

Wi-Fi 6/6E/7 LTCC RF Diplexer



ADID-R-0013

Request Samples



Check Inventory



1.6 x 0.8 x 0.6 mm
RoHS Compliant

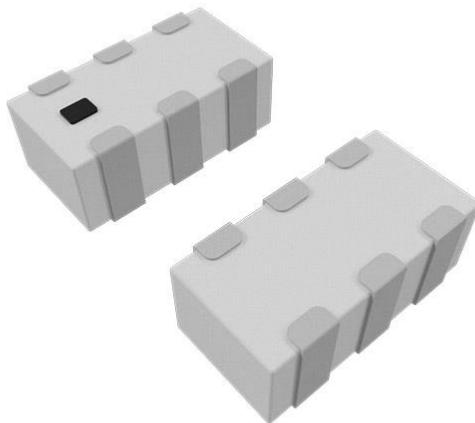
Features

- Supporting 2400~2500 / 5150~7150 MHz Simultaneously
- Small Form Factor 1.6 x 0.8 x 0.6 mm
- Low Insertion Loss 0.5 dB
- High Isolation Between Bands
- Temperature Stability Across Wide Temperature Bands
- High-Power Handling up to 3W
- RoHS Compliant

Applications

- Wi-Fi Modules
- AR/VR Headsets
- Wi-Fi Access Point and Mesh Wi-Fi Systems
- Smart Plugs, Lights, and Doorbells
- Smart TVs and Streaming Devices
- Laptops and PCs

Product Image



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Electrical Specifications

Parameters	Specification		Units	Notes
Passband	2400-2500	5170-7125	MHz	
Insertion Loss	0.5	0.9	dB	Max. @ 25°C
	0.8	1.2		Max. @ -40°C ~ +85°C
VSWR	< 2.0		-	
Attenuation (min.)	31.5	-	dB	4800~5000MHz
	26	-		5170~7125MHz
	24.8	-		7200~7500MHz
	20	-		9600~10000MHz
	18	-		12000~12500MHz
	-	34		70 ~ 2200 MHz
	-	32		2400 ~ 2500 MHz
	-	8.7		3400 ~ 3800 MHz
	-	22		10340 ~ 14250 MHz
	-	20		15510 ~ 21375 MHz
Isolation (min.)	31	28	dB	
Power Capacity	3		W	-

Mechanical Specifications

Parameters	Specifications
Filter Dimension	1.6 x 0.8 x 0.6 mm
Mounting Type	Surface Mount

Environmental Specifications

Parameters	Specifications
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-10°C ~ +40°C (70% R.H. max)
Humidity	90% - 95% R.H.

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Ordering Information

Part Number	Description
ADID-R-0013	Wi-Fi 6/6E/7 LTCC RF Diplexer
ADID-R-0013-EVB	Wi-Fi 6/6E/7 LTCC RF Diplexer EVB

Note: Other options not listed may be available upon request via [Abracon online support](#)

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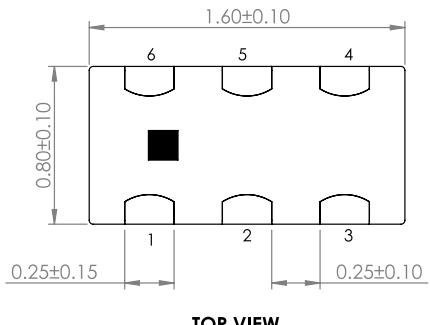
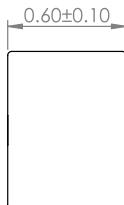
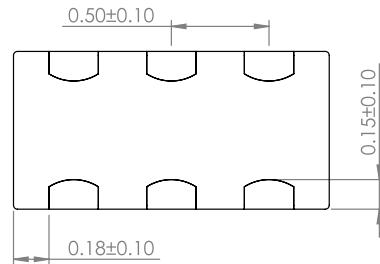
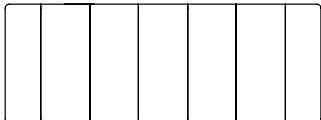
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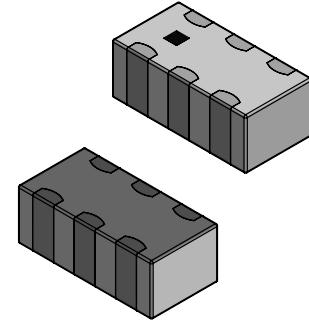
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Package Dimensions & PCB Footprint

