SMD 2.45GHz Dielectric Band Pass Filter

ADFC15-2450.00-A

Request Samples | Check Inventory

1.0 x 0.5 x 0.38 mm
RoHS Compliant
MSL LEVEL 1

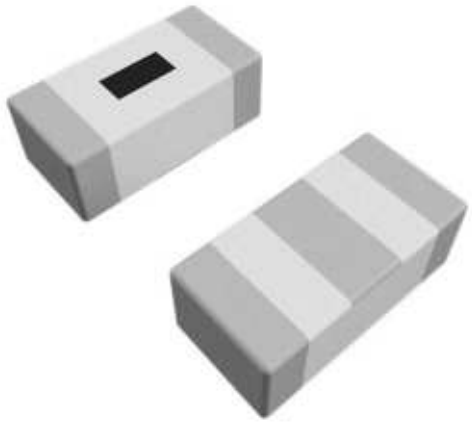
Features

- Bandpass Ceramic Filter with 100MHz Bandwidth
- Compact in Size 1.0 x 0.5 x 0.38 mm
- Low Insertion Loss: <1.4 dB
- Single-Ended Input and Output
- Excellent Selectivity with High Out-of-Band Rejection
- RoHS Compliant

Applications

- WiFi/WLAN Coverage
  - WiFi 4/5 (802.11b/g/n/ac)
- Bluetooth®/ ZigBee® / Thread/ Matter
- 2.4GHz TWS Audio
- IoT Wearable Devices
- Smart Home Automation

Product Image



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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (f_0)	-	2450	-	MHz	
Passband	2400	-	2500	MHz	
Insertion Loss	-	1.3	1.4	dB	@25ºC
	-	-	1.7	dB	@-40ºC ~ +85ºC
Amplitude Ripple	-	0.47	0.5	dB	
VSWR	-	-	1.5		
Group Delay	-	0.47	-	ns	
Group Delay Ripple	-	0.01	-		
Relative Attenuation (Reference level: 0dB)	34.0	34.4	-	dB	800 ~ 960 MHz
	8.0	12.6	-		1710~ 1970 MHz
	40.3	43.9	-		4800 ~ 5000 MHz
	37.3	39.9	-		7200 ~ 7500 MHz
Source Impedance (1) (single ended)	-	50	-	Ω	
Load Impedance (1) (single ended)	-	50	-	Ω	
Power Capacity	-	3	-	W	

Notes: (1) Without Matching Network (Ref. Testing Environment Circuit as shown below)

Mechanical Specification

Parameters	Specifications
Dimension	1.0 x 0.5 x 0.38 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40ºC ~ +85ºC
Storage Temperature Range	-10ºC ~ +40ºC
RoHS Complaint	Yes
MSL Level	1

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MSL LEVEL 1

Ordering Information

Part Number	Description
ADFC15-2450.00-A	SMD 2.45GHz Dielectric Band Pass Filter on Cut Tape
ADFC15-2450.00-A-T	SMD 2.45GHz Dielectric Band Pass Filter on Tap & Reel
ADFC15-2450.00-A-T-EVB	SMD 2.45GHz Dielectric Band Pass Filter EVB

Note: Other options not listed may be available upon request via Abracon online support

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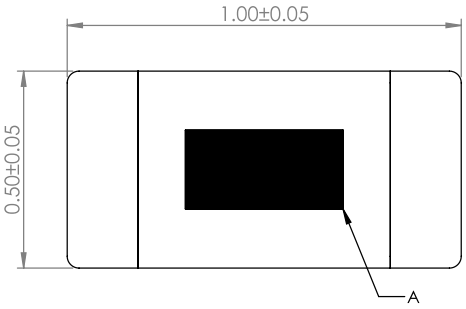


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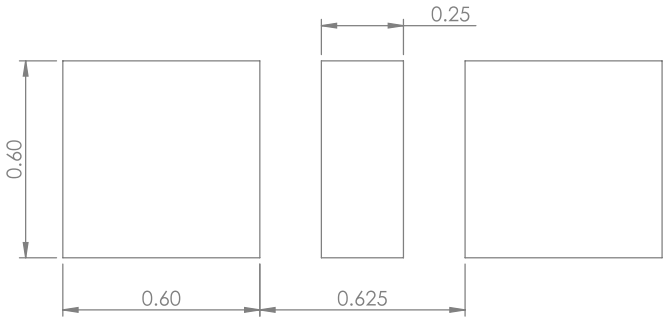
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MSL LEVEL 1

