

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

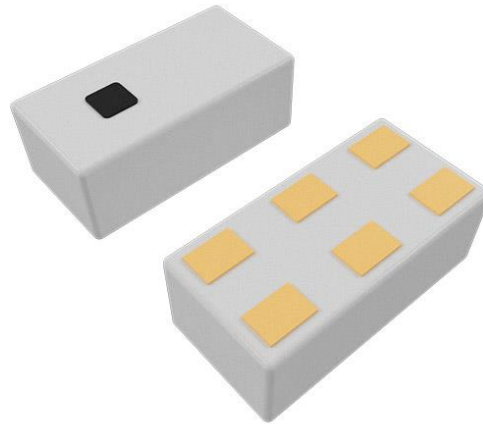
Features

- 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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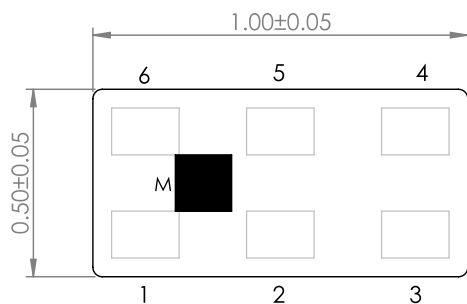


1.0 x 0.5 x 0.37 mm

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Product Dimensions

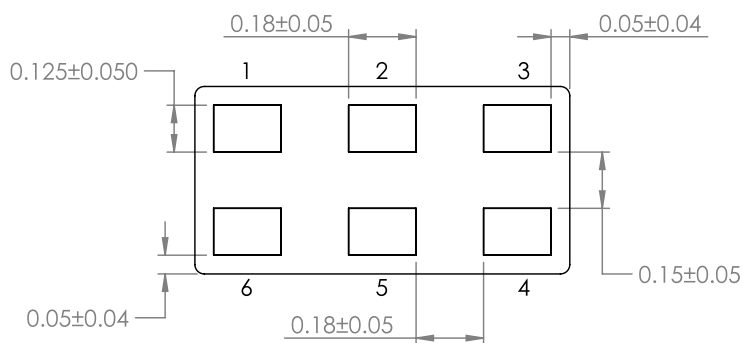


TOP VIEW

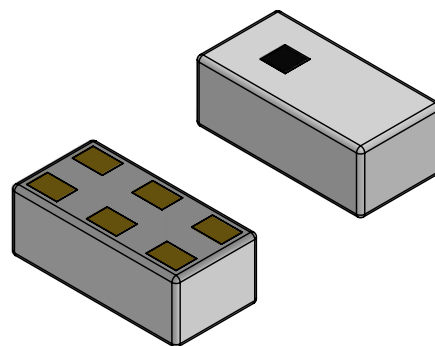


FRONT VIEW

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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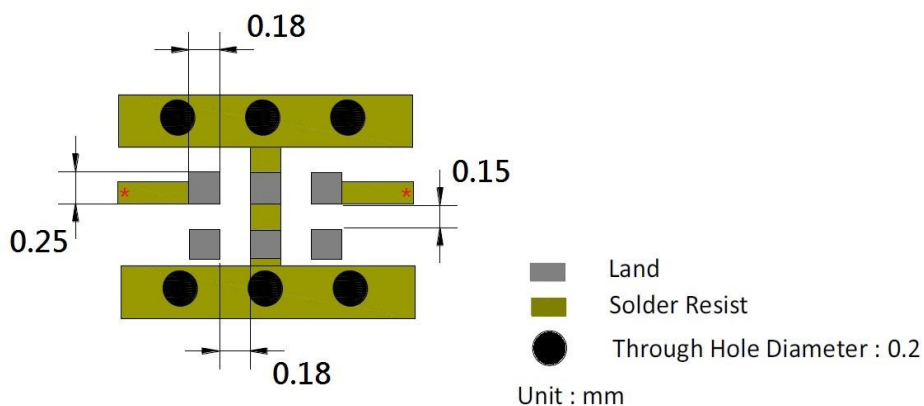


