

SMD 1582.4MHz SAW Filter

ABSES5AD-L100KM

Request Samples



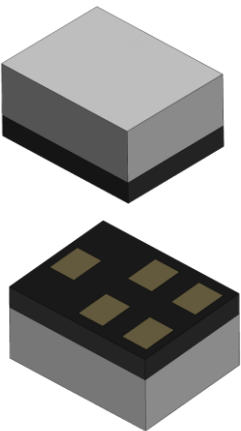
Check Inventory



1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Description

This advanced multi-constellation filter supports GPS, GLONASS, BEIDOU, and GALILEO systems, making it ideal for high-accuracy global navigation. Despite its miniature 1.4 x 1.1 x 0.7 mm footprint, it delivers robust performance with a low 1.2 dB insertion loss and a wide 46.834MHz bandwidth. Its strong >30 dB out-of-band rejection ensures signal clarity in congested RF environments. This RoHS-compliant filter is perfectly suited for demanding applications in automotive telematics, UAVs, autonomous vehicles, and precision agriculture, enabling reliable positioning and tracking.



Features

- Support GPS/GLONASS/BEIDOU/GALILEO
- Bandwidth 46.834MHz
- 1.4 x 1.1 x 0.7 mm in Size
- Low Insertion Loss: 1.2 dB
- Out-of-Band Rejection: > 30 dB
- Maximum Input Power: 10 dBm
- [RoHS Compliant](#) | [MSL Level 1](#)

Applications

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

Ordering Information

Part Number	Description
ABSES5AD-L100KM	SMD 1582.4MHz SAW Filter on Tape & Reel
ABSES5AD-L100KM-EVB	SMD 1582.4MHz SAW Filter Evaluation Board

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

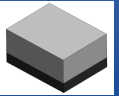


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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1582.4	-	MHz	-
VSWR ⁽¹⁾	-	1.6	2.0	-	1559.05 - 1563.15 MHz
	-	1.2	2.0		1574.42 - 1576.42MHz
	-	1.3	2.0		1597.78 - 1605.66MHz
Insertion Loss ⁽¹⁾	-	1.8	2.2	dB	1559.05 - 1563.15 MHz
	-	1.2	1.5	dB	1574.42 - 1576.42 MHz
	-	1.5	2.0	dB	1597.78 - 1605.66 MHz
Amplitude Ripple ⁽¹⁾	-	0.2	1.0	dB	1559.05 - 1563.15MHz
	-	0.2	1.0	dB	1574.42 - 1576.42MHz
	-	0.2	1.0	dB	1597.78 - 1605.66MHz
Attenuation ⁽¹⁾ (Reference level from 0 dB)	35	38	-	dB	10 – 925 MHz
	38	42	-		1427 - 1463 MHz
	38	42	-		1710 – 1785 MHz
	38	42	-		1850 – 2025 MHz
	40	45	-		2300 – 3000 MHz
	25	30	-		4800 – 5000 MHz
Group Delay ⁽¹⁾ (+25 °C)	-	14	20	ns	1559.05 -1605.66 MHz
Group Delay Ripple	-	1.5	6.9	ns	1559.05 -1605.66 MHz
Source Impedance ⁽²⁾ (single ended)	-	50	-	Ω	
Load Impedance ⁽²⁾ (single ended)	-	50	-	Ω	
Input Power Level	-	-	10	dBm	
DC Voltage (V)	-	-	3	V	

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

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

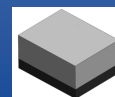


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Mechanical Specification

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

Environmental Specification

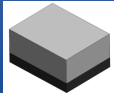
Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
MSL level	1
ESD	N/A



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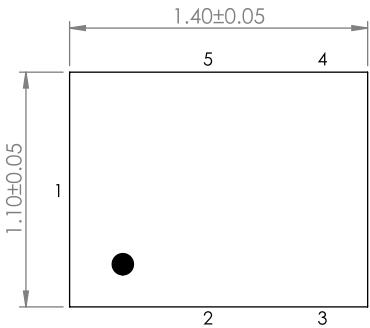


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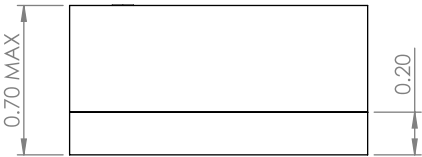


