

Specification for a Monolithic SMD Crystal Filter MtronPTI P/N: XF9342R

I. General & Electrical Requirements:

1. Center Frequency (F_{ON}): 80.0MHz
2. Passband:
 - @ 1dB: $\geq F_{ON} \pm 5.0\text{kHz}$ minimum
 - @ 3dB: $\geq F_{ON} \pm 10.0\text{kHz}$ minimum
3. Insertion Loss (@ peak of transmission within the 3dB passband): $\leq 4.0\text{dB}$
4. Passband Ripple (peak-valley): $\leq 1.0\text{dB}$
5. Rejection (Minimum, Relative to Insertion Loss)
 - 40dB: $F_{ON} \pm 60.0\text{kHz}$ maximum
6. Spurious Responses: **TBD at the prototype build stage**
(expectations are for between -10dB and -14dB over a range of $F_{ON} + 50\text{kHz}$ to $F_{ON} + 1\text{MHz}$)
7. Coupling Capacitance (C_C): **TBD at the prototype build stage**
8. Input Signal: 0dBm nominal, $\leq +3\text{dBm}$ maximum without any impact on filter performance
9. Input/Output Terminating Impedance (Z_{IN}/Z_{OUT} , Single Ended): **TBD at the prototype build stage**
(expectations are for $\sim 1500\Omega$ and $\sim 1700\Omega // \sim -1\text{pF}$ to 0p)
10. Source/Load Impedance (Z_S/Z_L , Differential): **Matching Circuit TBD at the prototype build stage**

Note 1: All electrical performance specifications are valid over the full Operating Temperature Range (0°C to $+50^\circ\text{C}$) unless otherwise noted.

Note 2: All electrical performance specifications are to be validated and adjusted at the prototype build stage.

II. Environmental, Physical & Reflow Requirements:

1. Temperature Range
 - Operating: 0°C to $+50^\circ\text{C}$
 - Storage: -40°C to $+85^\circ\text{C}$
2. Solderability: Per EIAJ-STD-002
3. Package: Single Package 5x7mm SMD
4. RoHS Compliant

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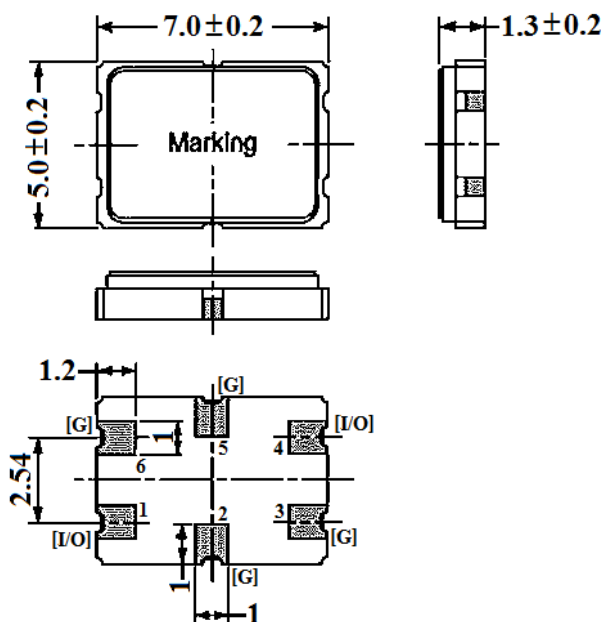


Figure 1 – Filter Package Outline Drawing

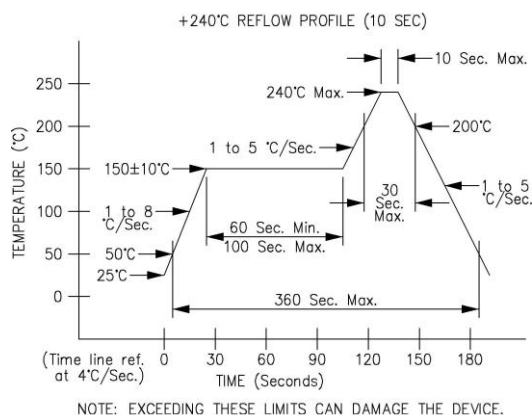
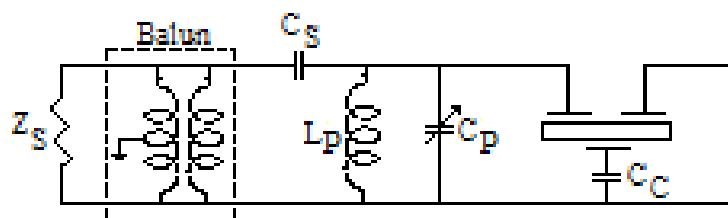


Figure 2 – Recommended Reflow Profile



$$Z_S = 100 \text{ Ohms}$$

$$C_S \cong 4.7 \text{ pF to } 5.1 \text{ pF} \quad C_C = \text{T.B.D.}$$

$$L_P \cong 200 \text{ nH} \quad C_P \cong 1 - 5 \text{ pF}$$

Balun:

MiniCircuits ADT1-1WT-1 or Similar

Figure 3: Suggested 100Ω Differential Source & Load Impedance (Z_S/Z_L) to Single Ended Filter Input & Output Impedance (Z_{IN}/Z_{OUT}) Matching Network Topology