1.0 x 0.5 x 0.37 mm

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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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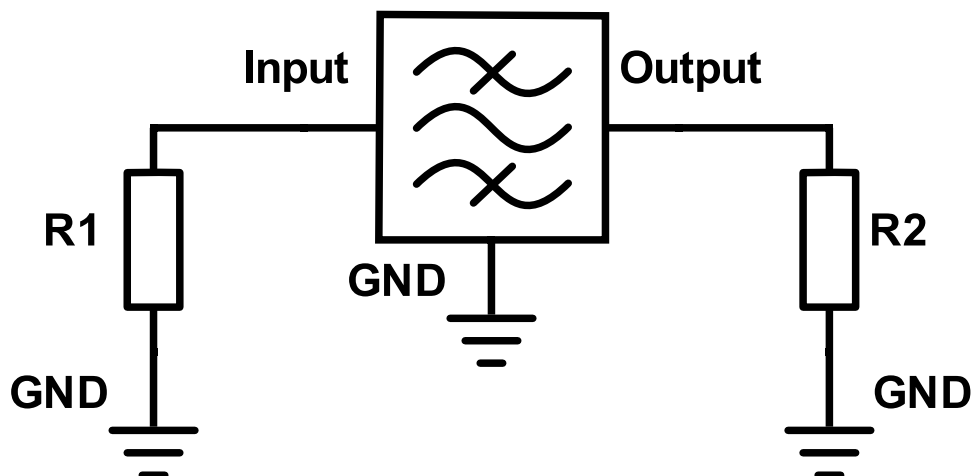


1.0 x 0.5 x 0.37 mm

RoHS Compliant

MSL Level = 1

Measurement Circuit



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

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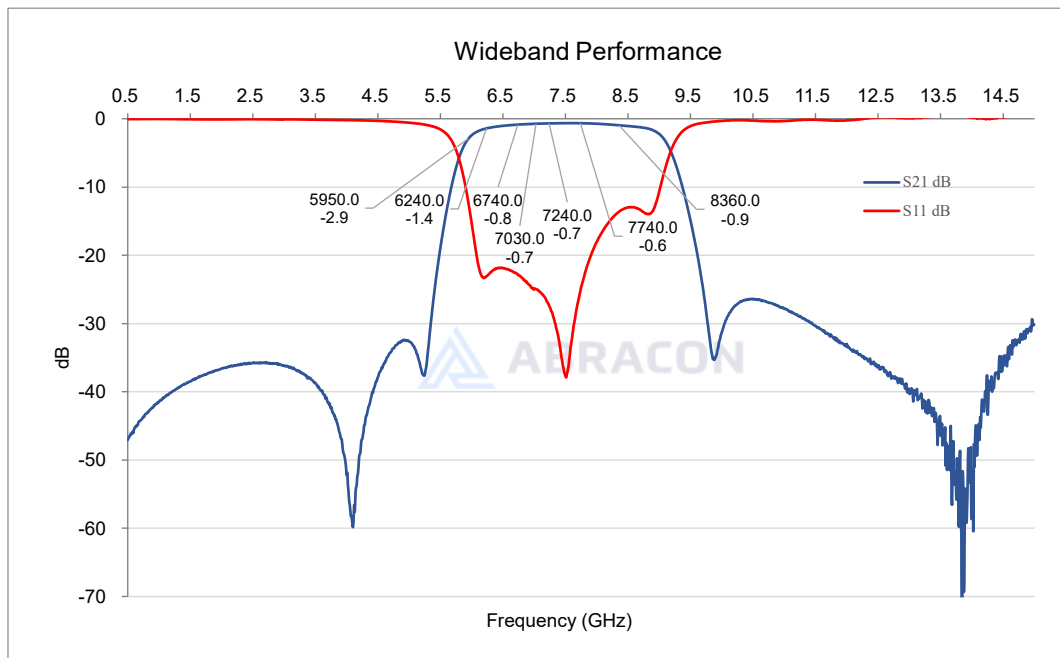


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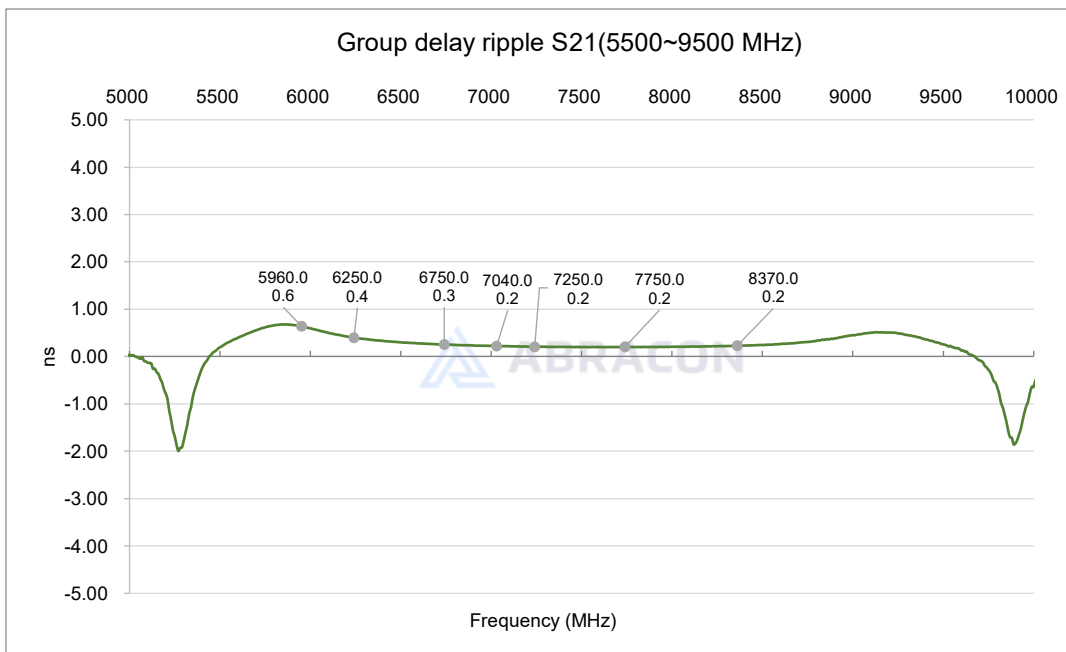
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Frequency Characteristics