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RoHS Compliant
MSL Level = 1

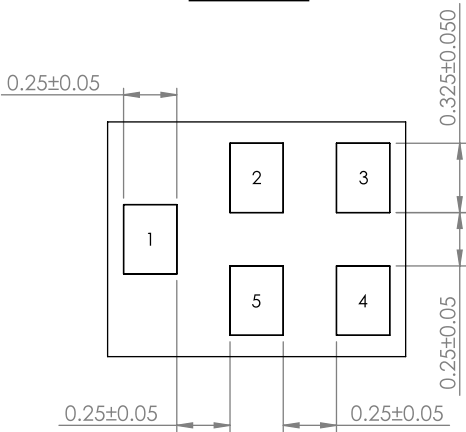
Product Dimension



TOP VIEW



FRONT VIEW



BOTTOM VIEW

Unit: mm

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

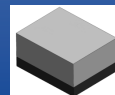


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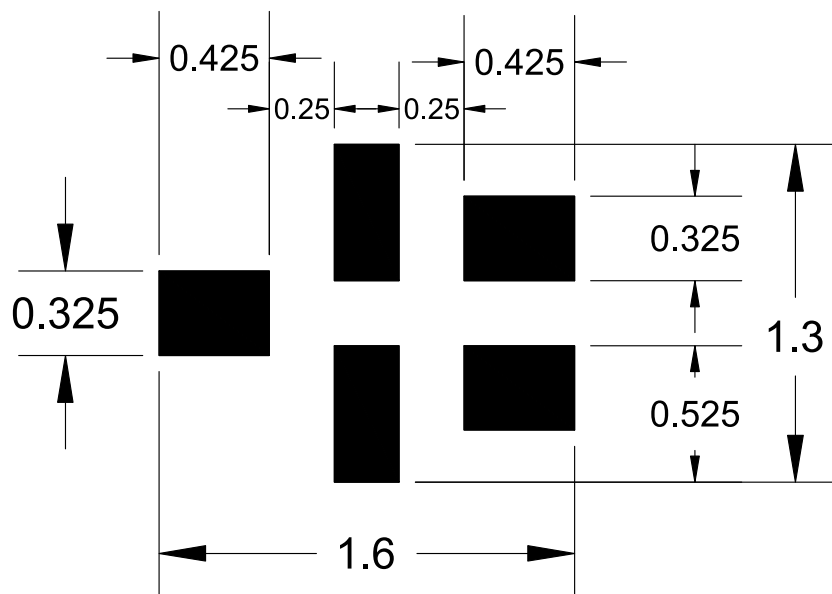


Check Inventory



1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Recommended Land Pattern

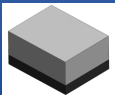


Land Pattern

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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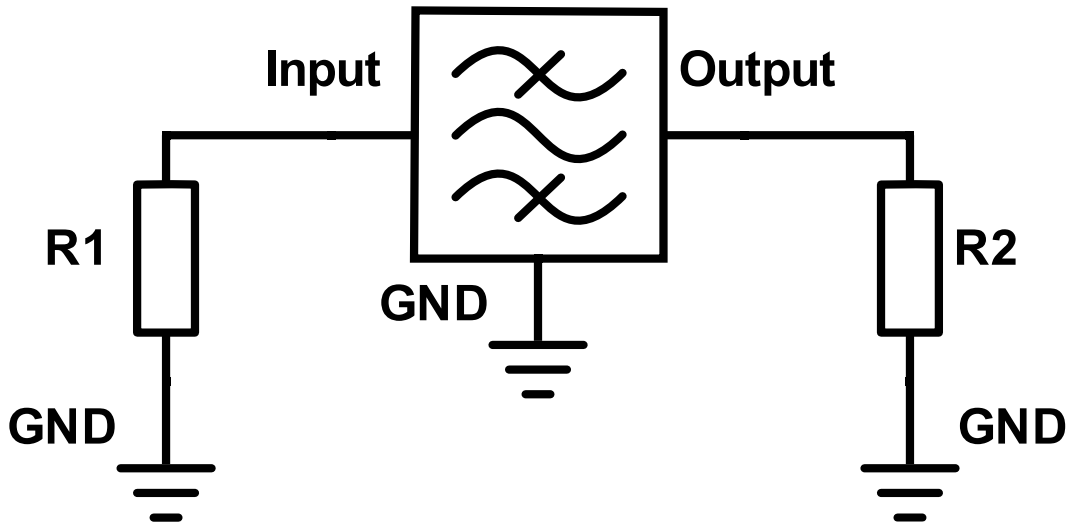


