

14.0GHz Surface Mount Bandpass Filter B140MB4S

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DESCRIPTION

This DLI brand surface mount catalog band pass filter is designed to cover Satcom band centered at 14.0GHz. This BPF utilizes DLI's low loss temperature stable materials which offer small size and minimal performance variation over temperature while leveraging thin film technology to offer a drop in solution with highly repeatable performance.

FEATURES

- Small Size
- Fully Shielded Component
- Solder Surface Mount Package
- Moisture Sensitivity Level: MSL1
- Frequency Stable over Temperature
- Operating & Storage Temp: -55°C to +125°C
- Characteristic Impedance: 50Ω

Packaging and Ordering Information:

To request tape and reel packaging, please order part number B140MB4S-T.

SPECIFICATIONS*

| Parameter | Frequency Range (GHz) | Min | Typ. | Max |
|--|---|--------------|--------------|-----|
| Insertion Loss (dB) | 13.75 - 14.5 | | 2.0 | 3.0 |
| Return Loss (dB) | | 14.0 | 21.0 | |
| Low Side Rejection (dB) | DC - 10.7 10.7 - 12.75 | 55.0 50.0 | 70.0 60.0 | |
| High Side Rejection (dB) | 15.75 - 28.75 | 40.0 | 60.0 | |
| CW Input Power** (W) | | | | 10 |
| $\theta_{JC} \left(\frac{^{\circ}C}{W} \right)$ | 7.5 | | | |
| Size (L x W x H) | 0.500 x 0.180 x 0.103 in 12.7 x 4.57 x 2.62 mm | | | |



*Electrical specifications based on typical probed performance at room temperature. Insertion loss shall vary ± 0.5 dB over temperature.

**Power rating assumes the component will be mounted to a PCB with good thermally conducting ground vias as outlined in the recommended PCB layout that are connected to an adequate heat sink. Max power is based on 125°C base temperature.

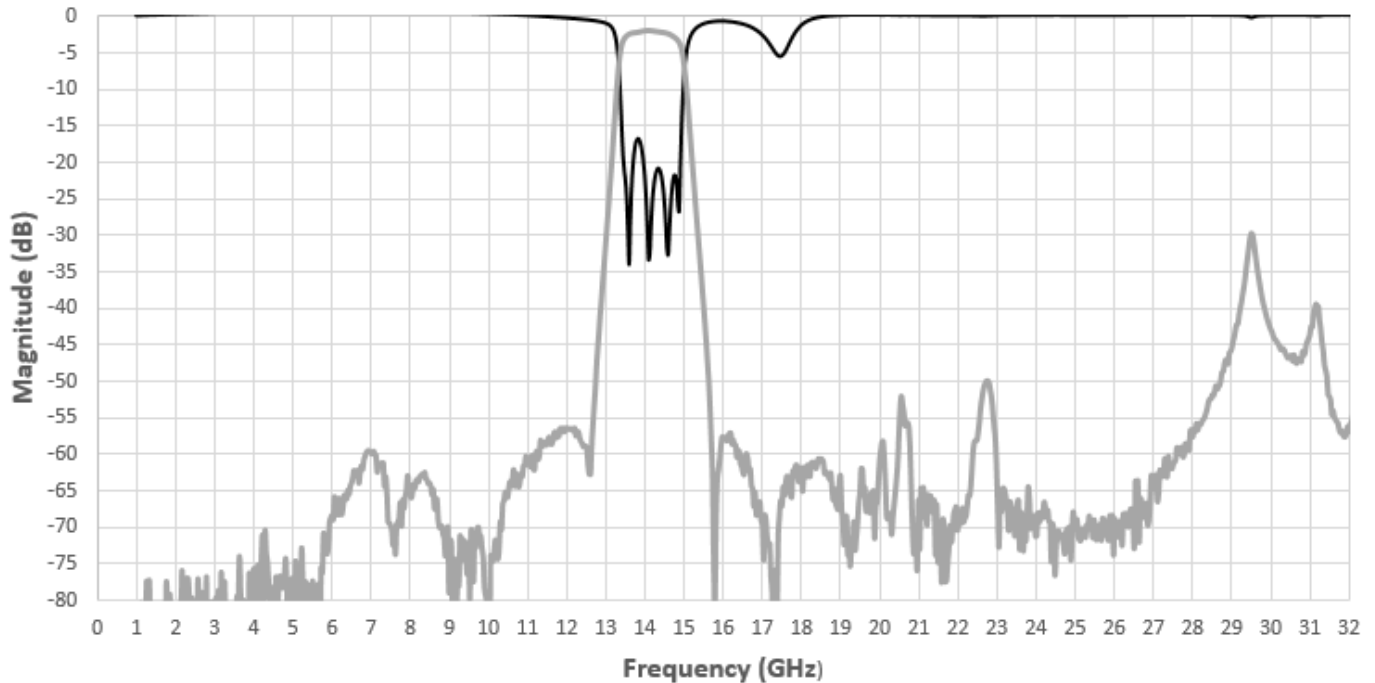
Information in this document is for informational and guideline purposes only. All information regarding the Product described in this datasheet is subject to change from time to time at Knowles Precision Devices' sole discretion. It is the customer's sole responsibility to evaluate the suitability of the Product in the customer's particular application. Knowles Precision Devices assumes no responsibility or liability for the use of the information contained within.