**TOP VIEW****SIDE VIEW****BOTTOM VIEW****FRONT VIEW**

Pin #	Function
1	GND
2	Common Port
3	GND
4	Lower Port
5	GND
6	Higher Port
M	Mark

*Unit: mm*

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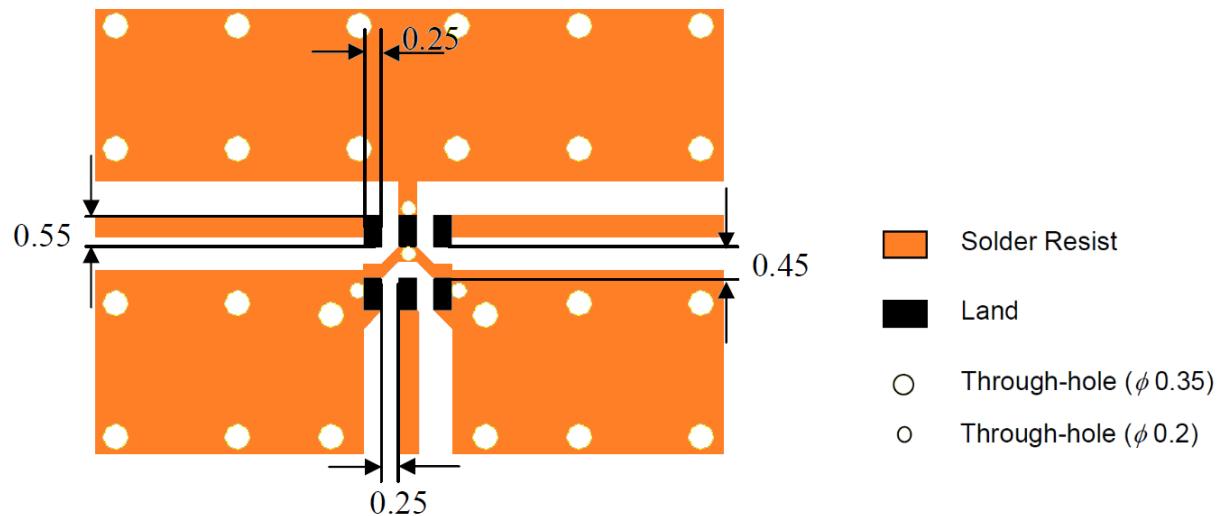
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Recommended Footprint (PCB Layout)



Note: Line width to be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.
The transmission line is Gound Coplanar Waveguide (GCPW). For technical assistance, please contact [Abracon online support](#) through our online support platform.

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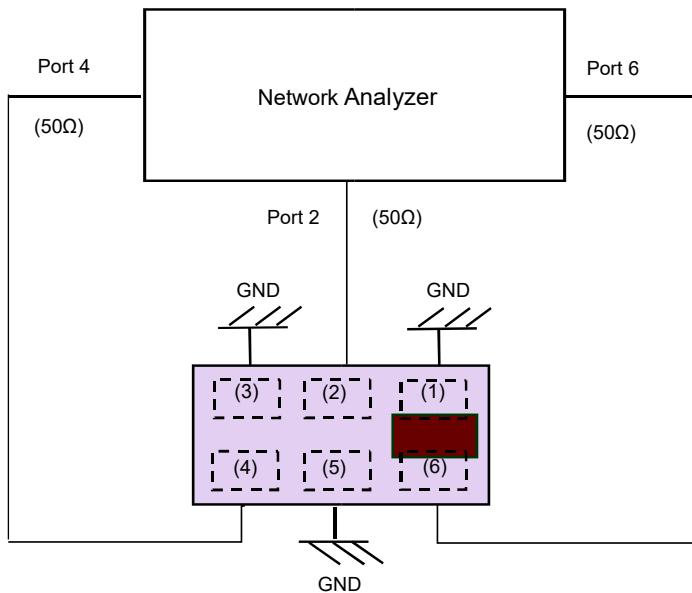
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**1.6 x 0.8 x 0.6 mm
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Measurement Setup



