

# Multilayer Organic (MLO™)



## 0603 WLAN/BT Diplexer



### MLO™ TECHNOLOGY

The 0603 diplexer is a best in class low profile multilayer organic passive device that is based on AVX's patented multilayer organic high density interconnect technology. The MLO™ diplexer uses high dielectric constant and low loss materials to realize high Q passive printed elements such as inductors, and capacitors in a multilayer stack up. The MLO™ diplexers can support multiple wireless standards such as WCDMA, CDMA, WLAN, GSM, and BT. These diplexers are less than 0.5mm in height and are ideally suited for band switching for dual band systems. All diplexers are expansion matched to printed circuit boards thereby resulting in improved reliability vs. ceramic and Si components.

### APPLICATIONS

Multiband applications including WiFi, WiMax, GPS, and cellular bands

### LAND GRID ARRAY ADVANTAGES

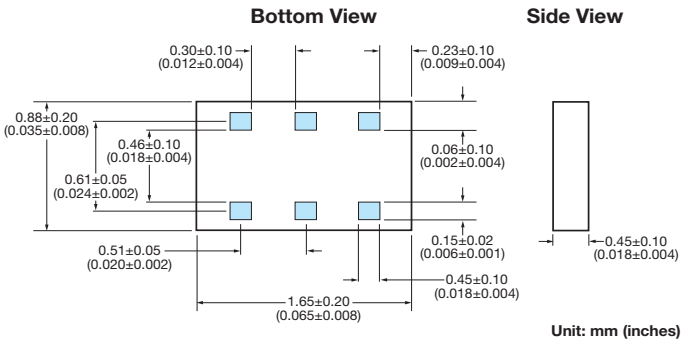
- Inherent Low Profile
- Excellent Solderability
- Low Parasitics
- High Heat Dissipation

### HOW TO ORDER

**DP** **03** **B** **5425** **7** **TR**  
 Type Size Design Frequency (MHz) Finish Packaging  
 7 = Au  
 T = NiSn  
 Tape & Reel



### COMPONENT DIMENSIONS AND FUNCTIONS



### QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual characteristics.

### OPERATING TEMPERATURE

-40°C to +85°C

### TERMINATION

Finishes available in Ni Au, Ni Sn and OSP coatings which are compatible with automatic soldering technologies which include reflow, wave soldering, vapor phase and manual.

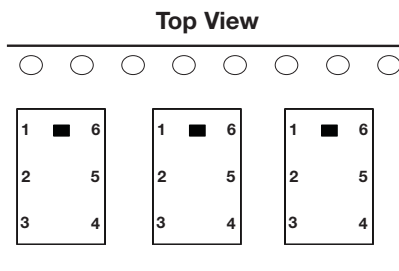
Terminal No.	Terminal Name
1	GND
2	Common
3	GND
4	Low Frequency Port
5	GND
6	High Frequency Port

PART NUMBER: DP03B54257TR

### Electrical Characteristics @ 25°C

No.	Parameter	Freq. (MHz)	Port	Specification	Typ. value	Unit
1	Insertion Loss	2400-2496	Low	0.55 max	0.40	dB
2		4900-5950	High	1.2 max	0.80	dB
3	Attenuation	500-2700	High	28 min	35	dB
4		9800-11900	High	10 min	14	dB
6	Attenuation	4800-4992	Low	20 min	25	dB
7		4900-5950	Low	23 min	27	dB
8	Isolation	7200-7500	Low	26 min	30	dB
9		500-2700	Low-High	28 min	35	dB
10	4900-5950	Low-High	22 min	25	dB	
11	VSWR	2400-2500	Ant	2.0 max	1.5	-
12	VSWR	4900-5950	Ant	2.0 max	1.3	-
13	VSWR	2400-2500	Low	2.0 max	1.5	-
14	VSWR	4900-5950	High	2.0 max	1.3	-