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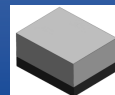
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Measurement Circuit



Port	Matching Component
Input (Pin 1)	R1: 50 Ω
Output (Pin 4)	R2: 50 Ω

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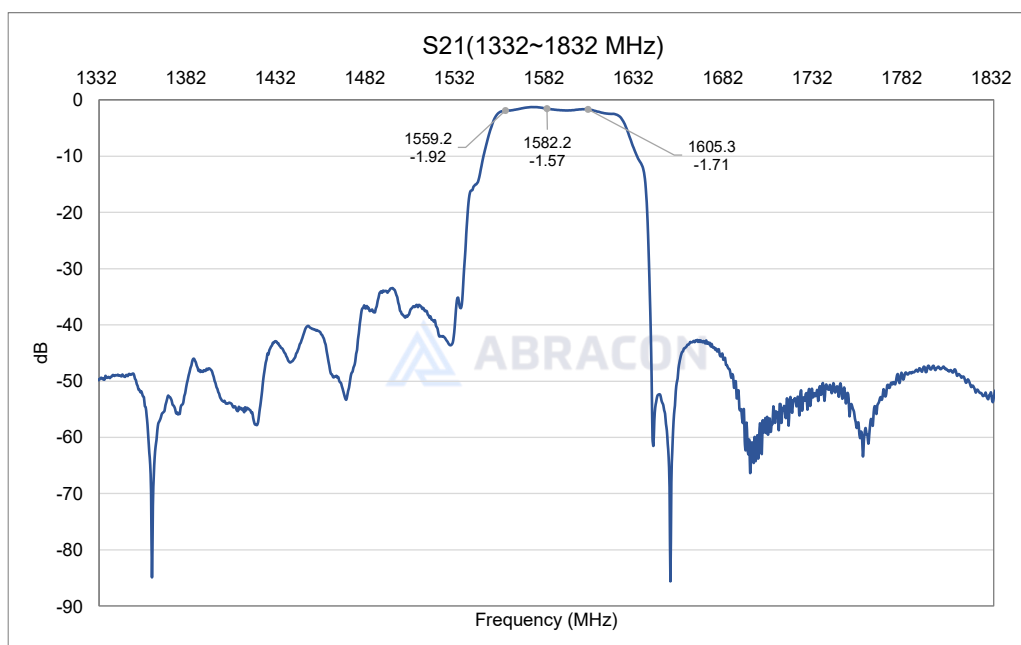
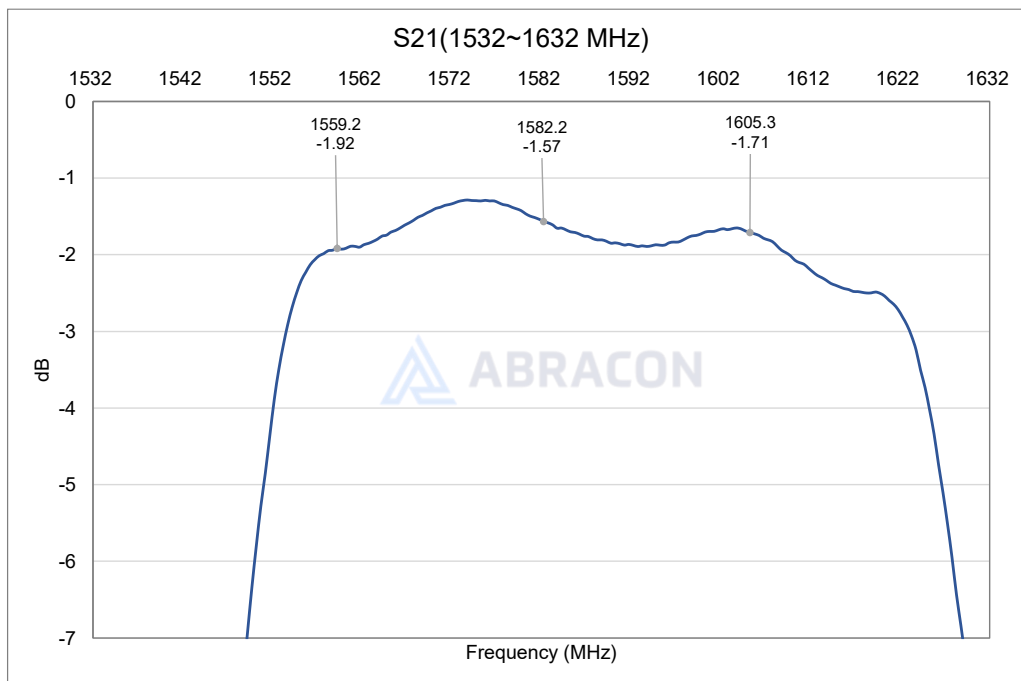
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1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Frequency Characteristics