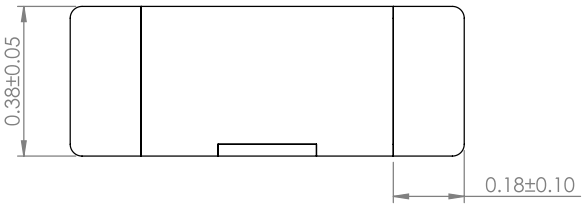
Product Dimensions



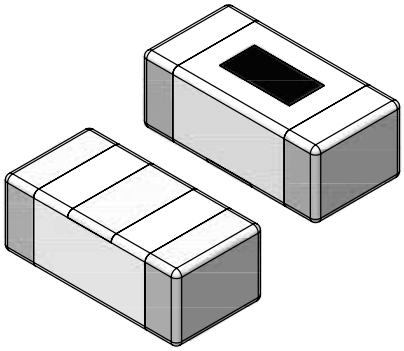
TOP VIEW

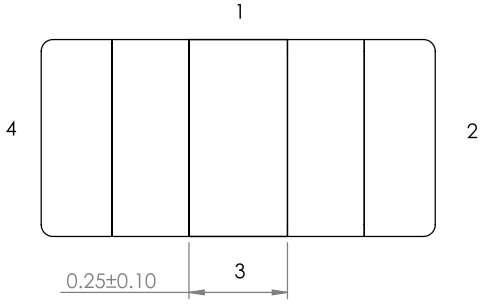
RECOMMENDED LAND PATTERN





FRONT VIEW





BOTTOM VIEW

Pin #	Function
1	GND
2	Output/Input
3	GND
4	Input/Output
A	MARK

Unit: mm

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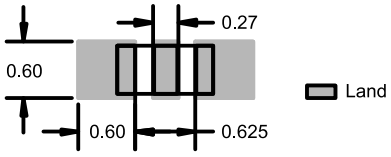


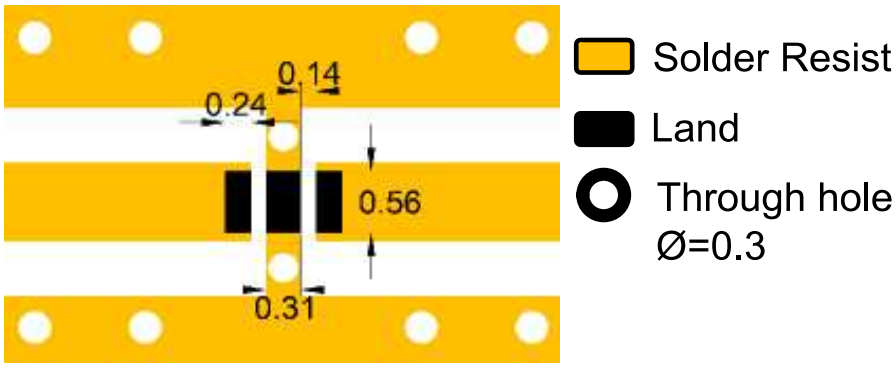
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RoHS Compliant
MSL LEVEL 1

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. For technical assistance, please contact Abracon online support through our online support platform.

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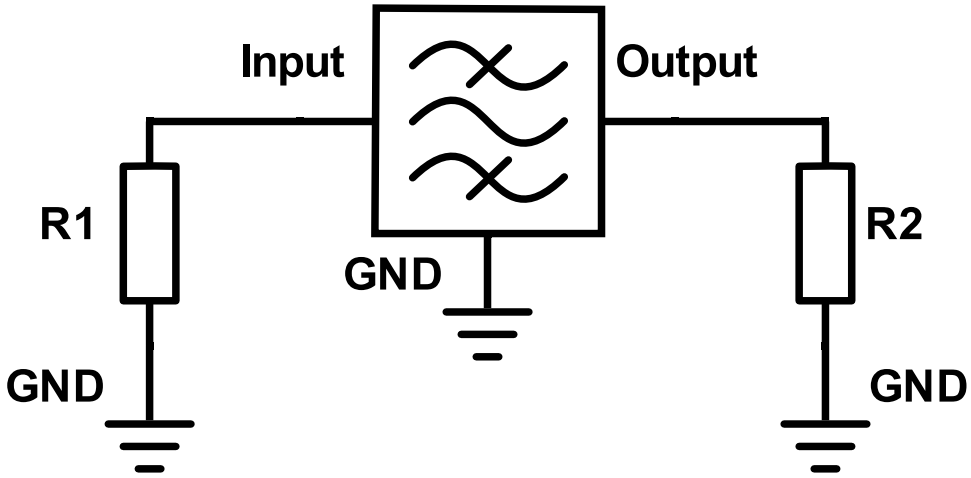