### ORIENTATION IN TAPE



### POWER CAPACITY

4.5W Maximum

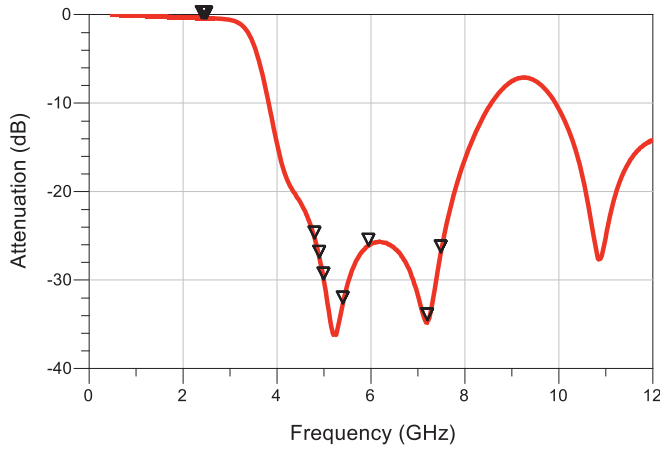
### Mechanical Characteristics @ 25°C

Size [mm(inches)]	1.65 x 0.88 (0.065 x 0.035)
Height [mm(inches)]	0.42 (0.017)
Volume (mm^3)	0.77



### S PARAMETER MEASUREMENTS

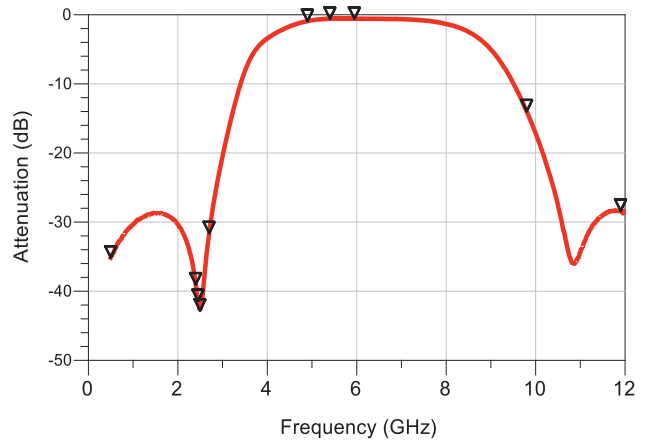
#### LOW BAND PORT ATTENUATION



#### Low Band Attenuation

Frequency	Attenuation
4.800 GHz	25.302
4.992 GHz	29.935
4.900 GHz	27.471
5.400 GHz	32.647
5.590 GHz	26.099
7.200 GHz	34.531
7.488 GHz	26.860

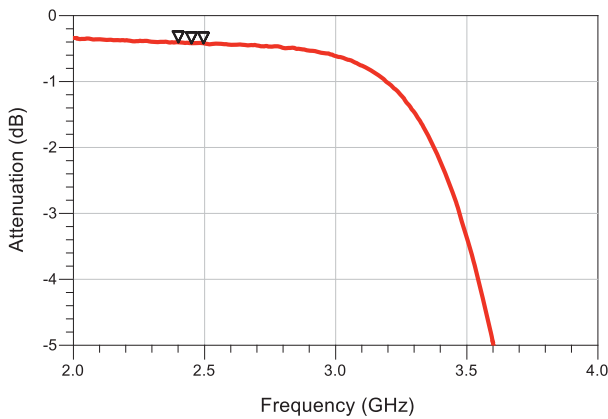
#### HIGH BAND PORT ATTENUATION



#### High Band Attenuation

Frequency	Attenuation
0.500 GHz	35.133
2.400 GHz	39.019
2.450 GHz	41.406
2.496 GHz	42.793
2.700 GHz	31.607
9.800 GHz	13.967
11.90 GHz	28.352

