

## 11.75GHz and 19.25GHz Surface Mount Diplexer ADP12054

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### DESCRIPTION

This DLI brand surface mount catalog diplexer is designed to cover Satcom bands centered at 11.75GHz and 19.25GHz. This diplexer 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
- 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
<b>Filter 1 LOW BAND</b>	Insertion Loss (dB)	10.7 - 12.75		1.5	4.5
	Return Loss (dB)	10.7 - 12.75	10	18	
	Low Side Rejection (dB)	DC - 9.5	45	65	
	High Side Rejection (dB)	14.0 - 29.0 17.3-21.2	40 40	55 65	
<b>Filter 2 HIGH BAND</b>	Insertion Loss (dB)	17.3 - 20.2 20.2-21.2		1.7 2.6	3.7 4.5
	Return Loss (dB)	17.3 - 21.2	10	19	
	Low Side Rejection (dB)	DC - 15.5 10.7-12.75	40 45	60 53	
	High Side Rejection (dB)	22.75 - 29.0	40	55	
<b>Isolation (dB)</b>		10.7-12.75 17.3-21.2	40	52	
<b>Input Power (W)</b>		10			
<b>Size (L x W x H)</b>		0.450.x 0.310 x 0.093 in 11.43 x 7.87 x 2.36 mm			

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

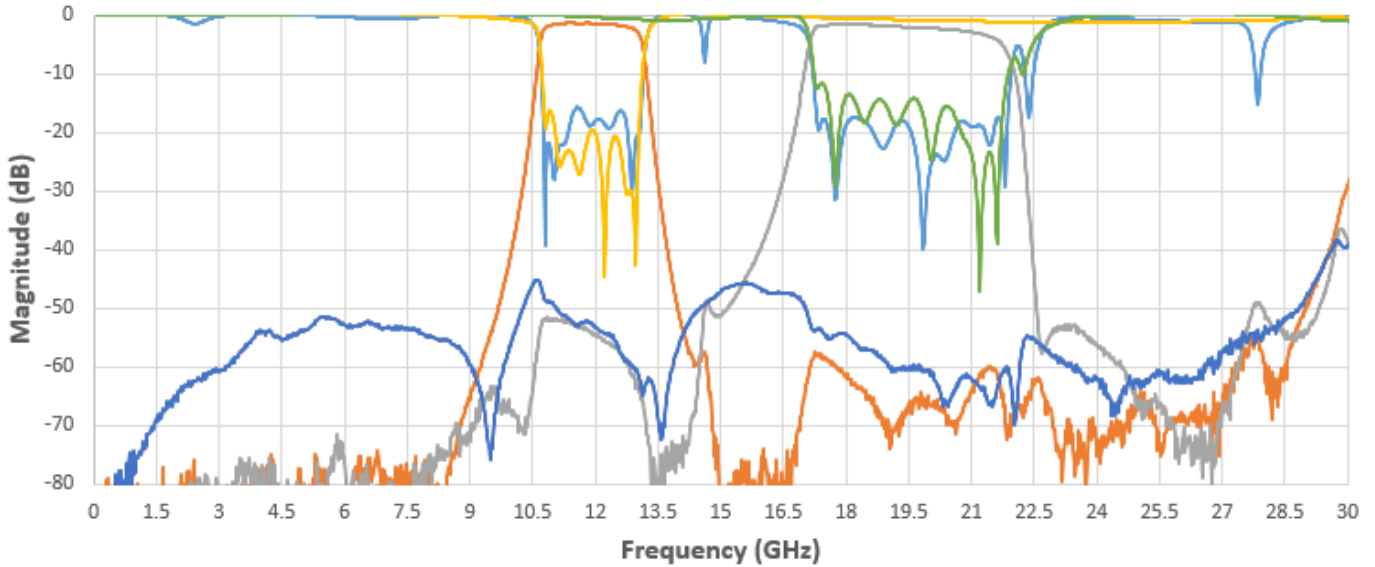
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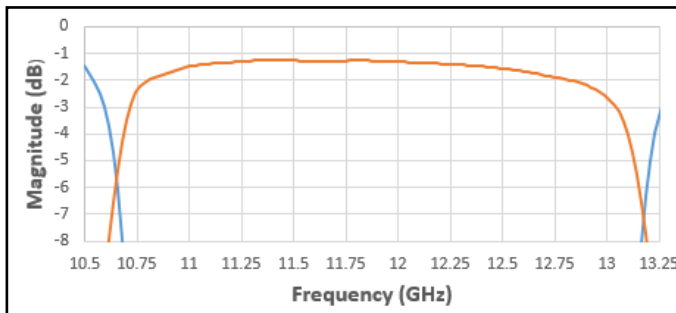
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 ADP12054**

