

SMD 866.5 MHz SAW Filter



AFII-SW-0031

Request Samples



Check Inventory



1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

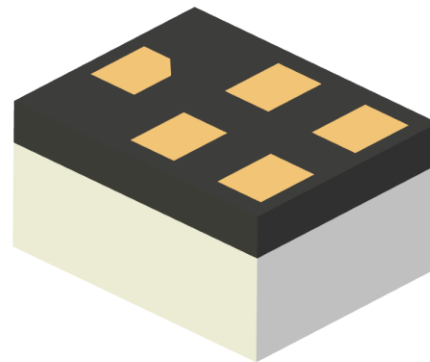
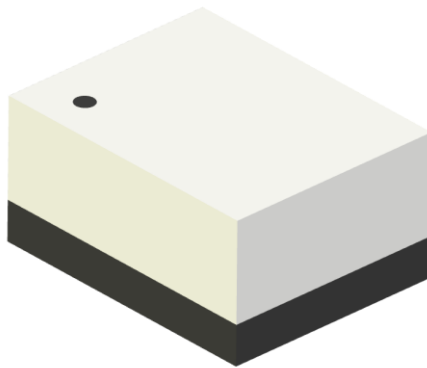
Features

- 1.4 x 1.1 x 0.7 mm in Size
- Low Insertion Loss: 1.7 dB
- Out-of-Band Rejection: > 30 dB
- 50 Ohms Single-Ended Input & Output
- Maximum Input Power: +20dBm

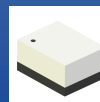
Applications

- RF Modules
- Security Cameras
- Remote Controls
- IoT Equipment
- Information & Communications Devices

Product Image



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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	866.5	-	MHz	-
VSWR	-	1.6	2.0	-	863 - 870 MHz
Insertion Loss ⁽¹⁾	-	1.7	1.9	dB	863 - 870 MHz
Amplitude Ripple ⁽¹⁾	-	0.3	1.0	dB	863 - 870 MHz
Group Delay	-	58.0	71.2	ns	863 - 870 MHz
Group Delay Ripple ⁽¹⁾	-	2.1	4.2	ns	
Attenuation ⁽²⁾ (Reference level from 0 dB)	40.0	47.0	-	dB	0.30 - 750.00 MHz
	40.0	47.0	-		750.00 - 815.00 MHz
	43.0	50.0	-		815.00 - 832.00 MHz
	25.0	30.0	-		832.00 - 847.00 MHz
	38.0	43.0	-		892.00 - 925.00 MHz
	38.0	44.0	-		925.00 - 1920.00 MHz
	40.0	47.0	-		1920.00 - 1940.00 MHz
	40.0	47.0	-		1940.00 - 1980.00 MHz
	30.0	39.0	-		1980.00 - 4000.00 MHz
Source Impedance (single ended) ⁽³⁾	-	50	-	Ω	
Load Impedance (single ended) ⁽³⁾	-	50	-	Ω	
RF Power Dissipation	-	-	20	dBm	

Notes: (1) Averaged values of linear S-Parameters at +25°C

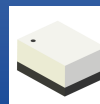
(2) Averaged values of linear S-Parameters at +25°C

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

Mechanical Specification

Parameters	Specifications
Dimension	1.4 x 1.1 x 0.7 mm
Mounting Type	Surface Mount

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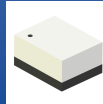
Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
ESD (HBM)	>100 V
ESD (CDM)	>100 V
MSL Level	3
RoHS Compliant	Yes

Ordering Information

Part Number	Description
AFII-SW-0031	SMD 866.5 MHz SAW Filter on Cut Tape
AFII-SW-0031-T	SMD 866.5 MHz SAW Filter on Tape & Reel
AFII-SW-0031-EVB	SMD 866.5 MHz SAW Filter Evaluation Board

