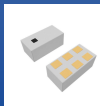


Wi-Fi 6/6E/7 LTCC RF Diplexer



ADID-R-0012

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1.6 x 0.8 x 0.65 mm

RoHS Compliant

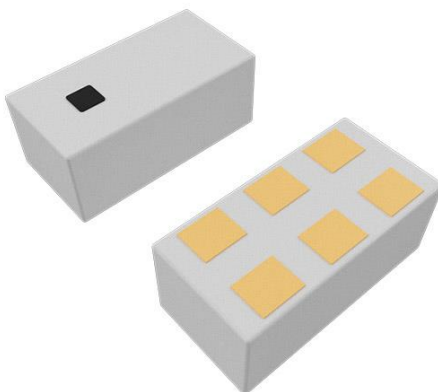
Features

- Supporting 2400~2500 / 5150~7150 MHz Simultaneously
- Small Form Factor 1.6 x 0.8 x 0.65 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

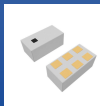
Applications

- 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



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



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1.6 x 0.8 x 0.65 mm

RoHS Compliant

Electrical Specifications

Parameters	Specification		Units	Notes
Passband	2400-2500	5150-7150	MHz	
Insertion Loss	0.5	1.0	dB	@25°C
	0.7	1.3		@-40°C ~ +85°C
VSWR	< 2.0		-	
Attenuation (min.)	40	-	dB	4800 ~ 5000 MHz
	30	-		7200 ~ 7500 MHz
	-	45		2400 ~ 2500 MHz
	-	29		10300 ~ 14300 MHz
	-	30		15300 ~ 21450 MHz
Isolation (min.)	40		dB	2400 ~ 2500 MHz
	40			4800 ~ 5000 MHz
	38			5000 ~ 6000 MHz
	30			6000 ~ 7150 MHz
Power Capacity	3		W	-

Mechanical Specifications

Parameters	Specifications
Filter Dimension	1.6 x 0.8 x 0.65 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.

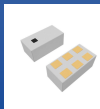


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1.6 x 0.8 x 0.65 mm

RoHS Compliant

Ordering Information

Part Number	Description
ADID-R-0012	Wi-Fi 6/6E/7 LTCC RF Diplexer
ADID-R-0012-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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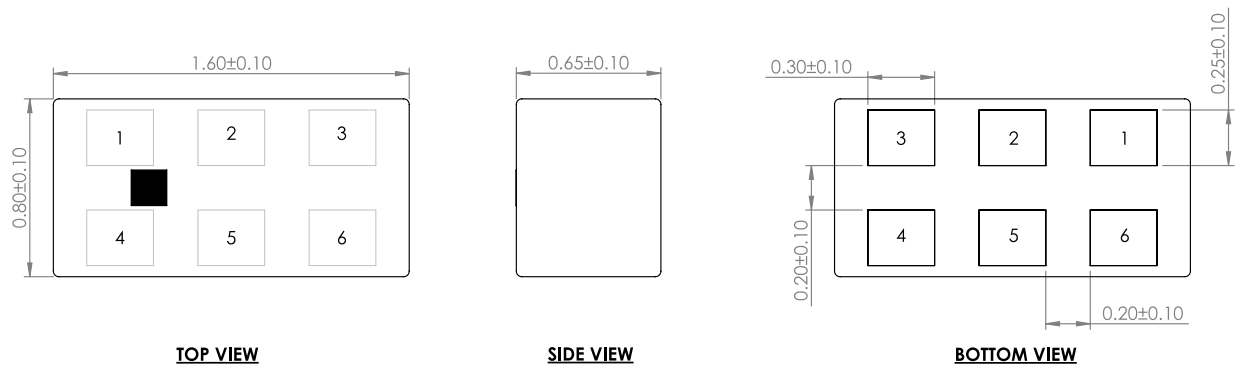
Check Inventory



