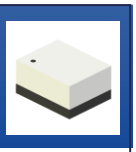
SMD 1575 MHz SAW FILTER



AFII-SW-0062

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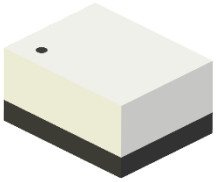
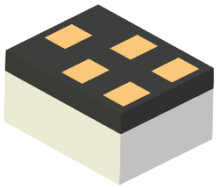
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Description

This high-performance GPS L1 band filter is engineered for precision and reliability. Its ultra-low insertion loss of just 0.9 dB preserves signal strength, while the compact 1.4 x 1.1 x 0.7 mm footprint saves critical board space. The 50-ohm single-ended design ensures easy integration, and with an out-of-band rejection exceeding 22 dB, it effectively minimizes interference. These features make it an ideal choice for demanding applications such as automotive telematics, autonomous vehicles, and asset tracking, where accurate positioning is paramount. The component is RoHS compliant and rated MSL Level 3.





Features

- Supports GPS L1 Band
- 1.4 x 1.1 x 0.7 mm in Size
- Low Insertion Loss: 0.9 dB
- Out-of-Band Rejection: > 22 dB
- 50 Ohms Single-Ended Input & Output
- Maximum Input Power: +10 dBm
- RoHS Compliant | MSL Level 3

Applications

- GNSS Modules
- Automotive Transportation & Telematics
- Asset Tracking / Fleet Management
- UAVs, Robotics & Autonomous Vehicles
- Micro-Mobility Solutions
- Precision Agriculture

Ordering Information

Part Number	Description
AFII-SW-0062	SMD 1575 MHz SAW FILTER on Cut Tape
AFII-SW-0062-T	SMD 1575 MHz SAW FILTER on Tape & Reel
AFII-SW-0062-EVB	SMD 1575 MHz SAW FILTER Evaluation Board

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

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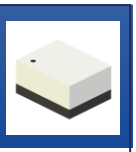

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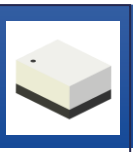
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency(fc)	-	1575.42	-	MHz	-
VSWR	-	1.2	1.8		
Insertion Loss (1)	-	0.9	1.04	dB	1574.22 ~ 1576.62MHz
Amplitude Ripple (1)	-	0.2	0.6		1574.22 ~ 1576.62MHz
Group Delay (1)		16	17	ns	1574.22 ~ 1576.62MHz
Group Delay Ripple (1)	-	0.05	0.1	ns	1574.22 ~ 1576.62MHz
Attenuation (2) (Reference level from 0 dB)	30	35	-	dB	DC ~1450 MHz
	32	38	-		1450 ~1520 MHz
	32	38	-		1625 ~1640 MHz
	35	40	-		1640 ~1805 MHz
	35	40	-		1805 ~1910 MHz
	35	40	-		1910 ~2000 MHz
	25	30	-		2000 ~4000 MHz
	18	22	-		4000 ~6000 MHz
Source Impedance (3) (single ended)	-	50	-	Ω	
Load Impedance (3) (single ended)	-	50	-	Ω	
RF Power Dissipation	-	10	-	dBm	

Notes: (1) Averaged values of linear S-Parameters at +25ºC
(2) Averaged values of linear S-Parameters at +25ºC
(3) A matching network is unnecessary (refer to the Measurement Circuits section).

SMD 1575 MHz SAW FILTER



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

Mechanical Specification

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

Environmental Specification

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

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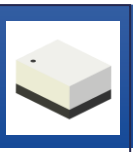

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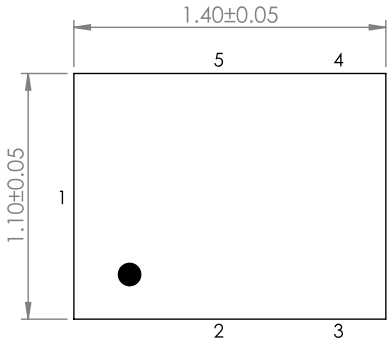
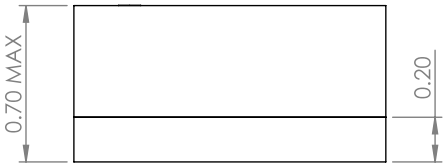
RoHS Compliant
MSL Level = 3

