

# 5442 MHz SMD Dielectric Filter



**AFII-DF-0033**

Request Samples



Check Inventory



9.4 x 5.1 x 3.0 mm  
RoHS Compliant  
MSL Level = N/A

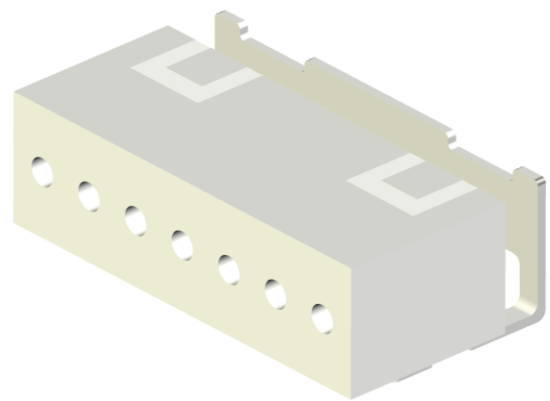
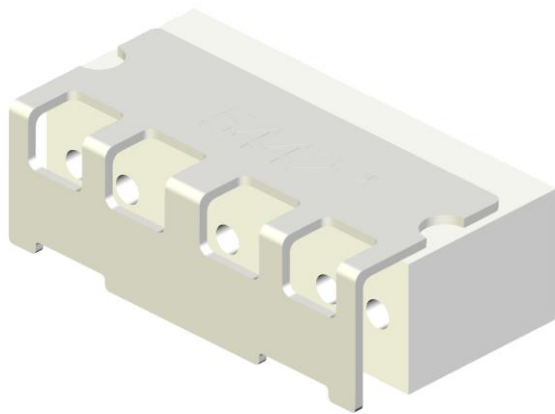
## Features

- Bandpass Dielectric Filter with 585 MHz bandwidth
- Surface Mount 9.4 x 5.1 x 3.0 mm package
- Single-Ended Input and Output
- Excellent selectivity with high out-of-band rejection
- RoHS Compliant

## Applications

- WiFi 6E/7 Access Points and Routers
- Industrial IoT
- Enterprise Networks
- 5 GHz (U-NII-1 / U-NII-2A / U-NII-2B / U-NII-2C)

## Product Image



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## Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	5442.0	-	MHz	
Bandwidth	-	585	-	MHz	5150 – 5735 MHz
Insertion Loss	-	1.1	2.2	dB	5150 – 5735 MHz
VSWR	≤ 2.0				5150 – 5735 MHz
Amplitude Ripple	-	-	2.0	dB <sub>p-p</sub>	5150 – 5735 MHz
Attenuation	50	-	-	dB	0 ~ 2500 MHz
	40				2500 ~ 4000 MHz
	50				5925 ~ 7125 MHz
Input Power			3	W	
Source Impedance <sup>(1)</sup> (single ended)	-	50	-	Ω	
Load Impedance <sup>(1)</sup> (single ended)	-	50	-	Ω	

Notes: (1) No matching network needed (Ref. Testing Environment Circuit as shown in “Measurement Circuit” section).

## Mechanical Specification

Parameters	Specifications
Dimension	9.4 x 5.1 x 3.0 mm
Mounting Type	SMD Mount

## Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
RoHS Compliant	Yes

## Ordering Information

Part Number	Description
AFII-DF-0033	5442 MHz SMD Dielectric Filter
AFII-DF-0033-EVB	5442 MHz SMD Dielectric Filter Evaluation Board

