

SMD UWB High Rejection Band Pass Filter



AFII-LC-0047

Request Samples



Check Inventory



1.0 x 0.5 x 0.37 mm

RoHS Compliant

MSL Level = 1

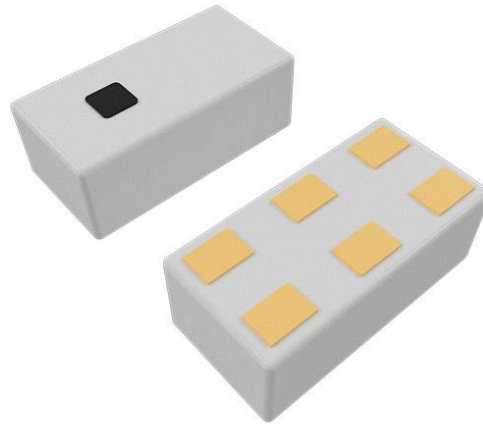
Features

- Supports UWB Channels 5-9
- Bandpass Ceramic Bandwidth
- Compact in Size 1.0 x 0.5 x 0.37 mm
- Single-Ended Input and Output
- Excellent Selectivity with High Out-of-Band Rejection
- 50-ohm Characteristic Impedance
- RoHS Compliant

Applications

- UWB (Ultra-Wide Band)
- Secure Car Access
- Item Tracking
- Indoor Navigation
- Hands-Free Payment
- Smart Access
- Object Detection

Product Image



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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (f_0)	-	7245	-	MHz	
Passband	6240	-	8250	MHz	UWB channel 5~9
Insertion Loss	-	1.0	1.5	dB	Max.@25°C
	-	1.3	2.0		Max.@-40°C ~ +85°C
VSWR	-	1.5	2.0	-	Max.@-40°C ~ +85°C
Relative Attenuation (Reference level: 0dB)	30	35	-	dB	700~2690 MHz
	30	35	-		3400~3800 MHz
	30	38	-		3800~4000 MHz
	34	42	-		4000~4200 MHz
	25	35	-		4400~5000 MHz
	29	35	-		5150~5350 MHz
	20	30	-		12450~13500 MHz
	20	25	-		15500~16500 MHz
Amplitude ripple	-	-	0.7	dB	@ 20MHz
Group Delay	-	-	3.0	ns	
Group Delay Ripple	-	-	1.0		
Source Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	-
Load Impedance ⁽¹⁾ (single ended)	-	50	-	Ω	-
Power Capacity	3.0			W	

Notes: (1) A matching network is unnecessary (refer to the Measurement Circuits section).

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Mechanical Specification

Parameters	Specifications
Dimension	1.0 x 0.5 x 0.37 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-10°C ~ +40°C
MSL level	MSL 1
ESD	Pass 1000V(HBM) & Pass 250V(CDM)
RoHS Complaint	Yes

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Ordering Information

Part Number	Description
AFII-LC-0047	SMD UWB High Rejection Band Pass Filter
AFII-LC-0047-EVB	SMD UWB High Rejection Band Pass Filter EVB

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



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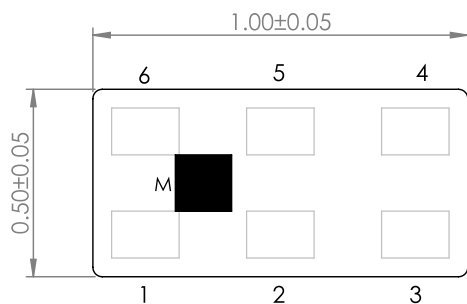