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Typical Measured Performance



*Typical de-embedded measured performance mounted on a connectorized test fixture. DEB is 0.010in RO4350B with 50.0Ohm CPW ground traces going into the ports at room temperature.

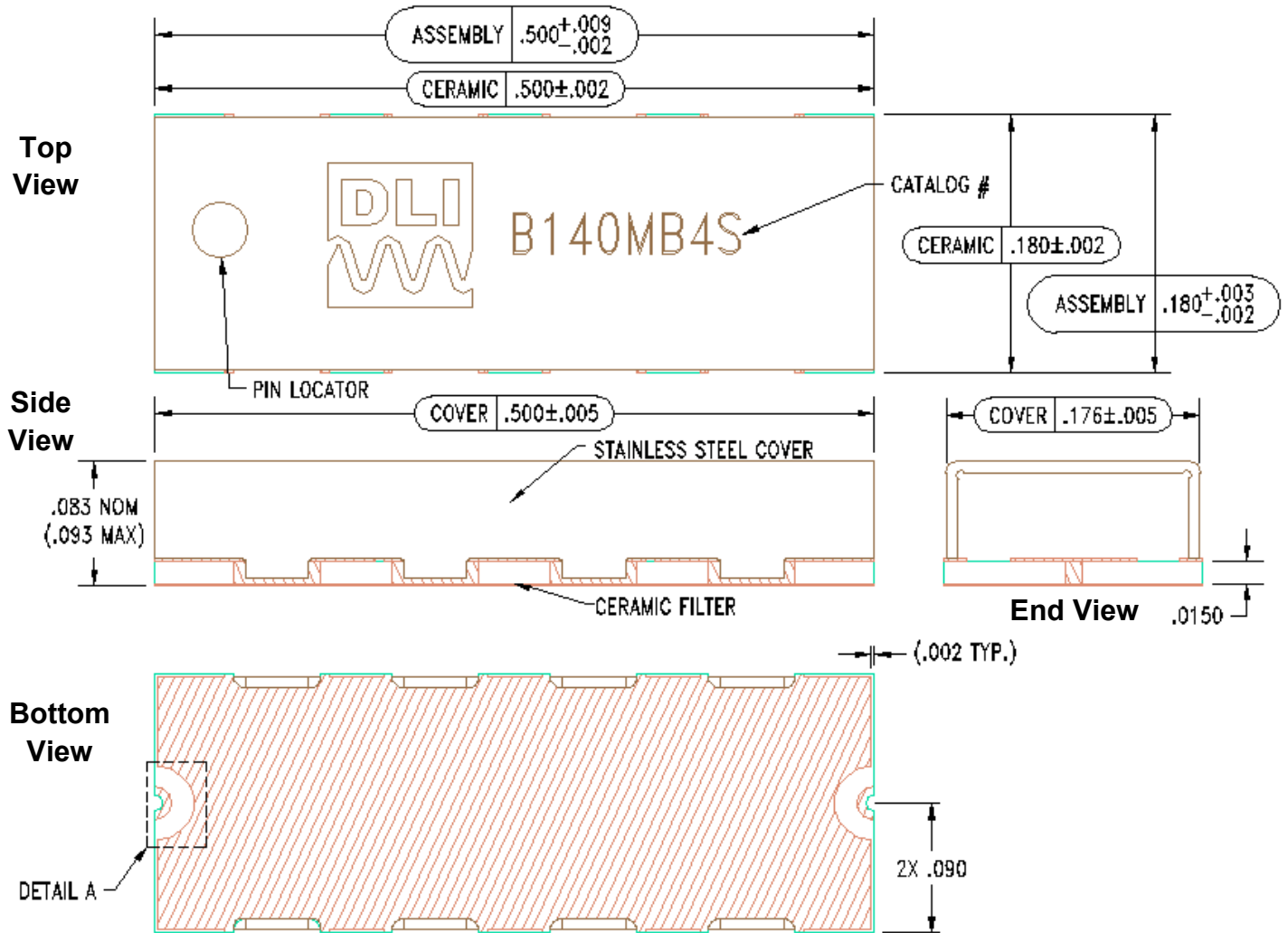
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Physical Dimensions

