



## Specification for a Switched 7 LC Filter Assembly MtronPTI P/N: SA0068

### I. General & Electrical Requirements

Parameter	Band 1	Band 2	Band 3	Band 4	Band 5	Band 6	Band 7
Minimum Frequency	30MHz	43MHz	65MHz	116MHz	174MHz	220MHz	320MHz
Cutoff Frequency	43MHz	65MHz	90MHz	174MHz	220MHz	320MHz	512MHz
Insertion Loss	≤ 1.3dB	≤ 1.3dB	≤ 1.3dB	≤ 1.3dB	≤ 1.3dB	≤ 1.3dB	≤ 1.3dB
Rejection @ 2 <sup>nd</sup> Harmonic	≥ 30dB	≥ 30dB	≥ 30dB	≥ 30dB	≥ 30dB	≥ 30dB	≥ 30dB
Ultimate Attenuation, Over 1.0GHz to 1.5GHz	≥ 50dB	≥ 50dB	≥ 50dB	≥ 50dB	≥ 50dB	≥ 50dB	≥ 50dB
Passband Signal Power, CW	≤ 30W	≤ 30W	≤ 30W	≤ 30W	≤ 30W	≤ 30W	≤ 30W
Z <sub>S</sub> /Z <sub>L</sub> , nominal	50Ω	50Ω	50Ω	50Ω	50Ω	50Ω	50Ω

#### Additional Parameters:

Switching Time: ≤ 6μsec

### II. Environmental & Physical Requirements:

- Temperature Range
  - Operating: -40°C to +60°C
  - Storage: -45°C to +85°C
- DC Power Supply: +100V<sub>DC</sub> @ 15mA maximum
- Package:
  - Size: Maximum 2.500" (L) x 2.500" (W) x 0.500" (H)
    - Excluding RF and Control Pins
    - Mounting Method: Thru-Holes for Customer hardware (Ref. Figure 1)
    - Package Drawing: Ref. Figure 1
  - Control Interface:
    - Seven (7) control lines
      - o +100V, @ 15mA maximum, Off State (Reverse Biased)
      - o -5V, @ 50mA maximum, On State (Forward Biased)
      - o Only one (1) control line can be forward biased at any time (i.e.; Break-Before-Make)

