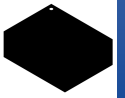


5250MHz Wi-Fi UNII 1-2a Bandpass Filter



AFII-LW-0017

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Check Inventory



1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

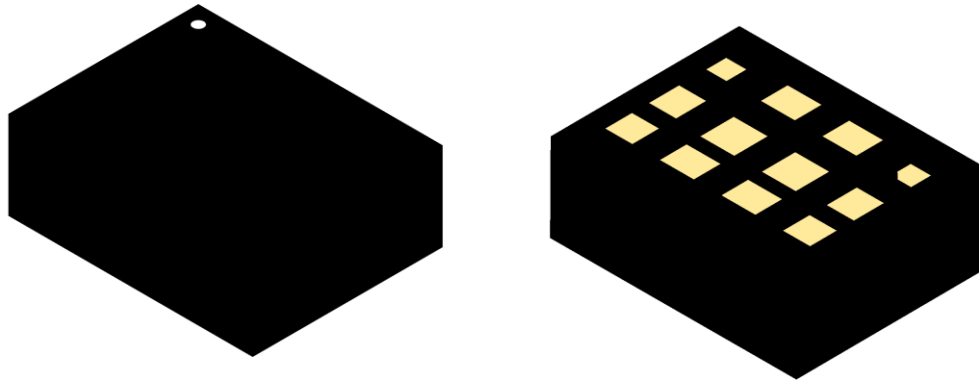
Features

- Frequency Range 5170 - 5330MHz
- Compact Size: 1.8 x 1.4 x 0.65 mm
- Low Insertion Loss in Wi-Fi UNII 1-2a Bands
- High Rejection in Wi-Fi UNII 2c-3 Bands
- Maximum Input Power: +28 dBm
- Single-Ended Input and Output
- Extended Temperature -40 to +105 °C

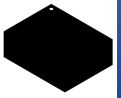
Applications

- Access Point
- Wireless Routers
- Residential Gateways
- Customer Premise Equipment
- Internet of Things
- Wi-Fi UNII 1-2a Indoor and Outdoor Use

Product Image



5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Electrical Specification

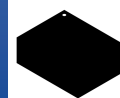
Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency(fc)	-	5250	-	MHz	-
VSWR	-	1.3	1.7		5170 - 5330MHz
Insertion Loss ⁽¹⁾		1.4	1.7	dB	5170 - 5330MHz
Amplitude Ripple	-	0.6	0.8	dB	5170 - 5330MHz
Group Delay		3.77	4.79	ns	5170 - 5330MHz
Group Delay Ripple		0.19	0.04	ns	5170 - 5330MHz
Attenuation ⁽²⁾ (Reference level from 0 dB)	30	34	-	dB	30 - 2400 MHz
	30	33	-		2400 - 2500 MHz
	26	30	-		2400 - 3000 MHz
	33	36	-		3400 - 3800 MHz
	34	37	-		3800 - 4900 MHz
	51	55	-		4400 - 4800 MHz
	40	42	-		4800 - 5000 MHz
	35	39	-		5490 - 5850 MHz
	29	31	-		7200 - 7500 MHz
	13	15	-		10300 - 11800 MHz
Source Impedance ⁽³⁾ (single ended)	-	50	-	Ω	
Load Impedance ⁽³⁾ (single ended)	-	50	-	Ω	
DC Voltage	-	3	-	V	
Input Power	-	-	28	dBm	

Notes: (1) Integrated IL referenced to 0dB. 160MHz bandwidth.

(2) Typical values are based on average measurements at + 25 °C.

(3) A matching network is unnecessary (refer to the Measurement Circuits section).

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Mechanical Specification

Parameters	Specifications
Dimension	1.8 x 1.4 x 0.65 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +105°C
Storage Temperature Range	-40°C ~ +105°C
RoHS Complaint	Yes
Maximum Input Power(dBm)	+28@50°C
ESD Voltage (HBM)	> 250 V
ESD Voltage (CDM)	> 250 V
Moisture Sensitivity Levels	3

