

# SMD 1582.4MHz SAW Filter

**ABSES5AF-L100KM**

Request Samples



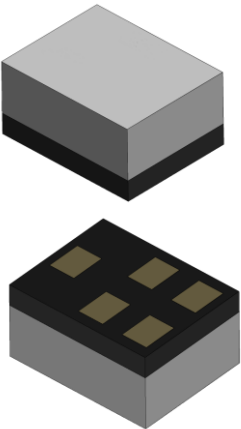
Check Inventory



**1.1 x 0.9 x 0.7 mm**  
**RoHS Compliant**  
**MSL Level = 1**

## Description

This ultra-compact GPS/GLONASS/BEIDOU/GALILEO filter is engineered for high-precision navigation and tracking applications. Measuring just 1.1 x 0.9 x 0.7 mm, it delivers exceptional performance with a low insertion loss of 1.2 dB and a wide 46.834MHz bandwidth. Its robust out-of-band rejection (>30 dB) ensures signal integrity in demanding environments. Ideal for RTK systems, automotive telematics, UAVs, and asset tracking, this RoHS-compliant component enables reliable positioning for autonomous vehicles and precision agriculture solutions.



## Features

- Support GPS/GLONASS/BEIDOU/GALILEO
- Bandwidth 46.834MHz
- 1.1 x 0.9 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
- RTK Systems
- Automotive Transportation & Telematics
- Asset Tracking / Fleet Management
- UAVs, Robotics & Autonomous Vehicles
- Micro-Mobility Solutions
- Precision Agriculture

## Ordering Information

Part Number	Description
ABSES5AF-L100KM	SMD 1582.4MHz SAW Filter on Tape & Reel
ABSES5AF-L100KM-EVB	SMD 1582.4MHz SAW Filter Evaluation Board

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

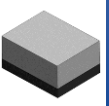


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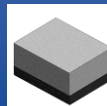
## Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1582.4	-	MHz	-
VSWR <sup>(1)</sup>	-	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 <sup>(1)</sup>	-	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 <sup>(1)</sup>	-	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 <sup>(1)</sup> (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 <sup>(1)</sup> (+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 <sup>(2)</sup> (single ended)	-	50	-	Ω	-
Load Impedance <sup>(2)</sup> (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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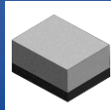
**1.1 x 0.9 x 0.7 mm**  
**RoHS Compliant**  
MSL Level = 1

## Mechanical Specification

Parameters	Specifications
Dimension	1.1 x 0.9 x 0.7 mm
Mounting Type	Surface Mount

## Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
MSL level	1
RoHS Compliant	Yes



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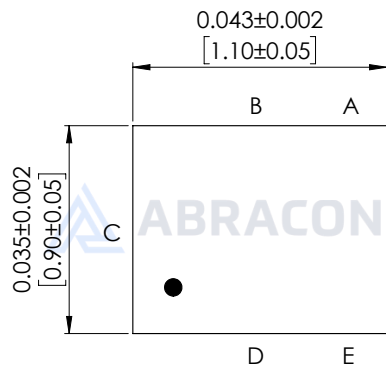


Check Inventory



1.1 x 0.9 x 0.7 mm  
RoHS Compliant  
MSL Level = 1

## Product Dimension

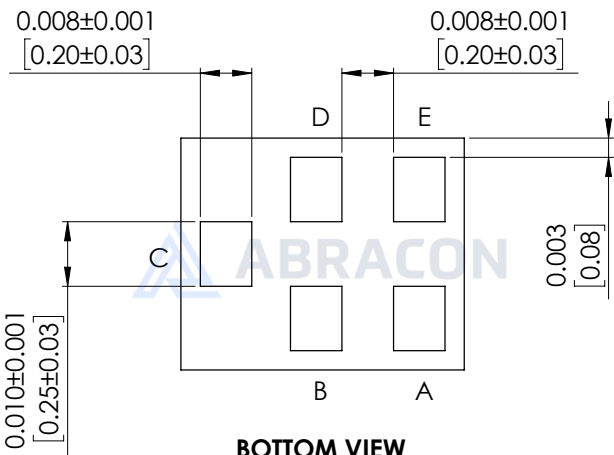


TOP VIEW

Unit: inches[mm]