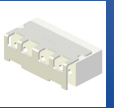


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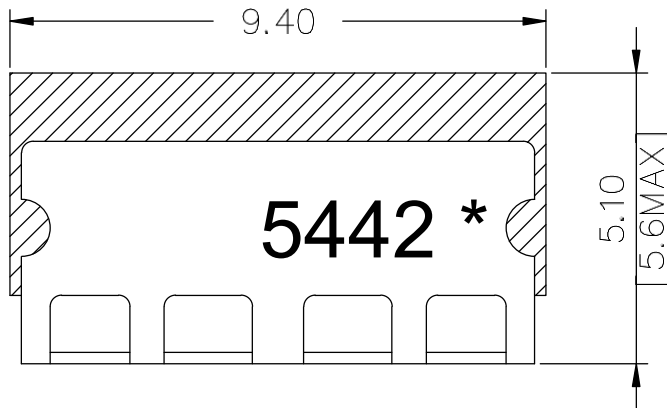
Check Inventory



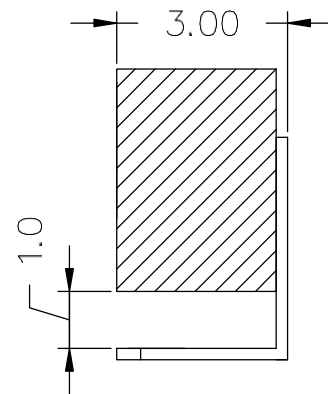
9.4 x 5.1 x 3.0 mm  
RoHS Compliant  
MSL Level = N/A