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



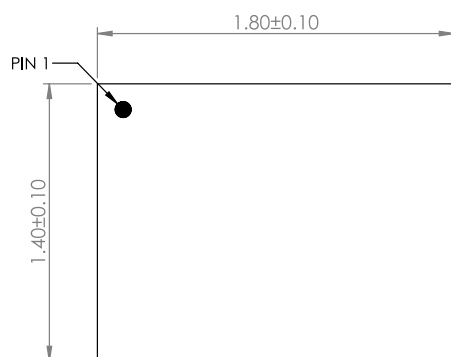
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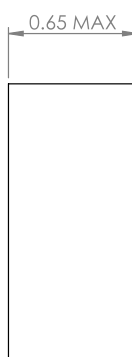
Check Inventory

1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

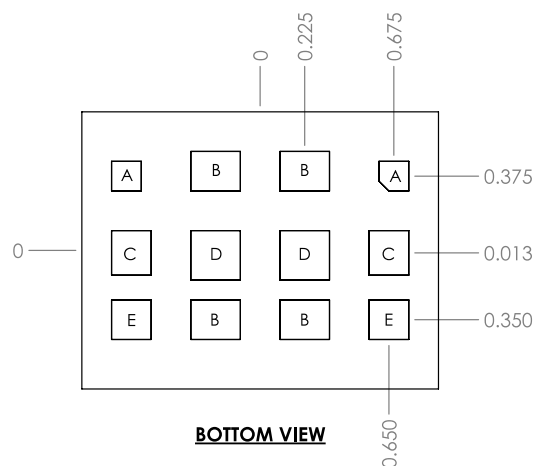
Product Dimensions



TOP VIEW



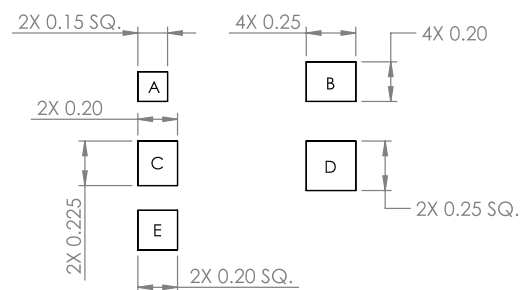
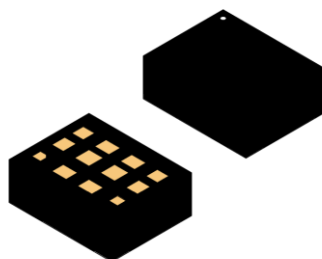
SIDE VIEW



BOTTOM VIEW



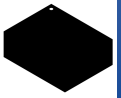
FRONT VIEW



Unit: mm

All tolerances are ± 0.05 mm except for overall length and width ± 0.10 mm

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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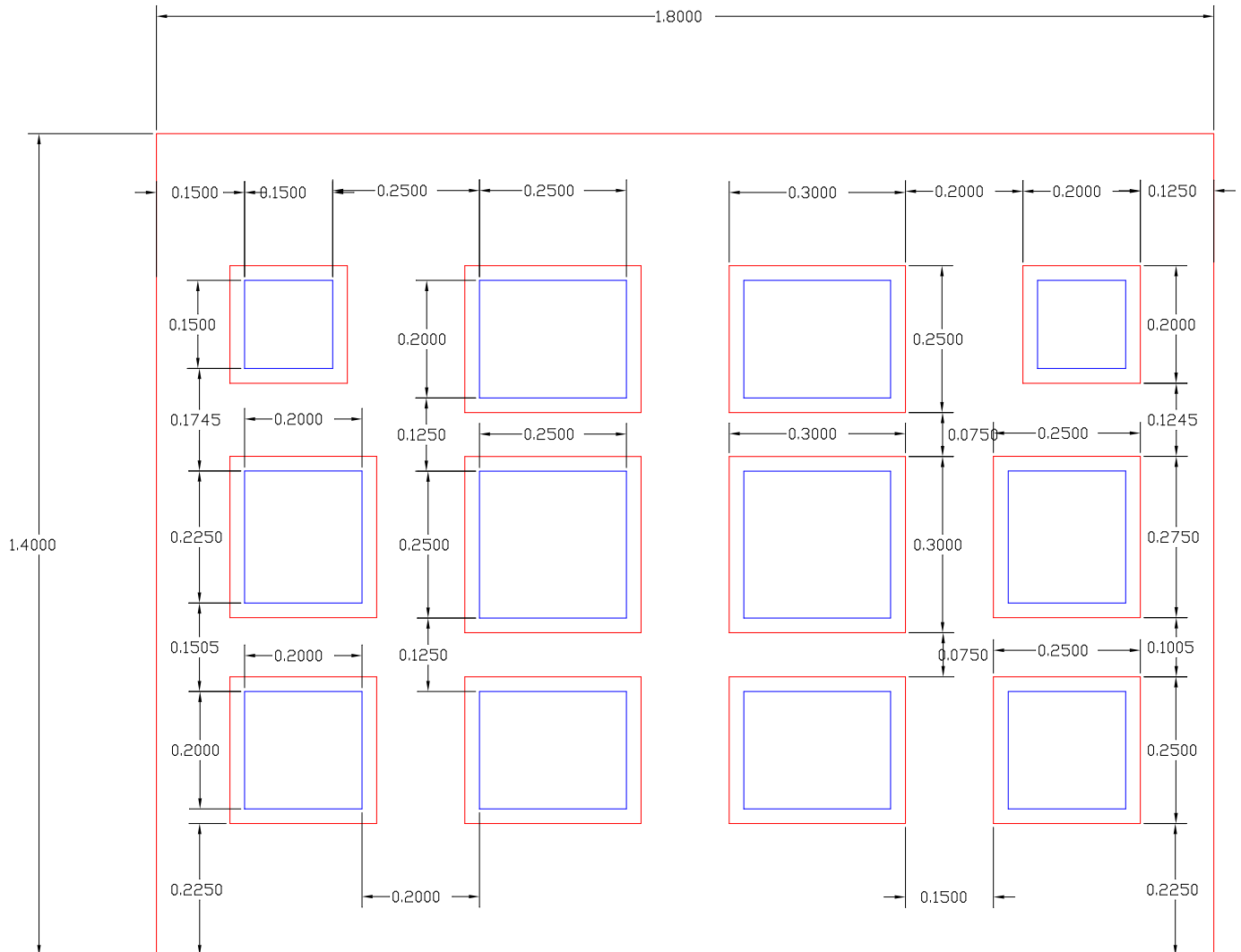