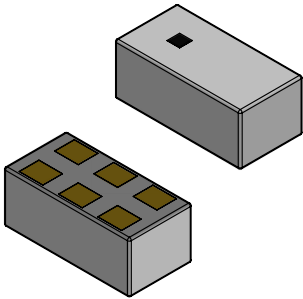
1.6 x 0.8 x 0.65 mm

RoHS Compliant

Package Dimensions & PCB Footprint



Pin #	Function
1	Low Freq. Port
2	GND
3	High Freq. Port
4	GND
5	Common Port
6	GND
M	MARK



Unit: mm

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



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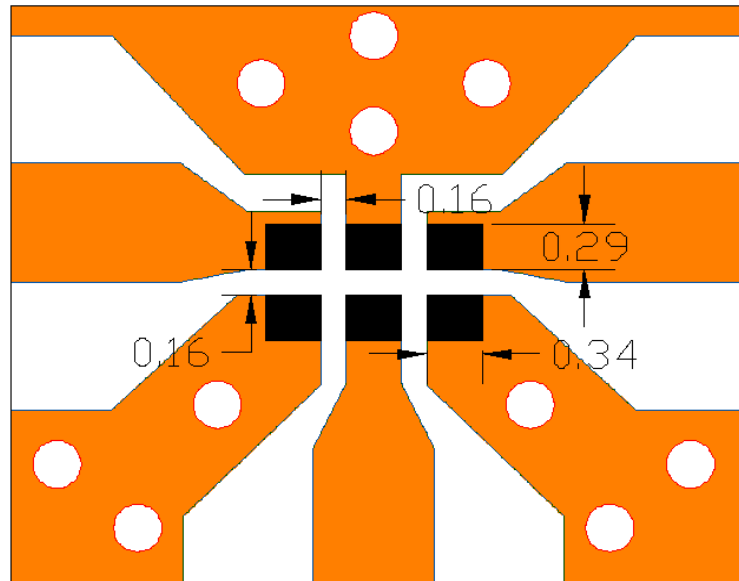
Check Inventory



1.6 x 0.8 x 0.65 mm

RoHS Compliant

Recommended Footprint (PCB Layout)



-  Solder Resist
-  Land
-  Through hole: $\phi=0.2$

Unit: mm

Note: Line width to be designed to match 50 Ω 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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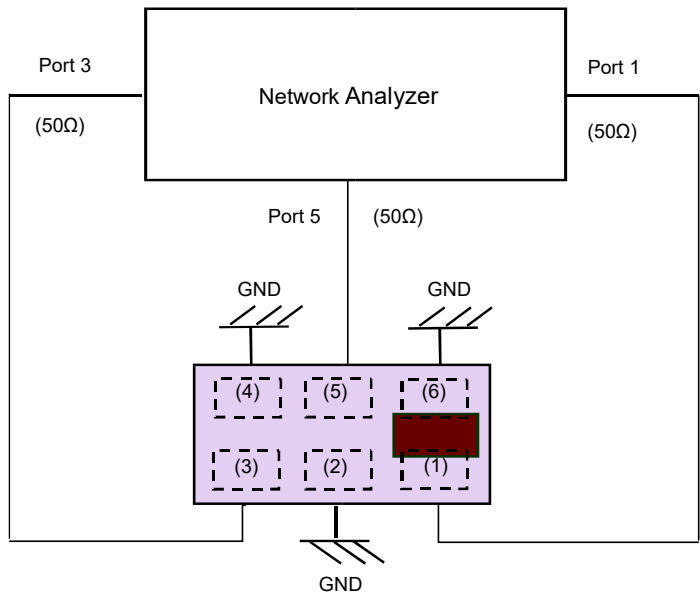
Check Inventory