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Measurement Circuit



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

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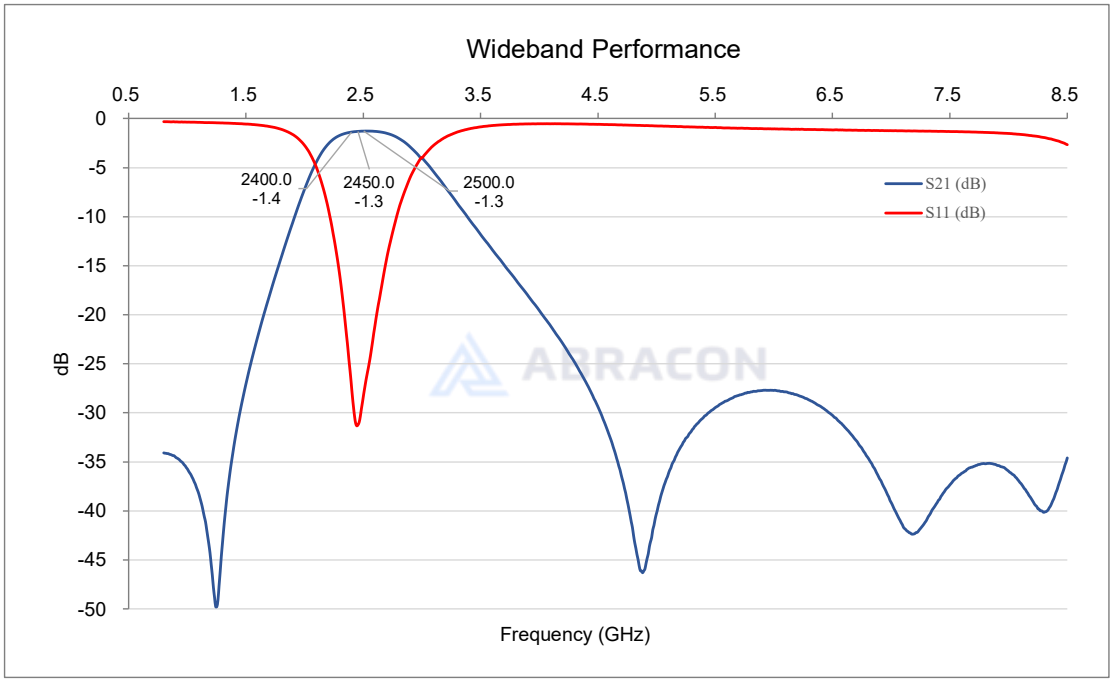


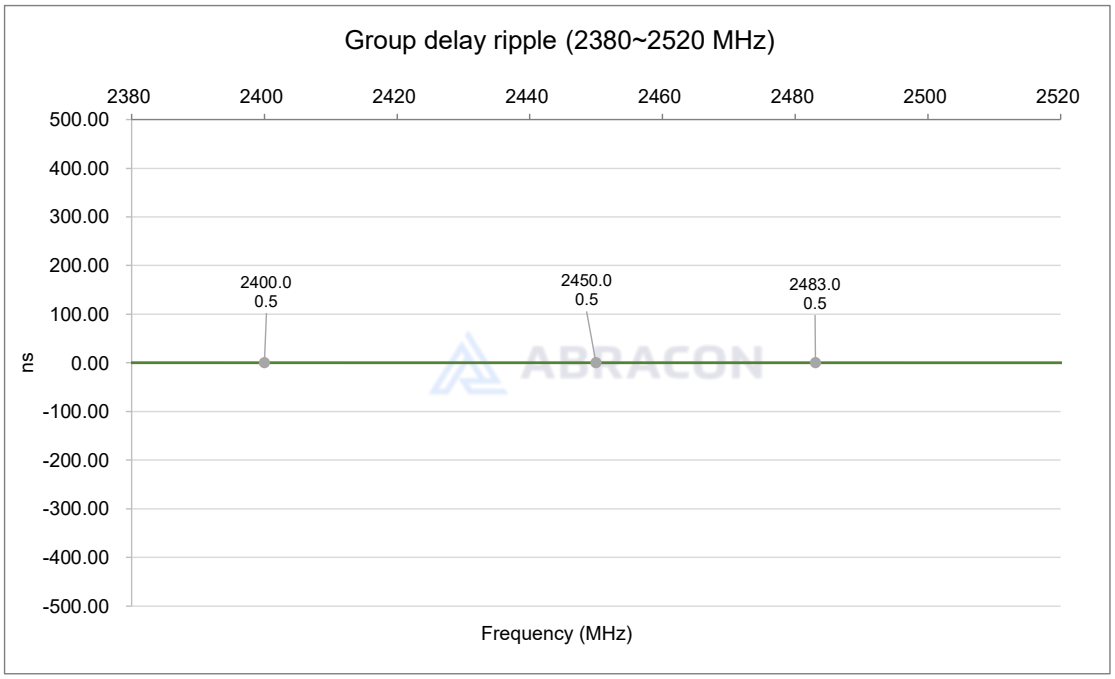
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Frequency Characteristics