Check Inventory



1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Recommended Land Pattern

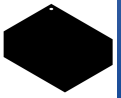


--- Land Pattern --- Solder Mask

Unit : mm

Please note: The line width should be designed to achieve a 50-ohm characteristic impedance, depending on the PCB material and thickness. For technical assistance, please contact [Abracon online support](#) through our online support platform.

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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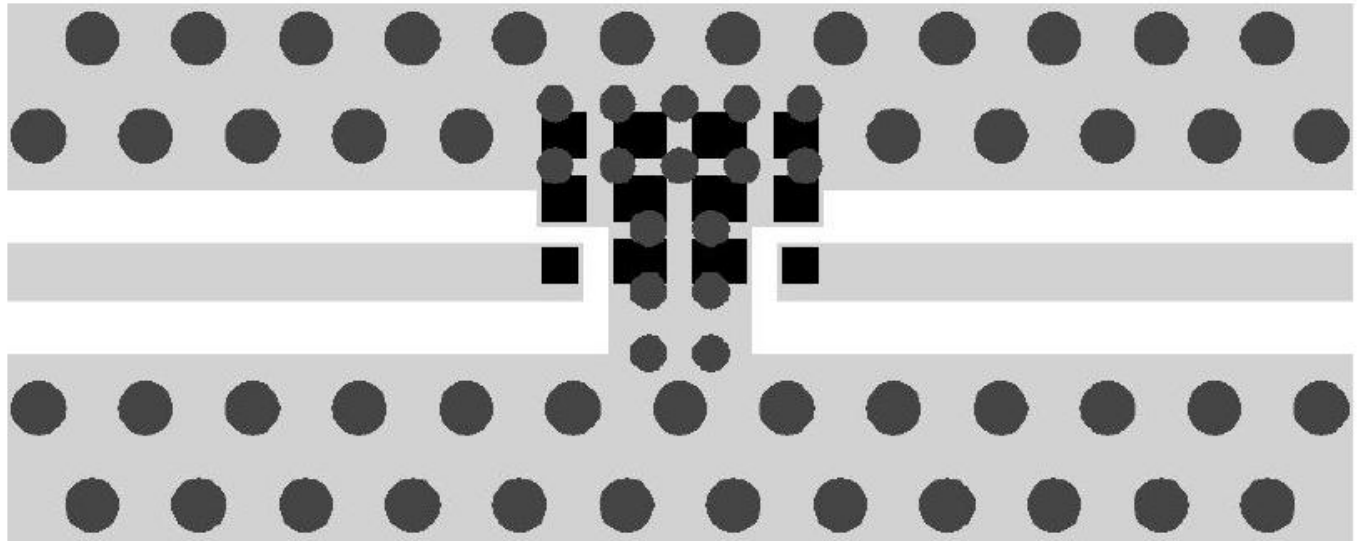