1.6 x 0.8 x 0.65 mm

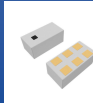
RoHS Compliant

Measurement Setup



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

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



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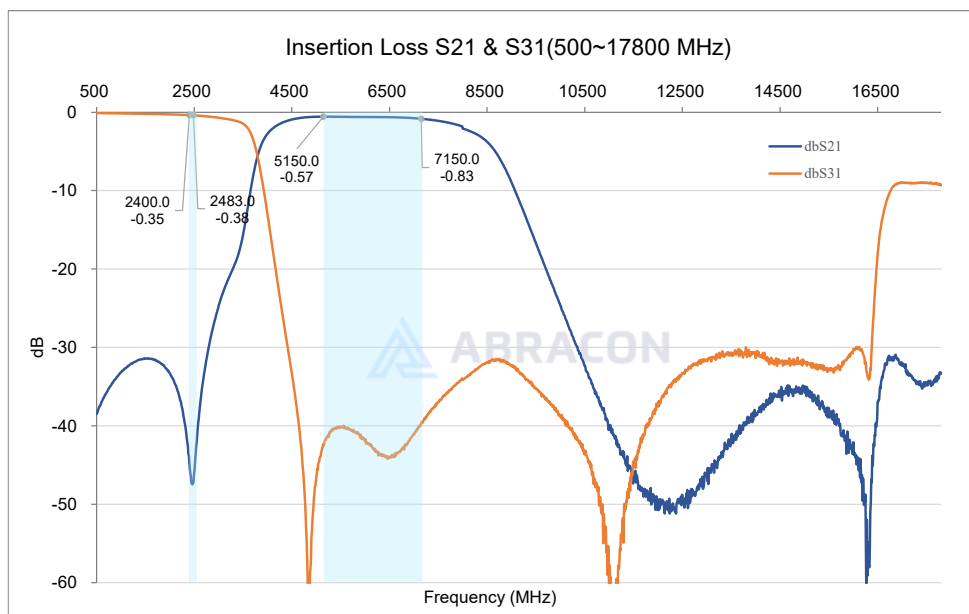