S21 narrow band

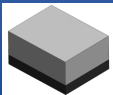


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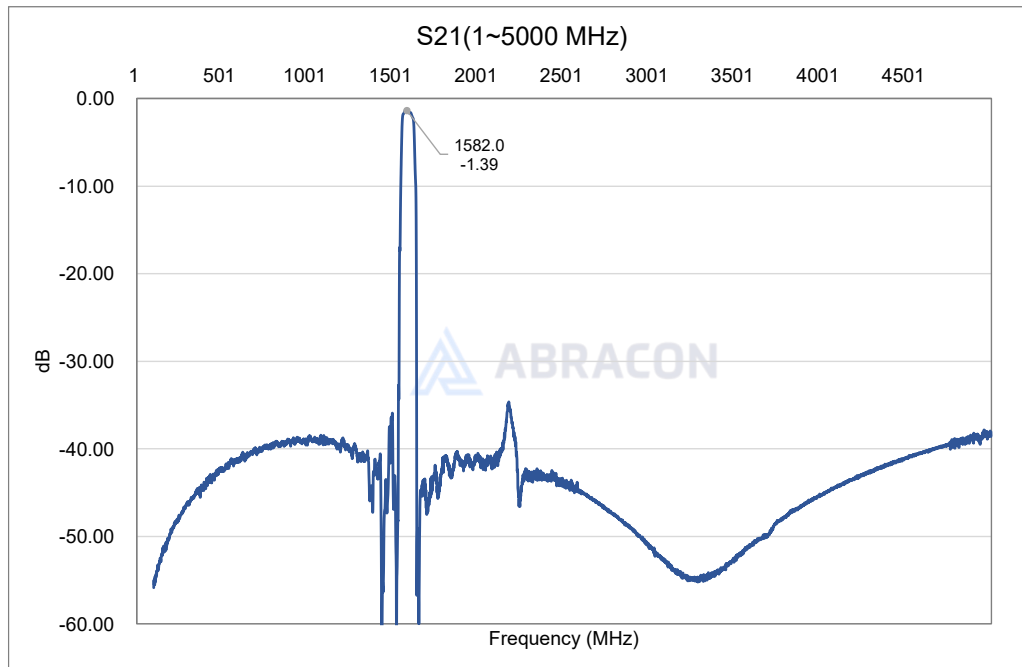


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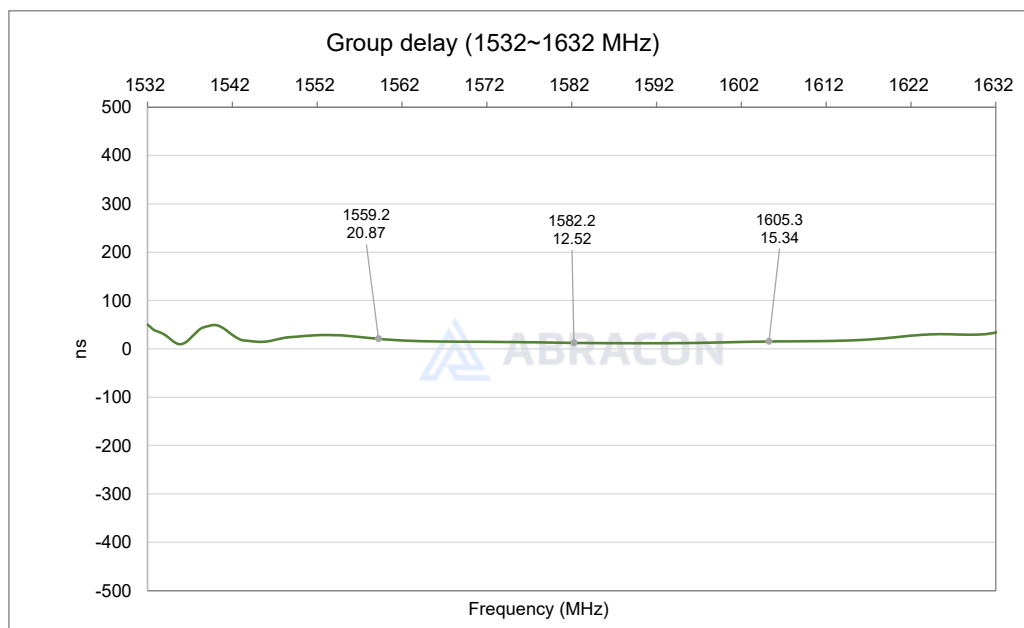