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



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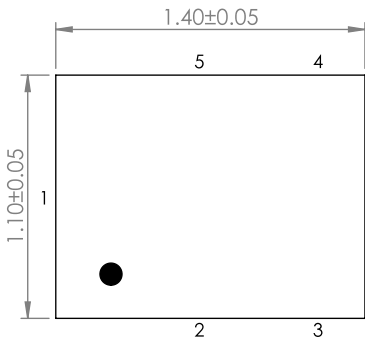


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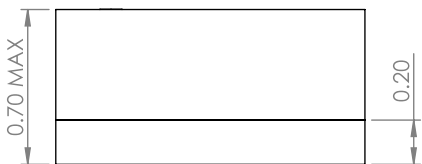


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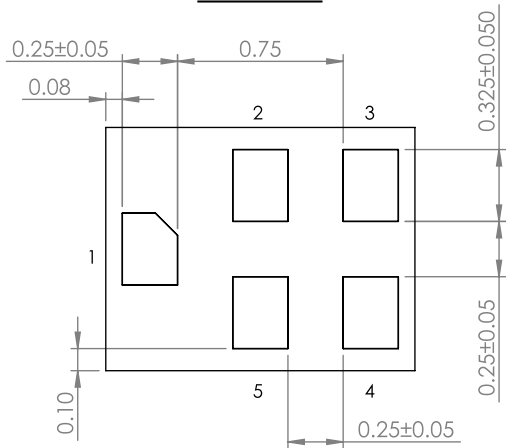
Package Dimensions



TOP VIEW



FRONT VIEW

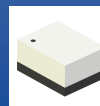


BOTTOM VIEW

Unit: mm

Pin No.	Description
C	Input
A	Output
B, D, E	Ground

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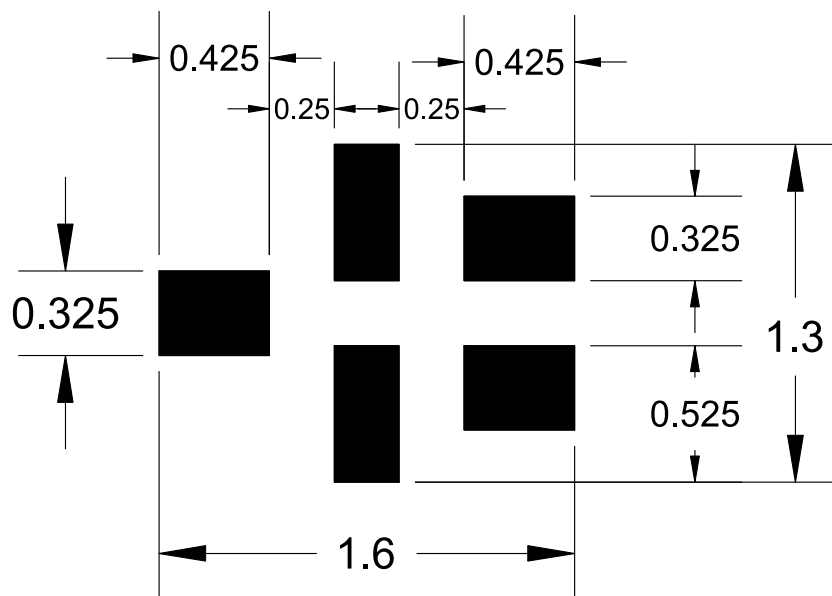