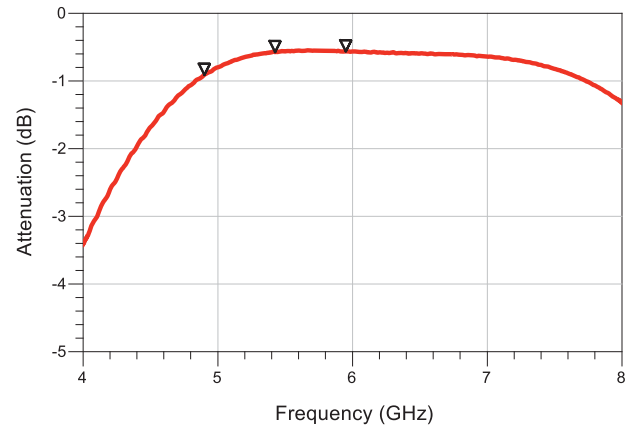
#### LOW BAND INSERTION LOSS



#### Low Band Insertion Loss

Frequency	Insertion Loss
2.400 GHz	0.404
2.450 GHz	0.418
2.496 GHz	0.420

#### HIGH BAND INSERTION LOSS



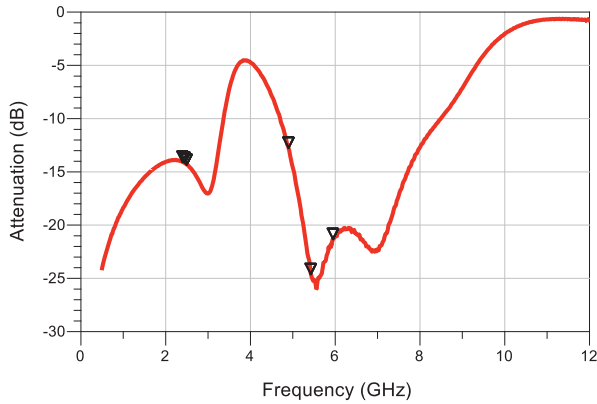
#### High Band Insertion Loss

Frequency	Insertion Loss
4.900 GHz	0.909
5.400 GHz	0.577
5.950 GHz	0.562

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### S PARAMETER MEASUREMENTS

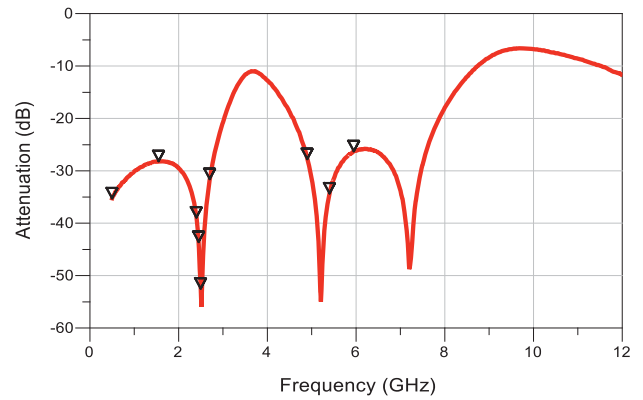
#### COMMON PORT RETURN LOSS



#### Common Return Loss

Frequency	Return Loss	VSWR
2.400 GHz	14.066	1.494
2.450 GHz	14.162	1.487
2.496 GHz	14.325	1.476
4.900 GHz	12.750	1.599
5.400 GHz	24.603	1.125
5.950 GHz	21.310	1.188

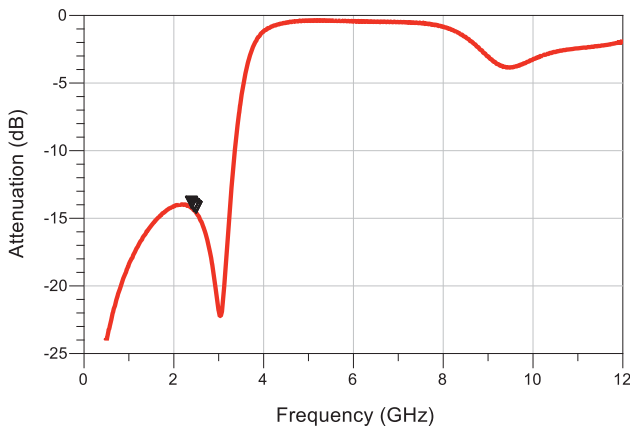
#### ISOLATION



#### Isolation

Frequency	Attenuation
0.500 GHz	32.253
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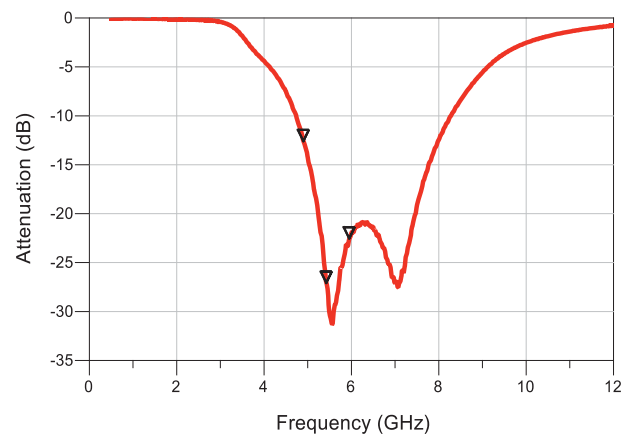
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#### HIGH BAND RETURN LOSS



