Filter Summary Report: TIA,simple,Z4

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1 Examined $H(z)$ for TIA simple Z4: $\frac{Z_4}{2}$

$$H(z) = \frac{Z_4}{2}$$

2 HP

3 BP

3.1 BP-1 $Z(s) = \left(\infty,\ \infty,\ \infty,\ \frac{L_4 R_4 s}{C_4 L_4 R_4 s^2 + L_4 s + R_4},\ \infty,\ \infty\right)$

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

Parameters:

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

4 LP

5 BS

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

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

Parameters:

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

6 GE

7 AP

8 INVALID-NUMER

9 INVALID-WZ

10 INVALID-ORDER

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

$$H(s) = \frac{R_4}{2}$$

10.2 INVALID-ORDER-2 $Z(s) = \left(\infty,\ \infty,\ \infty,\ \frac{1}{C_4 s},\ \infty,\ \infty\right)$

$$H(s) = \frac{1}{2C_4 s}$$

10.3 INVALID-ORDER-3 $Z(s) = \left(\infty,\ \infty,\ \infty,\ \frac{R_4}{C_4 R_4 s+1},\ \infty,\ \infty\right)$

$$H(s) = \frac{R_4}{2C_4 R_4 s + 2}$$

10.4 INVALID-ORDER-4 $Z(s) = \left(\infty,\ \infty,\ \infty,\ R_4 + \frac{1}{C_4 s},\ \infty,\ \infty\right)$

$$H(s) = \frac{C_4 R_4 s + 1}{2C_4 s}$$

10.5 INVALID-ORDER-5 $Z(s) = \left(\infty,\ \infty,\ \infty,\ L_4 s + \frac{1}{C_4 s},\ \infty,\ \infty\right)$

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

10.6 INVALID-ORDER-6 $Z(s) = \left(\infty,\ \infty,\ \infty,\ \frac{L_4 s}{C_4 L_4 s^2+1},\ \infty,\ \infty\right)$

$$H(s) = \frac{L_4 s}{2C_4 L_4 s^2 + 2}$$

10.7 INVALID-ORDER-7 $Z(s) = \left(\infty,\ \infty,\ \infty,\ L_4 s + R_4 + \frac{1}{C_4 s},\ \infty,\ \infty\right)$

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

10.8 INVALID-ORDER-8 $Z(s) = \left(\infty,\ \infty,\ \infty,\ \frac{L_4 s}{C_4 L_4 s^2+1} + R_4,\ \infty,\ \infty\right)$

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

11 PolynomialError