Pin #	Function
(1)	GND
(2)	Common
(3)	GND
(4)	Lower Freq. Band
(5)	GND
(6)	Higher Freq. Band



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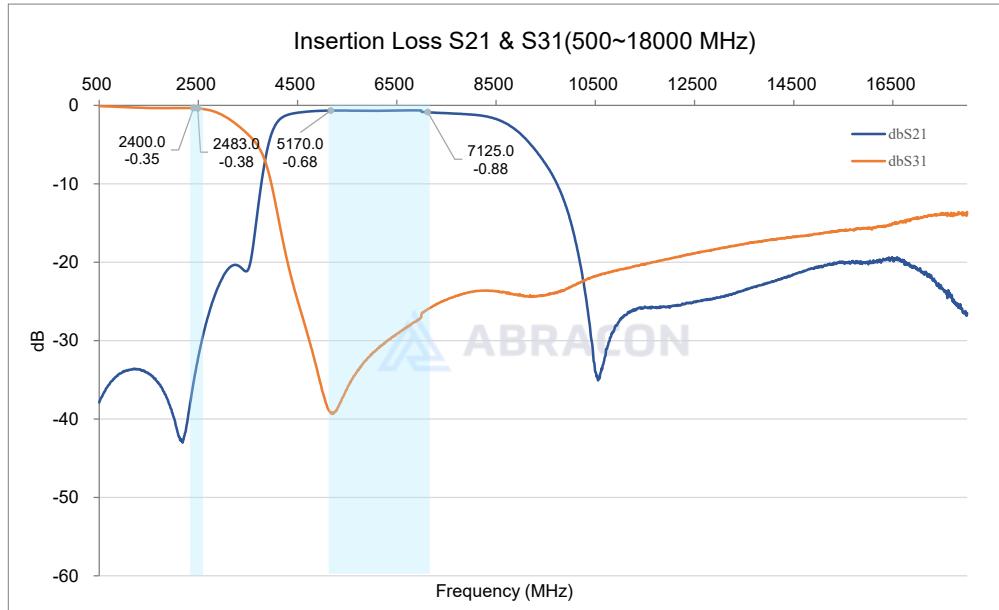
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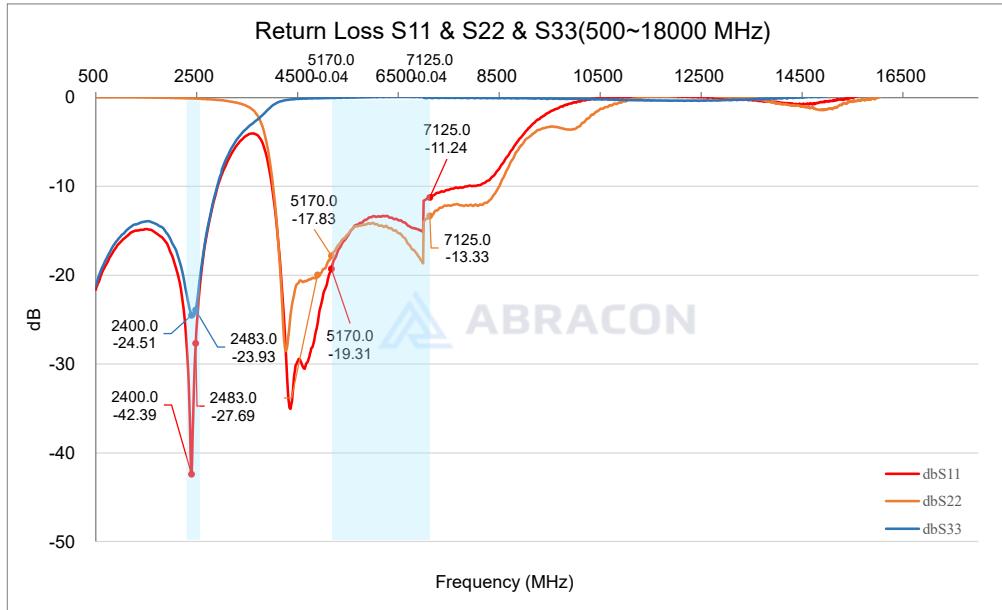
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Frequency Characteristics