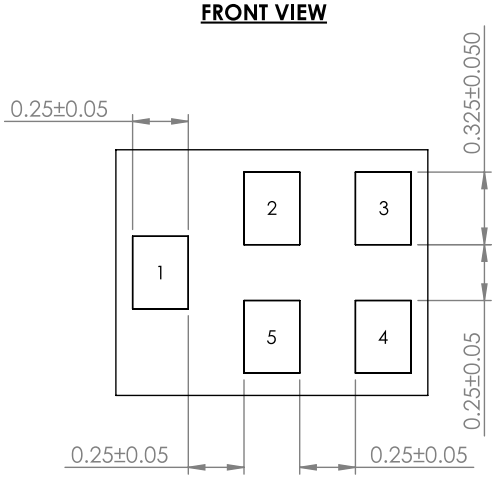
Product Dimensions



TOP VIEW



FRONT VIEW



BOTTOM VIEW

Unit : mm

Pin No.	Description
1	Input
4	Output
2, 3, 5	Ground

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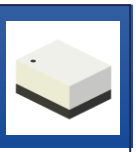
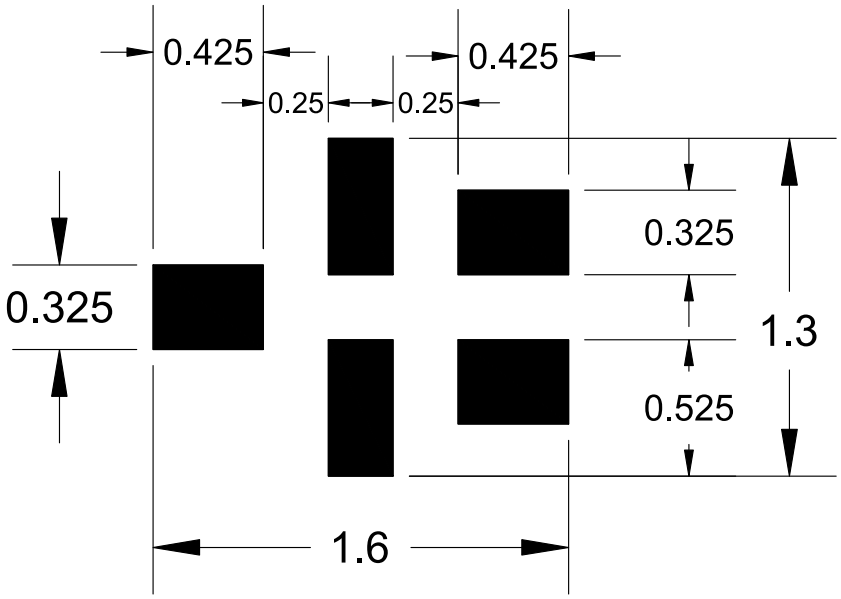


AFII-SW-0062

Request Samples | 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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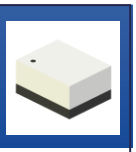

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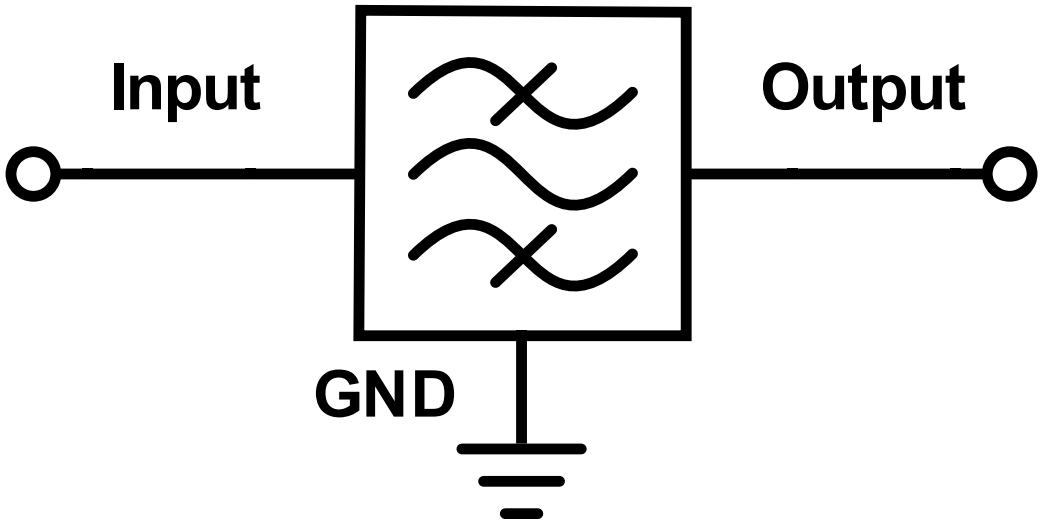
Request Samples Check Inventory

