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}} - C_5\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}}}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: 0

K-BP: $\frac{C_3 C_5 R_5 R_6}{C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6}$

Qz: None

Wz: None

9.10 X-INVALID-NUMER-10 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_5 R_6 s + C_3 R_6}{-C_1 C_3 C_5 R_3 R_5 s^2 - C_1 + s\left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_5 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_3 R_5 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3R_3-C_3R_5+C_5R_5}{C_3C_5R_3R_5}$

K-LP: $-\frac{C_3R_6}{C_1}$

K-HP: 0

K-BP: $-\frac{C_3C_5R_5R_6}{C_1C_3R_3-C_1C_3R_5+C_1C_5R_5}$

Qz: None

Wz: None

9.11   X-INVALID-NUMER-11 $Z(s) = \left(\frac{1}{C_1s}, \ \infty, \ \frac{R_3}{C_3R_3s+1}, \ \infty, \ \frac{1}{C_5s}, \ \frac{R_6}{C_6R_6s+1} \right)$

$$H(s) = \frac{C_3C_5R_3R_6s + C_5R_6}{C_1 + s^2\left(C_1C_3C_6R_3R_6 - C_1C_5C_6R_3R_6\right) + s\left(C_1C_3R_3 - C_1C_5R_3 + C_1C_6R_6\right)}$$

Parameters:

Q: $\frac{C_3\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3-C_5}} - C_5\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3-C_5}}}{C_3R_3-C_5R_3+C_6R_6}$

wo: $\sqrt{\frac{1}{C_3C_6R_3R_6-C_5C_6R_3R_6}}$

bandwidth: $\frac{(C_3R_3-C_5R_3+C_6R_6)\sqrt{\frac{1}{C_3C_6R_3R_6-C_5C_6R_3R_6}}}{C_3\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3-C_5}} - C_5\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3-C_5}}}$

K-LP: $\frac{C_5R_6}{C_1}$

K-HP: 0

K-BP: $\frac{C_3C_5R_3R_6}{C_1C_3R_3-C_1C_5R_3+C_1C_6R_6}$

Qz: None

Wz: None

9.12   X-INVALID-NUMER-12 $Z(s) = \left(\frac{1}{C_1s}, \ \infty, \ \frac{R_3}{C_3R_3s+1}, \ \infty, \ R_5 + \frac{1}{C_5s}, \ R_6 \right)$

$$H(s) = \frac{C_3C_5R_3R_6s + C_5R_6}{C_1C_3C_5R_3R_5s^2 + C_1 + s\left(C_1C_3R_3 - C_1C_5R_3 + C_1C_5R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3R_3-C_5R_3+C_5R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3R_3-C_5R_3+C_5R_5}{C_3C_5R_3R_5}$

K-LP: $\frac{C_5R_6}{C_1}$

K-HP: 0

K-BP: $\frac{C_3C_5R_3R_6}{C_1C_3R_3-C_1C_5R_3+C_1C_5R_5}$

Qz: None

Wz: None

9.13   X-INVALID-NUMER-13 $Z(s) = \left(R_1 + \frac{1}{C_1s}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5s}, \ \frac{R_6}{C_6R_6s+1} \right)$

$$H(s) = \frac{C_1C_5R_1R_6s + C_5R_6}{-C_1C_5C_6R_3R_6s^2 + C_1 + s\left(-C_1C_5R_3 + C_1C_6R_6\right)}$$

Parameters:

Q: $\frac{i\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}{C_5R_3-C_6R_6}$

wo: $\frac{i}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_5R_3-C_6R_6}{C_5C_6R_3R_6}$

K-LP: $\frac{C_5R_6}{C_1}$

K-HP: 0

K-BP: $-\frac{C_5R_1R_6}{C_5R_3-C_6R_6}$

Qz: None

Wz: None

9.14 X-INVALID-NUMER-14 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_6 s + C_5 R_6}{C_1 + s^2 \left(-C_1 C_5 C_6 R_3 R_6 + C_1 C_5 C_6 R_5 R_6 \right) + s \left(-C_1 C_5 R_3 + C_1 C_5 R_5 + C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{1}{R_3-R_5}} - \sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{1}{R_3-R_5}}}{C_5 R_3 - C_5 R_5 - C_6 R_6}$

wo: $\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_5 C_6 R_3 R_6 - C_5 C_6 R_5 R_6}}(C_5 R_3 - C_5 R_5 - C_6 R_6)}{\sqrt{C_5}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{-\frac{1}{R_3-R_5}} - \sqrt{C_5}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{-\frac{1}{R_3-R_5}}}$

K-LP: $\frac{C_5 R_6}{C_1}$

K-HP: 0

K-BP: $-\frac{C_5 R_1 R_6}{C_5 R_3 - C_5 R_5 - C_6 R_6}$

Qz: None

Wz: None

9.15 X-INVALID-NUMER-15 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_6 s + C_3 R_6}{C_1 C_3 C_6 R_5 R_6 s^2 - C_1 + s \left(C_1 C_3 R_5 - C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{i\sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}{C_3 R_5 - C_6 R_6}$

wo: $\frac{i}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 R_5 - C_6 R_6}{C_3 C_6 R_5 R_6}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: 0

K-BP: $\frac{C_3 R_1 R_6}{C_3 R_5 - C_6 R_6}$

Qz: None

Wz: None

9.16 X-INVALID-NUMER-16 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 C_5 C_6 R_5 R_6 s^2 + C_1 C_3 - C_1 C_5 + s \left(C_1 C_3 C_5 R_5 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{C_3-C_5}}{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}$

wo: $\frac{\sqrt{C_3-C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}{C_3 C_5 C_6 R_5 R_6}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_6}{C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6}$

Qz: None

Wz: None

9.17 X-INVALID-NUMER-17 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_6 s + C_3 R_6}{-C_1 + s^2 \left(-C_1 C_3 C_6 R_3 R_6 + C_1 C_3 C_6 R_5 R_6 \right) + s \left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_6 R_6 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_6}R_3\sqrt{R_6}\sqrt{\frac{1}{R_3-R_5}} - \sqrt{C_3}\sqrt{C_6}R_5\sqrt{R_6}\sqrt{\frac{1}{R_3-R_5}}}{C_3 R_3 - C_3 R_5 + C_6 R_6}$

wo: $\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}$

bandwidth: $\frac{(C_3 R_3 - C_3 R_5 + C_6 R_6)\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_3 C_6 R_5 R_6}}}{\sqrt{C_3}\sqrt{C_6} R_3 \sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_6} R_5 \sqrt{R_6}\sqrt{\frac{1}{R_3 - R_5}}}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: 0

K-BP: $-\frac{C_3 R_1 R_6}{C_3 R_3 - C_3 R_5 + C_6 R_6}$

Qz: None

Wz: None

9.18 X-INVALID-NUMER-18 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{-C_1 C_3 C_5 C_6 R_3 R_6 s^2 + C_1 C_3 - C_1 C_5 + s\left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{-C_3 + C_5}}{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\frac{\sqrt{-C_3 + C_5}}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

bandwidth: $\frac{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}{C_3 C_5 C_6 R_3 R_6}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: $-\frac{C_3 C_5 R_1 R_6}{C_3 C_5 R_3 - C_3 C_6 R_6 + C_5 C_6 R_6}$

Qz: None

Wz: None

9.19 X-INVALID-NUMER-19 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s^2\left(-C_1 C_3 C_5 C_6 R_3 R_6 + C_1 C_3 C_5 C_6 R_5 R_6\right) + s\left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_5 R_5 + C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6} R_3 \sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6} R_5 \sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}}}{C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6}$

wo: $\sqrt{\frac{-C_3 + C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{\frac{-C_3 + C_5}{C_3 C_5 C_6 R_3 R_6 - C_3 C_5 C_6 R_5 R_6}}(C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6)}{\sqrt{C_3}\sqrt{C_5}\sqrt{C_6} R_3 \sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}} - \sqrt{C_3}\sqrt{C_5}\sqrt{C_6} R_5 \sqrt{R_6}\sqrt{-\frac{C_3}{R_3 - R_5} + \frac{C_5}{R_3 - R_5}}}$

K-LP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-HP: 0

K-BP: $-\frac{C_3 C_5 R_1 R_6}{C_3 C_5 R_3 - C_3 C_5 R_5 - C_3 C_6 R_6 + C_5 C_6 R_6}$

Qz: None

Wz: None

9.20 X-INVALID-NUMER-20 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 C_6 R_1 R_6 s + C_5 R_1}{-C_1 C_5 C_6 R_1 R_3 s^2 + C_6 + s\left(C_1 C_6 R_1 - C_5 C_6 R_3\right)}$$

Parameters:

Q: $-\frac{i\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}{C_1 R_1 - C_5 R_3}$

wo: $\frac{i}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\frac{C_1 R_1 - C_5 R_3}{C_1 C_5 R_1 R_3}$

K-LP: $\frac{C_5 R_1}{C_6}$

K-HP: 0

K-BP: $\frac{C_5 R_1 R_6}{C_1 R_1 - C_5 R_3}$

Qz: None

Wz: None

9.21 X-INVALID-NUMER-21 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5s}, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_5C_6R_1R_6s + C_5R_1}{C_6 + s^2\left(-C_1C_5C_6R_1R_3 + C_1C_5C_6R_1R_5\right) + s\left(C_1C_6R_1 - C_5C_6R_3 + C_5C_6R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}} + \sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}{C_1R_1 - C_5R_3 + C_5R_5}$

wo: $\sqrt{-\frac{1}{C_1C_5R_1R_3 - C_1C_5R_1R_5}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_1C_5R_1R_3 - C_1C_5R_1R_5}}\left(C_1R_1 - C_5R_3 + C_5R_5\right)}{-\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{1}{R_3-R_5}} + \sqrt{C_1}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{1}{R_3-R_5}}}$

K-LP: $\frac{C_5R_1}{C_6}$

K-HP: 0

K-BP: $\frac{C_5R_1R_6}{C_1R_1 - C_5R_3 + C_5R_5}$

Qz: None

Wz: None

9.22 X-INVALID-NUMER-22 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5R_5s+1}, \ R_6 \right)$

$$H(s) = \frac{C_5R_1R_5R_6s + R_1R_6}{-C_1C_5R_1R_3R_5s^2 - R_3 + R_5 + s\left(-C_1R_1R_3 + C_1R_1R_5 - C_5R_3R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{R_3-R_5}}{C_1R_1R_3 - C_1R_1R_5 + C_5R_3R_5}$

wo: $\frac{\sqrt{R_3-R_5}}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_1R_1R_3 - C_1R_1R_5 + C_5R_3R_5}{C_1C_5R_1R_3R_5}$

