

## 28GHz and 39GHz Surface Mount Dual Band Filter

**AFL09387**

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### DESCRIPTION

This is DLI's surface mount catalog dual band filter designed for the 5G FR2 bands. The two passbands are centered at 28GHz and 39GHz. This dual filter utilizes DLI's low loss temperature stable materials which offer small size and minimal performance variation over temperature. This dual filter is built using thin film technology which offers a drop in solution with highly repeatable performance.



### FEATURES

- Small Size
- Integrated 3—Sided Stainless Steel Cover
- Solder Surface Mount Package
- Moisture Sensitivity Level: MSL1
- Frequency Stable over Temperature
- Operating & Storage Temp: -55°C to +125°C
- Characteristic Impedance: 50Ω

### SPECIFICATIONS\*

	Parameter	Frequency Range (GHz)	Min	Typ.	Max
Filter 1 LOW BAND	Insertion Loss (dB)	26.5 - 29.5		4.0	4.5
	Return Loss (dB)	26.5 - 29.5	10	12	
	Low Side Rejection (dB)	DC - 23.5	35	40	
	High Side Rejection (dB)	32.0 - 43.0	35	40	
Filter 2 HIGH BAND	Insertion Loss (dB)	37.5 - 40.5		4.0	4.5
	Return Loss (dB)	37.5 - 40.5	10	12	
	Low Side Rejection (dB)	DC - 33.5	40	40	
	High Side Rejection (dB)	44.5 - 55.0	25	40	
	Isolation (dB)	26.5 - 29.5 37.5 - 40.5	30	35	
	Input Power (W)	TBD			
	Size (L x W x H)	0.275.x 0.187 x 0.070 in 6.99 x 4.75 x 1.78 mm			

\*Electrical specifications based on typical probed performance at room temperature. Insertion loss shall vary  $\pm 0.5$ dB over 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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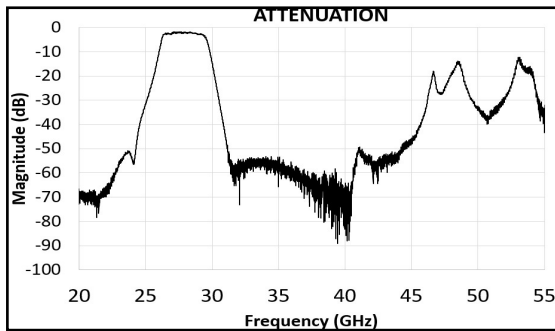
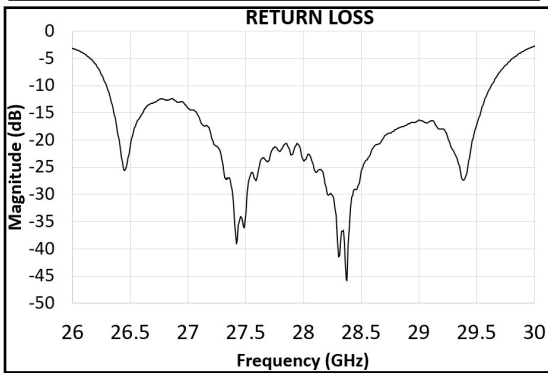
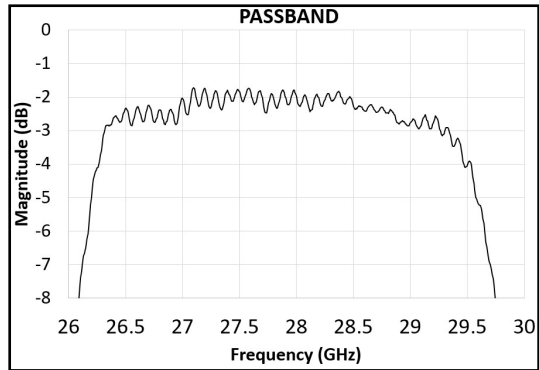
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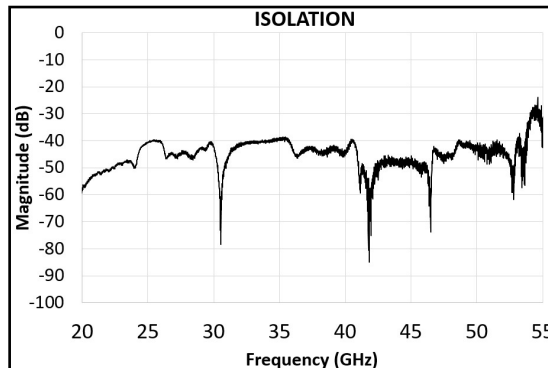
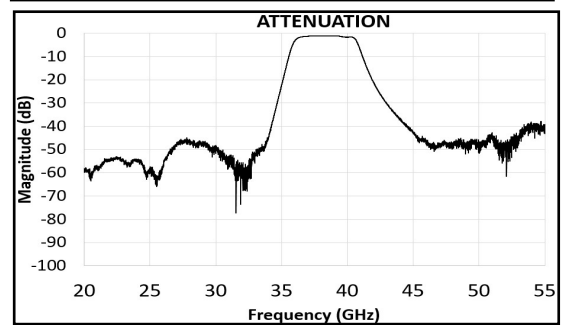
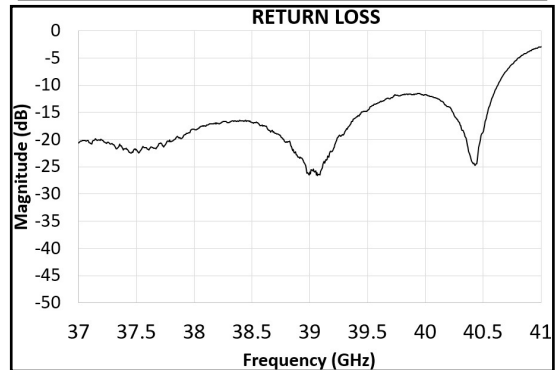
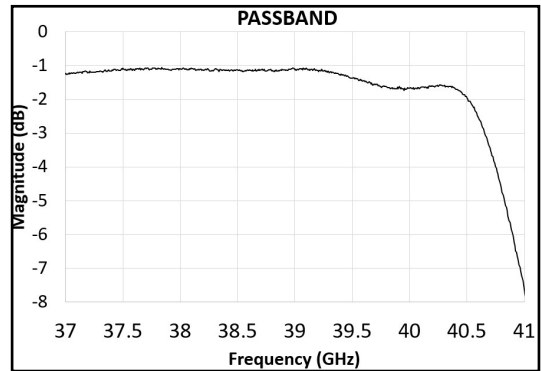
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### Typical Measured Performance