Check Inventory



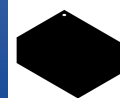
1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Evaluation Board Layout Guide



1. The diameter of the pad vias connecting to the bottom ground plane is 200 μm .
2. The diameter of the top ground vias connecting to the bottom ground plane is 300 μm .
3. The width of the RF signal line is 325 μm .
4. The spacing between the RF signal lines and the adjacent ground metals is 300 μm .

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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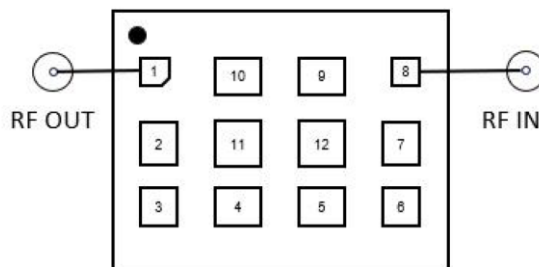


Check Inventory



1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Measurement Circuit

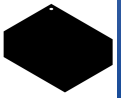


Top View

Port	Matching Component
Input (Pin 8)	RF Input matched to 50 Ω
Output (Pin 1)	RF Output matched to 50 Ω
Others	RF/DC ground. Use the recommended via pattern to minimize inductance and thermal resistance. Refer to PCB Mounting Pattern for suggested footprint.

* Matching component values shown are recommended based on the evaluation board. Value adjustment may be required on the end-user's circuit boards for the selected component manufacturer and PCB material.

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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Request Samples



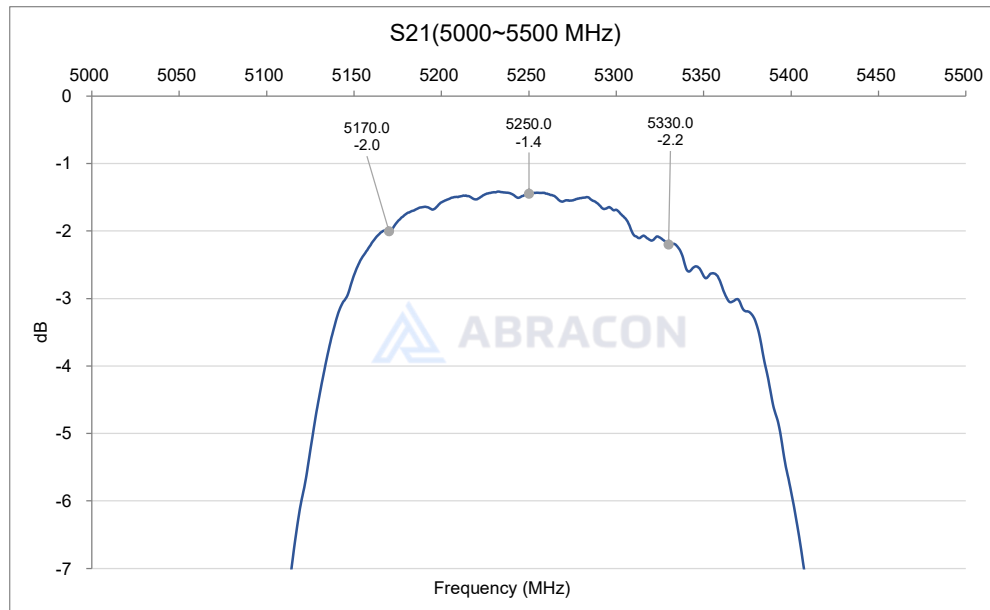
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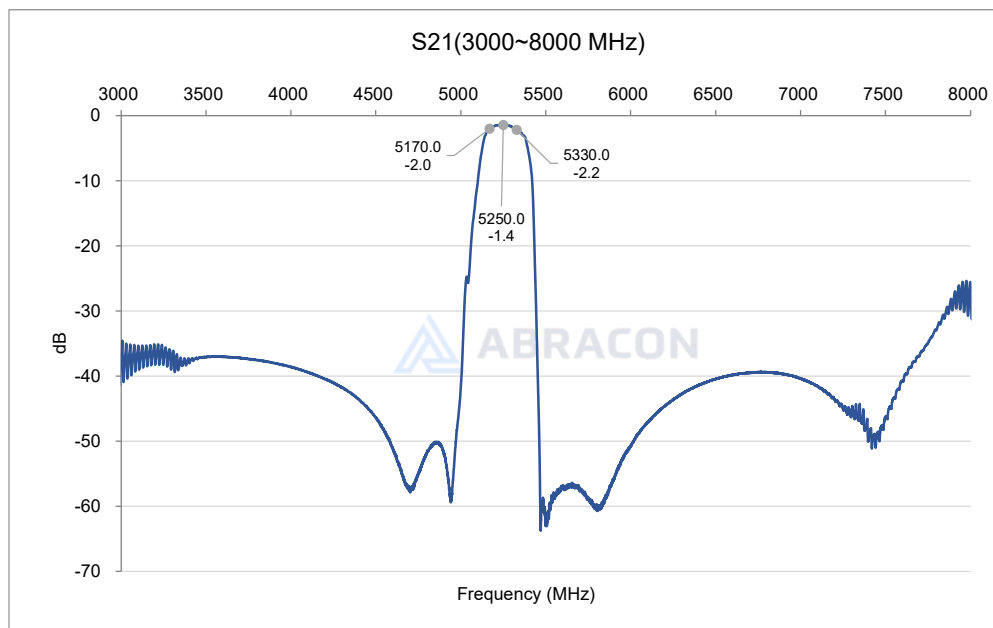
1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Frequency Characteristics

