Filter Summary Report: DIVIDER,Test,simple,Z1,Z2,ZL

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Contents

1 Examined $H(z)$ for DIVIDER Test simple Z1 Z2 ZL: $\frac{Z_L}{Z_1+Z_2+Z_L}$

$$H(z) = \frac{Z_L}{Z_1 + Z_2 + Z_L}$$

2 HP

2.1 HP-1 $Z(s) = \left(R_1,\ \frac{1}{C_2 s},\ L_L s\right)$

$$H(s) = \frac{C_2 L_L s^2}{C_2 L_L s^2 + C_2 R_1 s + 1}$$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_2 L_L}}}{R_1}$
wo: $\sqrt{\frac{1}{C_2 L_L}}$
bandwidth: $\frac{R_1}{L_L}$
K-LP: 0
K-HP: 1
K-BP: 0
Qz: None
Wz: None

2.2 HP-2 $Z(s) = \left(\frac{1}{C_1 s},\ R_2,\ L_L s\right)$

$$H(s) = \frac{C_1 L_L s^2}{C_1 L_L s^2 + C_1 R_2 s + 1}$$

Parameters:

Q: $\frac{L_L \sqrt{\frac{1}{C_1 L_L}}}{R_2}$
wo: $\sqrt{\frac{1}{C_1 L_L}}$
bandwidth: $\frac{R_2}{L_L}$
K-LP: 0
K-HP: 1
K-BP: 0
Qz: None
Wz: None

3 BP

3.1 BP-1 $Z(s) = \left(L_1 s,\ \frac{1}{C_2 s},\ R_L\right)$

$$H(s) = \frac{C_2 R_L s}{C_2 L_1 s^2 + C_2 R_L s + 1}$$

Parameters:

Q: $\frac{L_1 \sqrt{\frac{1}{C_2 L_1}}}{R_L}$
wo: $\sqrt{\frac{1}{C_2 L_1}}$
bandwidth: $\frac{R_L}{L_1}$
K-LP: 0
K-HP: 0
K-BP: 1
Qz: 0

Wz: None

3.2 BP-2 $Z(s) = \left(\frac{1}{C_1 s},\ L_2 s,\ R_L\right)$

$$H(s) = \frac{C_1 R_L s}{C_1 L_2 s^2 + C_1 R_L s + 1}$$

Parameters:

Q: $\frac{L_2\sqrt{\frac{1}{C_1 L_2}}}{R_L}$
wo: $\sqrt{\frac{1}{C_1 L_2}}$
bandwidth: $\frac{R_L}{L_2}$
K-LP: 0
K-HP: 0
K-BP: 1
Qz: 0
Wz: None

4 LP

4.1 LP-1 $Z(s) = \left(R_1,\ L_2 s,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{1}{C_L L_2 s^2 + C_L R_1 s + 1}$$

Parameters:

Q: $\frac{L_2\sqrt{\frac{1}{C_L L_2}}}{R_1}$
wo: $\sqrt{\frac{1}{C_L L_2}}$
bandwidth: $\frac{R_1}{L_2}$
K-LP: 1
K-HP: 0
K-BP: 0
Qz: None
Wz: None

4.2 LP-2 $Z(s) = \left(L_1 s,\ R_2,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{1}{C_L L_1 s^2 + C_L R_2 s + 1}$$

Parameters:

Q: $\frac{L_1\sqrt{\frac{1}{C_L L_1}}}{R_2}$
wo: $\sqrt{\frac{1}{C_L L_1}}$
bandwidth: $\frac{R_2}{L_1}$
K-LP: 1
K-HP: 0
K-BP: 0
Qz: None
Wz: None

5 BS

6 GE

7 AP

8 INVALID-NUMER

9 INVALID-WZ

10 INVALID-ORDER

10.1 INVALID-ORDER-1 $Z(s) = (R_1,\ R_2,\ R_L)$

$$H(s) = \frac{R_L}{R_1 + R_2 + R_L}$$

10.2 INVALID-ORDER-2 $Z(s) = (R_1,\ R_2,\ L_L s)$

$$H(s) = \frac{L_L s}{L_L s + R_1 + R_2}$$

10.3 INVALID-ORDER-3 $Z(s) = \left(R_1,\ R_2,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{1}{s\left(C_L R_1 + C_L R_2\right) + 1}$$