## Product Dimensions

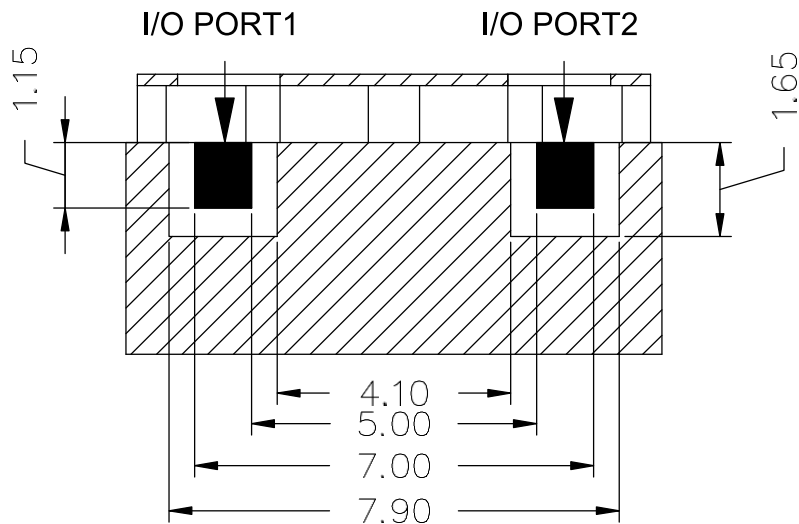
### TOP VIEW



### SIDE VIEW



### BOTTOM VIEW



TOLERANCE :  $\pm 0.20$

UNIT: mm

\*:MONTH CODE

Unit : mm

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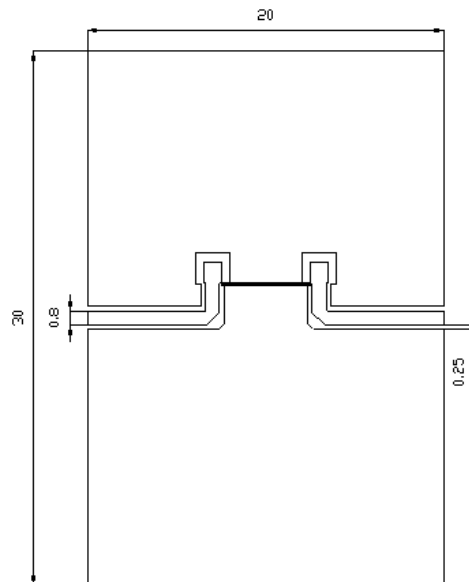
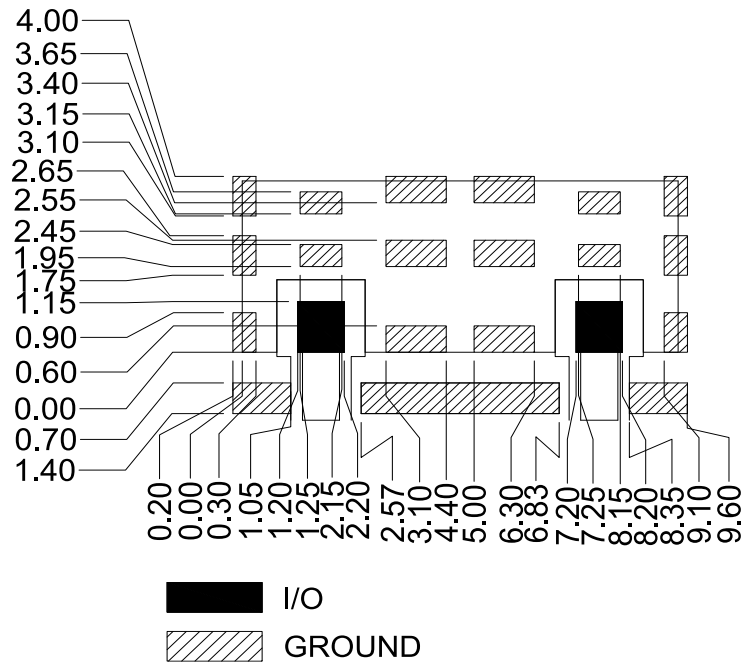
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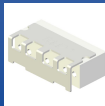
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## PCB Footprint & EVB

Please reach out to us for more detailed layout info via [Abracon online support](#)



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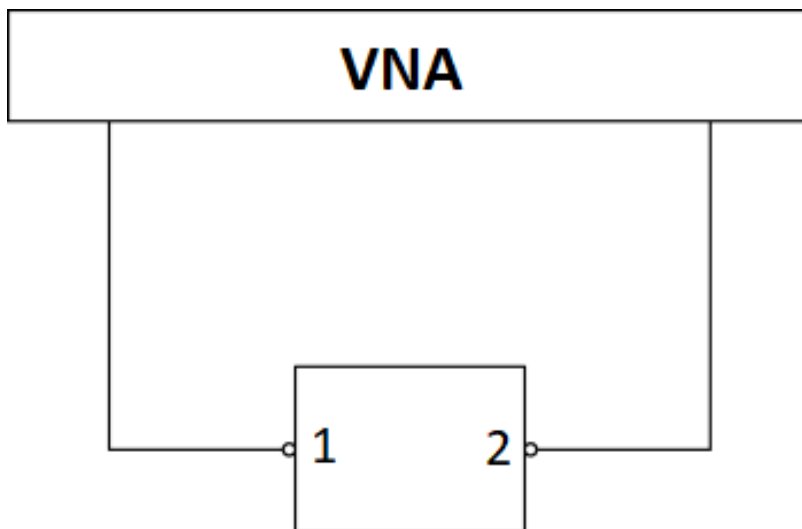
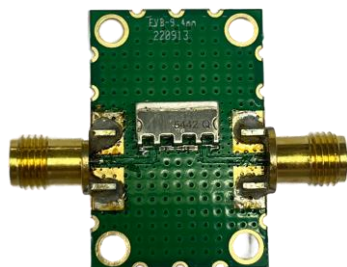