K-LP: $-\frac{R_1R_6}{R_3-R_5}$

K-HP: 0

K-BP: $-\frac{C_5R_1R_5R_6}{C_1R_1R_3 - C_1R_1R_5 + C_5R_3R_5}$

Qz: None

Wz: None

9.23 X-INVALID-NUMER-23 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_6R_1R_6s + C_3R_1}{C_1C_3C_6R_1R_5s^2 - C_6 + s\left(-C_1C_6R_1 + C_3C_6R_5\right)}$$

Parameters:

Q: $-\frac{i\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}{C_1R_1 - C_3R_5}$

wo: $\frac{i}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $-\frac{C_1R_1 - C_3R_5}{C_1C_3R_1R_5}$

K-LP: $-\frac{C_3R_1}{C_6}$

K-HP: 0

K-BP: $-\frac{C_3R_1R_6}{C_1R_1 - C_3R_5}$

Qz: None

Wz: None

9.24 X-INVALID-NUMER-24 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ R_5 + \frac{1}{C_5s}, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_5C_6R_1R_6s + C_3C_5R_1}{C_1C_3C_5C_6R_1R_5s^2 + C_3C_6 - C_5C_6 + s\left(C_1C_3C_6R_1 - C_1C_5C_6R_1 + C_3C_5C_6R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}\sqrt{C_3-C_5}}{C_1C_3R_1 - C_1C_5R_1 + C_3C_5R_5}$

wo: $\frac{\sqrt{C_3-C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}}$

bandwidth: $\frac{C_1C_3R_1 - C_1C_5R_1 + C_3C_5R_5}{C_1C_3C_5R_1R_5}$
K-LP: $\frac{C_3C_5R_1}{C_3C_6 - C_5C_6}$
K-HP: 0
K-BP: $\frac{C_3C_5R_1R_6}{C_1C_3R_1 - C_1C_5R_1 + C_3C_5R_5}$
Qz: None
Wz: None

9.25   X-INVALID-NUMER-25 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ \frac{R_5}{C_5R_5s+1}, \ R_6 \right)$

$$H(s) = \frac{C_3C_5R_1R_5R_6s^2 + C_3R_1R_6s}{s^2\left(C_1C_3R_1R_5 - C_1C_5R_1R_5\right) + s\left(-C_1R_1 + C_3R_5 - C_5R_5\right) - 1}$$

Parameters:

Q: $\frac{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}}}{C_1R_1 - C_3R_5 + C_5R_5}$

wo: $\sqrt{-\frac{1}{C_1C_3R_1R_5 - C_1C_5R_1R_5}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_1C_3R_1R_5 - C_1C_5R_1R_5}}(C_1R_1 - C_3R_5 + C_5R_5)}{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}}}$

K-LP: 0
K-HP: $\frac{C_3C_5R_6}{C_1C_3 - C_1C_5}$
K-BP: $-\frac{C_3R_1R_6}{C_1R_1 - C_3R_5 + C_5R_5}$
Qz: None
Wz: None

9.26   X-INVALID-NUMER-26 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{1}{C_3s}, \ \infty, \ \frac{R_5}{C_5R_5s+1}, \ \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_5R_1R_5s + C_3R_1}{-C_6 + s^2\left(C_1C_3C_6R_1R_5 - C_1C_5C_6R_1R_5\right) + s\left(-C_1C_6R_1 + C_3C_6R_5 - C_5C_6R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}}}{C_1R_1 - C_3R_5 + C_5R_5}$

wo: $\sqrt{-\frac{1}{C_1C_3R_1R_5 - C_1C_5R_1R_5}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_1C_3R_1R_5 - C_1C_5R_1R_5}}(C_1R_1 - C_3R_5 + C_5R_5)}{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3-C_5}}}$

K-LP: $-\frac{C_3R_1}{C_6}$
K-HP: 0
K-BP: $-\frac{C_3C_5R_1R_5}{C_1C_6R_1 - C_3C_6R_5 + C_5C_6R_5}$
Qz: None
Wz: None

9.27   X-INVALID-NUMER-27 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3 + \frac{1}{C_3s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_6R_1R_6s + C_3R_1}{-C_6 + s^2\left(-C_1C_3C_6R_1R_3 + C_1C_3C_6R_1R_5\right) + s\left(-C_1C_6R_1 - C_3C_6R_3 + C_3C_6R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3-R_5}} - \sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3-R_5}}}{C_1R_1 + C_3R_3 - C_3R_5}$

wo: $\sqrt{\frac{1}{C_1C_3R_1R_3 - C_1C_3R_1R_5}}$

bandwidth: $\frac{(C_1R_1 + C_3R_3 - C_3R_5)\sqrt{\frac{1}{C_1C_3R_1R_3 - C_1C_3R_1R_5}}}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_3\sqrt{\frac{1}{R_3-R_5}} - \sqrt{C_1}\sqrt{C_3}\sqrt{R_1}R_5\sqrt{\frac{1}{R_3-R_5}}}$

K-LP: $-\frac{C_3R_1}{C_6}$
K-HP: 0
K-BP: $-\frac{C_3R_1R_6}{C_1R_1 + C_3R_3 - C_3R_5}$
Qz: None

9.28 X-INVALID-NUMER-28 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3 + \frac{1}{C_3s}, \ \infty, \ \frac{1}{C_5s}, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_5C_6R_1R_6s + C_3C_5R_1}{-C_1C_3C_5C_6R_1R_3s^2 + C_3C_6 - C_5C_6 + s\left(C_1C_3C_6R_1 - C_1C_5C_6R_1 - C_3C_5C_6R_3\right)}$$

Parameters:

Q: $-\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}\sqrt{-C_3+C_5}}{C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3}$

wo: $\frac{\sqrt{-C_3+C_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}\sqrt{R_3}}$

bandwidth: $-\frac{C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3}{C_1C_3C_5R_1R_3}$

K-LP: $\frac{C_3C_5R_1}{C_3C_6 - C_5C_6}$

K-HP: 0

K-BP: $\frac{C_3C_5R_1R_6}{C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3}$

Qz: None

Wz: None

9.29 X-INVALID-NUMER-29 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ R_3 + \frac{1}{C_3s}, \ \infty, \ R_5 + \frac{1}{C_5s}, \ R_6 + \frac{1}{C_6s} \right)$

$$H(s) = \frac{C_3C_5C_6R_1R_6s + C_3C_5R_1}{C_3C_6 - C_5C_6 + s^2\left(-C_1C_3C_5C_6R_1R_3 + C_1C_3C_5C_6R_1R_5\right) + s\left(C_1C_3C_6R_1 - C_1C_5C_6R_1 - C_3C_5C_6R_3 + C_3C_5C_6R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}{C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3 + C_3C_5R_5}$

wo: $\sqrt{\frac{-C_3+C_5}{C_1C_3C_5R_1R_3 - C_1C_3C_5R_1R_5}}$

bandwidth: $\frac{\sqrt{\frac{-C_3+C_5}{C_1C_3C_5R_1R_3 - C_1C_3C_5R_1R_5}}\left(C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3 + C_3C_5R_5\right)}{-\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_3\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}+\sqrt{C_1}\sqrt{C_3}\sqrt{C_5}\sqrt{R_1}R_5\sqrt{-\frac{C_3}{R_3-R_5}+\frac{C_5}{R_3-R_5}}}$

K-LP: $\frac{C_3C_5R_1}{C_3C_6 - C_5C_6}$

K-HP: 0

K-BP: $\frac{C_3C_5R_1R_6}{C_1C_3R_1 - C_1C_5R_1 - C_3C_5R_3 + C_3C_5R_5}$

Qz: None

Wz: None

9.30 X-INVALID-NUMER-30 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \ \infty, \ \frac{R_3}{C_3R_3s+1}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_3R_1R_3R_6s + R_1R_6}{C_1C_3R_1R_3R_5s^2 - R_3 + R_5 + s\left(-C_1R_1R_3 + C_1R_1R_5 + C_3R_3R_5\right)}$$

Parameters:

Q: $-\frac{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{-R_3+R_5}}{C_1R_1R_3 - C_1R_1R_5 - C_3R_3R_5}$

wo: $\frac{\sqrt{-R_3+R_5}}{\sqrt{C_1}\sqrt{C_3}\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $-\frac{C_1R_1R_3 - C_1R_1R_5 - C_3R_3R_5}{C_1C_3R_1R_3R_5}$

K-LP: $-\frac{R_1R_6}{R_3 - R_5}$

K-HP: 0

K-BP: $-\frac{C_3R_1R_3R_6}{C_1R_1R_3 - C_1R_1R_5 - C_3R_3R_5}$

Qz: None

Wz: None

9.31 X-INVALID-NUMER-31 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{s^2 \left(C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3 \right) + s \left(C_1 R_1 + C_3 R_3 - C_5 R_3 \right) + 1}$$

Parameters:

Q: $\frac{\sqrt{C_1} C_3 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1} C_5 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}}}{C_1 R_1 + C_3 R_3 - C_5 R_3}$

wo: $\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}$

bandwidth: $\frac{(C_1 R_1 + C_3 R_3 - C_5 R_3) \sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}}{\sqrt{C_1} C_3 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1} C_5 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}}}$

K-LP: 0

K-HP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-BP: $\frac{C_5 R_1 R_6}{C_1 R_1 + C_3 R_3 - C_5 R_3}$

Qz: None

Wz: None

9.32 X-INVALID-NUMER-32 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 s + C_5 R_1}{C_6 + s^2 \left(C_1 C_3 C_6 R_1 R_3 - C_1 C_5 C_6 R_1 R_3 \right) + s \left(C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_1} C_3 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1} C_5 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}}}{C_1 R_1 + C_3 R_3 - C_5 R_3}$

wo: $\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}$

bandwidth: $\frac{(C_1 R_1 + C_3 R_3 - C_5 R_3) \sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}}{\sqrt{C_1} C_3 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1} C_5 \sqrt{R_1} \sqrt{R_3} \sqrt{\frac{1}{C_3 - C_5}}}$