S21 narrow band



S21 wide band



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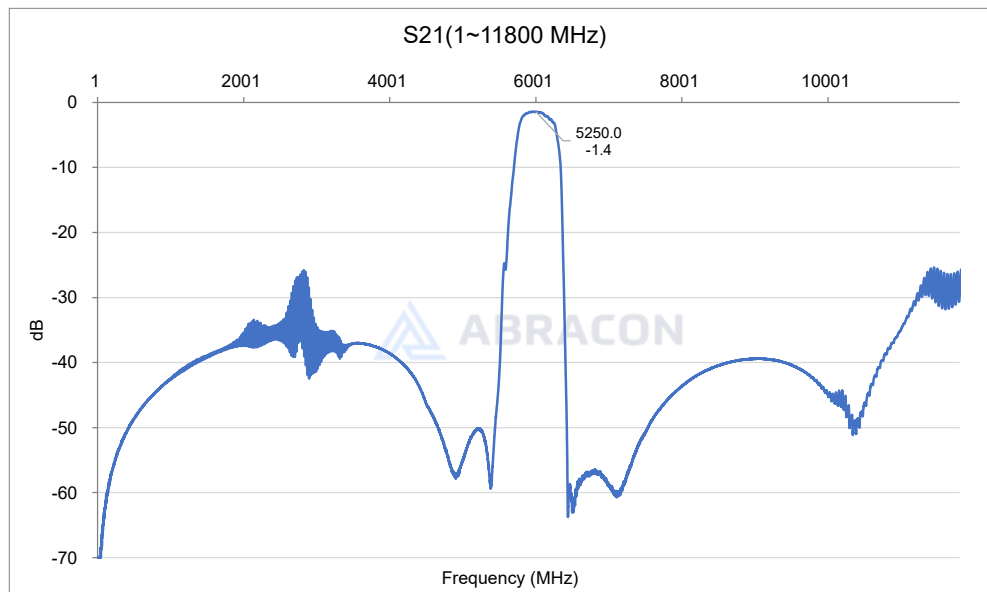


