



## Specification for a Monolithic SMD Crystal Filter MtronPTI P/N: XF9343R

### I. General & Electrical Requirements:

1. Center Frequency ( $F_{ON}$ ): 112.0MHz
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) ***MtronPTI to Validate at the prototype build stage***  
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  $0\text{p}$ )*
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 ( $0^\circ\text{C}$  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:  $0^\circ\text{C}$  to  $+50^\circ\text{C}$
  - Storage:  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$
2. Solderability: Per EIAJ-STD-002
3. Package: Single Package 5x7mm SMD
4. RoHS Compliant

Specification for a Monolithic SMD Crystal Filter  
 MtronPTI P/N: XF9343R

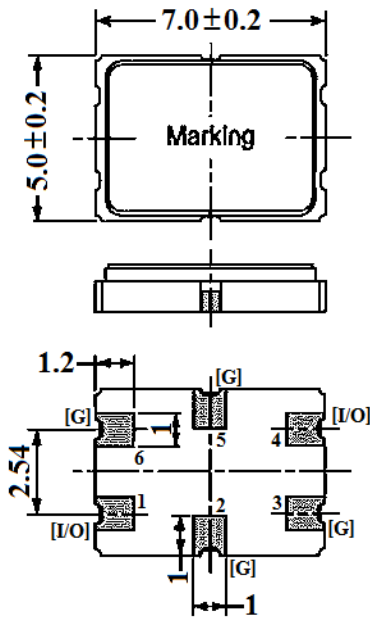


Figure 1 – Filter Package Outline Drawing

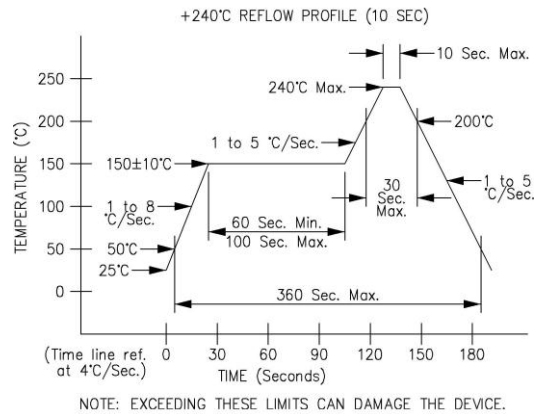
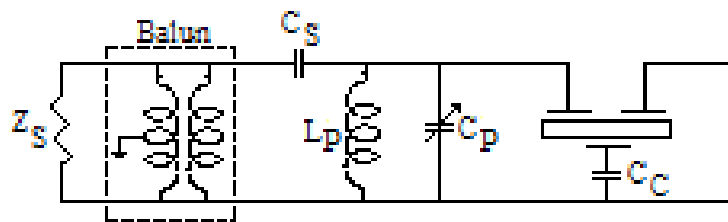


Figure 2 – Recommended Reflow Profile



$Z_S = 100 \text{ Ohms}$

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

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

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