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

Measurement Circuit



Pin No.	Description
1	Input Impedance: 50 Ω
4	Output Impedance: 50 Ω
2, 3,5	Ground

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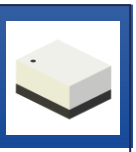

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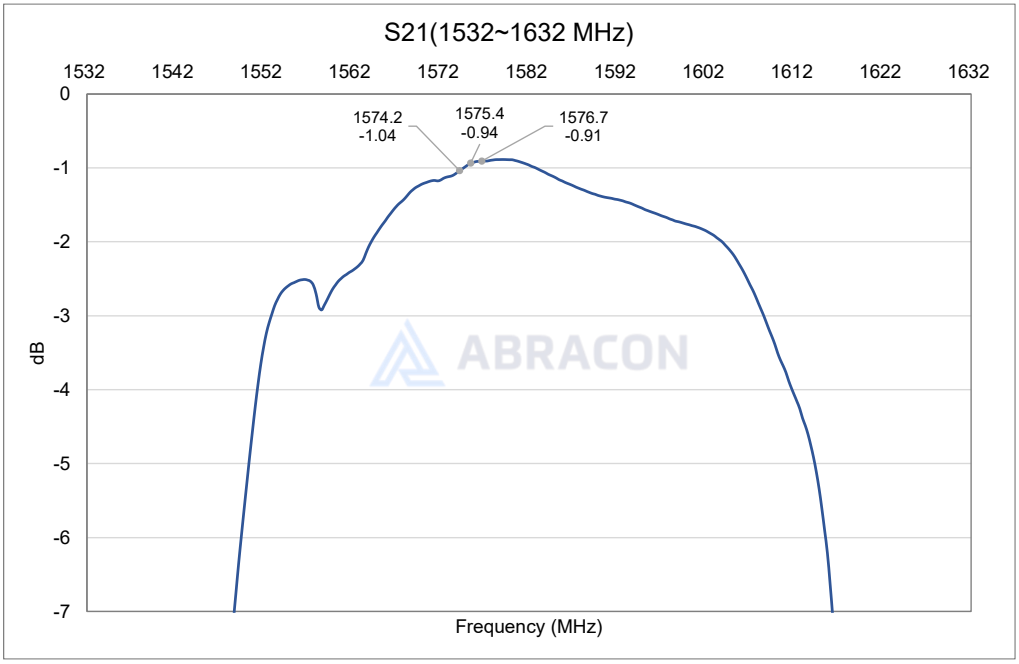
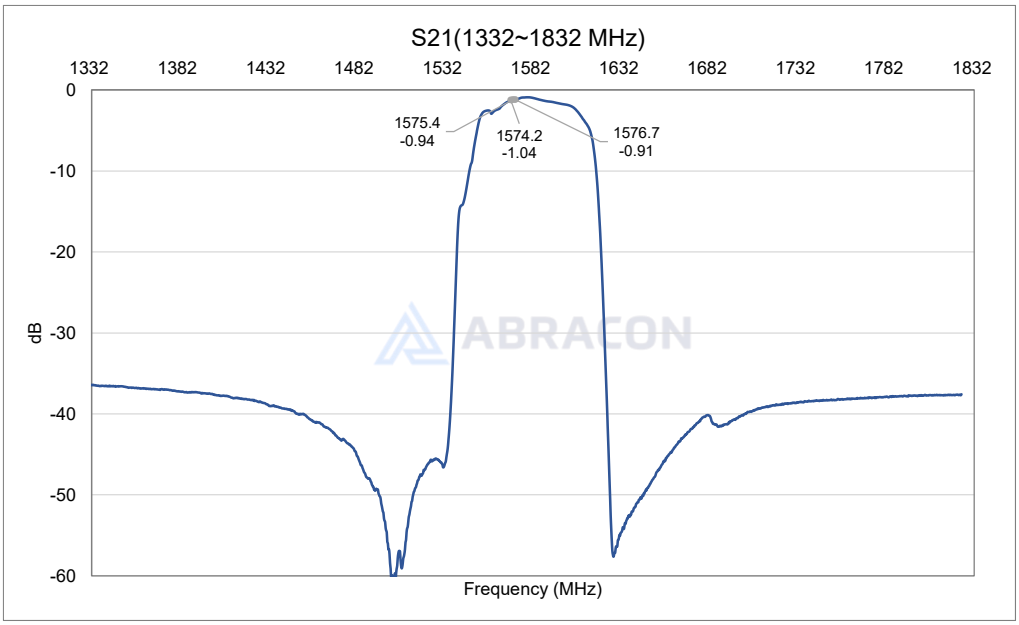
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Frequency Characteristics