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## Measurement Circuit



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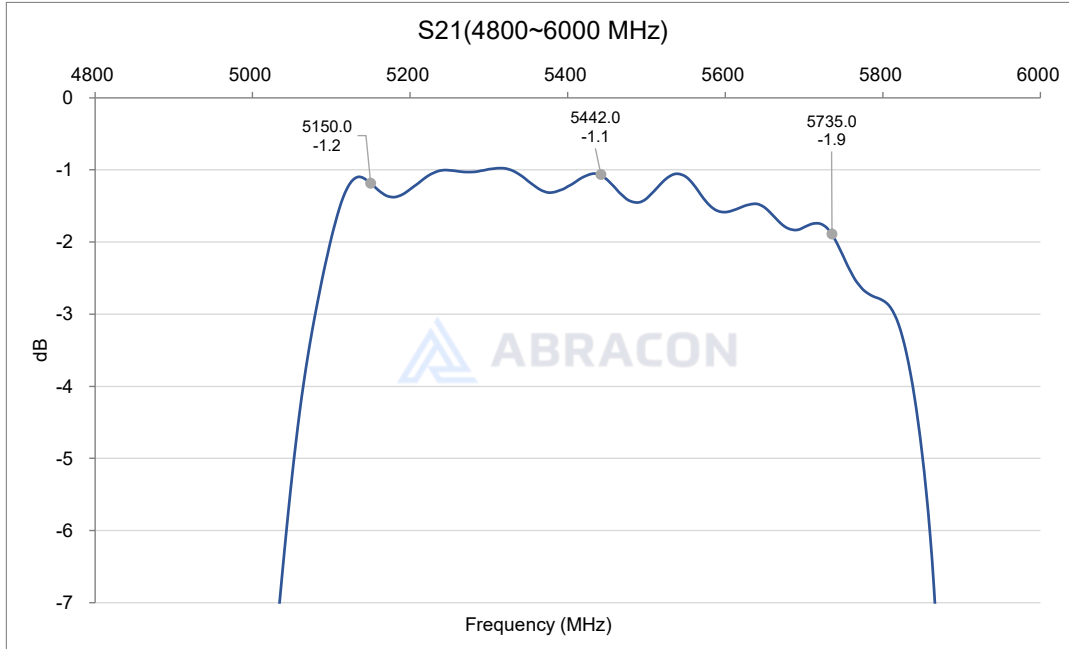
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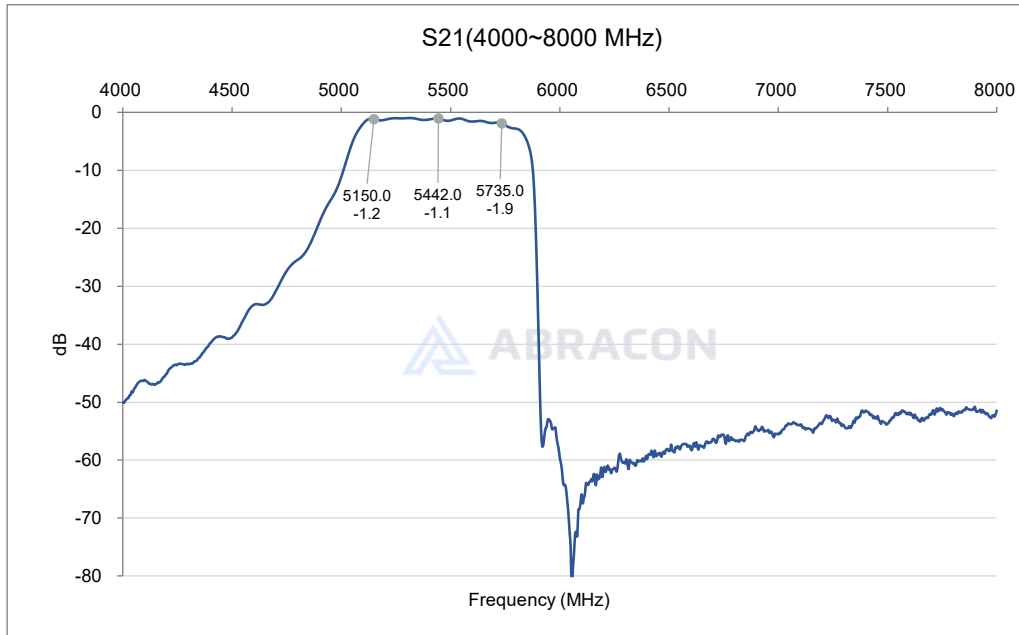
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## Frequency Characteristics