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RoHS Compliant
MSL Level = 1

S21 wide band



Group Delay

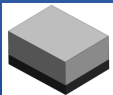


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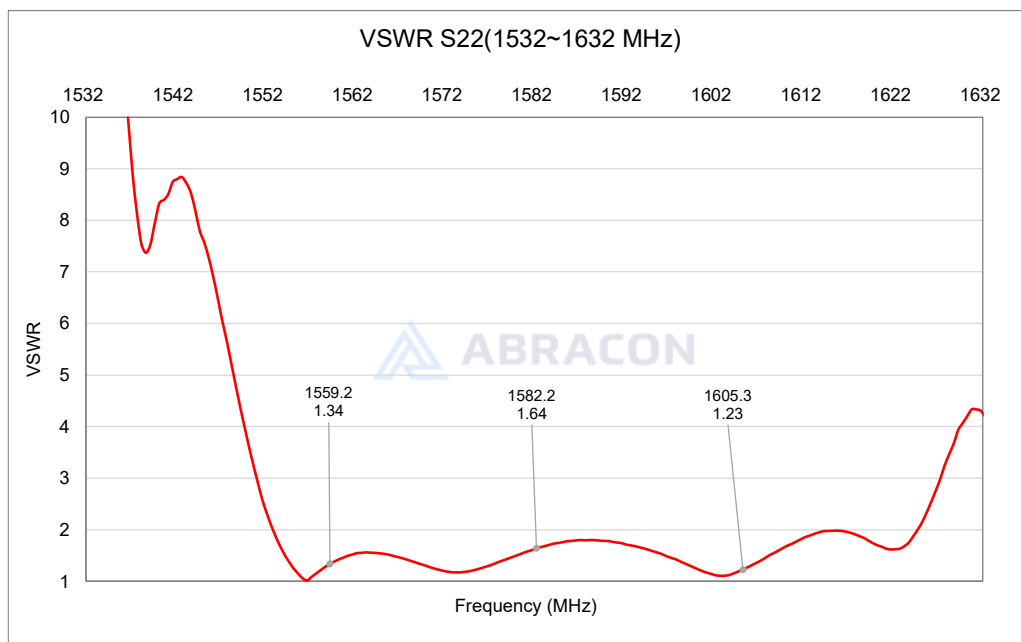
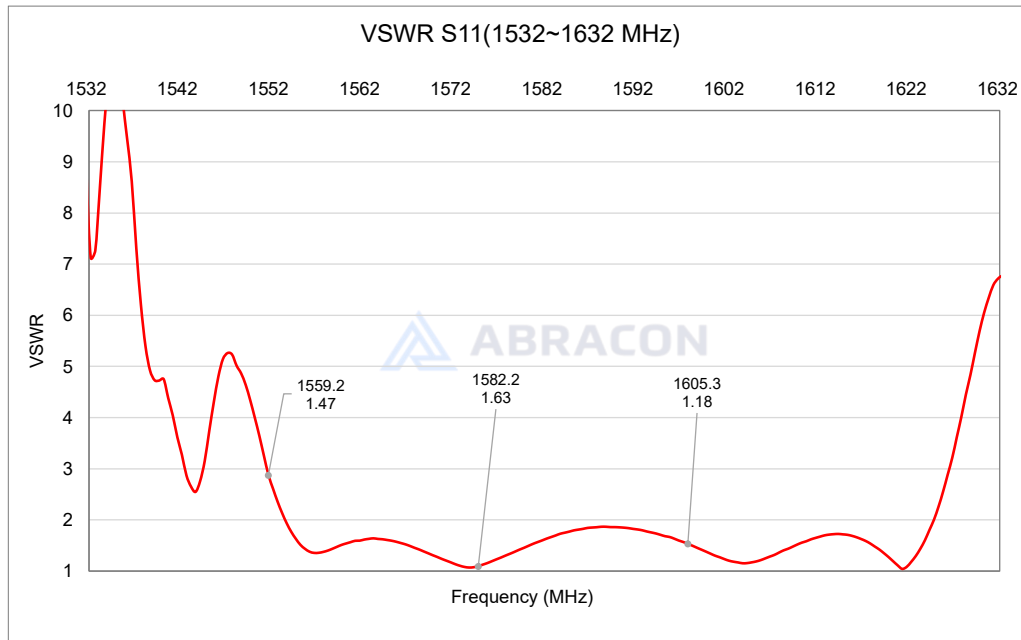