S21 narrow band





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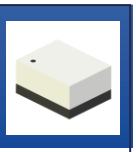

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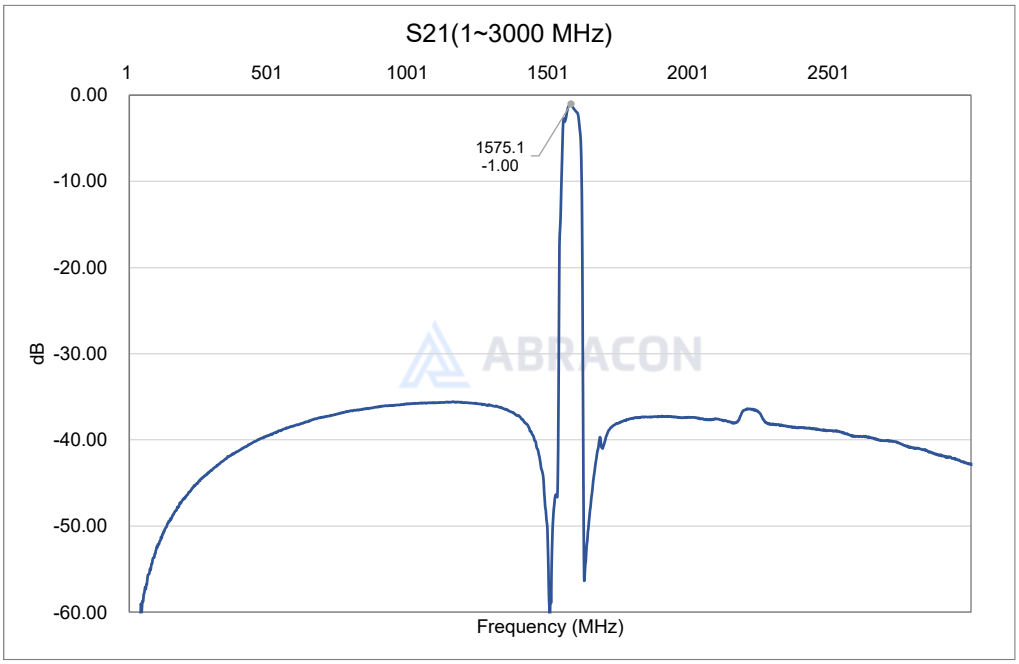
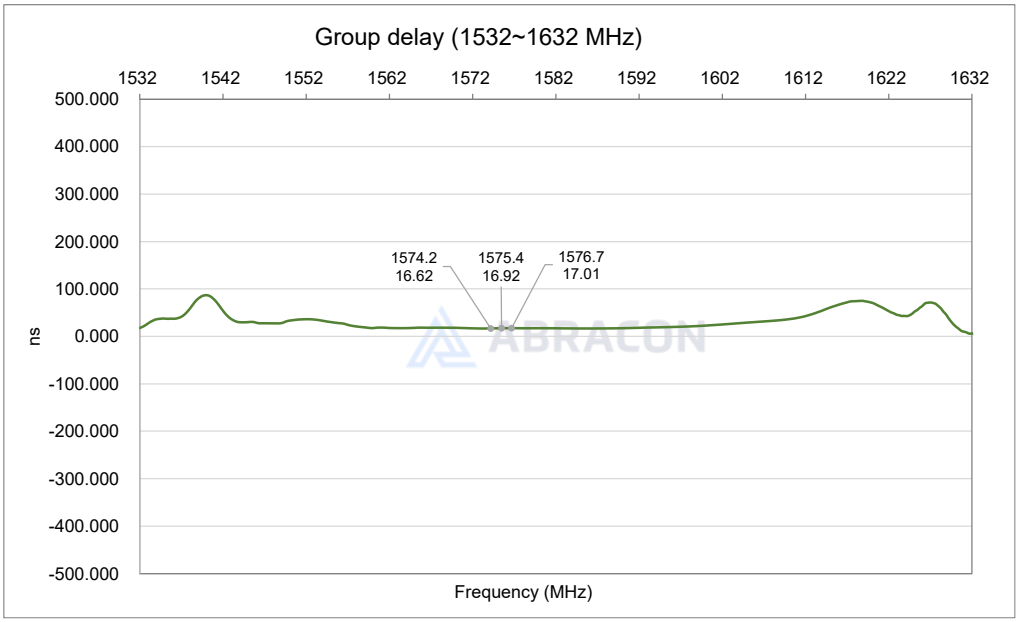
Request Samples | Check Inventory