Check Inventory



1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Recommended Land Pattern

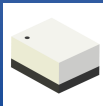


Land Pattern

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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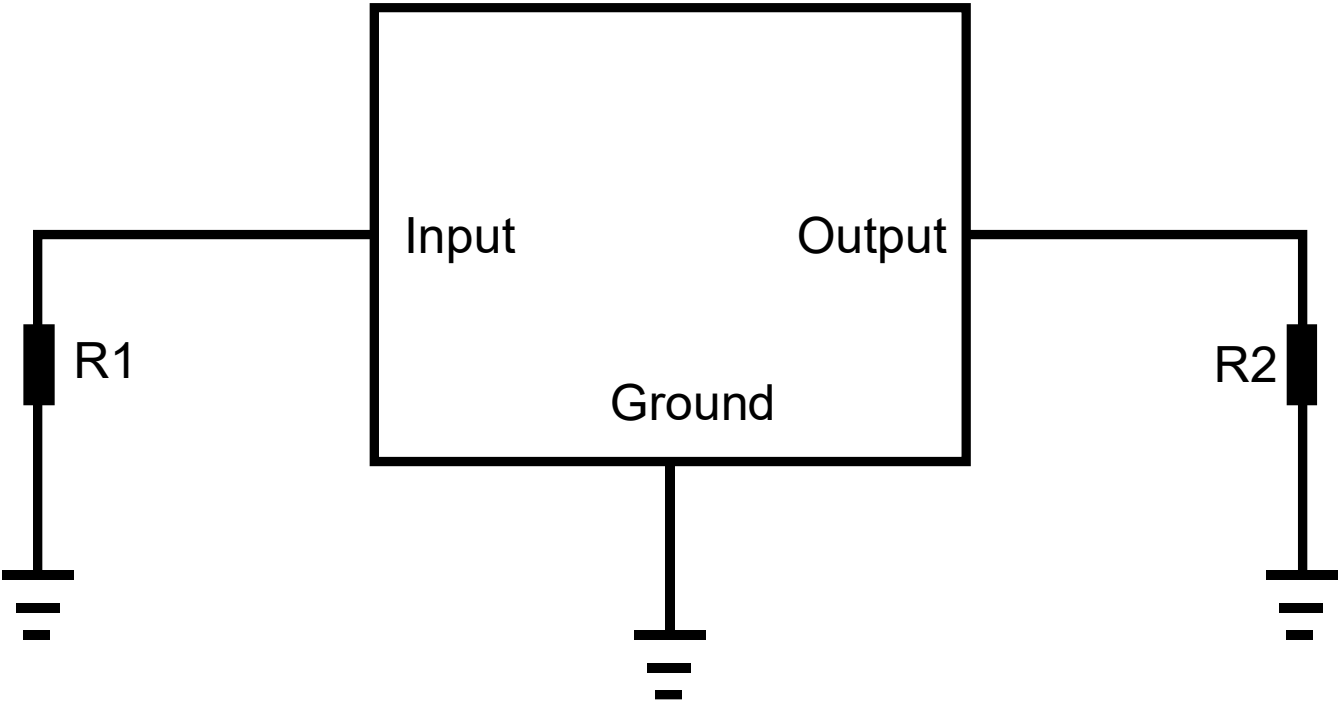


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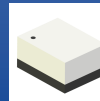
1.4 x 1.1 x 0.7 mm
RoHS Compliant
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Measurement Circuit