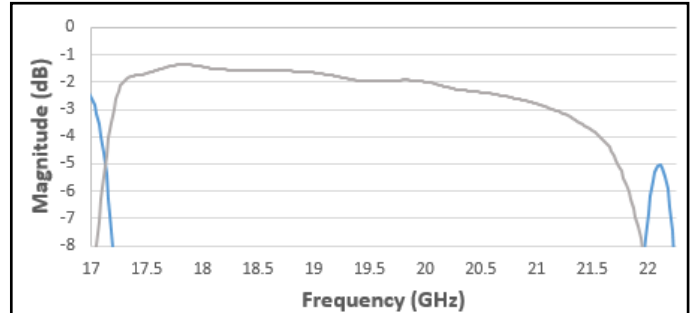
**Typical Measured Performance**



**FILTER 1 (LOW BAND)**



**FILTER 2 (HIGH BAND)**

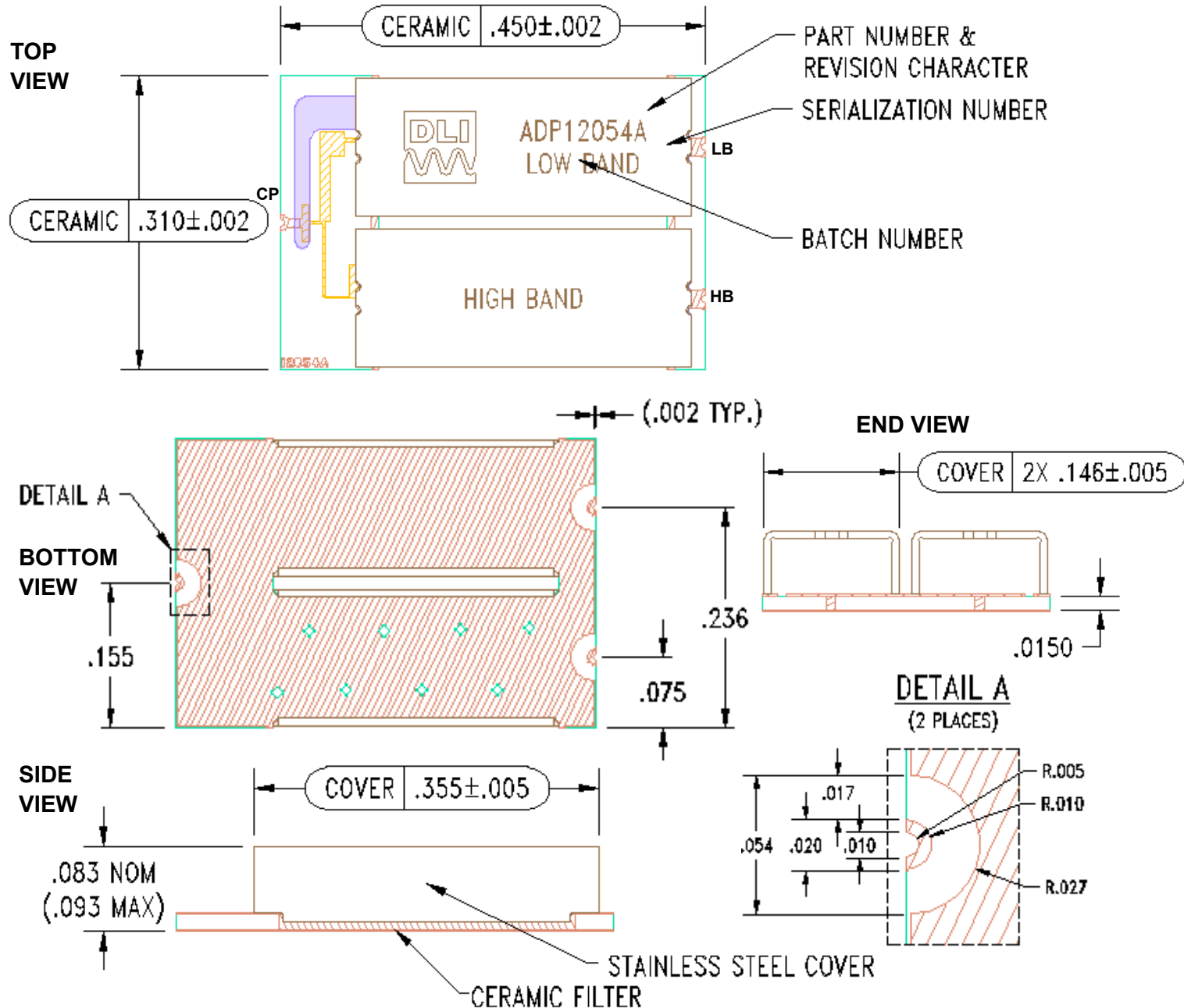


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**ADP12054**

**Physical Dimensions** Units = inches (in)



**Termination Finish:**

ENIG: 3 - 6 μinch Au over 50 μinch Ni . Maximum