1.0 x 0.5 x 0.37 mm

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Product Dimensions

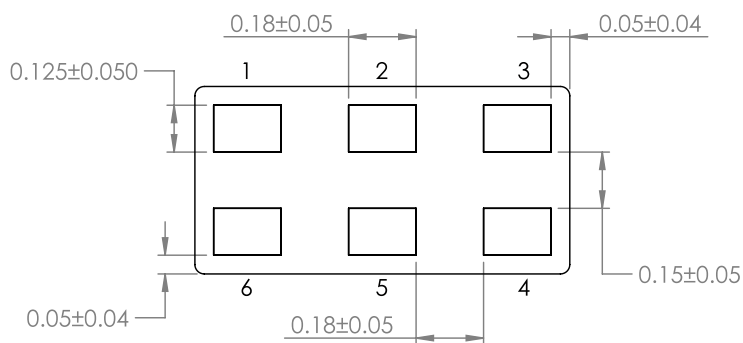


TOP VIEW

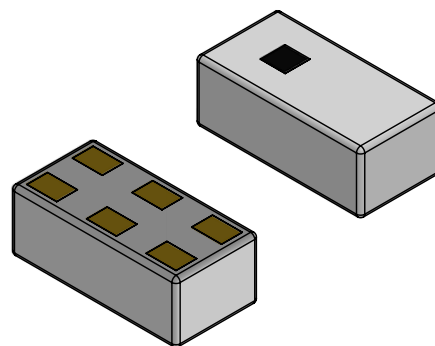


FRONT VIEW

Pin #	Function
1	NC
2	GND
3	NC
4	In/Out
5	GND
6	In/Out
M	MARK



BOTTOM VIEW



Unit: mm

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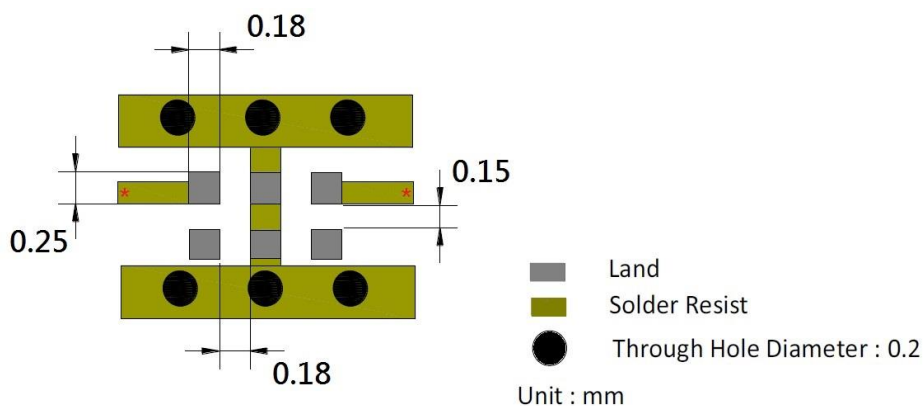


1.0 x 0.5 x 0.37 mm

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MSL Level = 1

Recommended Land Pattern



Unit : mm

Please note: The line width should be designed to achieve a 50-ohm characteristic impedance, depending on the PCB material and thickness. Please request technical support via [Abracon online support](#)

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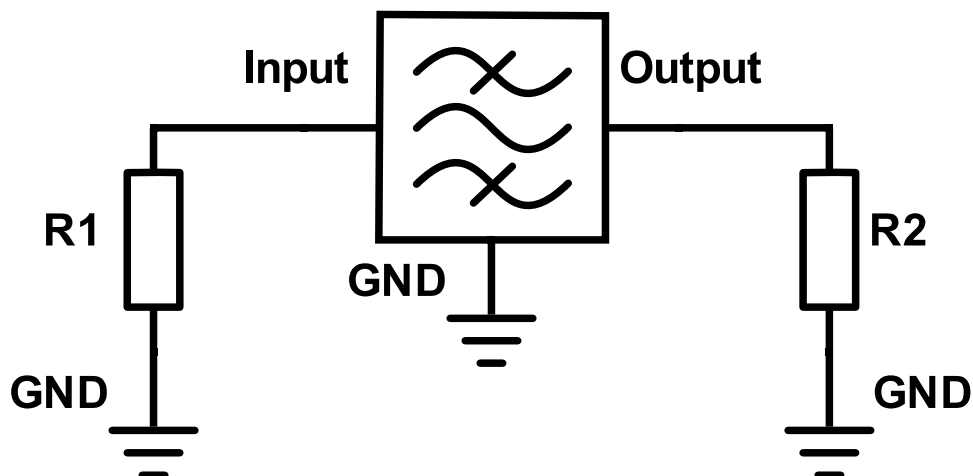