Insertion Loss (S21 & S31) 500 – 18000 MHz



Return Loss (S11 & S22 & S33) 500 – 18000 MHz



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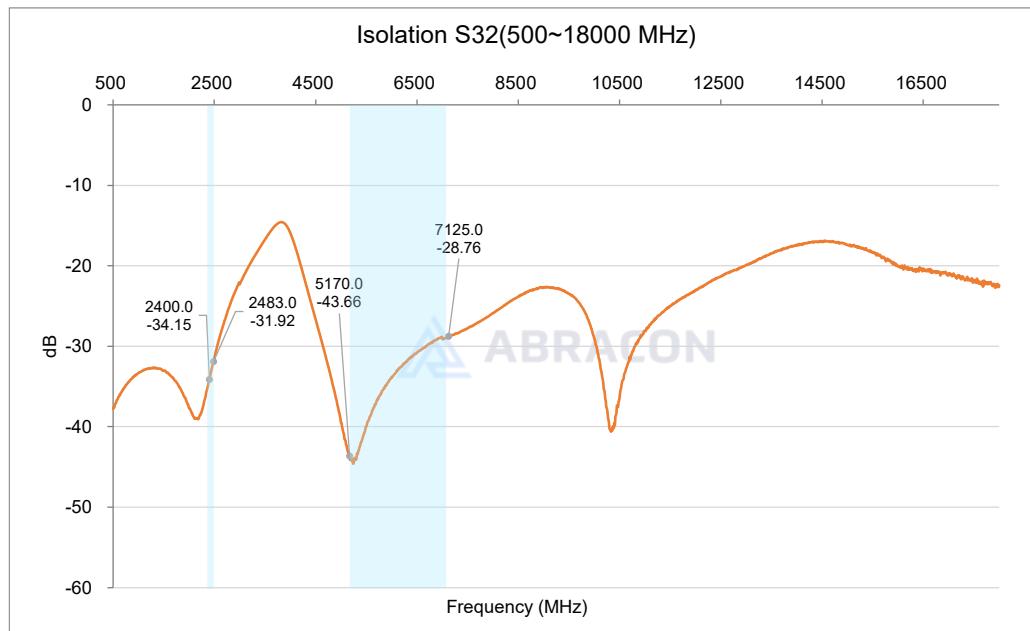


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Isolation (S32) 500 – 18000 MHz





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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

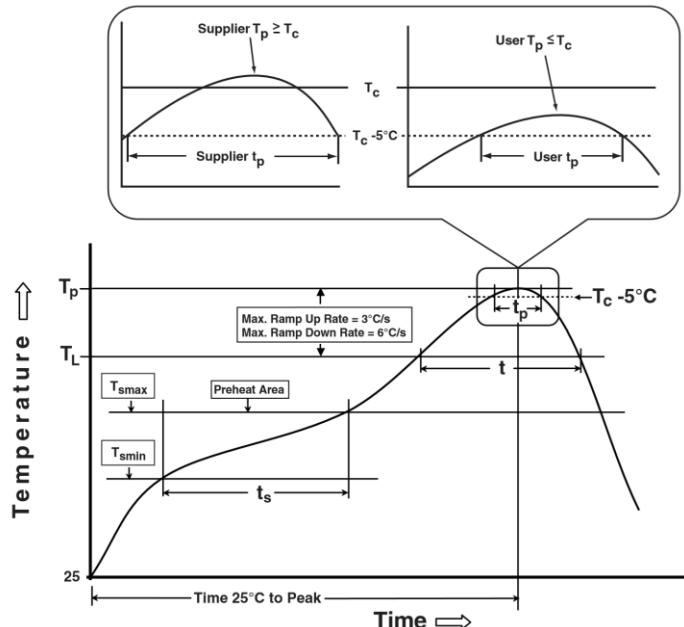


Table 1

**SnPb Eutectic Process
Classification Temperatures (T_c)**

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5mm	235°C	220°C
≥2.5mm	220°C	220°C