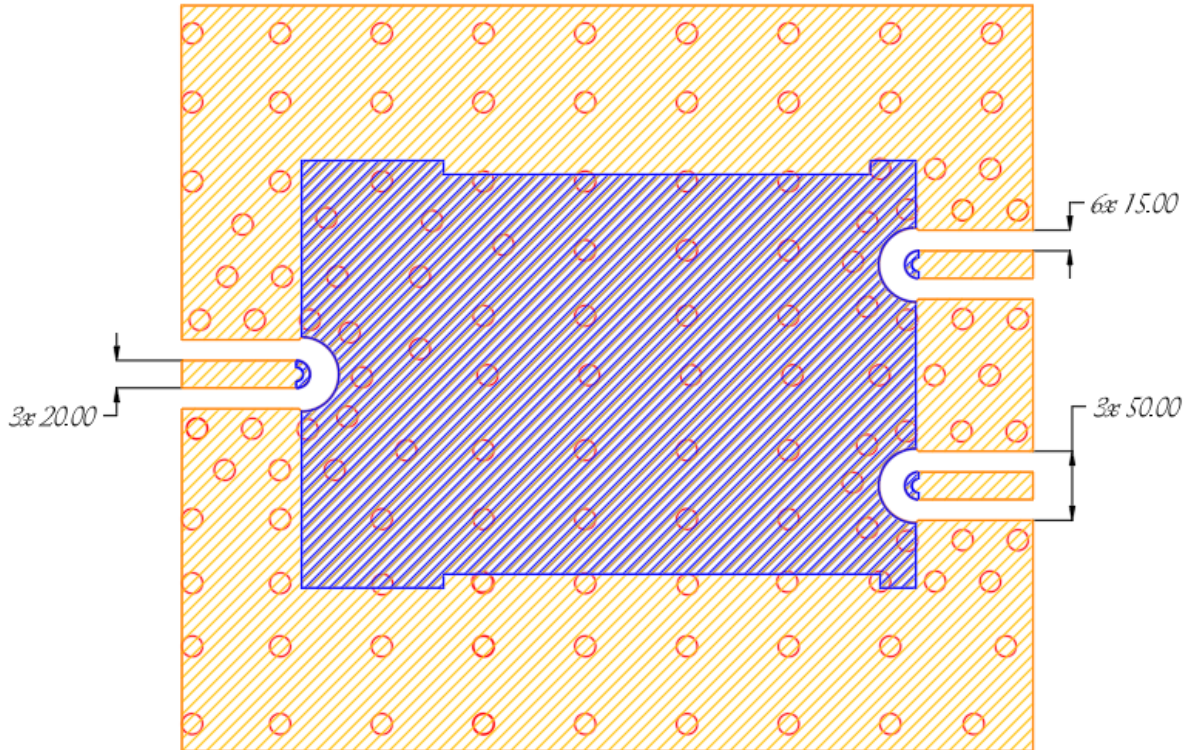
Assembly Process Temperature: 250°C

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**Recommended PCB Layout ( unit = mil)**

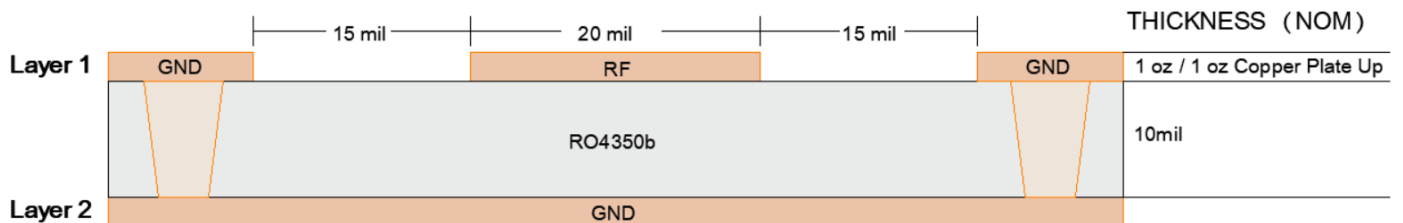


**PCB RECOMMENDED STACKUP**

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.knowlescapacitors.com/Support/Catalogs>

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