S21 narrow band



S21 wide band



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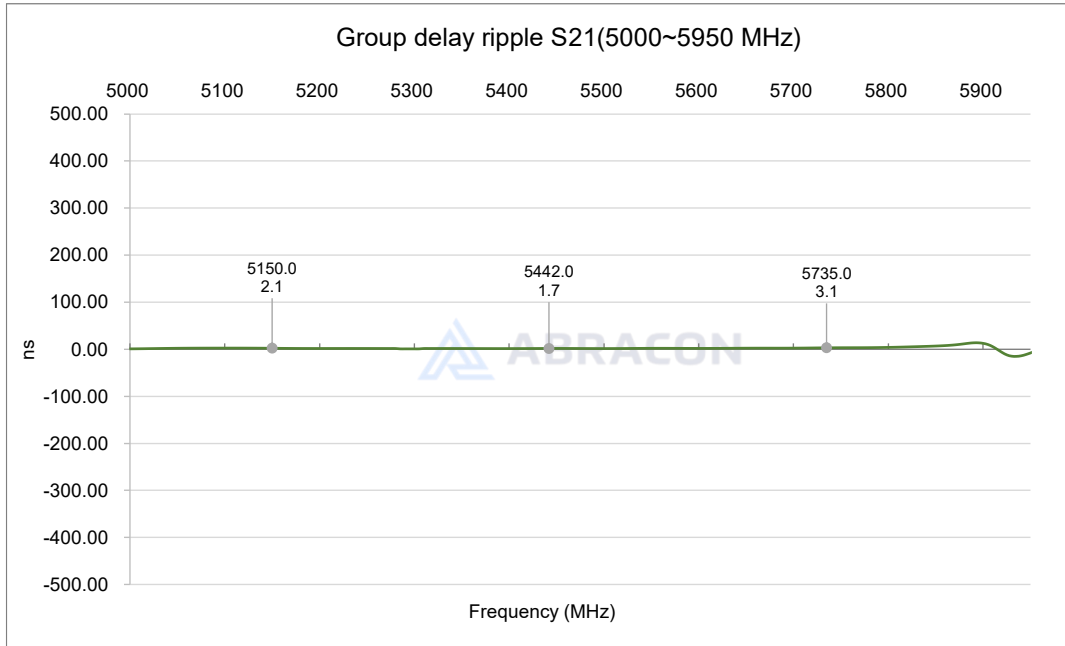