**FILTER 1 (LOW BAND)**



**FILTER 2 (HIGH BAND)**



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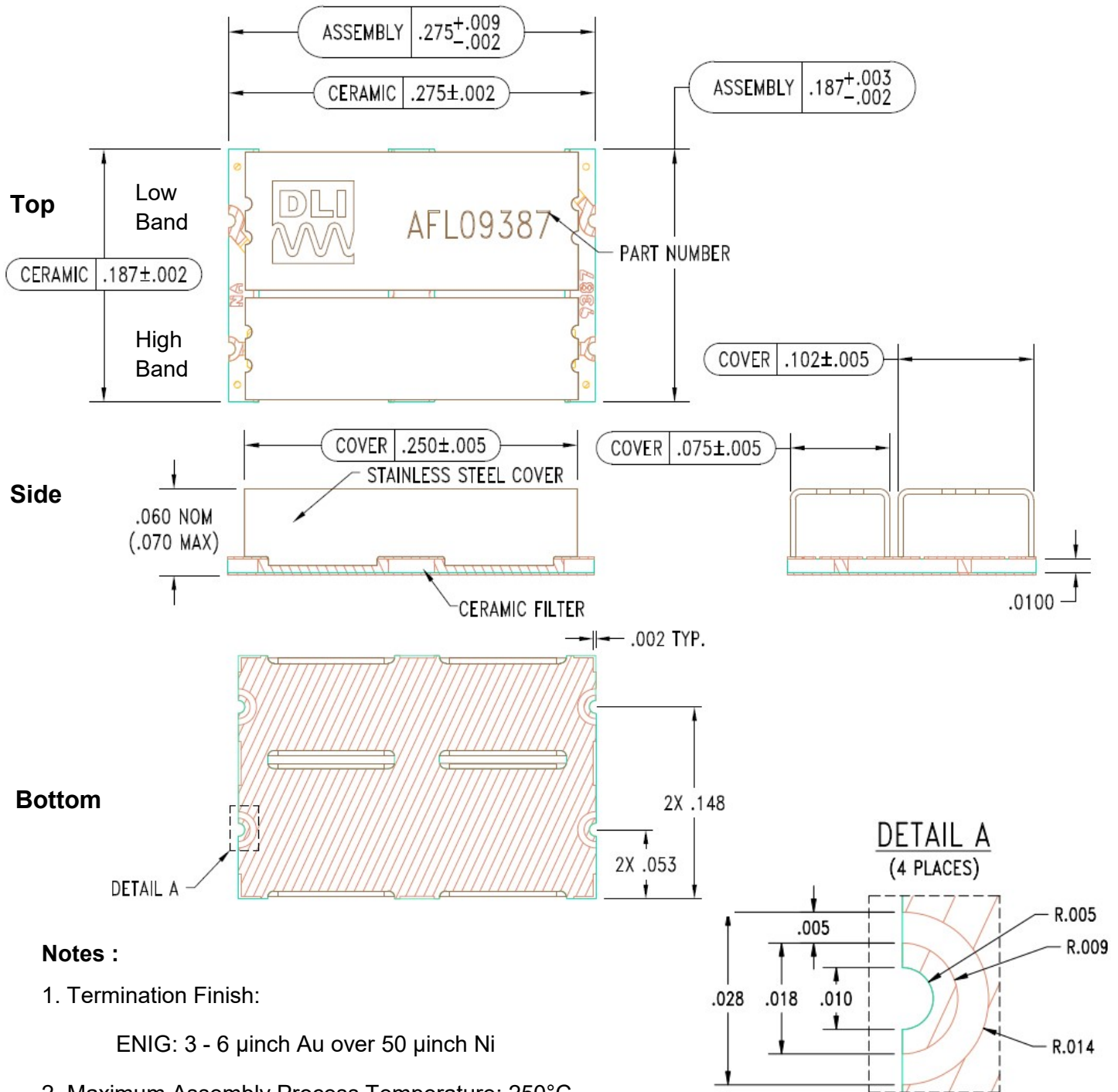
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**Physical Dimensions**