K-LP: $\frac{C_5 R_1}{C_6}$

K-HP: 0

K-BP: $\frac{C_3 C_5 R_1 R_3}{C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3}$

Qz: None

Wz: None

10 X-INVALID-ORDER

10.1 X-INVALID-ORDER-1 $Z(s) = (R_1, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6)$

$$H(s) = \frac{R_1 R_6}{-R_3 + R_5}$$

10.2 X-INVALID-ORDER-2 $Z(s) = \left(R_1, \ \infty, \ R_3, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{R_1}{s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.3 X-INVALID-ORDER-3 $Z(s) = \left(R_1, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_6 R_1 R_6 s + R_1}{s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.4 X-INVALID-ORDER-4 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ R_5,\ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{R_1 R_6}{-R_3 + R_5 + s\left(-C_6 R_3 R_6 + C_6 R_5 R_6\right)}$$

10.5 X-INVALID-ORDER-5 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{-C_5 R_3 s + 1}$$

10.6 X-INVALID-ORDER-6 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 R_1}{-C_5 C_6 R_3 s + C_6}$$

10.7 X-INVALID-ORDER-7 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 C_6 R_1 R_6 s + C_5 R_1}{-C_5 C_6 R_3 s + C_6}$$

10.8 X-INVALID-ORDER-8 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{s\left(-C_5 R_3 + C_5 R_5\right) + 1}$$

10.9 X-INVALID-ORDER-9 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 R_1}{C_6 + s\left(-C_5 C_6 R_3 + C_5 C_6 R_5\right)}$$

10.10 X-INVALID-ORDER-10 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 C_6 R_1 R_6 s + C_5 R_1}{C_6 + s\left(-C_5 C_6 R_3 + C_5 C_6 R_5\right)}$$

10.11 X-INVALID-ORDER-11 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ R_6\right)$

$$H(s) = \frac{C_5 R_1 R_5 R_6 s + R_1 R_6}{-C_5 R_3 R_5 s - R_3 + R_5}$$

10.12 X-INVALID-ORDER-12 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 R_1 R_5 s + R_1}{-C_5 C_6 R_3 R_5 s^2 + s\left(-C_6 R_3 + C_6 R_5\right)}$$

10.13 X-INVALID-ORDER-13 $Z(s) = \left(R_1,\ \infty,\ R_3,\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_5 C_6 R_1 R_5 R_6 s^2 + R_1 + s\left(C_5 R_1 R_5 + C_6 R_1 R_6\right)}{-C_5 C_6 R_3 R_5 s^2 + s\left(-C_6 R_3 + C_6 R_5\right)}$$

10.14 X-INVALID-ORDER-14 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5,\ R_6\right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{C_3 R_5 s - 1}$$

10.15 X-INVALID-ORDER-15 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5,\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 R_1}{C_3 C_6 R_5 s - C_6}$$

10.16 X-INVALID-ORDER-16 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5,\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_6 R_1 R_6 s + C_3 R_1}{C_3 C_6 R_5 s - C_6}$$

10.17 X-INVALID-ORDER-17 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5}$$

10.18 X-INVALID-ORDER-18 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$$

10.19 X-INVALID-ORDER-19 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_6 s + C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$$

10.20 X-INVALID-ORDER-20 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s\left(C_3 C_6 R_6 - C_5 C_6 R_6\right)}$$

10.21 X-INVALID-ORDER-21 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 C_5 R_5 s + C_3 - C_5}$$

10.22 X-INVALID-ORDER-22 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_3 C_5 C_6 R_5 s + C_3 C_6 - C_5 C_6}$$

10.23 X-INVALID-ORDER-23 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_6 s + C_3 C_5 R_1}{C_3 C_5 C_6 R_5 s + C_3 C_6 - C_5 C_6}$$

10.24 X-INVALID-ORDER-24 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_1 R_6 s}{s\left(C_3 R_5 - C_5 R_5\right) - 1}$$

10.25 X-INVALID-ORDER-25 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 s + C_3 R_1}{-C_6 + s\left(C_3 C_6 R_5 - C_5 C_6 R_5\right)}$$

10.26 X-INVALID-ORDER-26 $Z(s) = \left(R_1,\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_5 R_6 s^2 + C_3 R_1 + s\left(C_3 C_5 R_1 R_5 + C_3 C_6 R_1 R_6\right)}{-C_6 + s\left(C_3 C_6 R_5 - C_5 C_6 R_5\right)}$$

10.27 X-INVALID-ORDER-27 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5,\ R_6\right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{s\left(-C_3 R_3 + C_3 R_5\right) - 1}$$

10.28 X-INVALID-ORDER-28 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5,\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 R_1}{-C_6 + s\left(-C_3 C_6 R_3 + C_3 C_6 R_5\right)}$$

10.29 X-INVALID-ORDER-29 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5,\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_6 R_1 R_6 s + C_3 R_1}{-C_6 + s\left(-C_3 C_6 R_3 + C_3 C_6 R_5\right)}$$

10.30 X-INVALID-ORDER-30 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{-C_3 C_5 R_3 s + C_3 - C_5}$$

10.31 X-INVALID-ORDER-31 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{-C_3 C_5 C_6 R_3 s + C_3 C_6 - C_5 C_6}$$

10.32 X-INVALID-ORDER-32 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_6 s + C_3 C_5 R_1}{-C_3 C_5 C_6 R_3 s + C_3 C_6 - C_5 C_6}$$

10.33 X-INVALID-ORDER-33 $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s\left(-C_3 C_5 R_3 + C_3 C_5 R_5\right)}$$

10.34 **X-INVALID-ORDER-34** $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6 + s\left(-C_3 C_5 C_6 R_3 + C_3 C_5 C_6 R_5\right)}$$

10.35 **X-INVALID-ORDER-35** $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_6 s + C_3 C_5 R_1}{C_3 C_6 - C_5 C_6 + s\left(-C_3 C_5 C_6 R_3 + C_3 C_5 C_6 R_5\right)}$$

10.36 **X-INVALID-ORDER-36** $Z(s) = \left(R_1,\ \infty,\ R_3 + \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s+1},\ \frac{R_6}{C_6 R_6 s+1}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_1 R_6 s}{-C_3 C_5 C_6 R_3 R_5 R_6 s^3 + s^2\left(-C_3 C_5 R_3 R_5 - C_3 C_6 R_3 R_6 + C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6\right) + s\left(-C_3 R_3 + C_3 R_5 - C_5 R_5 - C_6 R_6\right) - 1}$$

10.37 **X-INVALID-ORDER-37** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ R_5,\ R_6\right)$

$$H(s) = \frac{C_3 R_1 R_3 R_6 s + R_1 R_6}{C_3 R_3 R_5 s - R_3 + R_5}$$

10.38 **X-INVALID-ORDER-38** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ R_5,\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 R_1 R_3 s + R_1}{C_3 C_6 R_3 R_5 s^2 + s\left(-C_6 R_3 + C_6 R_5\right)}$$

10.39 **X-INVALID-ORDER-39** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ R_5,\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_6 R_1 R_3 R_6 s^2 + R_1 + s\left(C_3 R_1 R_3 + C_6 R_1 R_6\right)}{C_3 C_6 R_3 R_5 s^2 + s\left(-C_6 R_3 + C_6 R_5\right)}$$

10.40 **X-INVALID-ORDER-40** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{s\left(C_3 R_3 - C_5 R_3\right) + 1}$$

10.41 **X-INVALID-ORDER-41** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \frac{1}{C_5 s},\ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 s + C_5 R_1}{C_6 + s\left(C_3 C_6 R_3 - C_5 C_6 R_3\right)}$$

10.42 **X-INVALID-ORDER-42** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_3 R_6 s^2 + C_5 R_1 + s\left(C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6\right)}{C_6 + s\left(C_3 C_6 R_3 - C_5 C_6 R_3\right)}$$

10.43 **X-INVALID-ORDER-43** $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3 R_3 s+1},\ \infty,\ R_5 + \frac{1}{C_5 s},\ \frac{R_6}{C_6 R_6 s+1}\right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{C_3 C_5 C_6 R_3 R_5 R_6 s^3 + s^2\left(C_3 C_5 R_3 R_5 + C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6 + C_5 C_6 R_5 R_6\right) + s\left(C_3 R_3 - C_5 R_3 + C_5 R_5 + C_6 R_6\right) + 1}$$

10.44 X-INVALID-ORDER-44 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \frac{R_5}{C_5R_5s+1},\ R_6\right)$

$$H(s) = \frac{C_3C_5R_1R_3R_5R_6s^2 + R_1R_6 + s\left(C_3R_1R_3R_6 + C_5R_1R_5R_6\right)}{-R_3 + R_5 + s\left(C_3R_3R_5 - C_5R_3R_5\right)}$$

10.45 X-INVALID-ORDER-45 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \frac{R_5}{C_5R_5s+1},\ \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_3C_5R_1R_3R_5s^2 + R_1 + s\left(C_3R_1R_3 + C_5R_1R_5\right)}{s^2\left(C_3C_6R_3R_5 - C_5C_6R_3R_5\right) + s\left(-C_6R_3 + C_6R_5\right)}$$

10.46 X-INVALID-ORDER-46 $Z(s) = \left(R_1,\ \infty,\ \frac{R_3}{C_3R_3s+1},\ \infty,\ \frac{R_5}{C_5R_5s+1},\ R_6 + \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_3C_5C_6R_1R_3R_5R_6s^3 + R_1 + s^2\left(C_3C_5R_1R_3R_5 + C_3C_6R_1R_3R_6 + C_5C_6R_1R_5R_6\right) + s\left(C_3R_1R_3 + C_5R_1R_5 + C_6R_1R_6\right)}{s^2\left(C_3C_6R_3R_5 - C_5C_6R_3R_5\right) + s\left(-C_6R_3 + C_6R_5\right)}$$

10.47 X-INVALID-ORDER-47 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ R_5,\ R_6\right)$

$$H(s) = \frac{R_6}{s\left(-C_1R_3 + C_1R_5\right)}$$

10.48 X-INVALID-ORDER-48 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ R_5,\ \frac{1}{C_6s}\right)$

$$H(s) = \frac{1}{s^2\left(-C_1C_6R_3 + C_1C_6R_5\right)}$$

10.49 X-INVALID-ORDER-49 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ R_5,\ R_6 + \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_6R_6s + 1}{s^2\left(-C_1C_6R_3 + C_1C_6R_5\right)}$$