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

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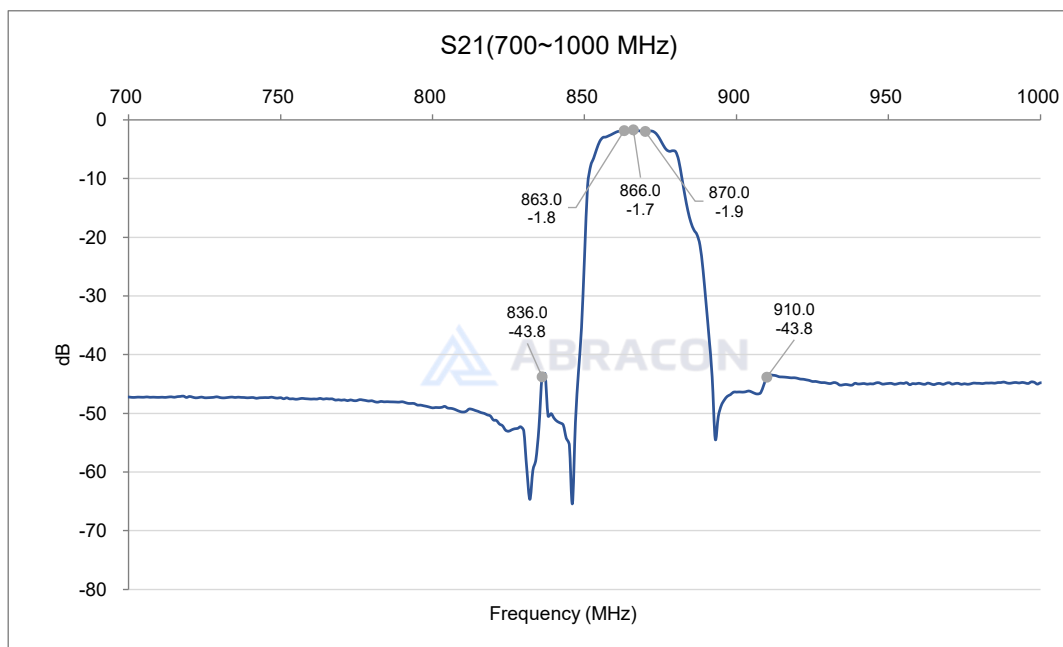
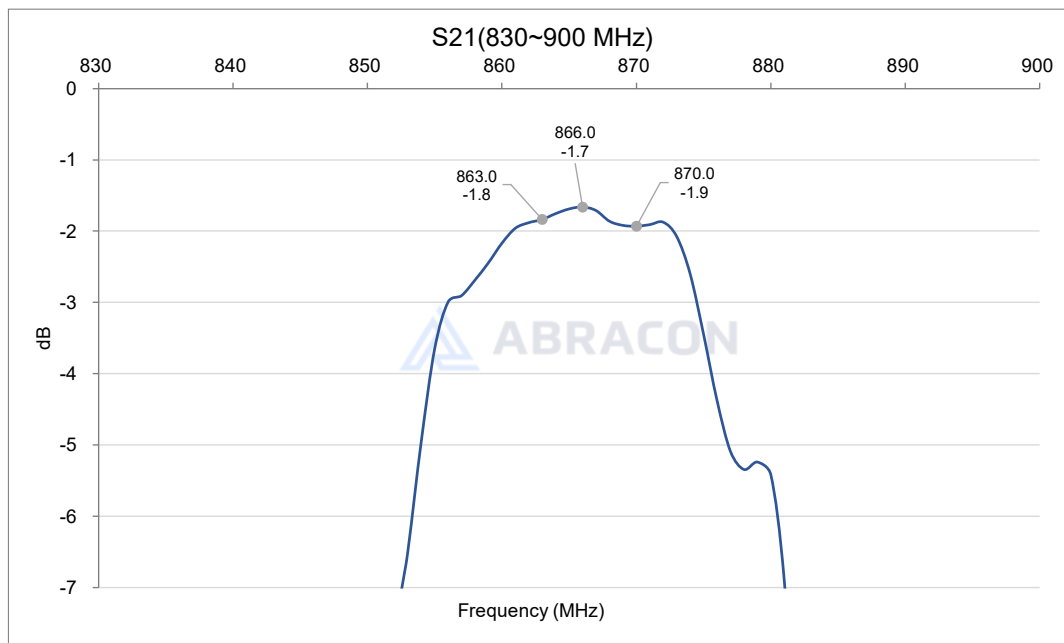
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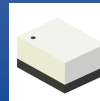
1.4 x 1.1 x 0.7 mm
RoHS Compliant
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Frequency Characteristics

