MEMtronics

Product Data Sheet

PSP02 - Channel Filter
Ka-Band Integrated W/G Filter

Product Description

The MEMtronics PSP02 miniature channel filter is designed to be a surface-mountable, high-performance fixed-frequency bandpass filter that supports channel selection and interference mitigation in the upper 5G bands.

The design utilizes dielectrically-loaded propagating waveguide cavities built with unibody construction for the ultimate in low loss with a small form factor. The filter is constructed from fused silica for ultra-stable operation over temperature.

This K-band filter provides a 5-pole filter function centered at 27.71 GHz with 425 MHz (1.5% bandwidth), exhibiting a nominal 2.1 dB insertion loss and a minimum 16 dB return loss over the passband. Rejection is > 20 dB at frequencies below 27.28 GHz and above 28.14 GHz, with an ultimate rejection of > 60 dB from 1 GHz thru 40 GHz.

This filter performance is provided as a demonstration of capabilities. Custom filters to meet specific user requirements are possible from 2 GHz-50 GHz, with passband bandwidths ranging from 0.5%-20%, with 2-12+ poles of filtering.

Primary Applications

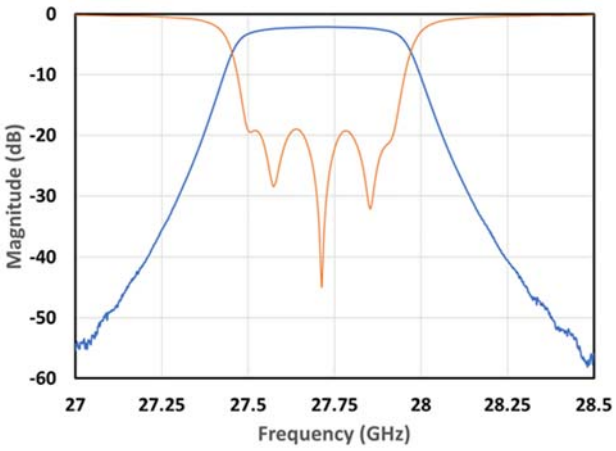
- 5G channel selection
- Interference mitigation
- Improve frequency reuse

Key Features and Performance

- Passband: 27.5-27.925 GHz
- Nom. mid-band loss: 2.1 dB
- Rejection: > 20 dB Fc +/- 425 MHz
- > 60 dB 1-40 GHz
- Temp Range: -55°C to +105°C
- Chip dimensions: (< 0.01 in^3)
  0.855 x 0.175 x 0.060 inches
- Weight: 0.32 grams
- Surface mount, CPW interconnect

PSP02 Filter Performance

Measured Narrowband Performance



Measured Broadband Performance