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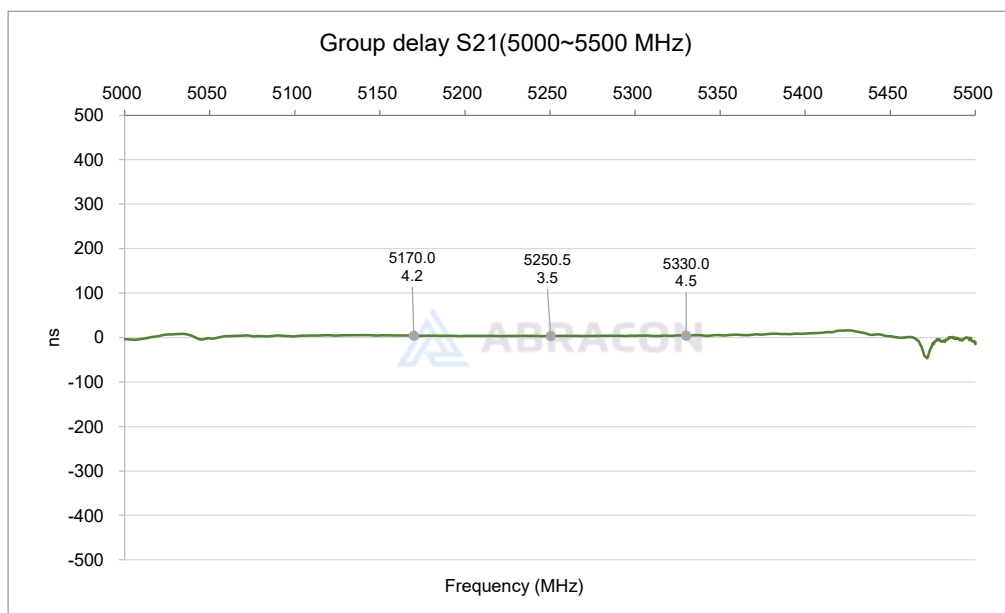


1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

S21 wide band



Group Delay



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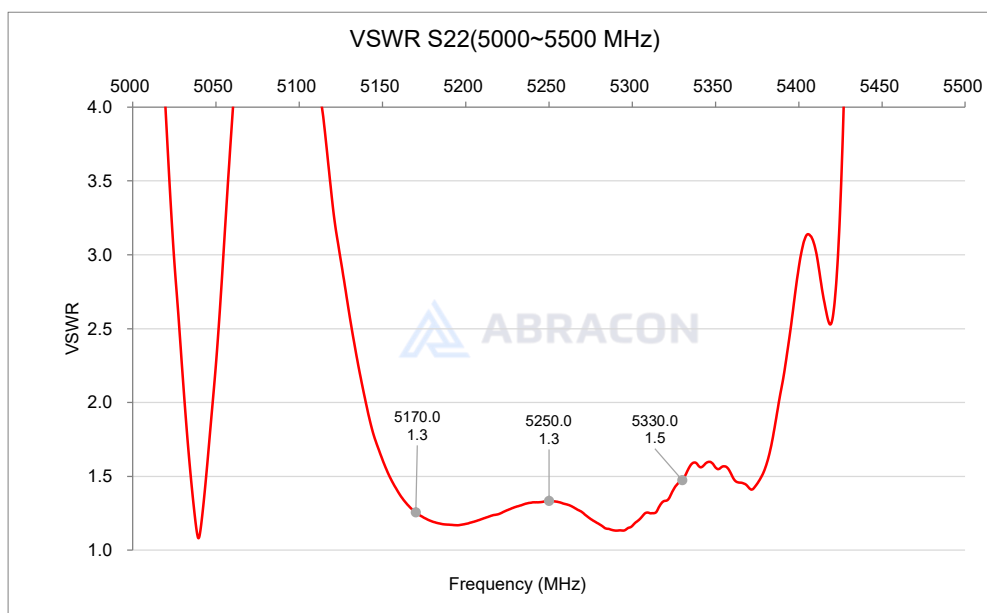
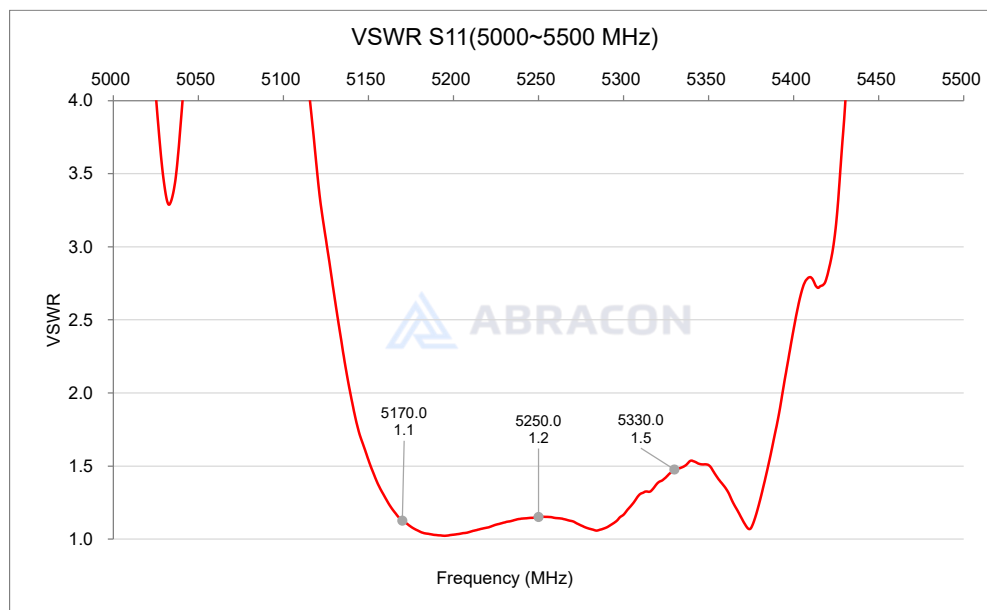