S21 narrow band



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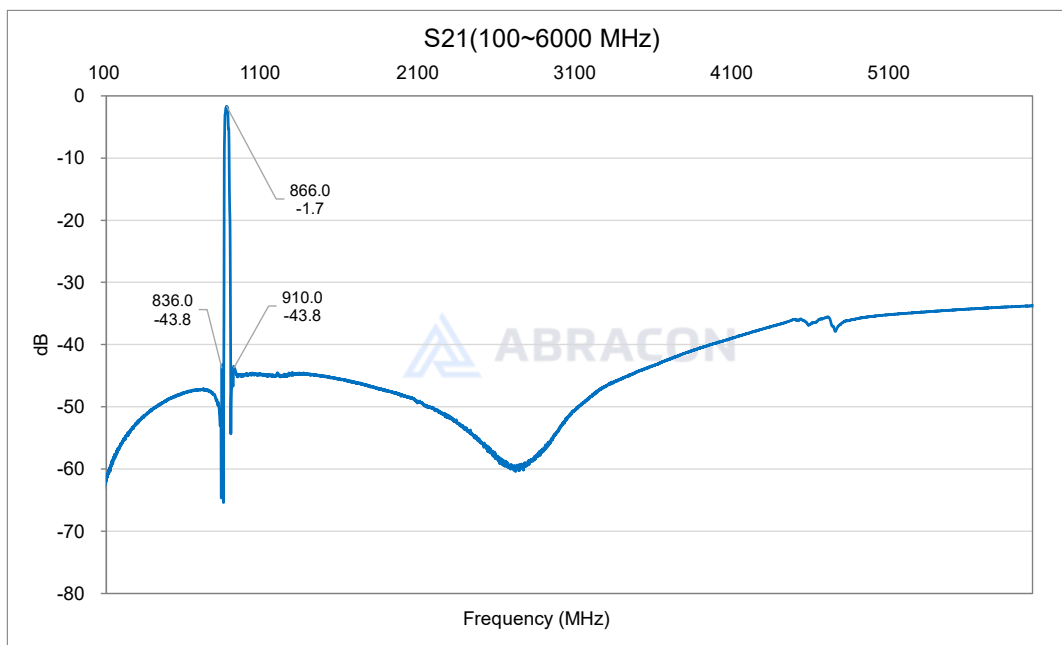


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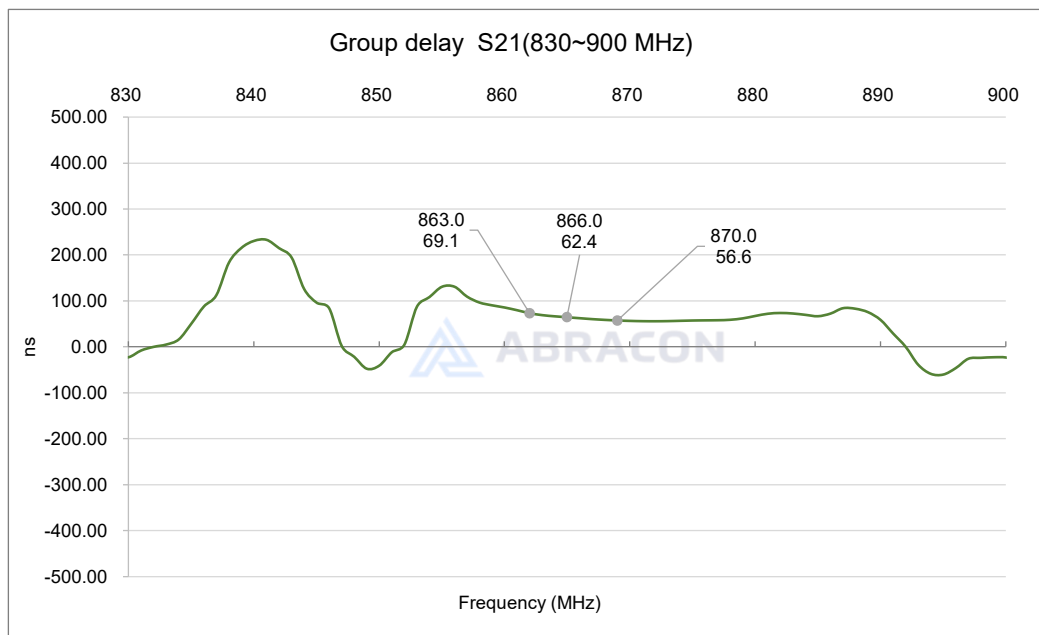