Group Delay Ripple



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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

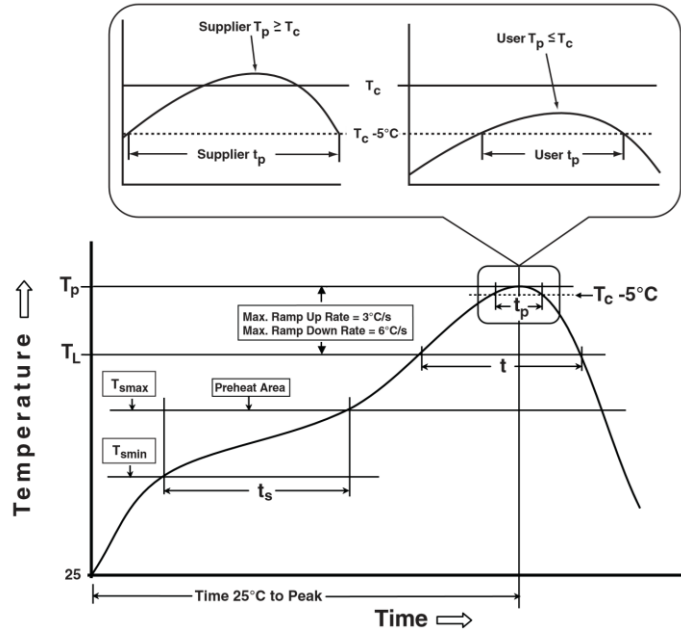


Table 1

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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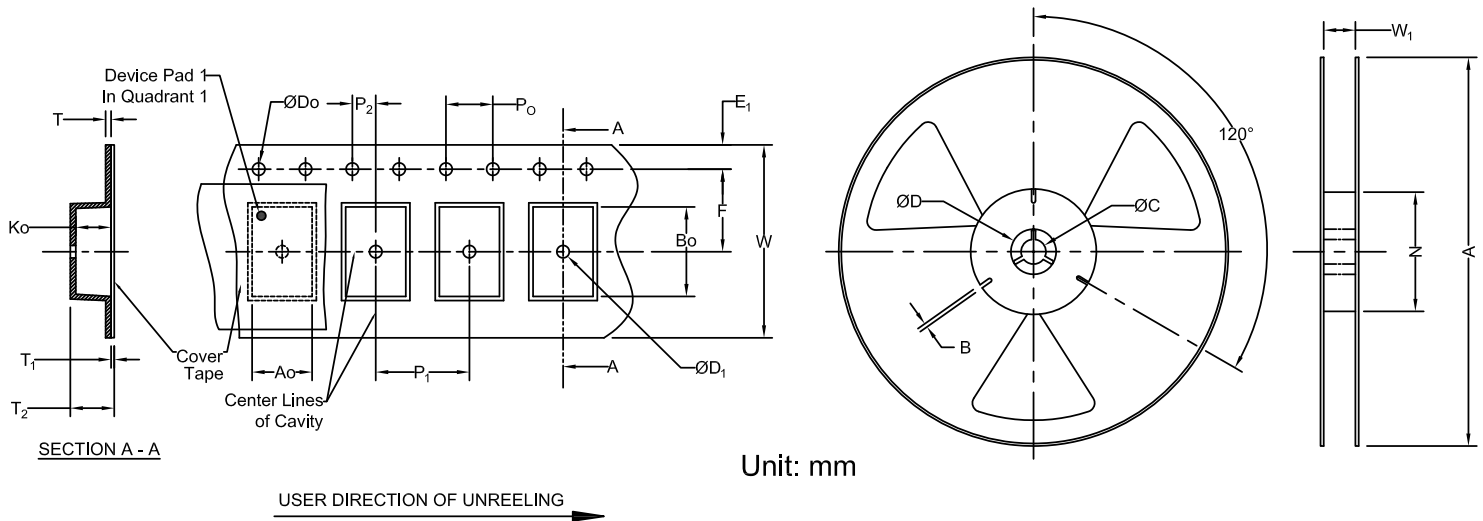
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RoHS Compliant

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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

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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