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Frequency	Return Loss	VSWR
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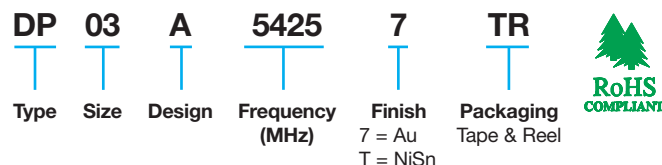
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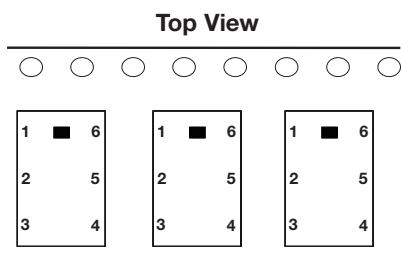
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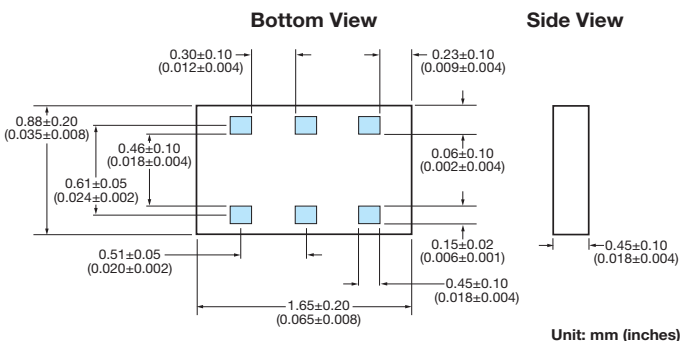
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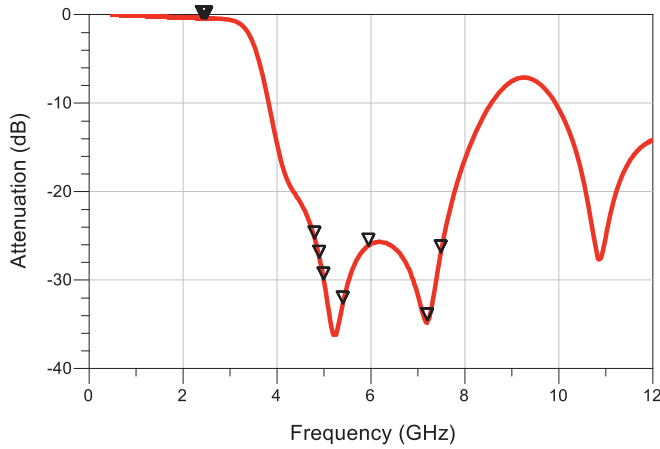
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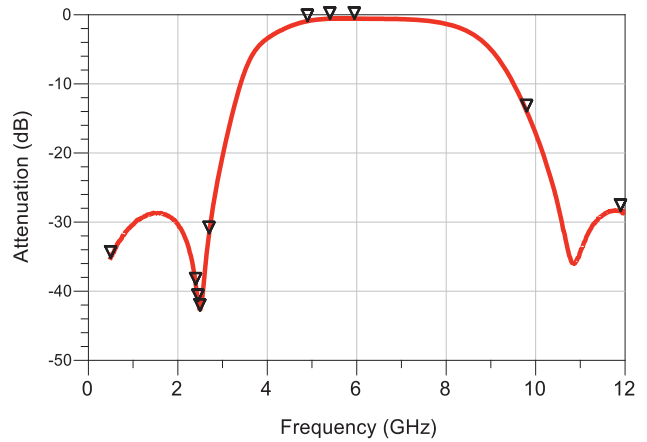
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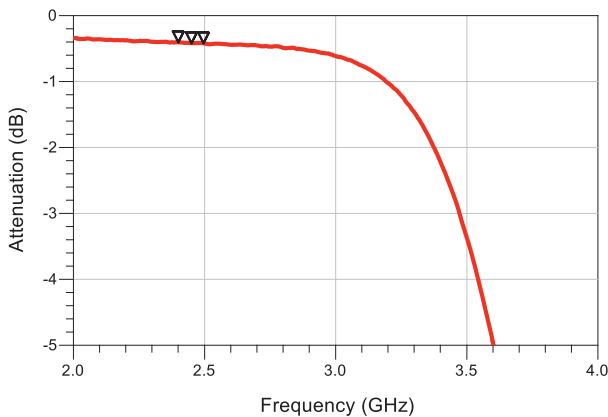
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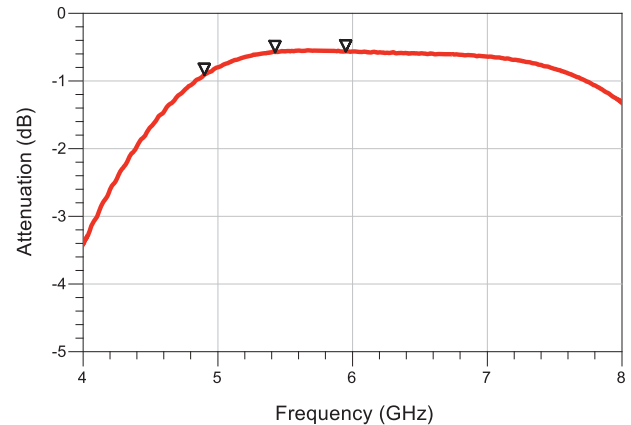
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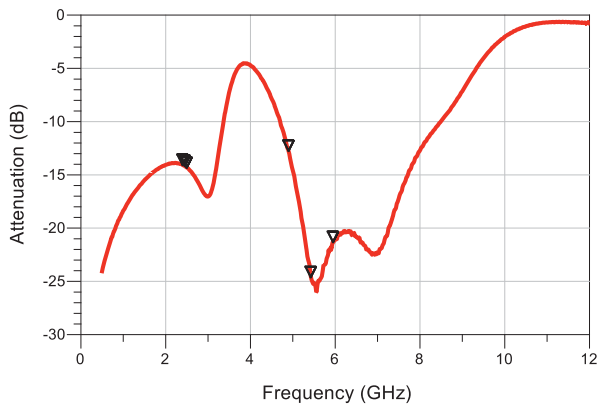