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

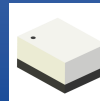
S21 wide band



Group Delay



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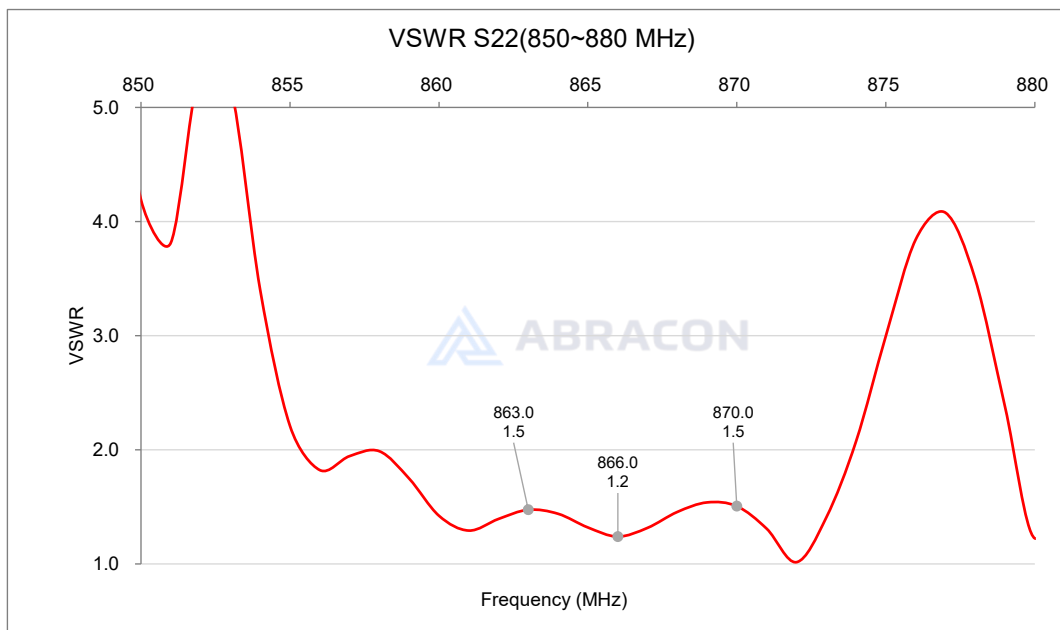
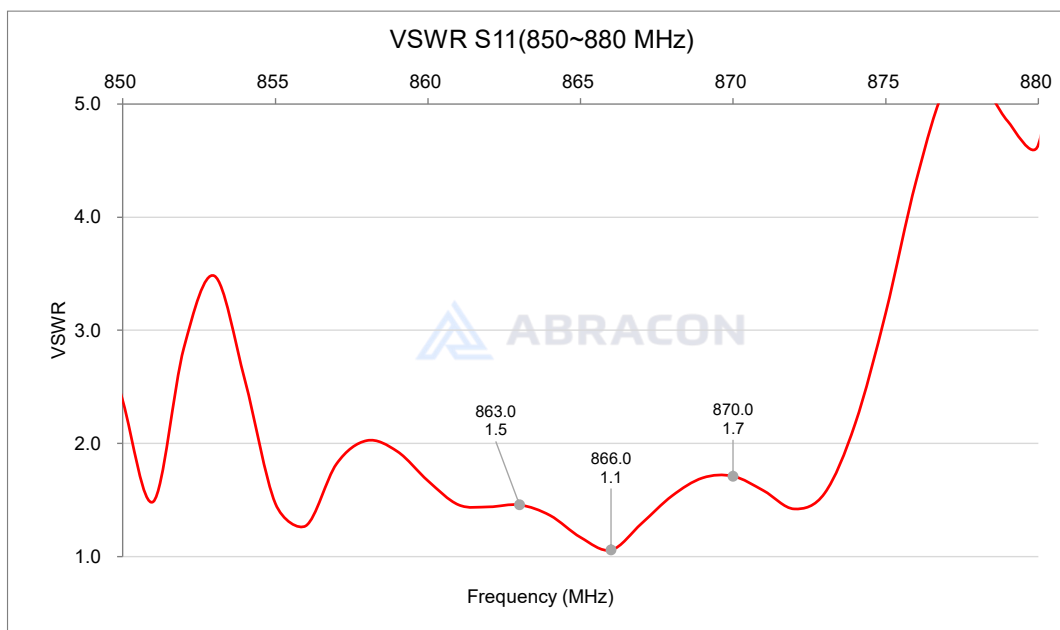