10.50 X-INVALID-ORDER-50 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ R_5,\ \frac{R_6}{C_6R_6s+1}\right)$

$$H(s) = \frac{R_6}{s^2\left(-C_1C_6R_3R_6 + C_1C_6R_5R_6\right) + s\left(-C_1R_3 + C_1R_5\right)}$$

10.51 X-INVALID-ORDER-51 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5s},\ R_6\right)$

$$H(s) = \frac{C_5R_6}{-C_1C_5R_3s + C_1}$$

10.52 X-INVALID-ORDER-52 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5s},\ \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_5}{-C_1C_5C_6R_3s^2 + C_1C_6s}$$

10.53 X-INVALID-ORDER-53 $Z(s) = \left(\frac{1}{C_1s},\ \infty,\ R_3,\ \infty,\ \frac{1}{C_5s},\ R_6 + \frac{1}{C_6s}\right)$

$$H(s) = \frac{C_5C_6R_6s + C_5}{-C_1C_5C_6R_3s^2 + C_1C_6s}$$

10.54 **X-INVALID-ORDER-54** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_5 R_6}{C_1 + s\left(-C_1 C_5 R_3 + C_1 C_5 R_5\right)}$$

10.55 **X-INVALID-ORDER-55** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5}{C_1 C_6 s + s^2\left(-C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.56 **X-INVALID-ORDER-56** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 C_6 R_6 s + C_5}{C_1 C_6 s + s^2\left(-C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.57 **X-INVALID-ORDER-57** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ R_6 \right)$

$$H(s) = \frac{C_5 R_5 R_6 s + R_6}{-C_1 C_5 R_3 R_5 s^2 + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.58 **X-INVALID-ORDER-58** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 R_5 s + 1}{-C_1 C_5 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.59 **X-INVALID-ORDER-59** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 C_6 R_5 R_6 s^2 + s\left(C_5 R_5 + C_6 R_6\right) + 1}{-C_1 C_5 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.60 **X-INVALID-ORDER-60** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ \frac{R_6}{C_6 R_6 s+1} \right)$

$$H(s) = \frac{C_5 R_5 R_6 s + R_6}{-C_1 C_5 C_6 R_3 R_5 R_6 s^3 + s^2\left(-C_1 C_5 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.61 **X-INVALID-ORDER-61** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_3 R_6}{C_1 C_3 R_5 s - C_1}$$

10.62 **X-INVALID-ORDER-62** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3}{C_1 C_3 C_6 R_5 s^2 - C_1 C_6 s}$$

10.63 **X-INVALID-ORDER-63** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_6 R_6 s + C_3}{C_1 C_3 C_6 R_5 s^2 - C_1 C_6 s}$$

10.64   X-INVALID-ORDER-64 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$$

10.65   X-INVALID-ORDER-65 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5}{s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.66   X-INVALID-ORDER-66 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_6 s + C_3 C_5}{s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.67   X-INVALID-ORDER-67 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s \left(C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

10.68   X-INVALID-ORDER-68 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 C_5 R_5 s + C_1 C_3 - C_1 C_5}$$

10.69   X-INVALID-ORDER-69 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5}{C_1 C_3 C_5 C_6 R_5 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.70   X-INVALID-ORDER-70 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_6 s + C_3 C_5}{C_1 C_3 C_5 C_6 R_5 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.71   X-INVALID-ORDER-71 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_5 R_6 s + C_3 R_6}{-C_1 + s \left(C_1 C_3 R_5 - C_1 C_5 R_5 \right)}$$

10.72   X-INVALID-ORDER-72 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_5 s + C_3}{-C_1 C_6 s + s^2 \left(C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.73   X-INVALID-ORDER-73 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_5 R_6 s^2 + C_3 + s \left(C_3 C_5 R_5 + C_3 C_6 R_6 \right)}{-C_1 C_6 s + s^2 \left(C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.74 **X-INVALID-ORDER-74** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_3 R_6}{-C_1 + s \left(-C_1 C_3 R_3 + C_1 C_3 R_5 \right)}$$

10.75 **X-INVALID-ORDER-75** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3}{-C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 \right)}$$

10.76 **X-INVALID-ORDER-76** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_6 R_6 s + C_3}{-C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 \right)}$$

10.77 **X-INVALID-ORDER-77** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_6}{-C_1 C_3 C_5 R_3 s + C_1 C_3 - C_1 C_5}$$

10.78 **X-INVALID-ORDER-78** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5}{-C_1 C_3 C_5 C_6 R_3 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.79 **X-INVALID-ORDER-79** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_6 s + C_3 C_5}{-C_1 C_3 C_5 C_6 R_3 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.80 **X-INVALID-ORDER-80** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s \left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_5 R_5 \right)}$$

10.81 **X-INVALID-ORDER-81** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5}{s^2 \left(-C_1 C_3 C_5 C_6 R_3 + C_1 C_3 C_5 C_6 R_5 \right) + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.82 **X-INVALID-ORDER-82** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_6 s + C_3 C_5}{s^2 \left(-C_1 C_3 C_5 C_6 R_3 + C_1 C_3 C_5 C_6 R_5 \right) + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.83 **X-INVALID-ORDER-83** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_5 s + C_3}{-C_1 C_3 C_5 C_6 R_3 R_5 s^3 - C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.84 **X-INVALID-ORDER-84** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_5 R_6 s^2 + C_3 + s\left(C_3 C_5 R_5 + C_3 C_6 R_6\right)}{-C_1 C_3 C_5 C_6 R_3 R_5 s^3 - C_1 C_6 s + s^2\left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5\right)}$$

10.85 **X-INVALID-ORDER-85** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_5 R_6 s + C_3 R_6}{-C_1 C_3 C_5 C_6 R_3 R_5 R_6 s^3 - C_1 + s^2\left(-C_1 C_3 C_5 R_3 R_5 - C_1 C_3 C_6 R_3 R_6 + C_1 C_3 C_6 R_5 R_6 - C_1 C_5 C_6 R_5 R_6\right) + s\left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6\right)}$$

10.86 **X-INVALID-ORDER-86** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_3 R_3 R_6 s + R_6}{C_1 C_3 R_3 R_5 s^2 + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.87 **X-INVALID-ORDER-87** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 R_3 s + 1}{C_1 C_3 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.88 **X-INVALID-ORDER-88** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_6 R_3 R_6 s^2 + s\left(C_3 R_3 + C_6 R_6\right) + 1}{C_1 C_3 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.89 **X-INVALID-ORDER-89** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_3 R_6 s + R_6}{C_1 C_3 C_6 R_3 R_5 R_6 s^3 + s^2\left(C_1 C_3 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.90 **X-INVALID-ORDER-90** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_3 R_6 s + C_5 R_6}{C_1 + s\left(C_1 C_3 R_3 - C_1 C_5 R_3\right)}$$

10.91 **X-INVALID-ORDER-91** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_3 s + C_5}{C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3\right)}$$

10.92 **X-INVALID-ORDER-92** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_3 R_6 s^2 + C_5 + s\left(C_3 C_5 R_3 + C_5 C_6 R_6\right)}{C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3\right)}$$

10.93 **X-INVALID-ORDER-93** $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_3 s + C_5}{C_1 C_3 C_5 C_6 R_3 R_5 s^3 + C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.94 X-INVALID-ORDER-94 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_3 R_6 s^2 + C_5 + s\left(C_3 C_5 R_3 + C_5 C_6 R_6\right)}{C_1 C_3 C_5 C_6 R_3 R_5 s^3 + C_1 C_6 s + s^2 \left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.95 X-INVALID-ORDER-95 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s+1} \right)$

$$H(s) = \frac{C_3 C_5 R_3 R_6 s + C_5 R_6}{C_1 C_3 C_5 C_6 R_3 R_5 R_6 s^3 + C_1 + s^2 \left(C_1 C_3 C_5 R_3 R_5 + C_1 C_3 C_6 R_3 R_6 - C_1 C_5 C_6 R_3 R_6 + C_1 C_5 C_6 R_5 R_6\right) + s\left(C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_5 R_5 + C_1 C_6 R_6\right)}$$

10.96 X-INVALID-ORDER-96 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_3 R_5 R_6 s^2 + R_6 + s\left(C_3 R_3 R_6 + C_5 R_5 R_6\right)}{s^2 \left(C_1 C_3 R_3 R_5 - C_1 C_5 R_3 R_5\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.97 X-INVALID-ORDER-97 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_3 R_5 s^2 + s\left(C_3 R_3 + C_5 R_5\right) + 1}{s^3 \left(C_1 C_3 C_6 R_3 R_5 - C_1 C_5 C_6 R_3 R_5\right) + s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.98 X-INVALID-ORDER-98 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_3 R_5 R_6 s^3 + s^2 \left(C_3 C_5 R_3 R_5 + C_3 C_6 R_3 R_6 + C_5 C_6 R_5 R_6\right) + s\left(C_3 R_3 + C_5 R_5 + C_6 R_6\right) + 1}{s^3 \left(C_1 C_3 C_6 R_3 R_5 - C_1 C_5 C_6 R_3 R_5\right) + s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.99 X-INVALID-ORDER-99 $Z(s) = \left(\frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s+1}, \ \infty, \ \frac{R_5}{C_5 R_5 s+1}, \ \frac{R_6}{C_6 R_6 s+1} \right)$

$$H(s) = \frac{C_3 C_5 R_3 R_5 R_6 s^2 + R_6 + s\left(C_3 R_3 R_6 + C_5 R_5 R_6\right)}{s^3 \left(C_1 C_3 C_6 R_3 R_5 R_6 - C_1 C_5 C_6 R_3 R_5 R_6\right) + s^2 \left(C_1 C_3 R_3 R_5 - C_1 C_5 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.100 X-INVALID-ORDER-100 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_1 R_1 R_6 s + R_6}{s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.101 X-INVALID-ORDER-101 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 R_1 s + 1}{s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.102 X-INVALID-ORDER-102 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_6 R_1 R_6 s^2 + s\left(C_1 R_1 + C_6 R_6\right) + 1}{s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.103 X-INVALID-ORDER-103 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s+1} \right)$

$$H(s) = \frac{C_1 R_1 R_6 s + R_6}{s^2 \left(-C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.104 X-INVALID-ORDER-104 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_6 s + C_5 R_6}{-C_1 C_5 R_3 s + C_1}$$