1.6 x 0.8 x 0.65 mm

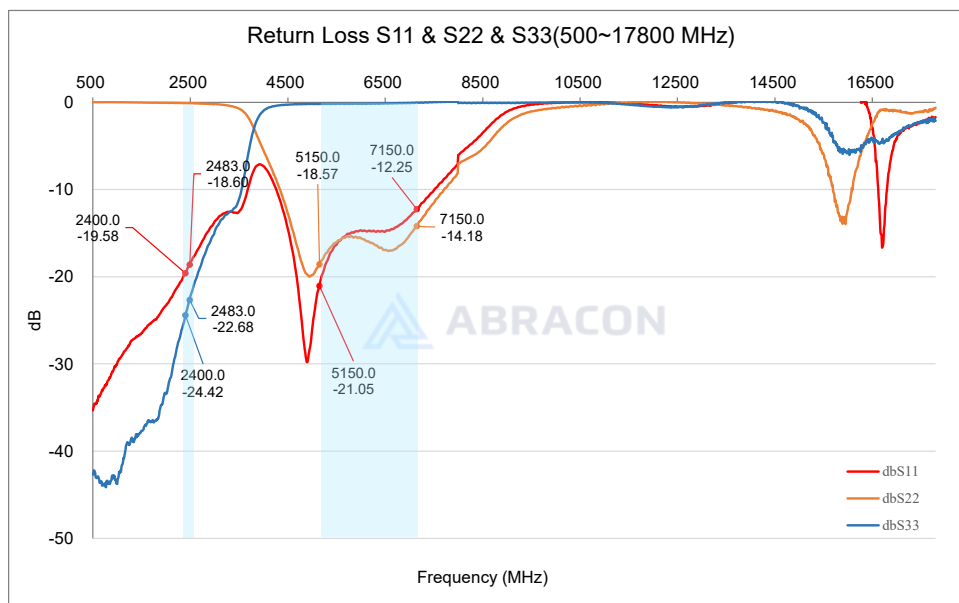
RoHS Compliant

Frequency Characteristics

Insertion Loss (S21 & S31) 500 – 17800 MHz



Return Loss (S11 & S22 & S33) 500 – 17800 MHz



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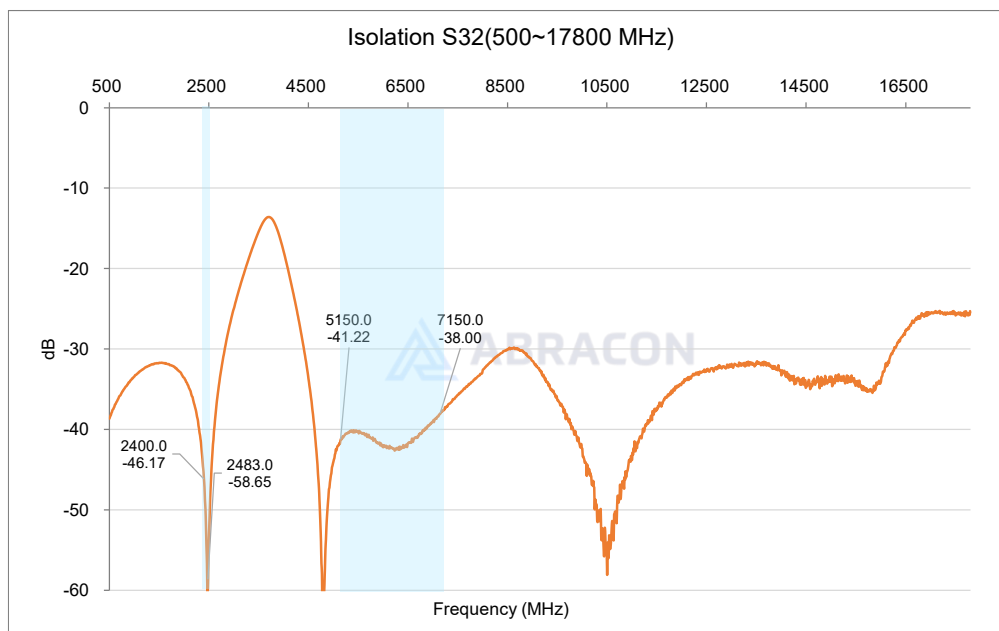
Check Inventory



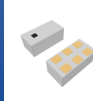
1.6 x 0.8 x 0.65 mm

RoHS Compliant

Isolation (S32) 500 – 17800 MHz



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1.6 x 0.8 x 0.65 mm

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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

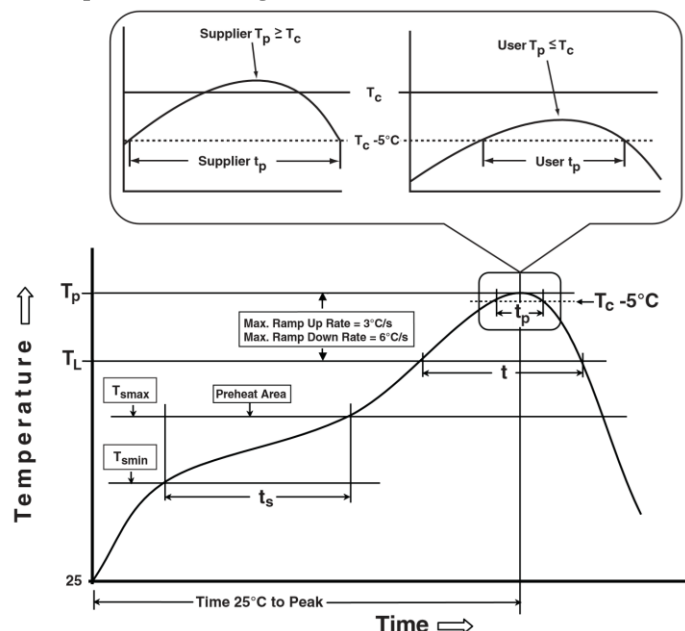


Table 1

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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[B39791B8039P810](#) [B39771B8035P810](#) [B39741B8012P810](#) [B39212B8033P810](#) [B39162B8636P810](#) [SF2225E](#) [SF2275E](#) [SF2395E](#) [SF2188D](#)