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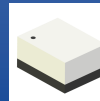


1.4 x 1.1 x 0.7 mm
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MSL Level = 3

VSWR (S11 & S22)



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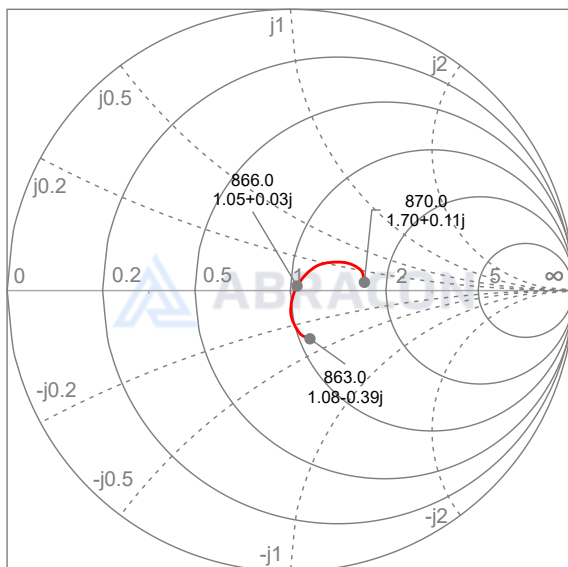
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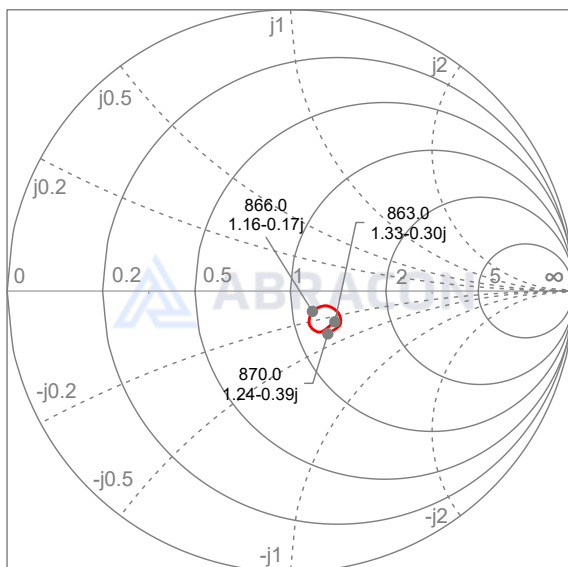
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Smith Chart (S11 & S22)

Smith chart S11 (863~870MHz)



Smith chart S22 (863~870MHz)



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RoHS Compliant
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Reflow Profile [JEDEC J-STD-020]