10.105 X-INVALID-ORDER-105 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 R_1 s + C_5}{-C_1 C_5 C_6 R_3 s^2 + C_1 C_6 s}$$

10.106 X-INVALID-ORDER-106 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 C_6 R_1 R_6 s^2 + C_5 + s\left(C_1 C_5 R_1 + C_5 C_6 R_6 \right)}{-C_1 C_5 C_6 R_3 s^2 + C_1 C_6 s}$$

10.107 X-INVALID-ORDER-107 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_6 s + C_5 R_6}{C_1 + s\left(-C_1 C_5 R_3 + C_1 C_5 R_5 \right)}$$

10.108 X-INVALID-ORDER-108 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 R_1 s + C_5}{C_1 C_6 s + s^2\left(-C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5 \right)}$$

10.109 X-INVALID-ORDER-109 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 C_6 R_1 R_6 s^2 + C_5 + s\left(C_1 C_5 R_1 + C_5 C_6 R_6 \right)}{C_1 C_6 s + s^2\left(-C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5 \right)}$$

10.110 X-INVALID-ORDER-110 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_5 R_6 s^2 + R_6 + s\left(C_1 R_1 R_6 + C_5 R_5 R_6 \right)}{-C_1 C_5 R_3 R_5 s^2 + s\left(-C_1 R_3 + C_1 R_5 \right)}$$

10.111 X-INVALID-ORDER-111 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_5 s^2 + s\left(C_1 R_1 + C_5 R_5 \right) + 1}{-C_1 C_5 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5 \right)}$$

10.112 X-INVALID-ORDER-112 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_5 C_6 R_1 R_5 R_6 s^3 + s^2\left(C_1 C_5 R_1 R_5 + C_1 C_6 R_1 R_6 + C_5 C_6 R_5 R_6 \right) + s\left(C_1 R_1 + C_5 R_5 + C_6 R_6 \right) + 1}{-C_1 C_5 C_6 R_3 R_5 s^3 + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5 \right)}$$

10.113 X-INVALID-ORDER-113 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_5 R_1 R_5 R_6 s^2 + R_6 + s\left(C_1 R_1 R_6 + C_5 R_5 R_6 \right)}{-C_1 C_5 C_6 R_3 R_5 R_6 s^3 + s^2\left(-C_1 C_5 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6 \right) + s\left(-C_1 R_3 + C_1 R_5 \right)}$$

10.114 X-INVALID-ORDER-114 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_6 s + C_3 R_6}{C_1 C_3 R_5 s - C_1}$$

10.115 X-INVALID-ORDER-115 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 R_1 s + C_3}{C_1 C_3 C_6 R_5 s^2 - C_1 C_6 s}$$

10.116 X-INVALID-ORDER-116 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_6 R_1 R_6 s^2 + C_3 + s \left(C_1 C_3 R_1 + C_3 C_6 R_6 \right)}{C_1 C_3 C_6 R_5 s^2 - C_1 C_6 s}$$

10.117 X-INVALID-ORDER-117 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$$

10.118 X-INVALID-ORDER-118 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 s + C_3 C_5}{s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.119 X-INVALID-ORDER-119 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_6 s^2 + C_3 C_5 + s \left(C_1 C_3 C_5 R_1 + C_3 C_5 C_6 R_6 \right)}{s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.120 X-INVALID-ORDER-120 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s \left(C_1 C_3 C_6 R_6 - C_1 C_5 C_6 R_6 \right)}$$

10.121 X-INVALID-ORDER-121 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 C_5 R_5 s + C_1 C_3 - C_1 C_5}$$

10.122 X-INVALID-ORDER-122 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 s + C_3 C_5}{C_1 C_3 C_5 C_6 R_5 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.123 X-INVALID-ORDER-123 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_6 s^2 + C_3 C_5 + s \left(C_1 C_3 C_5 R_1 + C_3 C_5 C_6 R_6 \right)}{C_1 C_3 C_5 C_6 R_5 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.124 X-INVALID-ORDER-124 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_6 + s \left(C_1 C_3 R_1 R_6 + C_3 C_5 R_5 R_6 \right)}{-C_1 + s \left(C_1 C_3 R_5 - C_1 C_5 R_5 \right)}$$

10.125 X-INVALID-ORDER-125 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 s^2 + C_3 + s \left(C_1 C_3 R_1 + C_3 C_5 R_5 \right)}{-C_1 C_6 s + s^2 \left(C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.126 X-INVALID-ORDER-126 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_5 R_6 s^3 + C_3 + s^2 \left(C_1 C_3 C_5 R_1 R_5 + C_1 C_3 C_6 R_1 R_6 + C_3 C_5 C_6 R_5 R_6 \right) + s \left(C_1 C_3 R_1 + C_3 C_5 R_5 + C_3 C_6 R_6 \right)}{-C_1 C_6 s + s^2 \left(C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.127 X-INVALID-ORDER-127 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_6 s + C_3 R_6}{-C_1 + s \left(-C_1 C_3 R_3 + C_1 C_3 R_5 \right)}$$

10.128 X-INVALID-ORDER-128 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 R_1 s + C_3}{-C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 \right)}$$

10.129 X-INVALID-ORDER-129 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_6 R_1 R_6 s^2 + C_3 + s \left(C_1 C_3 R_1 + C_3 C_6 R_6 \right)}{-C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 \right)}$$

10.130 X-INVALID-ORDER-130 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{-C_1 C_3 C_5 R_3 s + C_1 C_3 - C_1 C_5}$$

10.131 X-INVALID-ORDER-131 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 s + C_3 C_5}{-C_1 C_3 C_5 C_6 R_3 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.132 X-INVALID-ORDER-132 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_6 s^2 + C_3 C_5 + s \left(C_1 C_3 C_5 R_1 + C_3 C_5 C_6 R_6 \right)}{-C_1 C_3 C_5 C_6 R_3 s^2 + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.133 X-INVALID-ORDER-133 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_6 s + C_3 C_5 R_6}{C_1 C_3 - C_1 C_5 + s \left(-C_1 C_3 C_5 R_3 + C_1 C_3 C_5 R_5 \right)}$$

10.134   X-INVALID-ORDER-134 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 s + C_3 C_5}{s^2 \left(-C_1 C_3 C_5 C_6 R_3 + C_1 C_3 C_5 C_6 R_5 \right) + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.135   X-INVALID-ORDER-135 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_6 s^2 + C_3 C_5 + s \left(C_1 C_3 C_5 R_1 + C_3 C_5 C_6 R_6 \right)}{s^2 \left(-C_1 C_3 C_5 C_6 R_3 + C_1 C_3 C_5 C_6 R_5 \right) + s \left(C_1 C_3 C_6 - C_1 C_5 C_6 \right)}$$

10.136   X-INVALID-ORDER-136 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 s^2 + C_3 + s \left(C_1 C_3 R_1 + C_3 C_5 R_5 \right)}{-C_1 C_3 C_5 C_6 R_3 R_5 s^3 - C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.137   X-INVALID-ORDER-137 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_5 R_6 s^3 + C_3 + s^2 \left(C_1 C_3 C_5 R_1 R_5 + C_1 C_3 C_6 R_1 R_6 + C_3 C_5 C_6 R_5 R_6 \right) + s \left(C_1 C_3 R_1 + C_3 C_5 R_5 + C_3 C_6 R_6 \right)}{-C_1 C_3 C_5 C_6 R_3 R_5 s^3 - C_1 C_6 s + s^2 \left(-C_1 C_3 C_6 R_3 + C_1 C_3 C_6 R_5 - C_1 C_5 C_6 R_5 \right)}$$

10.138   X-INVALID-ORDER-138 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_6 + s \left(C_1 C_3 R_1 R_6 + C_3 C_5 R_5 R_6 \right)}{-C_1 C_3 C_5 C_6 R_3 R_5 R_6 s^3 - C_1 + s^2 \left(-C_1 C_3 C_5 R_3 R_5 - C_1 C_3 C_6 R_3 R_6 + C_1 C_3 C_6 R_5 R_6 - C_1 C_5 C_6 R_5 R_6 \right) + s \left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6 \right)}$$

10.139   X-INVALID-ORDER-139 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_3 R_6 s^2 + R_6 + s \left(C_1 R_1 R_6 + C_3 R_3 R_6 \right)}{C_1 C_3 R_3 R_5 s^2 + s \left(-C_1 R_3 + C_1 R_5 \right)}$$

10.140   X-INVALID-ORDER-140 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_3 s^2 + s \left(C_1 R_1 + C_3 R_3 \right) + 1}{C_1 C_3 C_6 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5 \right)}$$

10.141   X-INVALID-ORDER-141 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_1 C_3 C_6 R_1 R_3 R_6 s^3 + s^2 \left(C_1 C_3 R_1 R_3 + C_1 C_6 R_1 R_6 + C_3 C_6 R_3 R_6 \right) + s \left(C_1 R_1 + C_3 R_3 + C_6 R_6 \right) + 1}{C_1 C_3 C_6 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_3 + C_1 C_6 R_5 \right)}$$

10.142   X-INVALID-ORDER-142 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_1 C_3 R_1 R_3 R_6 s^2 + R_6 + s \left(C_1 R_1 R_6 + C_3 R_3 R_6 \right)}{C_1 C_3 C_6 R_3 R_5 R_6 s^3 + s^2 \left(C_1 C_3 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6 \right) + s \left(-C_1 R_3 + C_1 R_5 \right)}$$

10.143   X-INVALID-ORDER-143 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_6 + s \left(C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6 \right)}{C_1 + s \left(C_1 C_3 R_3 - C_1 C_5 R_3 \right)}$$

10.144   X-INVALID-ORDER-144 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 s^2 + C_5 + s\left(C_1 C_5 R_1 + C_3 C_5 R_3\right)}{C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3\right)}$$

10.145   X-INVALID-ORDER-145 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_3 R_6 s^3 + C_5 + s^2\left(C_1 C_3 C_5 R_1 R_3 + C_1 C_5 C_6 R_1 R_6 + C_3 C_5 C_6 R_3 R_6\right) + s\left(C_1 C_5 R_1 + C_3 C_5 R_3 + C_5 C_6 R_6\right)}{C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3\right)}$$