Check Inventory



1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

VSWR (S11 & S22)



5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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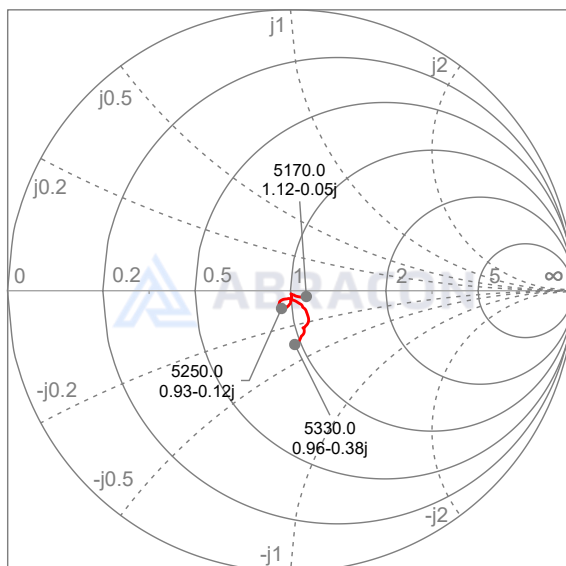
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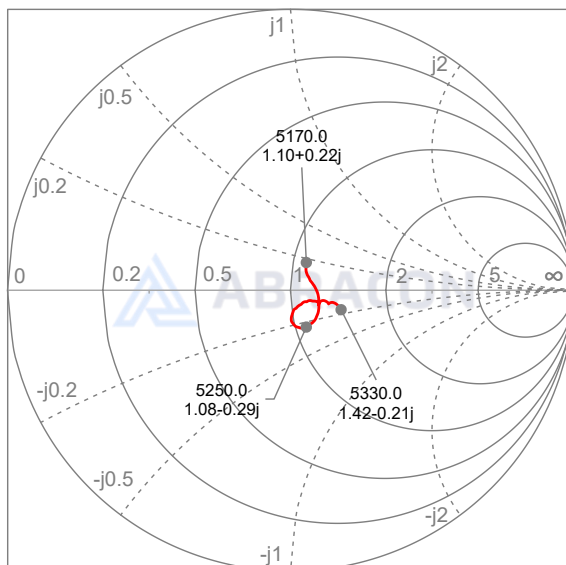
1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Smith Chart (S11 & S22)

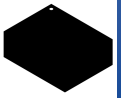
Smith chart S11 (5170~5330MHz)



Smith chart S22 (5170~5330MHz)



5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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Check Inventory



1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Reflow Profile [JEDEC J-STD-020]