Check Inventory

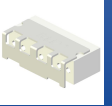


**9.4 x 5.1 x 3.0 mm**  
**RoHS Compliant**  
MSL Level = N/A

## Group Delay Ripple



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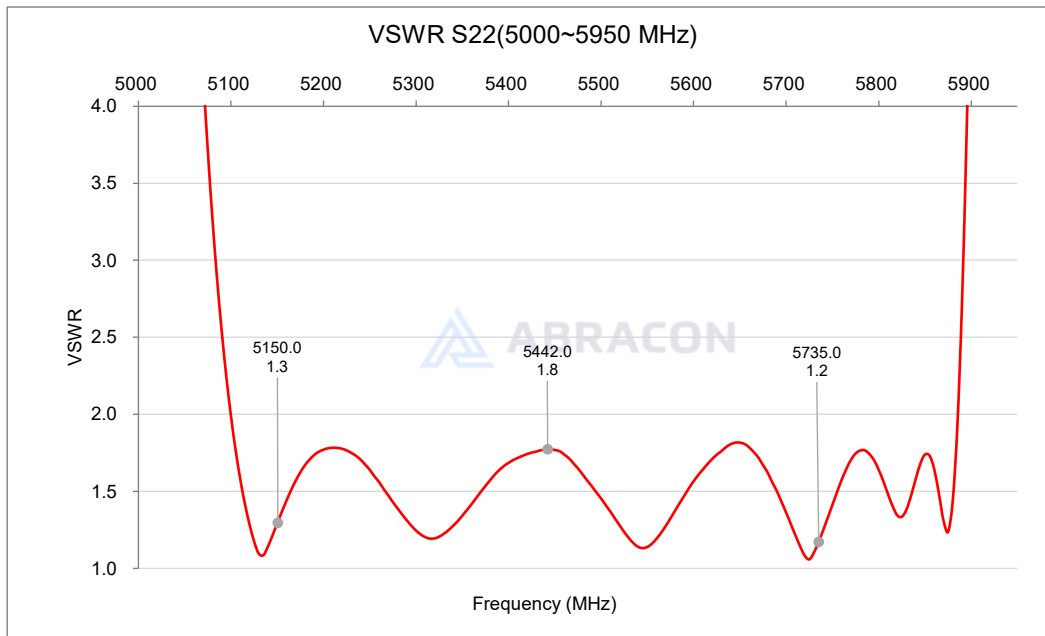
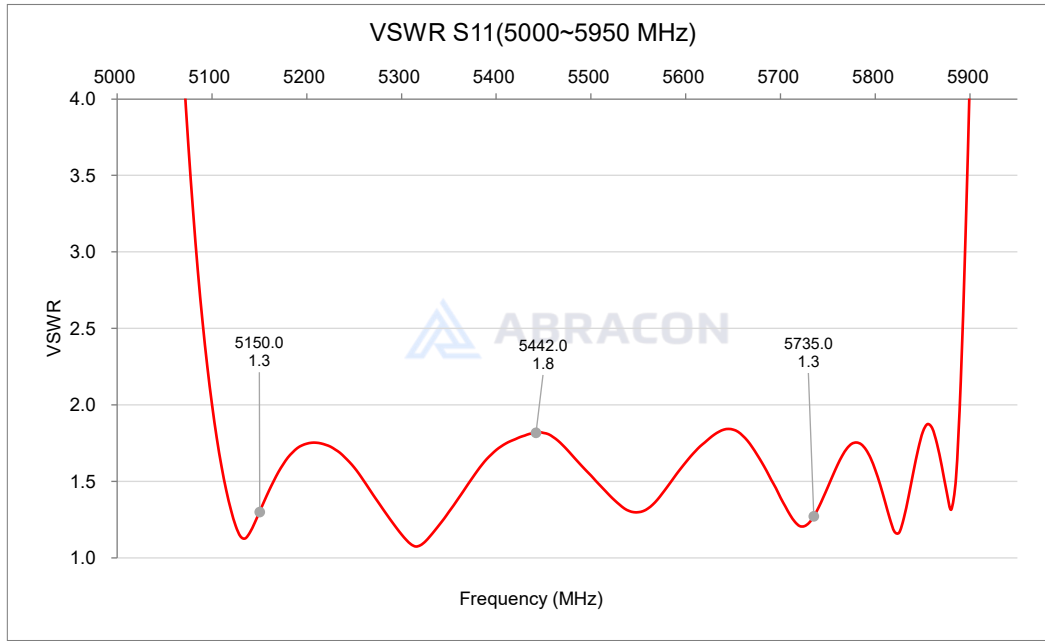


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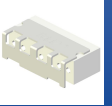