Units = inches



Notes :

1. Termination Finish:

ENIG: 3 - 6 μ inch Au over 50 μ inch Ni

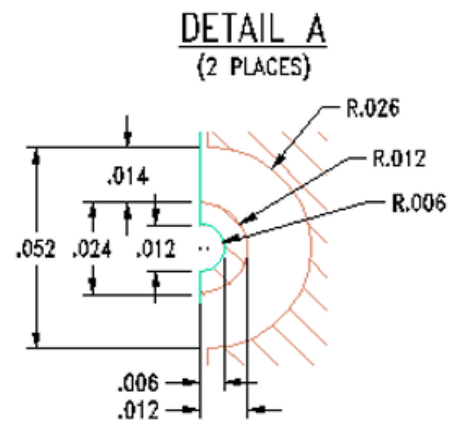
2. Maximum Assembly Process Temperature: 250°C

Tolerances:

For values with 3 decimal places ± 0.001

For values with 4 decimal places ± 0.0005

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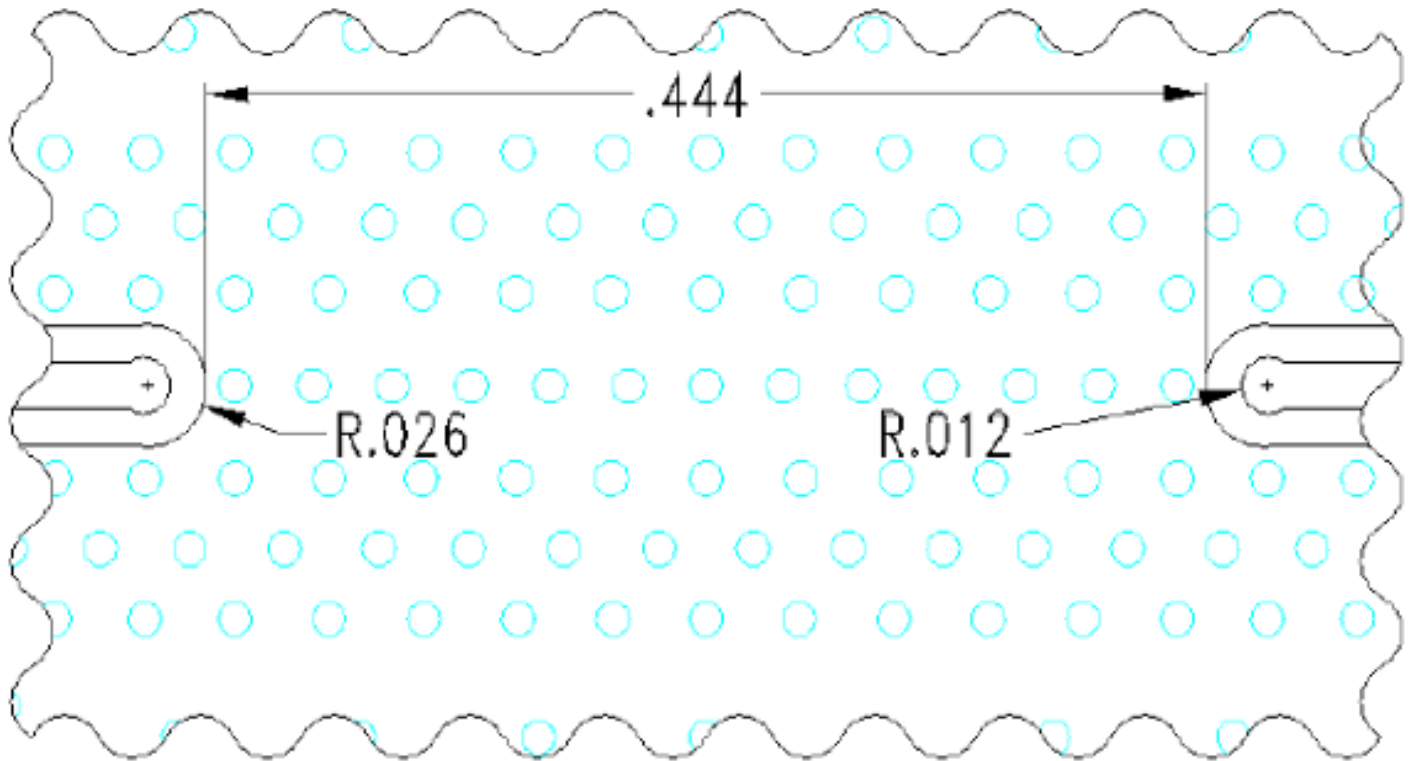
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Recommended PCB Layout Unit = inches

Note: 50Ω trace dimensions are application specific.