10.146   X-INVALID-ORDER-146 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 s^2 + C_5 + s\left(C_1 C_5 R_1 + C_3 C_5 R_3\right)}{C_1 C_3 C_5 C_6 R_3 R_5 s^3 + C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.147   X-INVALID-ORDER-147 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_3 R_6 s^3 + C_5 + s^2\left(C_1 C_3 C_5 R_1 R_3 + C_1 C_5 C_6 R_1 R_6 + C_3 C_5 C_6 R_3 R_6\right) + s\left(C_1 C_5 R_1 + C_3 C_5 R_3 + C_5 C_6 R_6\right)}{C_1 C_3 C_5 C_6 R_3 R_5 s^3 + C_1 C_6 s + s^2\left(C_1 C_3 C_6 R_3 - C_1 C_5 C_6 R_3 + C_1 C_5 C_6 R_5\right)}$$

10.148   X-INVALID-ORDER-148 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_6 + s\left(C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6\right)}{C_1 C_3 C_5 C_6 R_3 R_5 R_6 s^3 + C_1 + s^2\left(C_1 C_3 C_5 R_3 R_5 + C_1 C_3 C_6 R_3 R_6 - C_1 C_5 C_6 R_3 R_6 + C_1 C_5 C_6 R_5 R_6\right) + s\left(C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_5 R_5 + C_1 C_6 R_6\right)}$$

10.149   X-INVALID-ORDER-149 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_5 R_6 s^3 + R_6 + s^2\left(C_1 C_3 R_1 R_3 R_6 + C_1 C_5 R_1 R_5 R_6 + C_3 C_5 R_3 R_5 R_6\right) + s\left(C_1 R_1 R_6 + C_3 R_3 R_6 + C_5 R_5 R_6\right)}{s^2\left(C_1 C_3 R_3 R_5 - C_1 C_5 R_3 R_5\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.150   X-INVALID-ORDER-150 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_5 s^3 + s^2\left(C_1 C_3 R_1 R_3 + C_1 C_5 R_1 R_5 + C_3 C_5 R_3 R_5\right) + s\left(C_1 R_1 + C_3 R_3 + C_5 R_5\right) + 1}{s^3\left(C_1 C_3 C_6 R_3 R_5 - C_1 C_5 C_6 R_3 R_5\right) + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.151   X-INVALID-ORDER-151 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_1 C_3 C_5 C_6 R_1 R_3 R_5 R_6 s^4 + s^3\left(C_1 C_3 C_5 R_1 R_3 R_5 + C_1 C_3 C_6 R_1 R_3 R_6 + C_1 C_5 C_6 R_1 R_5 R_6 + C_3 C_5 C_6 R_3 R_5 R_6\right) + s^2\left(C_1 C_3 R_1 R_3 + C_1 C_5 R_1 R_5 + C_1 C_6 R_1 R_6 + C_3 C_5 R_3 R_5 + C_3 C_6 R_3 R_6 + C_5 C_6 R_5 R_6\right) + s\left(C_1 R_1 + C_3 R_3 + C_5 R_5 + C_6 R_6\right) + 1}{s^3\left(C_1 C_3 C_6 R_3 R_5 - C_1 C_5 C_6 R_3 R_5\right) + s^2\left(-C_1 C_6 R_3 + C_1 C_6 R_5\right)}$$

10.152   X-INVALID-ORDER-152 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_5 R_6 s^3 + R_6 + s^2\left(C_1 C_3 R_1 R_3 R_6 + C_1 C_5 R_1 R_5 R_6 + C_3 C_5 R_3 R_5 R_6\right) + s\left(C_1 R_1 R_6 + C_3 R_3 R_6 + C_5 R_5 R_6\right)}{s^3\left(C_1 C_3 C_6 R_3 R_5 R_6 - C_1 C_5 C_6 R_3 R_5 R_6\right) + s^2\left(C_1 C_3 R_3 R_5 - C_1 C_5 R_3 R_5 - C_1 C_6 R_3 R_6 + C_1 C_6 R_5 R_6\right) + s\left(-C_1 R_3 + C_1 R_5\right)}$$

10.153   X-INVALID-ORDER-153 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6\right)$

$$H(s) = \frac{R_1 R_6}{-R_3 + R_5 + s\left(-C_1 R_1 R_3 + C_1 R_1 R_5\right)}$$

10.154 X-INVALID-ORDER-154 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{R_1}{s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.155 X-INVALID-ORDER-155 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_6 R_1 R_6 s + R_1}{s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.156 X-INVALID-ORDER-156 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{-C_1 C_5 C_6 R_1 R_3 R_6 s^3 + s^2 \left(-C_1 C_5 R_1 R_3 + C_1 C_6 R_1 R_6 - C_5 C_6 R_3 R_6 \right) + s \left(C_1 R_1 - C_5 R_3 + C_6 R_6 \right) + 1}$$

10.157 X-INVALID-ORDER-157 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_5 R_1 R_6 s}{s^3 \left(-C_1 C_5 C_6 R_1 R_3 R_6 + C_1 C_5 C_6 R_1 R_5 R_6 \right) + s^2 \left(-C_1 C_5 R_1 R_3 + C_1 C_5 R_1 R_5 + C_1 C_6 R_1 R_6 - C_5 C_6 R_3 R_6 + C_5 C_6 R_5 R_6 \right) + s \left(C_1 R_1 - C_5 R_3 + C_5 R_5 + C_6 R_6 \right) + 1}$$

10.158 X-INVALID-ORDER-158 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 R_1 R_5 s + R_1}{-C_1 C_5 C_6 R_1 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 - C_5 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.159 X-INVALID-ORDER-159 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_5 C_6 R_1 R_5 R_6 s^2 + R_1 + s \left(C_5 R_1 R_5 + C_6 R_1 R_6 \right)}{-C_1 C_5 C_6 R_1 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 - C_5 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.160 X-INVALID-ORDER-160 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_5 R_1 R_5 R_6 s + R_1 R_6}{-C_1 C_5 C_6 R_1 R_3 R_5 R_6 s^3 - R_3 + R_5 + s^2 \left(-C_1 C_5 R_1 R_3 R_5 - C_1 C_6 R_1 R_3 R_6 + C_1 C_6 R_1 R_5 R_6 - C_5 C_6 R_3 R_5 R_6 \right) + s \left(-C_1 R_1 R_3 + C_1 R_1 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}$$

10.161 X-INVALID-ORDER-161 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{C_1 C_3 C_6 R_1 R_5 R_6 s^3 + s^2 \left(C_1 C_3 R_1 R_5 - C_1 C_6 R_1 R_6 + C_3 C_6 R_5 R_6 \right) + s \left(-C_1 R_1 + C_3 R_5 - C_6 R_6 \right) - 1}$$

10.162 X-INVALID-ORDER-162 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s \left(C_1 C_3 R_1 - C_1 C_5 R_1 \right)}$$

10.163 X-INVALID-ORDER-163 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6 + s \left(C_1 C_3 C_6 R_1 - C_1 C_5 C_6 R_1 \right)}$$

10.164 X-INVALID-ORDER-164 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_6 s + C_3 C_5 R_1}{C_3 C_6 - C_5 C_6 + s \left(C_1 C_3 C_6 R_1 - C_1 C_5 C_6 R_1 \right)}$$

10.165 X-INVALID-ORDER-165 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_1 C_3 C_5 C_6 R_1 R_5 R_6 s^3 + C_3 - C_5 + s^2 \left(C_1 C_3 C_5 R_1 R_5 + C_1 C_3 C_6 R_1 R_6 - C_1 C_5 C_6 R_1 R_6 + C_3 C_5 C_6 R_5 R_6 \right) + s \left(C_1 C_3 R_1 - C_1 C_5 R_1 + C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6 \right)}$$

10.166 X-INVALID-ORDER-166 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_1 R_6 s}{s^3 \left(C_1 C_3 C_6 R_1 R_5 R_6 - C_1 C_5 C_6 R_1 R_5 R_6 \right) + s^2 \left(C_1 C_3 R_1 R_5 - C_1 C_5 R_1 R_5 - C_1 C_6 R_1 R_6 + C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6 \right) + s \left(-C_1 R_1 + C_3 R_5 - C_5 R_5 - C_6 R_6 \right) - 1}$$

10.167 X-INVALID-ORDER-167 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_1 R_6 s}{s^3 \left(-C_1 C_3 C_6 R_1 R_3 R_6 + C_1 C_3 C_6 R_1 R_5 R_6 \right) + s^2 \left(-C_1 C_3 R_1 R_3 + C_1 C_3 R_1 R_5 - C_1 C_6 R_1 R_6 - C_3 C_6 R_3 R_6 + C_3 C_6 R_5 R_6 \right) + s \left(-C_1 R_1 - C_3 R_3 + C_3 R_5 - C_6 R_6 \right) - 1}$$

10.168 X-INVALID-ORDER-168 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{-C_1 C_3 C_5 C_6 R_1 R_3 R_6 s^3 + C_3 - C_5 + s^2 \left(-C_1 C_3 C_5 R_1 R_3 + C_1 C_3 C_6 R_1 R_6 - C_1 C_5 C_6 R_1 R_6 - C_3 C_5 C_6 R_3 R_6 \right) + s \left(C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_6 R_6 - C_5 C_6 R_6 \right)}$$

10.169 X-INVALID-ORDER-169 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_6 s}{C_3 - C_5 + s^3 \left(-C_1 C_3 C_5 C_6 R_1 R_3 R_6 + C_1 C_3 C_5 C_6 R_1 R_5 R_6 \right) + s^2 \left(-C_1 C_3 C_5 R_1 R_3 + C_1 C_3 C_5 R_1 R_5 + C_1 C_3 C_6 R_1 R_6 - C_1 C_5 C_6 R_1 R_6 - C_3 C_5 C_6 R_3 R_6 + C_3 C_5 C_6 R_5 R_6 \right) + s \left(C_1 C_3 R_1 - C_1 C_5 R_1 - C_3 C_5 R_3 + C_3 C_5 R_5 + C_3 C_6 R_6 - C_5 C_6 R_6 \right)}$$

10.170 X-INVALID-ORDER-170 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_1 R_6 s}{-C_1 C_3 C_5 R_1 R_3 R_5 s^3 + s^2 \left(-C_1 C_3 R_1 R_3 + C_1 C_3 R_1 R_5 - C_1 C_5 R_1 R_5 - C_3 C_5 R_3 R_5 \right) + s \left(-C_1 R_1 - C_3 R_3 + C_3 R_5 - C_5 R_5 \right) - 1}$$