**9.4 x 5.1 x 3.0 mm**  
**RoHS Compliant**  
**MSL Level = N/A**

## VSWR (S11 & S22)



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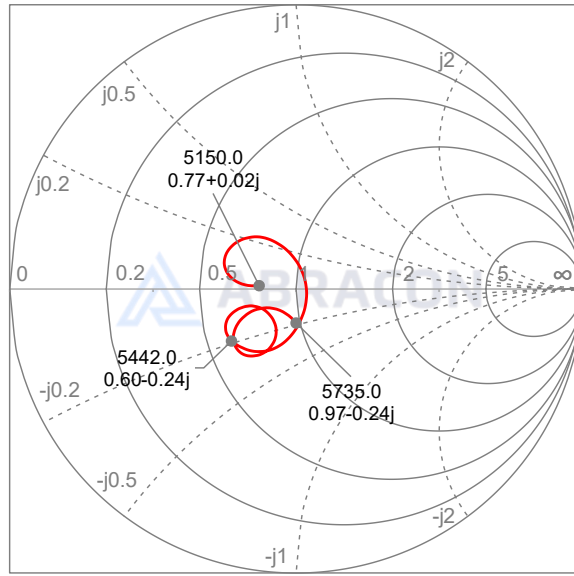
Check Inventory



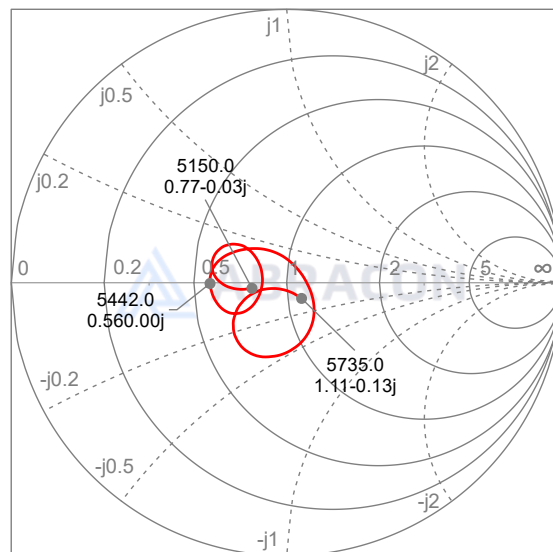
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RoHS Compliant  
MSL Level = N/A

## Smith Chart (S11 & S22)

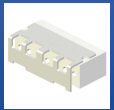
Smith chart S11 (5150~5735MHz)



Smith chart S22 (5150~5735MHz)



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## Reflow Profile [JEDEC J-STD-020]

Solder Paste: Ag3.0/Cu0.5/Sn

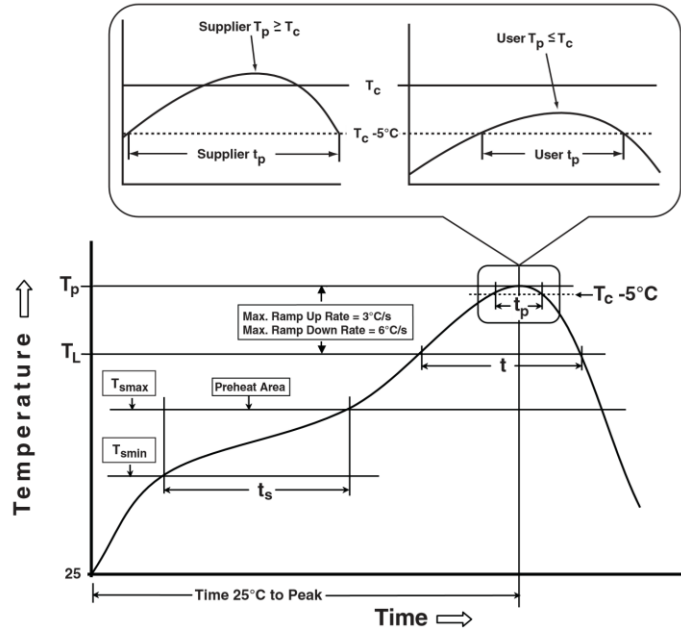


Table 1

SnPb Eutectic Process Classification Temperatures ( $T_c$ )		
Package Thickness	Volume $mm^3$ <350	Volume $mm^3$ $\geq$ 350
<2.5mm	235°C	220°C
$\geq$ 2.5mm	220°C	220°C

Table 2

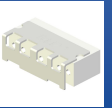
Pb-Free Process Classification Temperatures ( $T_c$ )			
Package Thickness	Volume $mm^3$ <350	Volume $mm^3$ 350-2000	Volume $mm^3$ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	240°C	240°C	240°C

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	220°C
Time at Liquidous ( $T_L$ )	60 – 150 sec.	30 – 100 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.	5 sec.
Ramp-down rate ( $T_p$ to $T_{smax}$ )	6°C/sec. max	2-6°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.