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

S21 Wide Band



Group Delay Ripple



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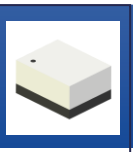

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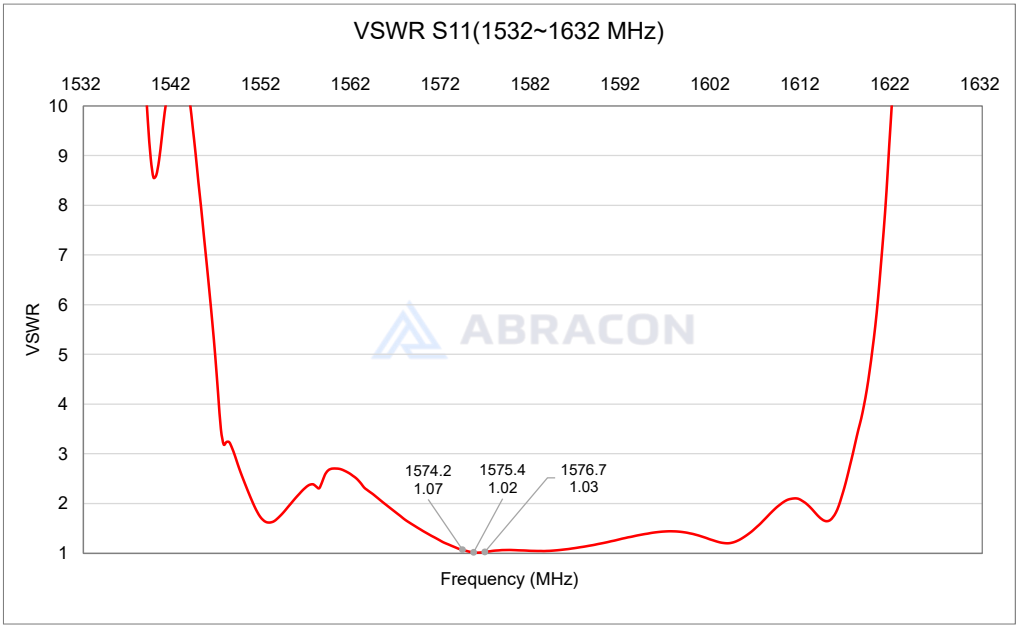
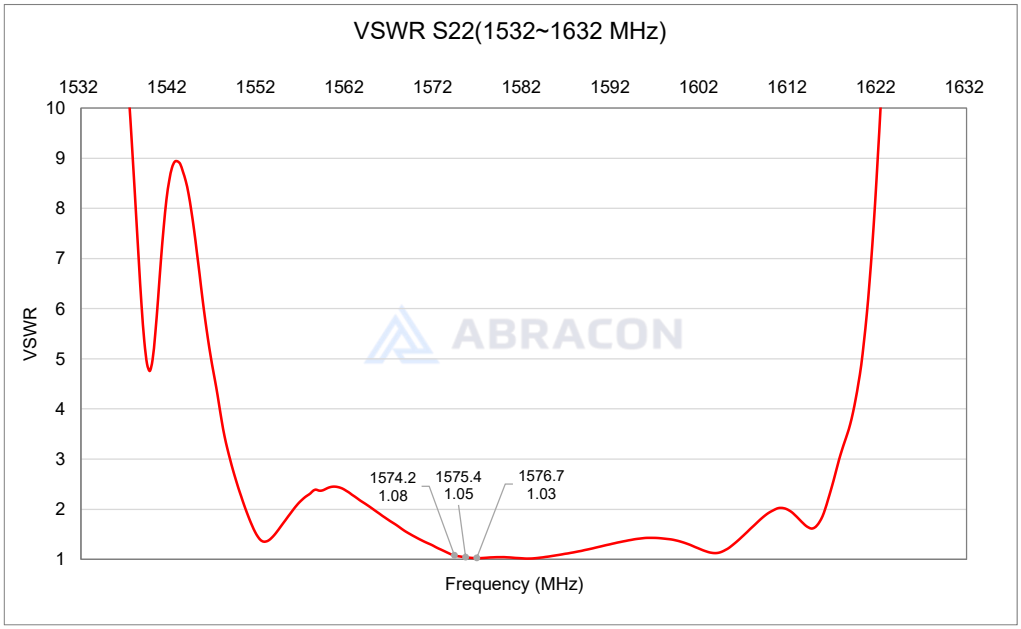
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