10.171 X-INVALID-ORDER-171 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 s + C_3 R_1}{-C_1 C_3 C_5 C_6 R_1 R_3 R_5 s^3 - C_6 + s^2 \left(-C_1 C_3 C_6 R_1 R_3 + C_1 C_3 C_6 R_1 R_5 - C_1 C_5 C_6 R_1 R_5 - C_3 C_5 C_6 R_3 R_5 \right) + s \left(-C_1 C_6 R_1 - C_3 C_6 R_3 + C_3 C_6 R_5 - C_5 C_6 R_5 \right)}$$

10.172 X-INVALID-ORDER-172 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_5 R_6 s^2 + C_3 R_1 + s \left(C_3 C_5 R_1 R_5 + C_3 C_6 R_1 R_6 \right)}{-C_1 C_3 C_5 C_6 R_1 R_3 R_5 s^3 - C_6 + s^2 \left(-C_1 C_3 C_6 R_1 R_3 + C_1 C_3 C_6 R_1 R_5 - C_1 C_5 C_6 R_1 R_5 - C_3 C_5 C_6 R_3 R_5 \right) + s \left(-C_1 C_6 R_1 - C_3 C_6 R_3 + C_3 C_6 R_5 - C_5 C_6 R_5 \right)}$$

10.173 X-INVALID-ORDER-173 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_1 R_6 s}{-C_1 C_3 C_5 C_6 R_1 R_3 R_5 R_6 s^4 + s^3 \left(-C_1 C_3 C_5 R_1 R_3 R_5 - C_1 C_3 C_6 R_1 R_3 R_6 + C_1 C_3 C_6 R_1 R_5 R_6 - C_1 C_5 C_6 R_1 R_5 R_6 - C_3 C_5 C_6 R_3 R_5 R_6 \right) + s^2 \left(-C_1 C_3 R_1 R_3 + C_1 C_3 R_1 R_5 - C_1 C_5 R_1 R_5 - C_1 C_6 R_1 R_6 - C_3 C_5 R_3 R_5 - C_3 C_6 R_3 R_6 + C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6 \right) + s \left(-C_1 R_1 - \right.}$$

10.174 X-INVALID-ORDER-174 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 R_1 R_3 s + R_1}{C_1 C_3 C_6 R_1 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 + C_3 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.175 X-INVALID-ORDER-175 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_6 R_1 R_3 R_6 s^2 + R_1 + s \left(C_3 R_1 R_3 + C_6 R_1 R_6 \right)}{C_1 C_3 C_6 R_1 R_3 R_5 s^3 + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 + C_3 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.176 X-INVALID-ORDER-176 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 R_1 R_3 R_6 s + R_1 R_6}{C_1 C_3 C_6 R_1 R_3 R_5 R_6 s^3 - R_3 + R_5 + s^2 \left(C_1 C_3 R_1 R_3 R_5 - C_1 C_6 R_1 R_3 R_6 + C_1 C_6 R_1 R_5 R_6 + C_3 C_6 R_3 R_5 R_6 \right) + s \left(-C_1 R_1 R_3 + C_1 R_1 R_5 + C_3 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}$$

10.177 X-INVALID-ORDER-177 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{s^3 \left(C_1 C_3 C_6 R_1 R_3 R_6 - C_1 C_5 C_6 R_1 R_3 R_6 \right) + s^2 \left(C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3 + C_1 C_6 R_1 R_6 + C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6 \right) + s \left(C_1 R_1 + C_3 R_3 - C_5 R_3 + C_6 R_6 \right) + 1}$$

10.178 X-INVALID-ORDER-178 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{C_1 C_3 C_5 R_1 R_3 R_5 s^3 + s^2 \left(C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3 + C_1 C_5 R_1 R_5 + C_3 C_5 R_3 R_5 \right) + s \left(C_1 R_1 + C_3 R_3 - C_5 R_3 + C_5 R_5 \right) + 1}$$

10.179 X-INVALID-ORDER-179 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 s + C_5 R_1}{C_1 C_3 C_5 C_6 R_1 R_3 R_5 s^3 + C_6 + s^2 \left(C_1 C_3 C_6 R_1 R_3 - C_1 C_5 C_6 R_1 R_3 + C_1 C_5 C_6 R_1 R_5 + C_3 C_5 C_6 R_3 R_5 \right) + s \left(C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5 \right)}$$

10.180 X-INVALID-ORDER-180 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_3 R_6 s^2 + C_5 R_1 + s \left(C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6 \right)}{C_1 C_3 C_5 C_6 R_1 R_3 R_5 s^3 + C_6 + s^2 \left(C_1 C_3 C_6 R_1 R_3 - C_1 C_5 C_6 R_1 R_3 + C_1 C_5 C_6 R_1 R_5 + C_3 C_5 C_6 R_3 R_5 \right) + s \left(C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5 \right)}$$

10.181 X-INVALID-ORDER-181 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_1 R_6 s}{C_1 C_3 C_5 C_6 R_1 R_3 R_5 R_6 s^4 + s^3 \left(C_1 C_3 C_5 R_1 R_3 R_5 + C_1 C_3 C_6 R_1 R_3 R_6 - C_1 C_5 C_6 R_1 R_3 R_6 + C_1 C_5 C_6 R_1 R_5 R_6 + C_3 C_5 C_6 R_3 R_5 R_6 \right) + s^2 \left(C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3 + C_1 C_5 R_1 R_5 + C_1 C_6 R_1 R_6 + C_3 C_5 R_3 R_5 + C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6 + C_5 C_6 R_5 R_6 \right) + s \left(C_1 R_1 + C_3 R_3 - \ldots \right)}$$

10.182 X-INVALID-ORDER-182 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_5 s^2 + R_1 + s \left(C_3 R_1 R_3 + C_5 R_1 R_5 \right)}{s^3 \left(C_1 C_3 C_6 R_1 R_3 R_5 - C_1 C_5 C_6 R_1 R_3 R_5 \right) + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 + C_3 C_6 R_3 R_5 - C_5 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.183 X-INVALID-ORDER-183 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_3 R_5 R_6 s^3 + R_1 + s^2 \left(C_3 C_5 R_1 R_3 R_5 + C_3 C_6 R_1 R_3 R_6 + C_5 C_6 R_1 R_5 R_6 \right) + s \left(C_3 R_1 R_3 + C_5 R_1 R_5 + C_6 R_1 R_6 \right)}{s^3 \left(C_1 C_3 C_6 R_1 R_3 R_5 - C_1 C_5 C_6 R_1 R_3 R_5 \right) + s^2 \left(-C_1 C_6 R_1 R_3 + C_1 C_6 R_1 R_5 + C_3 C_6 R_3 R_5 - C_5 C_6 R_3 R_5 \right) + s \left(-C_6 R_3 + C_6 R_5 \right)}$$

10.184 X-INVALID-ORDER-184 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_5 R_6 s^2 + R_1 R_6 + s \left(C_3 R_1 R_3 R_6 + C_5 R_1 R_5 R_6 \right)}{-R_3 + R_5 + s^3 \left(C_1 C_3 C_6 R_1 R_3 R_5 R_6 - C_1 C_5 C_6 R_1 R_3 R_5 R_6 \right) + s^2 \left(C_1 C_3 R_1 R_3 R_5 - C_1 C_5 R_1 R_3 R_5 - C_1 C_6 R_1 R_3 R_6 + C_1 C_6 R_1 R_5 R_6 + C_3 C_6 R_3 R_5 R_6 - C_5 C_6 R_3 R_5 R_6 \right) + s \left(-C_1 R_1 R_3 + C_1 R_1 R_5 + C_3 R_3 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}$$

11 X-INVALID-WZ

11.1 X-INVALID-WZ-1 $Z(s) = \left(R_1, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_5 R_6 s^2 + C_3 R_1 + s \left(C_3 C_5 R_1 R_5 + C_3 C_6 R_1 R_6 \right)}{-C_3 C_5 C_6 R_3 R_5 s^2 - C_6 + s \left(-C_3 C_6 R_3 + C_3 C_6 R_5 - C_5 C_6 R_5 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_3 R_5 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_3 R_5 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $-\frac{C_3 R_1}{C_6}$

K-HP: $-\frac{R_1 R_6}{R_3}$

K-BP: $\frac{-C_3 C_5 R_1 R_5 - C_3 C_6 R_1 R_6}{C_3 C_6 R_3 - C_3 C_6 R_5 + C_5 C_6 R_5}$

Qz: None

Wz: $\frac{1}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

11.2 X-INVALID-WZ-2 $Z(s) = \left(R_1, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ R_5 + \frac{1}{C_5 s}, \ R_6 + \frac{1}{C_6 s} \right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_3 R_6 s^2 + C_5 R_1 + s \left(C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6 \right)}{C_3 C_5 C_6 R_3 R_5 s^2 + C_6 + s \left(C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5 \right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_5 R_3 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_5 R_3 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $\frac{C_5 R_1}{C_6}$

K-HP: $\frac{R_1 R_6}{R_5}$

K-BP: $\frac{C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6}{C_3 C_6 R_3 - C_5 C_6 R_3 + C_5 C_6 R_5}$

Qz: None

Wz: $\frac{1}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

11.3 X-INVALID-WZ-3 $Z(s) = \left(R_1, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1} \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_5 R_6 s^2 + R_1 R_6 + s \left(C_3 R_1 R_3 R_6 + C_5 R_1 R_5 R_6 \right)}{-R_3 + R_5 + s^2 \left(C_3 C_6 R_3 R_5 R_6 - C_5 C_6 R_3 R_5 R_6 \right) + s \left(C_3 R_3 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}$$

Parameters:

Q: $\frac{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{R_3}{C_3 - C_5} + \frac{R_5}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{R_3}{C_3 - C_5} + \frac{R_5}{C_3 - C_5}}}{C_3 R_3 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6}$

wo: $\sqrt{\frac{-R_3 + R_5}{C_3 C_6 R_3 R_5 R_6 - C_5 C_6 R_3 R_5 R_6}}$

bandwidth: $\frac{\sqrt{\frac{-R_3 + R_5}{C_3 C_6 R_3 R_5 R_6 - C_5 C_6 R_3 R_5 R_6}} \left(C_3 R_3 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6 \right)}{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{R_3}{C_3 - C_5} + \frac{R_5}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{R_3}{C_3 - C_5} + \frac{R_5}{C_3 - C_5}}}$