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1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

VSWR (S11 & S22)

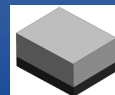


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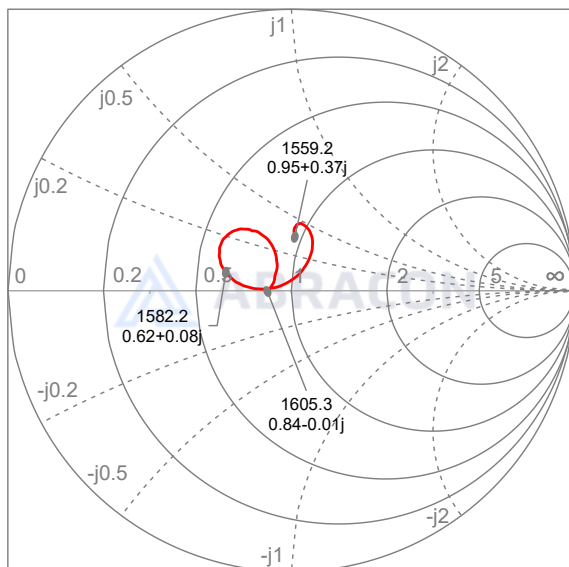
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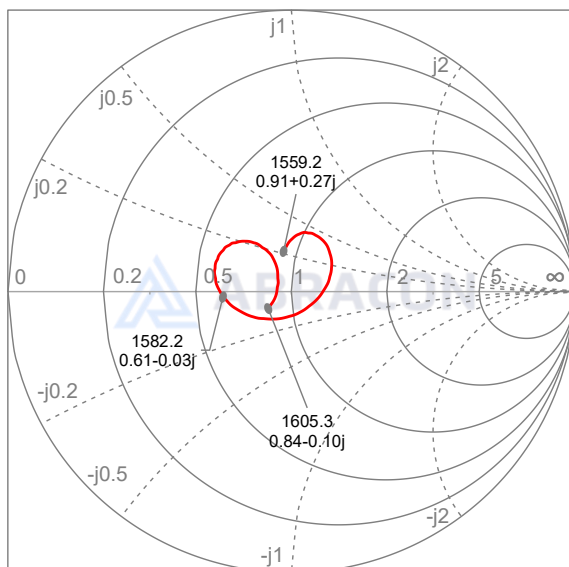
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Smith Chart (S11 & S22)

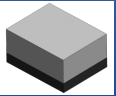
Smith chart S11 (1559~1605MHz)



Smith chart S22 (1559~1605MHz)



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Reflow Profile [JEDEC J-STD-020]

