

# Filter Summary Report: TIA,simple,Z3

Generated by MacAnalog-Symbolix

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1    Examined  $H(z)$  for TIA simple **Z3:**  $Z_3$

$$H(z) = Z_3$$

2    HP

3    BP

3.1    BP-1  $Z(s) = \left( \infty, \infty, \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}, \infty, \infty, \infty \right)$

$$H(s) = \frac{L_3 R_3 s}{C_3 L_3 R_3 s^2 + L_3 s + R_3}$$

Parameters:

Q:  $C_3 R_3 \sqrt{\frac{1}{C_3 L_3}}$   
wo:  $\sqrt{\frac{1}{C_3 L_3}}$   
bandwidth:  $\frac{1}{C_3 R_3}$   
K-LP: 0  
K-HP: 0  
K-BP:  $R_3$   
Qz: 0  
Wz: None

4    LP

5    BS

5.1    BS-1  $Z(s) = \left( \infty, \infty, \frac{R_3 (C_3 L_3 s^2 + 1)}{C_3 L_3 s^2 + C_3 R_3 s + 1}, \infty, \infty, \infty \right)$

$$H(s) = \frac{C_3 L_3 R_3 s^2 + R_3}{C_3 L_3 s^2 + C_3 R_3 s + 1}$$

Parameters:

Q:  $\frac{L_3 \sqrt{\frac{1}{C_3 L_3}}}{R_3}$   
wo:  $\sqrt{\frac{1}{C_3 L_3}}$   
bandwidth:  $\frac{R_3}{L_3}$   
K-LP:  $R_3$   
K-HP:  $R_3$   
K-BP: 0  
Qz: None  
Wz:  $\sqrt{\frac{1}{C_3 L_3}}$

6    GE

7    AP

8    INVALID-NUMER

9    INVALID-WZ

10   INVALID-ORDER

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

$$H(s) = R_3$$

10.2   INVALID-ORDER-2  $Z(s) = \left(\infty, \infty, \frac{1}{C_3s}, \infty, \infty, \infty\right)$

$$H(s) = \frac{1}{C_3s}$$

10.3   INVALID-ORDER-3  $Z(s) = \left(\infty, \infty, \frac{R_3}{C_3R_3s+1}, \infty, \infty, \infty\right)$

$$H(s) = \frac{R_3}{C_3R_3s+1}$$

10.4   INVALID-ORDER-4  $Z(s) = \left(\infty, \infty, R_3 + \frac{1}{C_3s}, \infty, \infty, \infty\right)$

$$H(s) = \frac{C_3R_3s+1}{C_3s}$$

10.5   INVALID-ORDER-5  $Z(s) = \left(\infty, \infty, L_3s + \frac{1}{C_3s}, \infty, \infty, \infty\right)$

$$H(s) = \frac{C_3L_3s^2+1}{C_3s}$$

10.6   INVALID-ORDER-6  $Z(s) = \left(\infty, \infty, \frac{L_3s}{C_3L_3s^2+1}, \infty, \infty, \infty\right)$

$$H(s) = \frac{L_3s}{C_3L_3s^2+1}$$

10.7   INVALID-ORDER-7  $Z(s) = \left(\infty, \infty, L_3s + R_3 + \frac{1}{C_3s}, \infty, \infty, \infty\right)$

$$H(s) = \frac{C_3L_3s^2+C_3R_3s+1}{C_3s}$$

10.8   INVALID-ORDER-8  $Z(s) = \left(\infty, \infty, \frac{L_3s}{C_3L_3s^2+1} + R_3, \infty, \infty, \infty\right)$

$$H(s) = \frac{C_3L_3R_3s^2+L_3s+R_3}{C_3L_3s^2+1}$$

11   PolynomialError