1.0 x 0.5 x 0.37 mm

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Measurement Circuit



Port	Matching Component
Input	R1: 50Ω
Output	R2: 50Ω

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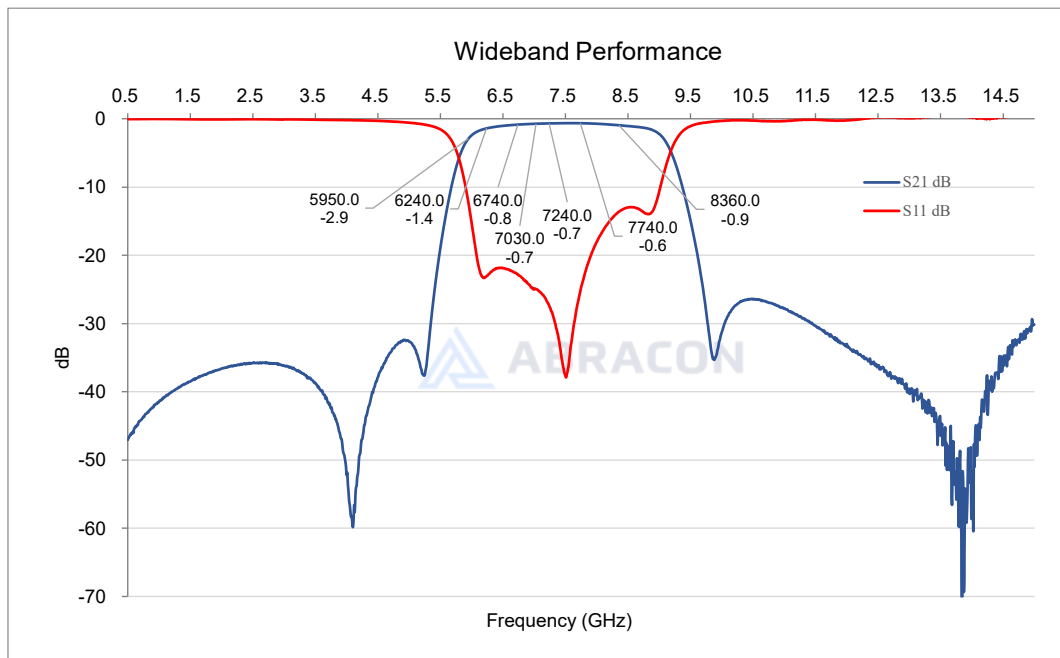


1.0 x 0.5 x 0.37 mm

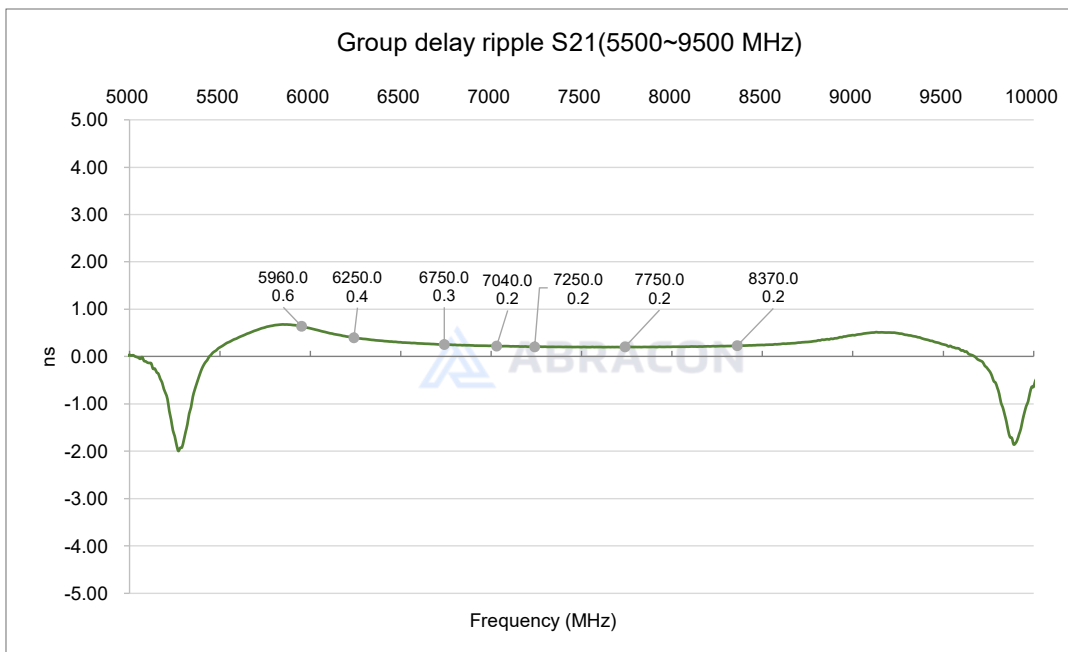
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Frequency Characteristics



Group Delay Ripple



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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