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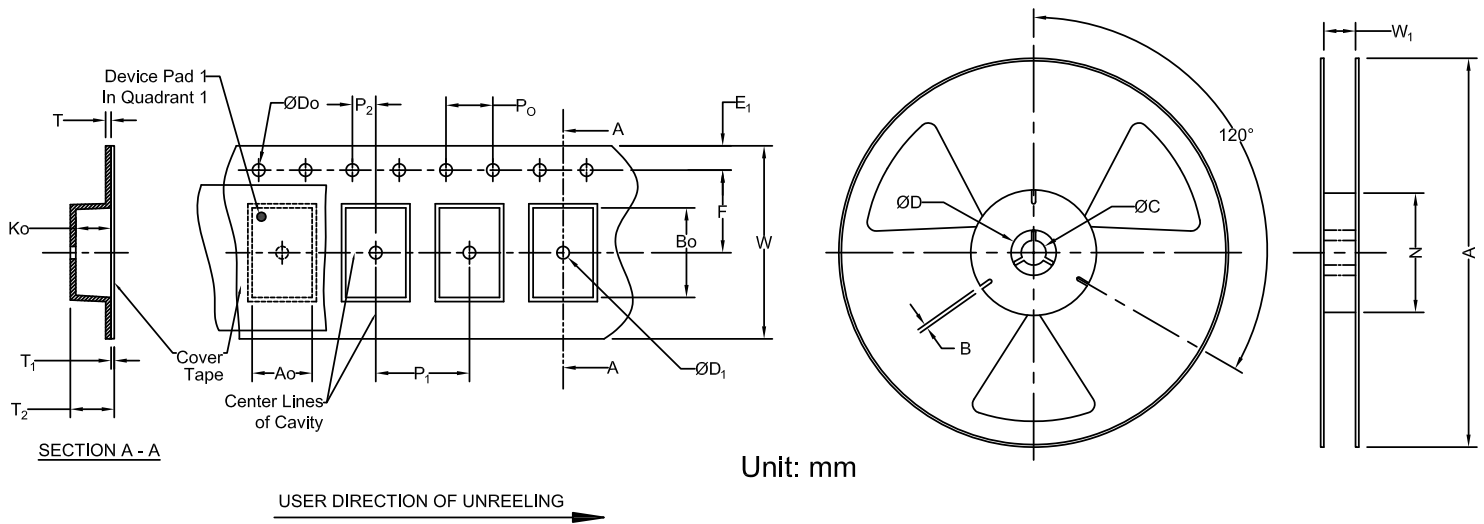
## Packaging

Per plastic reel 1500 pieces of dielectric ceramic part

Per inner box 1 reel

Per package 7 inner boxes

Tape & Reel Dimension



### Carrier Tape Specifications (mm)

E <sub>1</sub>	P <sub>0</sub>	F	P <sub>1</sub>	P <sub>2</sub>	D <sub>0</sub>	W	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	Reel Qty
1.75 ± 0.1	4.0 ± 0.1	11.5 ± 0.1	12.0 ± 0.1	2.0 ± 0.1	1.5 ± 0.1	24.0 ± 0.2	5.7 ± 0.1	10.0 ± 0.2	3.3 ± 0.1	1,500

### Reel Specifications (mm)

A	B	W <sub>1</sub>	N	C
330 ± 3	2.0 ± 0.5	26max	80min	13 ± 0.5

**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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