K-LP: $-\frac{R_1 R_6}{R_3 - R_5}$

K-HP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-BP: $\frac{C_3 R_1 R_3 R_6 + C_5 R_1 R_5 R_6}{C_3 R_3 R_5 - C_5 R_3 R_5 - C_6 R_3 R_6 + C_6 R_5 R_6}$

Qz: None

Wz: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

11.4 X-INVALID-WZ-4 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_6 + s\left(C_1 C_3 R_1 R_6 + C_3 C_5 R_5 R_6\right)}{-C_1 + s^2\left(C_1 C_3 C_6 R_5 R_6 - C_1 C_5 C_6 R_5 R_6\right) + s\left(C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6\right)}$$

Parameters:

Q: $\frac{C_3 \sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}}}{C_3 R_5 - C_5 R_5 - C_6 R_6}$

wo: $\sqrt{-\frac{1}{C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_3 C_6 R_5 R_6 - C_5 C_6 R_5 R_6}}\left(C_3 R_5 - C_5 R_5 - C_6 R_6\right)}{C_3 \sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_5}\sqrt{R_6}\sqrt{-\frac{1}{C_3 - C_5}}}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-BP: $\frac{C_1 C_3 R_1 R_6 + C_3 C_5 R_5 R_6}{C_1 C_3 R_5 - C_1 C_5 R_5 - C_1 C_6 R_6}$

Qz: None

Wz: $\frac{1}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}}$

11.5 X-INVALID-WZ-5 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ R_3 + \frac{1}{C_3 s}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_5 R_6 s^2 + C_3 R_6 + s\left(C_1 C_3 R_1 R_6 + C_3 C_5 R_5 R_6\right)}{-C_1 C_3 C_5 R_3 R_5 s^2 - C_1 + s\left(-C_1 C_3 R_3 + C_1 C_3 R_5 - C_1 C_5 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_3 R_5 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_3 R_5 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $-\frac{C_3 R_6}{C_1}$

K-HP: $-\frac{R_1 R_6}{R_3}$

K-BP: $\frac{-C_1 C_3 R_1 R_6 - C_3 C_5 R_5 R_6}{C_1 C_3 R_3 - C_1 C_3 R_5 + C_1 C_5 R_5}$

Qz: None

Wz: $\frac{1}{\sqrt{C_1}\sqrt{C_5}\sqrt{R_1}\sqrt{R_5}}$

11.6 X-INVALID-WZ-6 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{1}{C_5 s}, \ \frac{R_6}{C_6 R_6 s + 1}\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_6 + s\left(C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6\right)}{C_1 + s^2\left(C_1 C_3 C_6 R_3 R_6 - C_1 C_5 C_6 R_3 R_6\right) + s\left(C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_6 R_6\right)}$$

Parameters:

Q: $\frac{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}}}{C_3 R_3 - C_5 R_3 + C_6 R_6}$

wo: $\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6}}$

bandwidth: $\frac{\left(C_3 R_3 - C_5 R_3 + C_6 R_6\right)\sqrt{\frac{1}{C_3 C_6 R_3 R_6 - C_5 C_6 R_3 R_6}}}{C_3 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}} - C_5 \sqrt{C_6}\sqrt{R_3}\sqrt{R_6}\sqrt{\frac{1}{C_3 - C_5}}}$

K-LP: $\frac{C_5 R_6}{C_1}$

K-HP: $\frac{C_3 C_5 R_1}{C_3 C_6 - C_5 C_6}$

K-BP: $\frac{C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6}{C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_6 R_6}$

Qz: None

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

11.7 X-INVALID-WZ-7 $Z(s) = \left(R_1 + \frac{1}{C_1 s},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ R_5 + \frac{1}{C_5 s},\ R_6\right)$

$$H(s) = \frac{C_1 C_3 C_5 R_1 R_3 R_6 s^2 + C_5 R_6 + s\left(C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6\right)}{C_1 C_3 C_5 R_3 R_5 s^2 + C_1 + s\left(C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_5 R_5\right)}$$

Parameters:

Q: $\frac{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}{C_3 R_3 - C_5 R_3 + C_5 R_5}$

wo: $\frac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

bandwidth: $\frac{C_3 R_3 - C_5 R_3 + C_5 R_5}{C_3 C_5 R_3 R_5}$

K-LP: $\frac{C_5 R_6}{C_1}$

K-HP: $\frac{R_1 R_6}{R_5}$

K-BP: $\frac{C_1 C_5 R_1 R_6 + C_3 C_5 R_3 R_6}{C_1 C_3 R_3 - C_1 C_5 R_3 + C_1 C_5 R_5}$

Qz: None

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

11.8 X-INVALID-WZ-8 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ \frac{1}{C_3 s},\ \infty,\ \frac{R_5}{C_5 R_5 s + 1},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_5 R_6 s^2 + C_3 R_1 + s\left(C_3 C_5 R_1 R_5 + C_3 C_6 R_1 R_6\right)}{-C_6 + s^2\left(C_1 C_3 C_6 R_1 R_5 - C_1 C_5 C_6 R_1 R_5\right) + s\left(-C_1 C_6 R_1 + C_3 C_6 R_5 - C_5 C_6 R_5\right)}$$

Parameters:

Q: $\frac{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3 - C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3 - C_5}}}{C_1 R_1 - C_3 R_5 + C_5 R_5}$

wo: $\sqrt{-\frac{1}{C_1 C_3 R_1 R_5 - C_1 C_5 R_1 R_5}}$

bandwidth: $\frac{\sqrt{-\frac{1}{C_1 C_3 R_1 R_5 - C_1 C_5 R_1 R_5}}\left(C_1 R_1 - C_3 R_5 + C_5 R_5\right)}{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3 - C_5}} + \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_5}\sqrt{-\frac{1}{C_3 - C_5}}}$

K-LP: $-\frac{C_3 R_1}{C_6}$

K-HP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-BP: $\frac{-C_3 C_5 R_1 R_5 - C_3 C_6 R_1 R_6}{C_1 C_6 R_1 - C_3 C_6 R_5 + C_5 C_6 R_5}$

Qz: None

Wz: $\frac{1}{\sqrt{C_5}\sqrt{C_6}\sqrt{R_5}\sqrt{R_6}}$

11.9 X-INVALID-WZ-9 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1},\ \infty,\ \frac{R_3}{C_3 R_3 s + 1},\ \infty,\ \frac{1}{C_5 s},\ R_6 + \frac{1}{C_6 s}\right)$

$$H(s) = \frac{C_3 C_5 C_6 R_1 R_3 R_6 s^2 + C_5 R_1 + s\left(C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6\right)}{C_6 + s^2\left(C_1 C_3 C_6 R_1 R_3 - C_1 C_5 C_6 R_1 R_3\right) + s\left(C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3\right)}$$

Parameters:

Q: $\frac{\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_3}\sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_3}\sqrt{\frac{1}{C_3 - C_5}}}{C_1 R_1 + C_3 R_3 - C_5 R_3}$

wo: $\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}$

bandwidth: $\frac{\left(C_1 R_1 + C_3 R_3 - C_5 R_3\right)\sqrt{\frac{1}{C_1 C_3 R_1 R_3 - C_1 C_5 R_1 R_3}}}{\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_3}\sqrt{\frac{1}{C_3 - C_5}} - \sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_3}\sqrt{\frac{1}{C_3 - C_5}}}$

K-LP: $\frac{C_5 R_1}{C_6}$

K-HP: $\frac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-BP: $\frac{C_3 C_5 R_1 R_3 + C_5 C_6 R_1 R_6}{C_1 C_6 R_1 + C_3 C_6 R_3 - C_5 C_6 R_3}$

Qz: None

Wz: $\frac{1}{\sqrt{C_3}\sqrt{C_6}\sqrt{R_3}\sqrt{R_6}}$

11.10 X-INVALID-WZ-10 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \infty, \ \frac{R_3}{C_3 R_3 s + 1}, \ \infty, \ \frac{R_5}{C_5 R_5 s + 1}, \ R_6 \right)$

$$H(s) = \frac{C_3 C_5 R_1 R_3 R_5 R_6 s^2 + R_1 R_6 + s\left(C_3 R_1 R_3 R_6 + C_5 R_1 R_5 R_6\right)}{-R_3 + R_5 + s^2\left(C_1 C_3 R_1 R_3 R_5 - C_1 C_5 R_1 R_3 R_5\right) + s\left(-C_1 R_1 R_3 + C_1 R_1 R_5 + C_3 R_3 R_5 - C_5 R_3 R_5\right)}$$

Parameters:

Q: $\dfrac{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{-\frac{R_3}{C_3-C_5}+\frac{R_5}{C_3-C_5}}+\sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{-\frac{R_3}{C_3-C_5}+\frac{R_5}{C_3-C_5}}}{C_1 R_1 R_3 - C_1 R_1 R_5 - C_3 R_3 R_5 + C_5 R_3 R_5}$

wo: $\sqrt{\dfrac{-R_3+R_5}{C_1 C_3 R_1 R_3 R_5 - C_1 C_5 R_1 R_3 R_5}}$

bandwidth: $\dfrac{\sqrt{\frac{-R_3+R_5}{C_1 C_3 R_1 R_3 R_5 - C_1 C_5 R_1 R_3 R_5}}\left(C_1 R_1 R_3 - C_1 R_1 R_5 - C_3 R_3 R_5 + C_5 R_3 R_5\right)}{-\sqrt{C_1}C_3\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{-\frac{R_3}{C_3-C_5}+\frac{R_5}{C_3-C_5}}+\sqrt{C_1}C_5\sqrt{R_1}\sqrt{R_3}\sqrt{R_5}\sqrt{-\frac{R_3}{C_3-C_5}+\frac{R_5}{C_3-C_5}}}$

K-LP: $-\dfrac{R_1 R_6}{R_3 - R_5}$

K-HP: $\dfrac{C_3 C_5 R_6}{C_1 C_3 - C_1 C_5}$

K-BP: $\dfrac{-C_3 R_1 R_3 R_6 - C_5 R_1 R_5 R_6}{C_1 R_1 R_3 - C_1 R_1 R_5 - C_3 R_3 R_5 + C_5 R_3 R_5}$

Qz: None

Wz: $\dfrac{1}{\sqrt{C_3}\sqrt{C_5}\sqrt{R_3}\sqrt{R_5}}$

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