#### Band Selection

Control Pin	Selected Band
B1	1
B2	3
B3	5
B4	7
B5	6
B6	4
B7	2

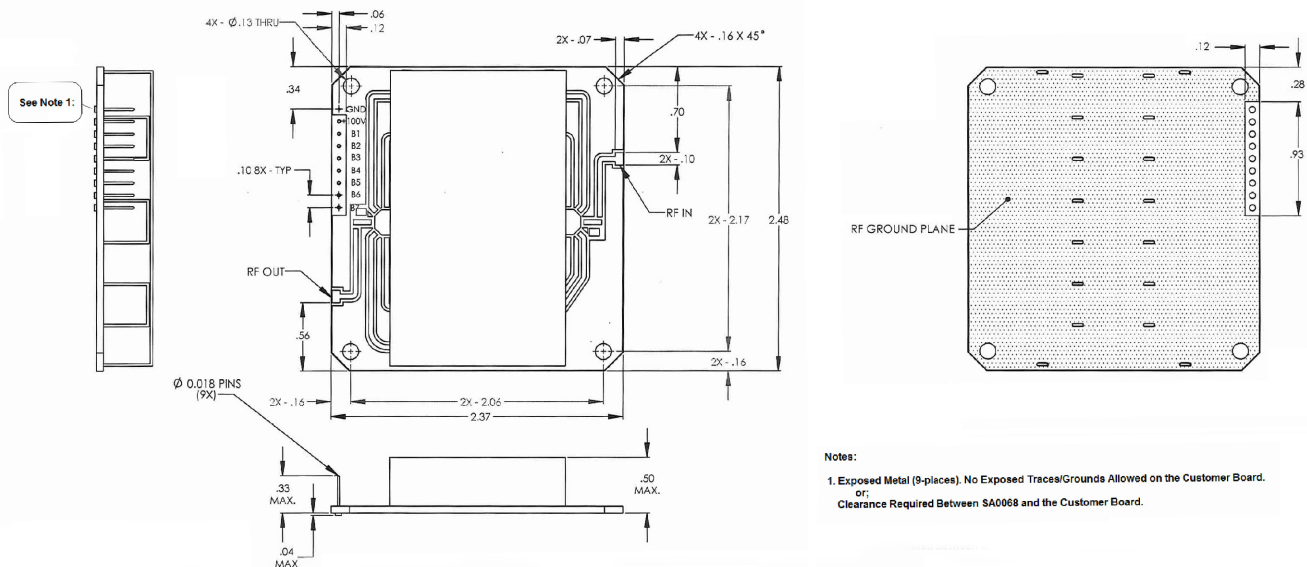


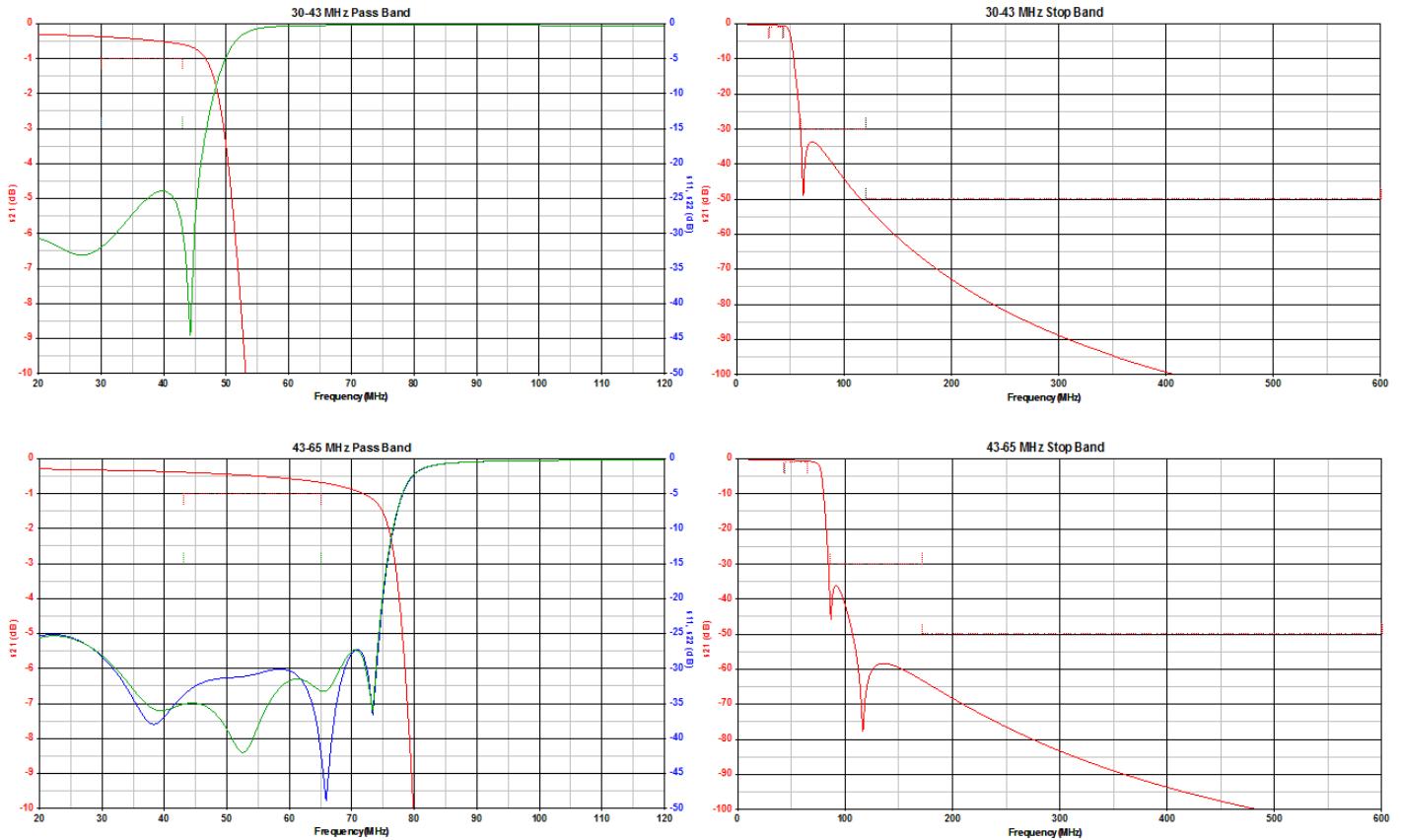
Figure 1: Package Outline Drawing



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### III. Design Simulation Plots:

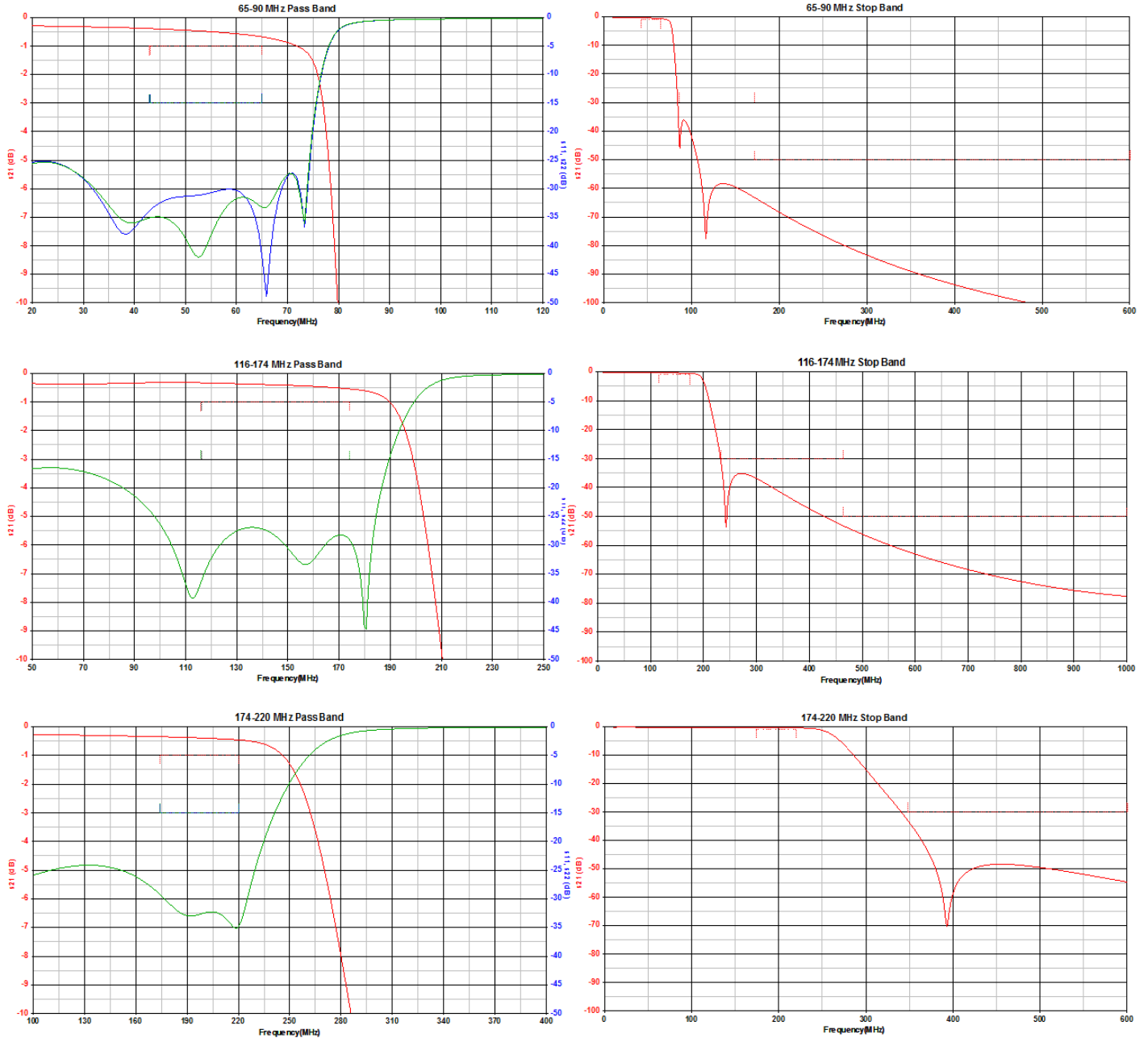
1. Simulations are conducted on a 7 channel assembly with lossy transmission line models in place to represent the interconnecting manifold.  
All individual filter response plots are of a circuit containing all seven filters with PIN diodes models set to select the simulated channel.
2. Coarse PIN diode models and biasing circuits were included in the simulations
3. All channels meet the specifications with adequate margin to ensure conformance over the Operating Temperature Range.





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### III. Design Simulation Plots (continued):





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