Units = inches (in)



**Notes :**

1. Termination Finish:

ENIG: 3 - 6  $\mu$ inch Au over 50  $\mu$ inch Ni

2. Maximum Assembly Process Temperature: 250°C

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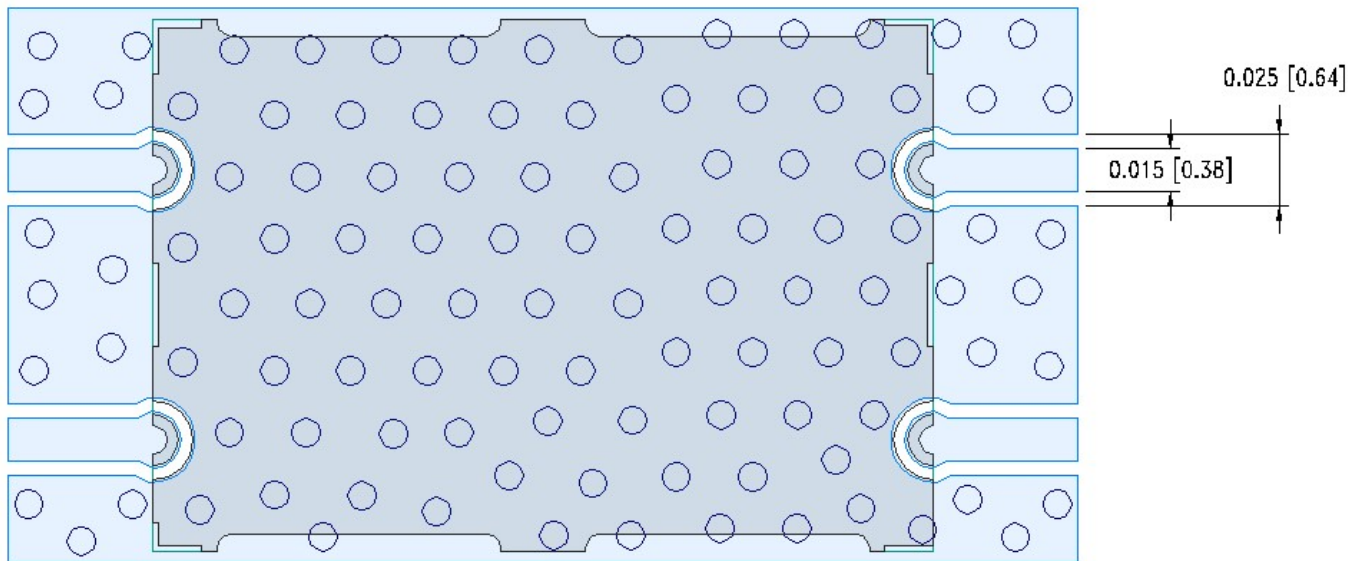
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**Recommended PCB Layout**

unit = in [mm]  
-50Ω trace dimensions are application specific  
-Ensure adequate grounding beneath the part

-  PWB Ground Via
-  Filter Bottom Metallization
-  PWB Top Metallization



**Note:**

- 50Ω trace dimensions are application specific.
- 50Ω trace dimensions are designed for 10mil thick R04350B Rogers Board .
  - 15 mils ( 0.38mm ) trace width
  - 5 mils ( 0.127mm) spacing between the trace and ground

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

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