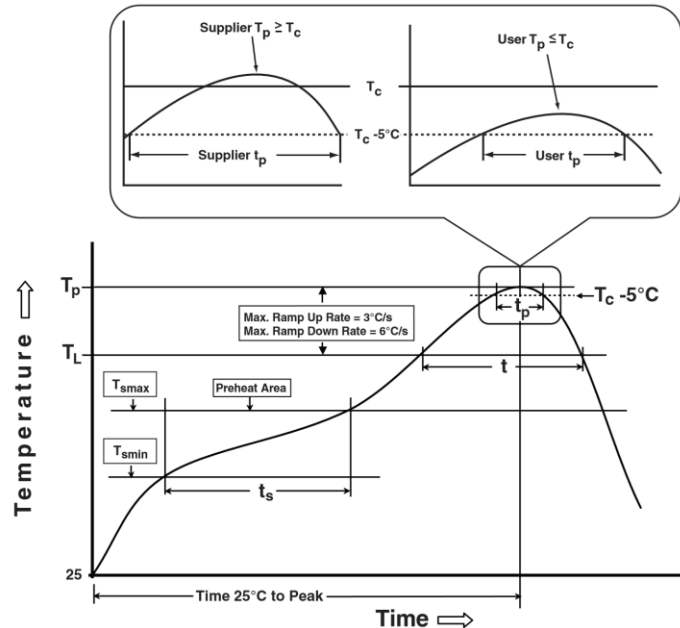


Table 1

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	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.

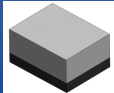
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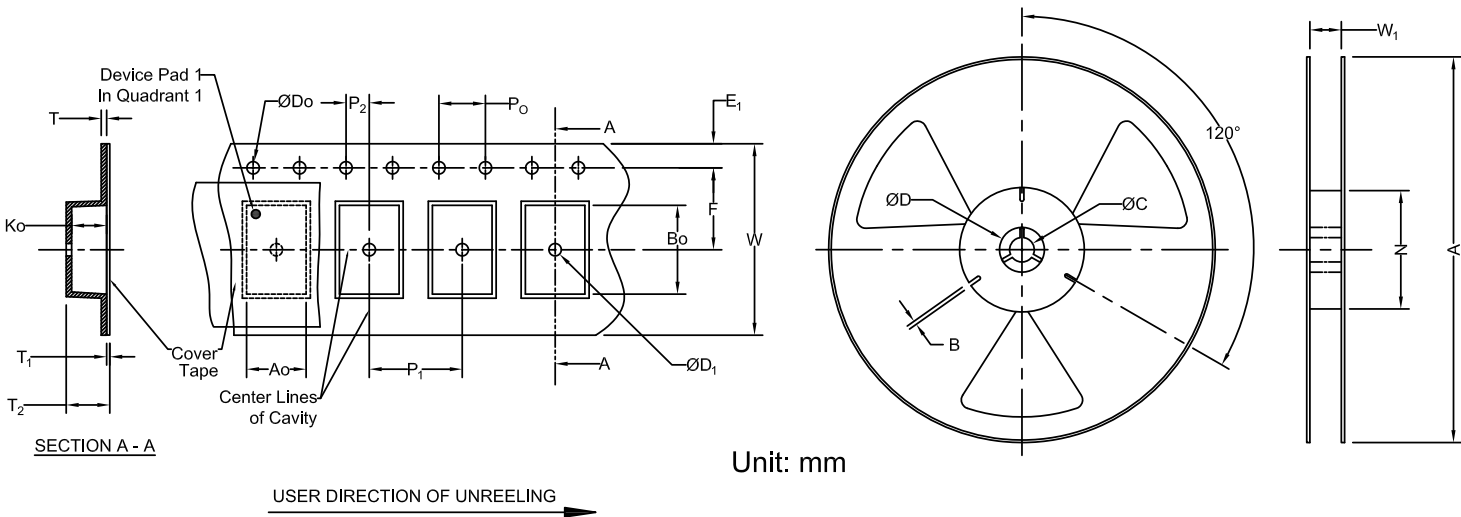


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 1

Packaging

Tape & Reel (5,000 pcs / reel)

1. Tape & Reel Dimension



Carrier Tape Specifications (mm)

Do	D1	E1	P0	P2	T	F	P1	W	A0	B0	K0	Reel Qty
1.55 ± 0.05	0.6 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.2 ± 0.03	3.5 ± 0.05	4.0 ± 0.1	8.0 ± 0.3	1.3 ± 0.05	1.6 ± 0.05	0.68 ± 0.04	5,000

Reel Specifications (mm)

A	W1	N	C	B
180.9 ± 0.15	8.48 ± 0.15	57.12 ± 0.15	13.12 ± 0.15	2.2 ± 0.2

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