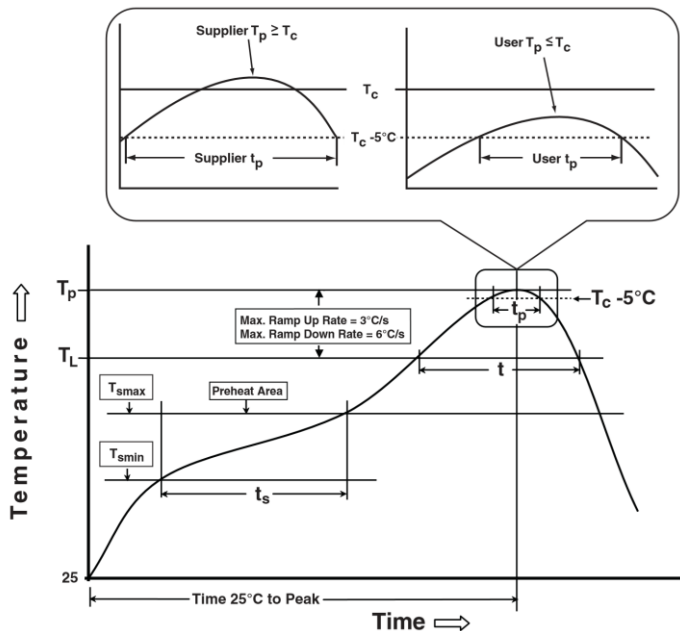


Table 1

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

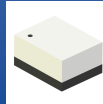
Classification Temperatures (T_c)

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.



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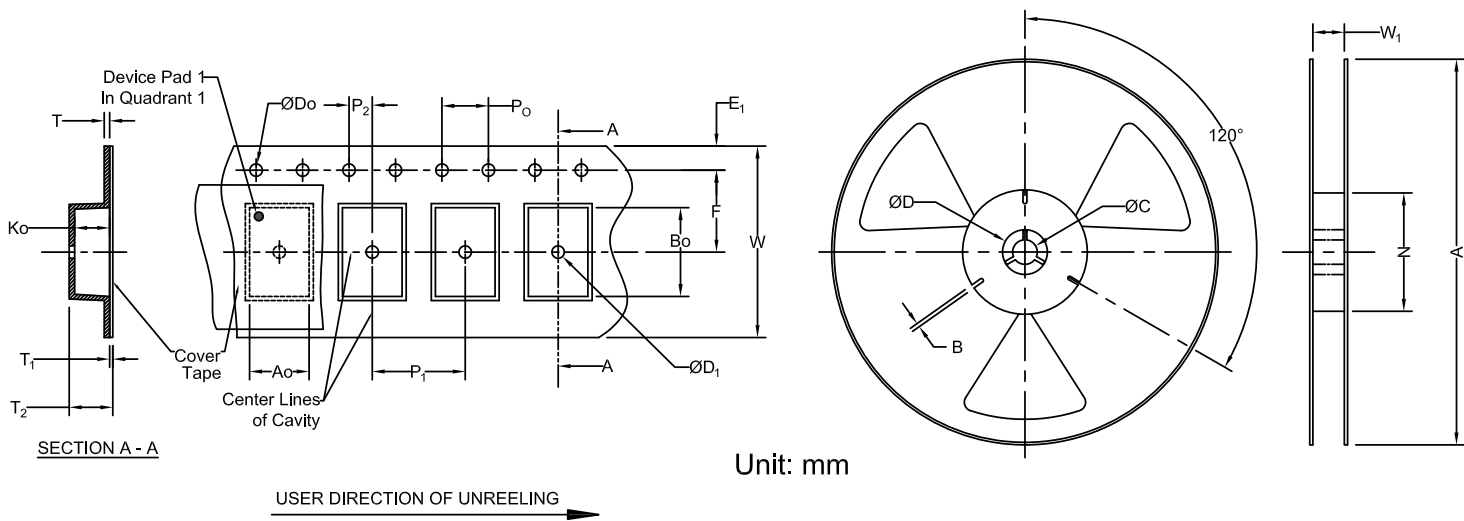


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Packaging

Tape & Reel (5,000 pcs / reel)

1. Tape & Reel Dimension



Carrier Tape Specifications (mm)

D0	D1	E1	P0	P2	T	F	P1	W	A0	B0	K0	Reel Qty
1.50 ± 0.1	0.5 ± 0.1	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.2 ± 0.03	3.5 ± 0.05	2.0 ± 0.1	8.0 ± 0.3	0.95 ± 0.05	1.15 ± 0.05	0.68 ± 0.04	5,000

Reel Specifications (mm)

A	W1	N	C	B
178.0 ± 0.05	9.0 ± 0.3	60 ± 0.2	13.3 ± 0.2	2.2 ± 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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