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Reflow Profile [JEDEC J-STD-020]

Solder paste: Sn/3.0Ag/0.5Cu

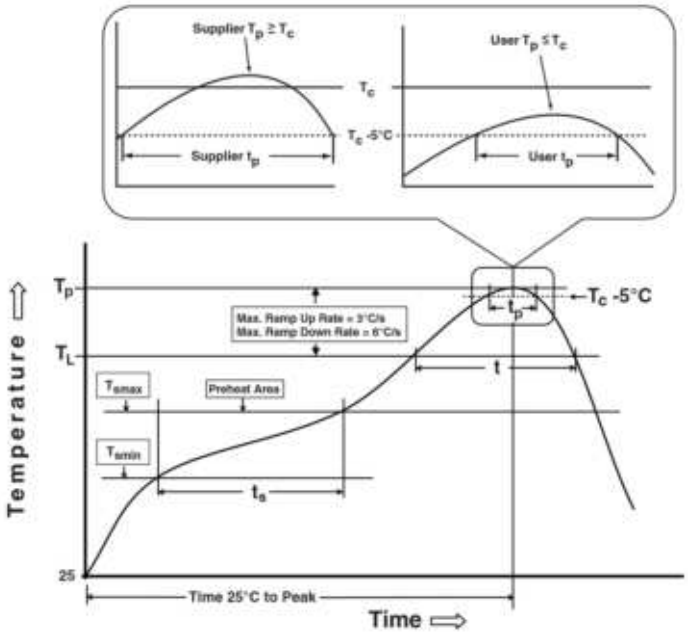


Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	**Volume mm³ <350**	**Volume mm³ ≧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 mm³ <350**	**Volume mm³ 350-2000**	**Volume mm³ >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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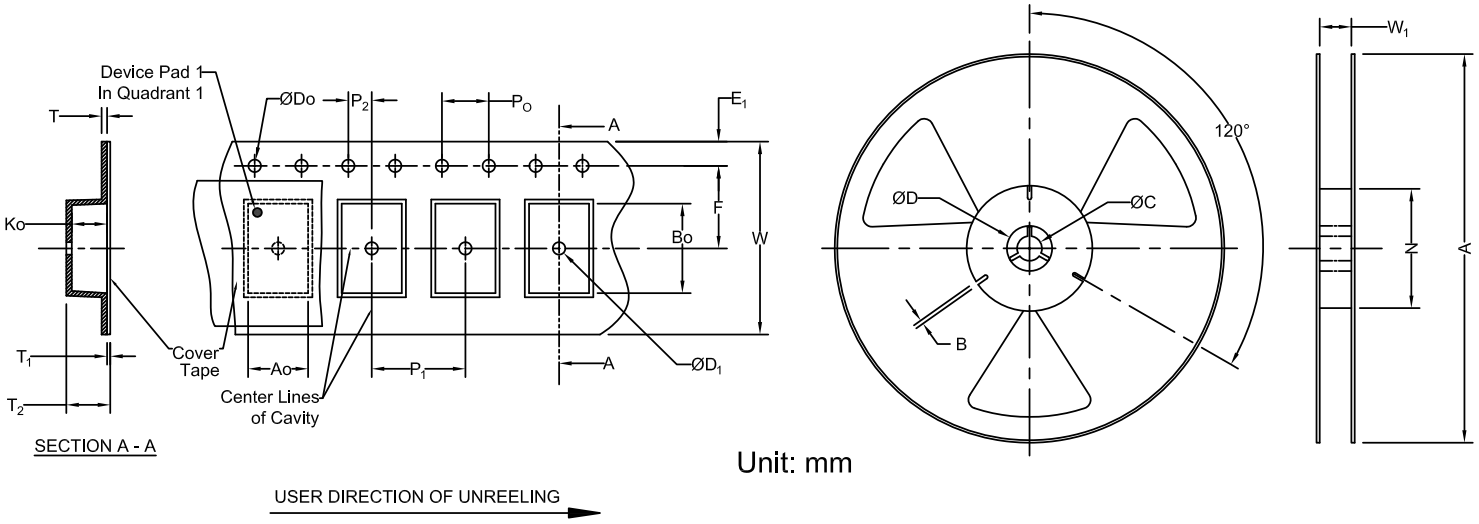
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MSL LEVEL 1

Packaging

Tape & Reel Dimension



Carrier Tape Specifications (mm)										
E1	D0	P0	P2	F	P1	W	A0	B0	T_2	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 ± 0.03	1.12 ± 0.03	0.45 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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