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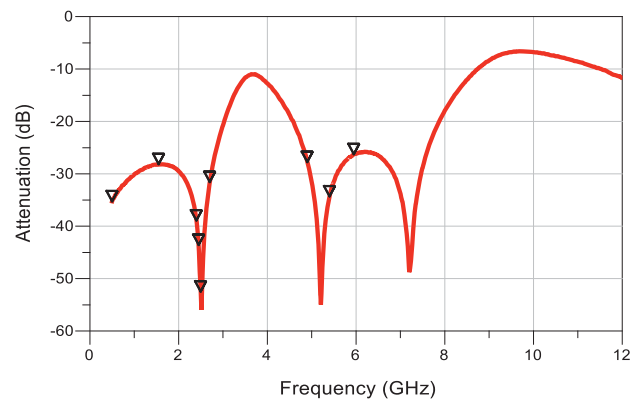
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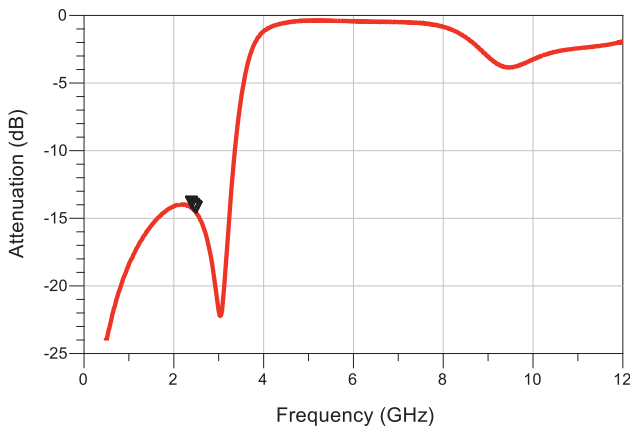
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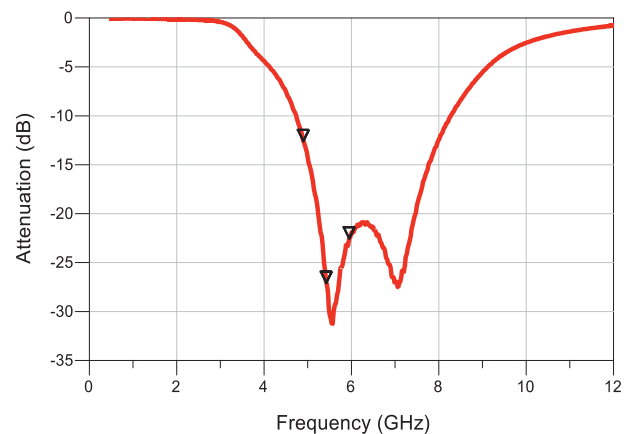
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