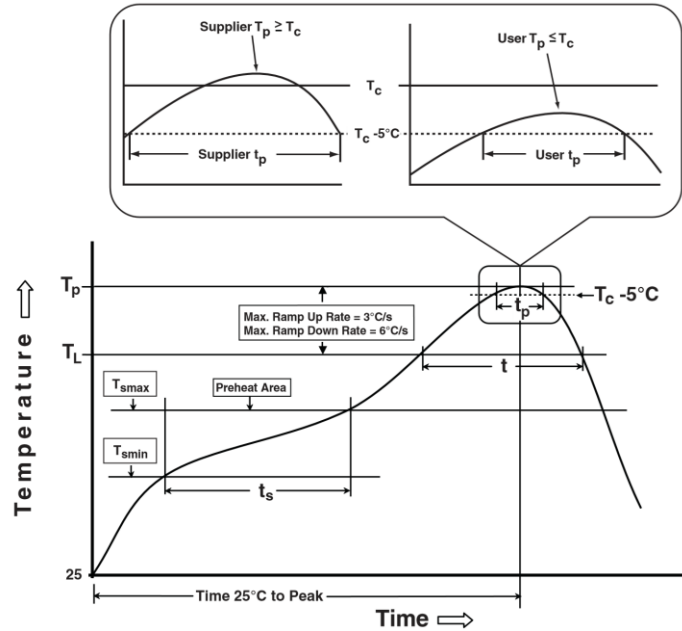


Table 1

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 – 120 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 – 90 sec.	60 – 90 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})	3°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.

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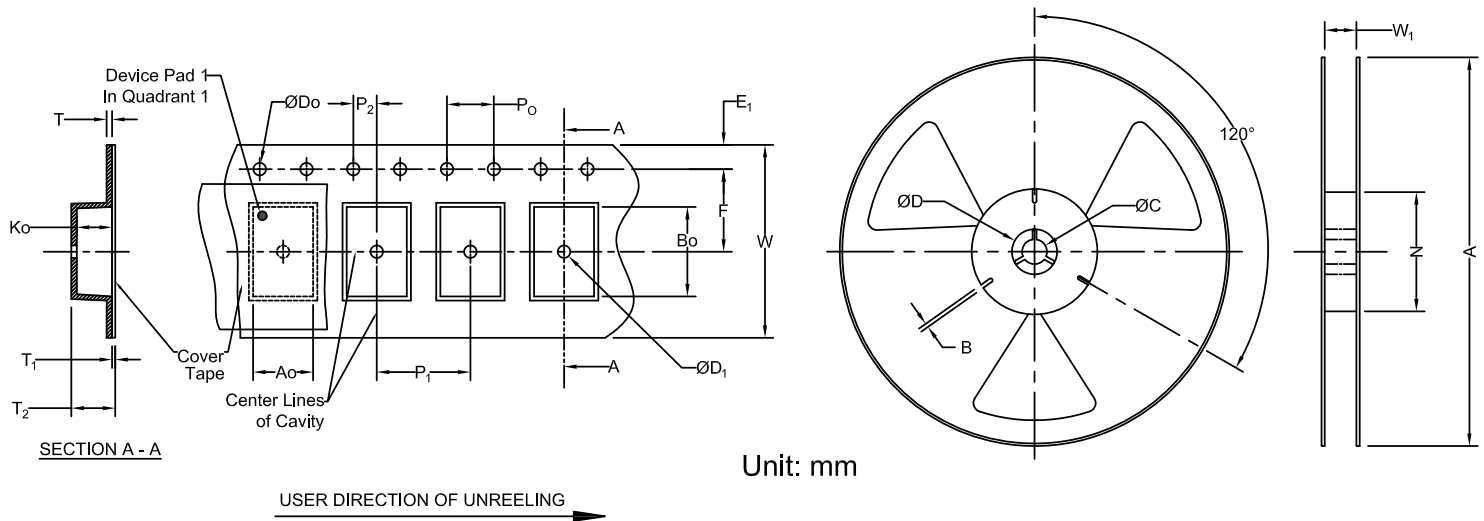
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RoHS Compliant

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Packaging

Tape & Reel Dimension



Unit: mm

Carrier Tape Specifications (mm)

E1	D0	P0	P2	F	P1	W	A0	B0	K ₀	Reel Qty
1.75 ± 0.1	1.5 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	3.5 ± 0.05	2.0 ± 0.05	8.0 ± 0.3	0.62 ± 0.10	1.12 ± 0.10	0.6 Max	10,000

Reel Specifications (mm)

A	W ₁	N	C
178 ± 2.0	10.0 ± 1.5	58 ± 2.0	13.5 ± 0.2

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