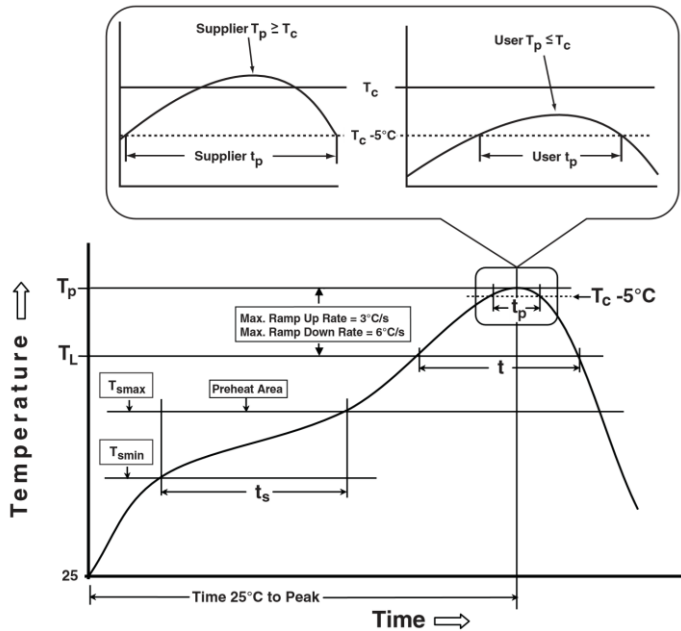


Table 1

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

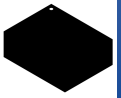
Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

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 – 180 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.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	3°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.

5250MHz Wi-Fi UNII 1-2a Bandpass Filter



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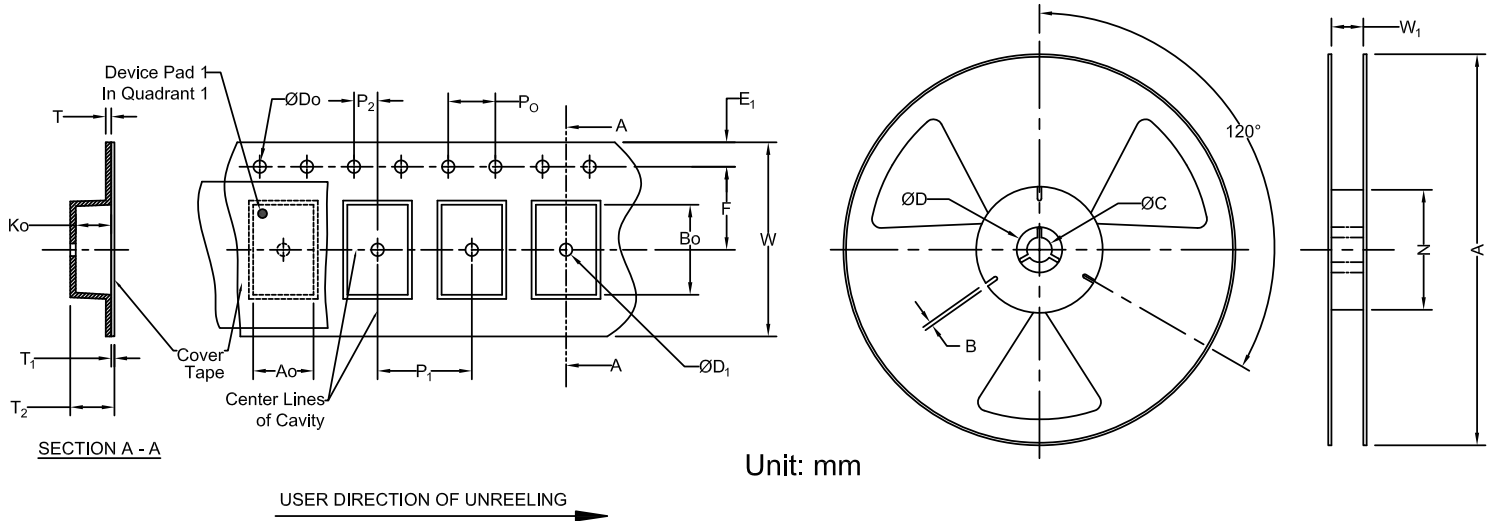


1.8 x 1.4 x 0.65 mm
RoHS Compliant
MSL LEVEL = N/A

Packaging

Tape & Reel (4,000 pcs / reel)

Tape & Reel Dimension



Carrier Tape Specifications (mm)

Do	D1	E1	P0	P2	T	F	P1	W	A0	B0	K0	Reel Qty
1.50 ± 0.1	0.6 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.20 ± 0.02	3.5 ± 0.05	4.0 ± 0.1	8.0 +0.3/-0.1	1.7 ± 0.05	2.1 ± 0.05	0.8 ± 0.05	4,000

Reel Specifications (mm)

A	W ₁	N	D	C	B
178 ± 1.0	9.0 ± 0.5	54.0 ± 0.5	21 ± 0.5	13.2 +0.3/-0.2	2.2 ± 0.3

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