10.4 INVALID-ORDER-4 $Z(s) = (R_1,\ L_2 s,\ R_L)$

$$H(s) = \frac{R_L}{L_2 s + R_1 + R_L}$$

10.5 INVALID-ORDER-5 $Z(s) = (R_1,\ L_2 s,\ L_L s)$

$$H(s) = \frac{L_L s}{R_1 + s\left(L_2 + L_L\right)}$$

10.6 INVALID-ORDER-6 $Z(s) = \left(R_1,\ \frac{1}{C_2 s},\ R_L\right)$

$$H(s) = \frac{C_2 R_L s}{s\left(C_2 R_1 + C_2 R_L\right) + 1}$$

10.7 INVALID-ORDER-7 $Z(s) = \left(R_1,\ \frac{1}{C_2 s},\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_2}{C_2 C_L R_1 s + C_2 + C_L}$$

10.8 INVALID-ORDER-8 $Z(s) = (L_1 s,\ R_2,\ R_L)$

$$H(s) = \frac{R_L}{L_1 s + R_2 + R_L}$$

10.9 INVALID-ORDER-9 $Z(s) = (L_1 s,\ R_2,\ L_L s)$

$$H(s) = \frac{L_L s}{R_2 + s\left(L_1 + L_L\right)}$$

10.10 INVALID-ORDER-10 $Z(s) = (L_1 s,\ L_2 s,\ R_L)$

$$H(s) = \frac{R_L}{R_L + s\left(L_1 + L_2\right)}$$

10.11 INVALID-ORDER-11 $Z(s) = (L_1 s,\ L_2 s,\ L_L s)$

$$H(s) = \frac{L_L}{L_1 + L_2 + L_L}$$

10.12 INVALID-ORDER-12 $Z(s) = \left(L_1 s,\ L_2 s,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{1}{s^2\left(C_L L_1 + C_L L_2\right) + 1}$$

10.13 INVALID-ORDER-13 $Z(s) = \left(L_1 s,\ \frac{1}{C_2 s},\ L_L s\right)$

$$H(s) = \frac{C_2 L_L s^2}{s^2\left(C_2 L_1 + C_2 L_L\right) + 1}$$

10.14 INVALID-ORDER-14 $Z(s) = \left(L_1 s,\ \frac{1}{C_2 s},\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_2}{C_2 C_L L_1 s^2 + C_2 + C_L}$$

10.15 INVALID-ORDER-15 $Z(s) = \left(\frac{1}{C_1 s},\ R_2,\ R_L\right)$

$$H(s) = \frac{C_1 R_L s}{s\left(C_1 R_2 + C_1 R_L\right) + 1}$$

10.16 INVALID-ORDER-16 $Z(s) = \left(\frac{1}{C_1 s},\ R_2,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1}{C_1 C_L R_2 s + C_1 + C_L}$$

10.17 INVALID-ORDER-17 $Z(s) = \left(\frac{1}{C_1 s},\ L_2 s,\ L_L s\right)$

$$H(s) = \frac{C_1 L_L s^2}{s^2\left(C_1 L_2 + C_1 L_L\right) + 1}$$

10.18 INVALID-ORDER-18 $Z(s) = \left(\frac{1}{C_1 s},\ L_2 s,\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1}{C_1 C_L L_2 s^2 + C_1 + C_L}$$

10.19 INVALID-ORDER-19 $Z(s) = \left(\frac{1}{C_1 s},\ \frac{1}{C_2 s},\ R_L\right)$

$$H(s) = \frac{C_1 C_2 R_L s}{C_1 C_2 R_L s + C_1 + C_2}$$

10.20 INVALID-ORDER-20 $Z(s) = \left(\frac{1}{C_1 s},\ \frac{1}{C_2 s},\ L_L s\right)$

$$H(s) = \frac{C_1 C_2 L_L s^2}{C_1 C_2 L_L s^2 + C_1 + C_2}$$

10.21 INVALID-ORDER-21 $Z(s) = \left(\frac{1}{C_1 s},\ \frac{1}{C_2 s},\ \frac{1}{C_L s}\right)$

$$H(s) = \frac{C_1 C_2}{C_1 C_2 + C_1 C_L + C_2 C_L}$$

11 PolynomialError