VSWR (S11 & S22)





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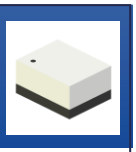

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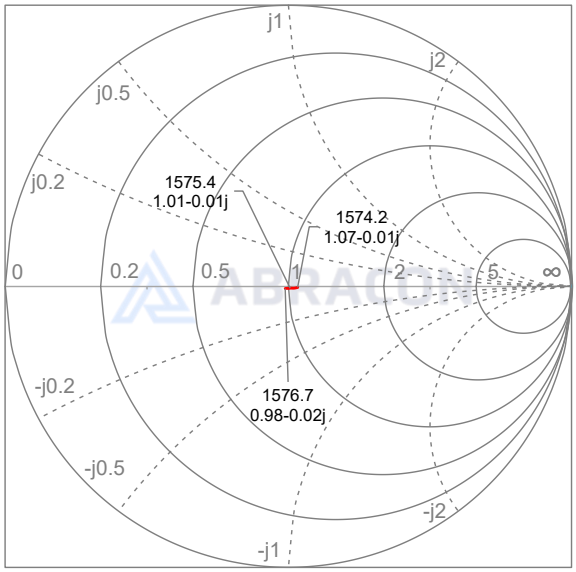
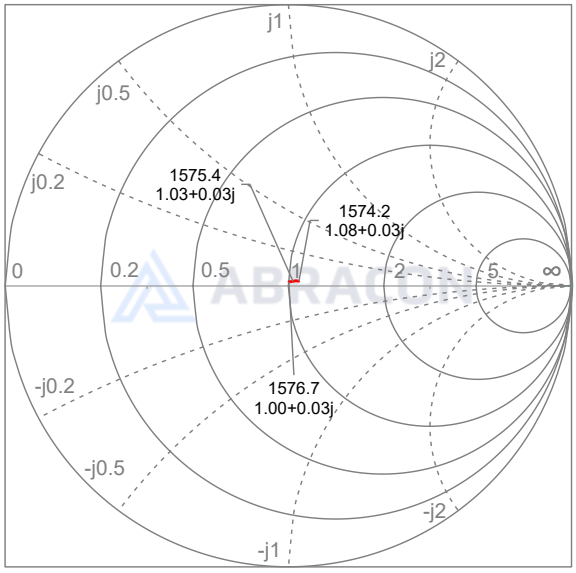
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Smith Chart (S11 & S22)

Smith chart S11 (1574~1576MHz)



Smith chart S22 (1574~1576MHz)



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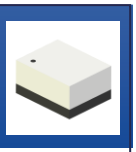

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Reflow Profile [JEDEC J-STD-020]

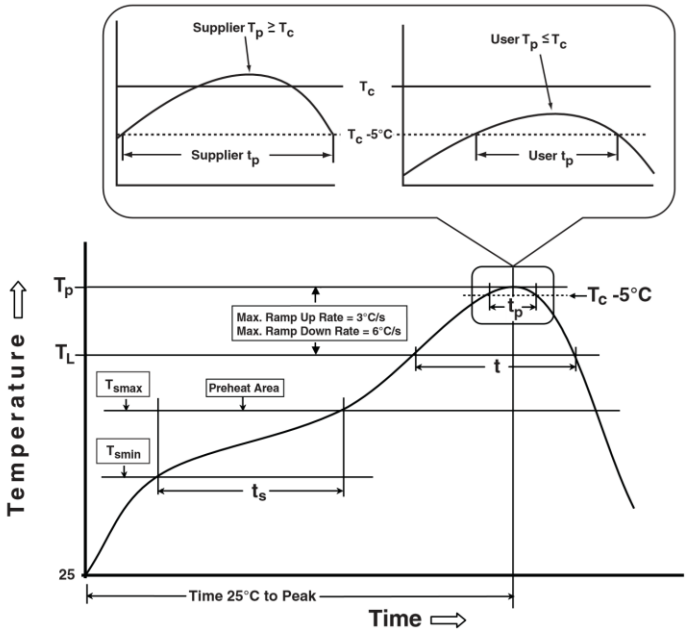

Table 1

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	180°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	220°C
Time at Liquidous (T_L)	60 – 150 sec.	50 – 80 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.	20 ~ 40 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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