Table 2

**Pb-Free Process
Classification Temperatures (T_c)**

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 – 120 sec.	60 – 90 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at Liquidous (T_L)	60 – 150 sec.	60 – 150 sec.
Peak package body temperature (T_p)*	See Table 1	See Table 2
Time (T_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	10 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

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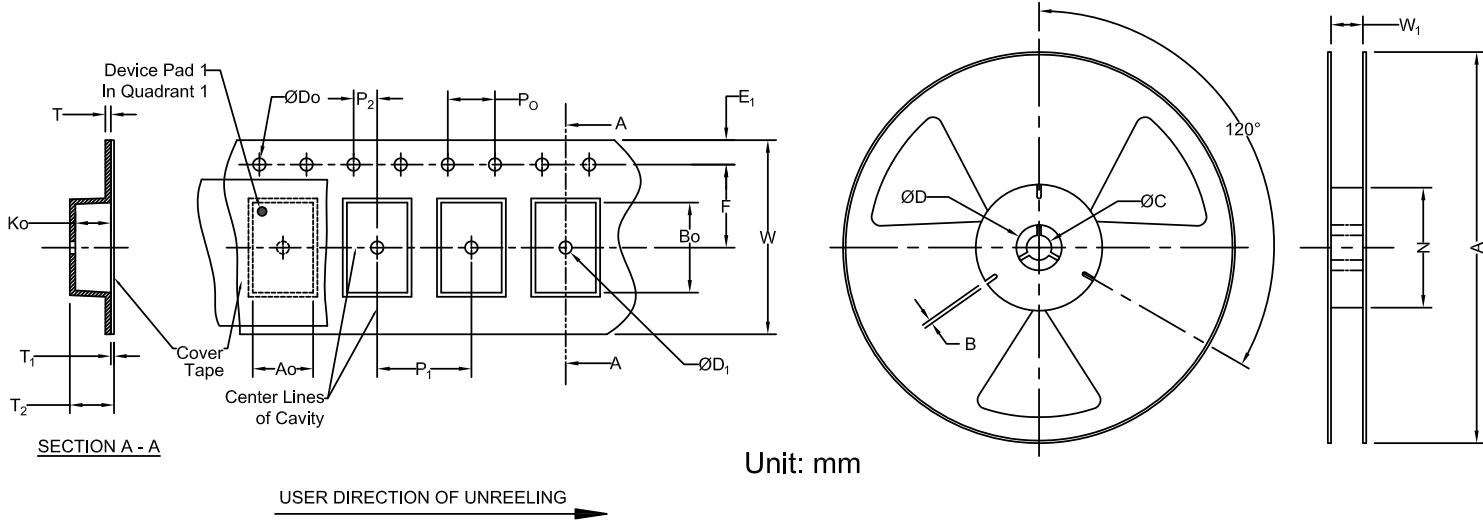


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Packaging

Tape & Reel

1. Tape & Reel Dimension 1608(0603)



Carrier Tape Specifications (mm)										
Do	E ₁	P ₀	P ₂	T	F	P ₁	W	A ₀	B ₀	Reel Qty
1.5±0.1	1.75±0.10	4.00±0.10	2.00±0.05	0.75±0.10	3.50±0.05	4.00±0.10	8.00±0.30	1.0±0.10	1.8±0.10	4,000

Reel Specifications (mm)			
A	N	B	C
Φ178±2.0	Φ58.0±2.0	Φ2.45±0.20	Φ13.5±0.20

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf ('COTS'), which are designed, intended, and validated for use in commercial, industrial, and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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