

Specification for a 2-Pole Spectrum Cleanup Crystal Filter MtronPTI P/N: 6880-010

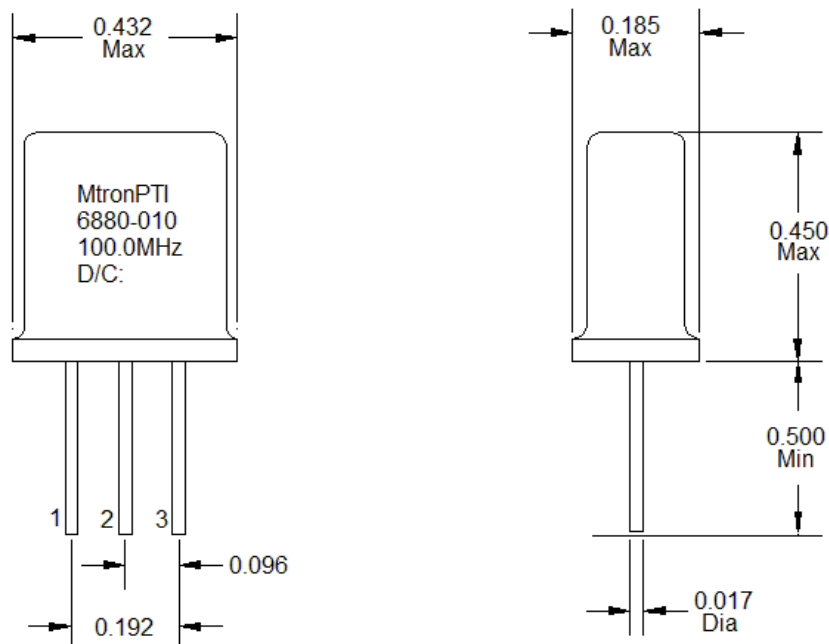
I. General & Electrical Requirements

1. Center Frequency (F_{ON}): 100.0MHz
2. 3dB Passband: $\leq F_{ON} \pm 7.5\text{kHz}$
3. Insertion Loss (@ peak of transmission within the 3dB passband): $\leq 6\text{dB}$
4. Passband Ripple (peak-valley): $\leq 1.0\text{dB}$
5. Rejection (Minimum, Relative to Insertion Loss)
 $15\text{dB}: \leq F_{ON} \pm 37.5\text{kHz}$
6. Ultimate Attenuation: 25dB minimum
7. Spurious Response: -15dB minimum @ $F_{ON} + 35\text{kHz}$ to $F_{ON} + 500\text{kHz}$
8. Input Signal Level: $\leq +5\text{dBm}$
9. Z_{IN}/Z_{OUT} : $1450\Omega // -1\text{pF} \pm 2\text{pF}$ (Reference Figure 2 for Suggested 50Ω Matching Circuit)

II. Environmental & Physical Requirements:

1. Temperature Range
Operating: 0°C to $+75^\circ\text{C}$
Storage: -45°C to $+90^\circ\text{C}$
2. Solderability: Per EIAJ-STD-002
3. Package: Reference Drawing Figure 1

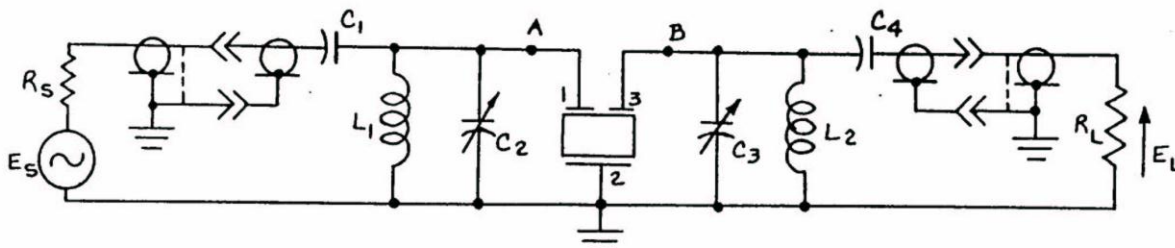
All Dimensions are in Inches



Pin # 2 is Case Ground

Figure 1 – 6880-010 Package Outline Drawing

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$$R_s = R_L = 50 \text{ Ohms}$$

$C_1 = 6.2 \text{ pF}$ Nom. (Select for correct source parallel resistance.)

$C_4 = 6.2 \text{ pF}$ Nom. (Select for correct load parallel resistance.)

$$C_2 = C_3 = 0.8 - 10 \text{ pF (Note 1)}$$

$L_1 = L_2 = 8 \text{ T \#32 AWG. ON } 3/16 \times 60 \text{ REXOLITE CORE}$

$$Z_{\text{source}} = 1450 \Omega \text{ } // -1 \pm 2$$

$$Z_{\text{load}} = 1450 \Omega \text{ } // -1 \pm 2$$

Z_{source} and Z_{load} are the impedances at points A and B, respectively, with the filter removed and the test fixture terminated with a 50 ohm resistive load.

NOTES: 1.) C_2 and C_3 are adjusted for (Check One):
☒ optimum passband characteristic
☐ specified source and load reactance of _____ pF.

2.) Attenuation reference is (Check One):
☒ Peak of transmission
☐ Loss at reference frequency: _____ kHz.

3.) Flat loss is the ratio of power delivered to the load, to the available power, expressed in dB.

a. Excluding test fixture loss (Equal source & load resistance): Flat Loss = $20 \text{ LOG}_{10} (E_{L1}/E_{L2})$

$E_{L1} = E_L$ with filter replaced by a short from A to B & C_2, C_3 tuned for max. E_L at f_{on} .

$E_{L2} = E_L$ with filter installed, C_2 & C_3 tuned per note 1, and frequency per note 2.

b. Including test fixture loss
 Flat Loss = $20 \text{ LOG}_{10} (E_{L3}/E_{L2})$

$E_{L3} = E_L$ with test fixture removed & C connected to D

4.) Initial level of E_s such that $E_{L3} = 0.224 \text{ Volts } \pm 10\%$.
 (Source Power = $0 \pm 1 \text{ dBm}$.)
 E_s held constant during all measurement.

Figure 2 – 6880-010 Suggested 50Ω Matching Circuit