

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

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

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    $Z(s) = \left(\infty, \infty, \infty, \frac{1}{C_4s}, \infty, \infty\right)$

$$H(s) = \frac{1}{2C_4s}$$

10.3   INVALID-ORDER-3    $Z(s) = \left(\infty, \infty, \infty, \frac{R_4}{C_4R_4s+1}, \infty, \infty\right)$

$$H(s) = \frac{R_4}{2C_4R_4s+2}$$

10.4   INVALID-ORDER-4    $Z(s) = \left(\infty, \infty, \infty, R_4 + \frac{1}{C_4s}, \infty, \infty\right)$

$$H(s) = \frac{C_4R_4s+1}{2C_4s}$$

10.5   INVALID-ORDER-5    $Z(s) = \left(\infty, \infty, \infty, L_4s + \frac{1}{C_4s}, \infty, \infty\right)$

$$H(s) = \frac{C_4L_4s^2+1}{2C_4s}$$

10.6   INVALID-ORDER-6    $Z(s) = \left(\infty, \infty, \infty, \frac{L_4s}{C_4L_4s^2+1}, \infty, \infty\right)$

$$H(s) = \frac{L_4s}{2C_4L_4s^2+2}$$

10.7   INVALID-ORDER-7    $Z(s) = \left(\infty, \infty, \infty, L_4s + R_4 + \frac{1}{C_4s}, \infty, \infty\right)$

$$H(s) = \frac{C_4L_4s^2+C_4R_4s+1}{2C_4s}$$

10.8   INVALID-ORDER-8    $Z(s) = \left(\infty, \infty, \infty, \frac{L_4s}{C_4L_4s^2+1} + R_4, \infty, \infty\right)$

$$H(s) = \frac{C_4L_4R_4s^2+L_4s+R_4}{2C_4L_4s^2+2}$$

11   PolynomialError