- Ensure adequate grounding beneath the part.

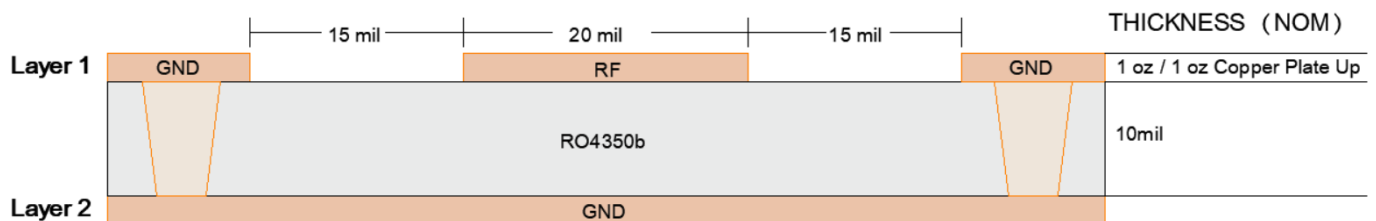


PCB RECOMMENDED STACKUP

Filter is matched to RF layer stackup seen below

Dimensions are specified below in inches (not to scale)

- Board material : RO4350b
- Board material design dk : 3.66
- CPWG : 20mil trace width, 15mil gaps



For further details and best practices, reference the **Microwave Products Guide**, available at: <https://www.knowlesc capacitors.com/Support/Catalogs>

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