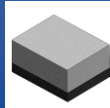
FRONT VIEW



BOTTOM VIEW

Unit: inches [mm]

Pin No.	Description
C	Input
A	Output
B, D	Case Ground
E	To be Grounded



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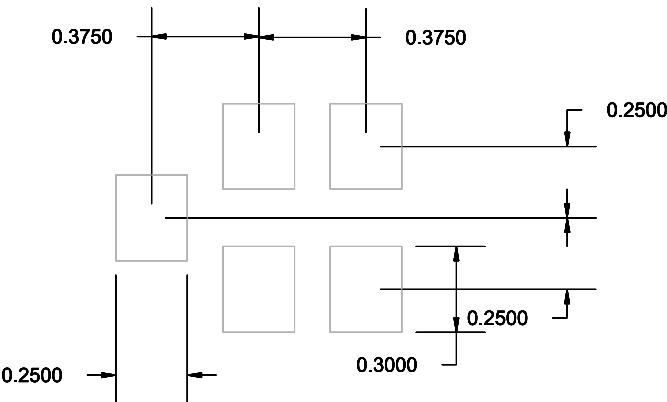


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1.1 x 0.9 x 0.7 mm  
RoHS Compliant  
MSL Level = 1

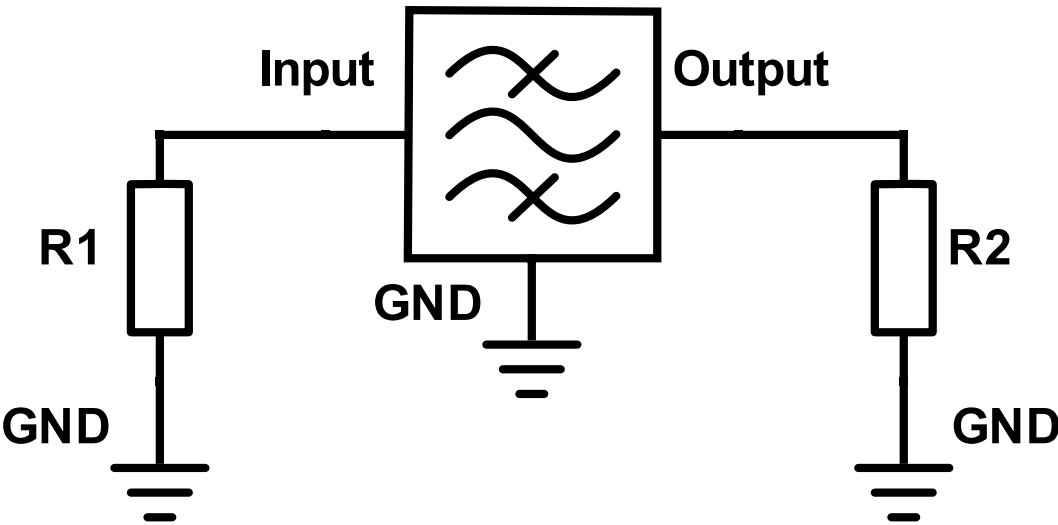
## Recommended Land Pattern



Unit : mm

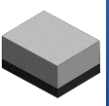
Please note: The line width should be designed to achieve a 50-ohm characteristic impedance, depending on the PCB material and thickness. For technical assistance, please contact [Abracon online support](#) through our online support platform.

## Measurement Circuit



Port	Matching Component
Input (Pin C)	R1: 50 $\Omega$
Output (Pin A)	R2: 50 $\Omega$

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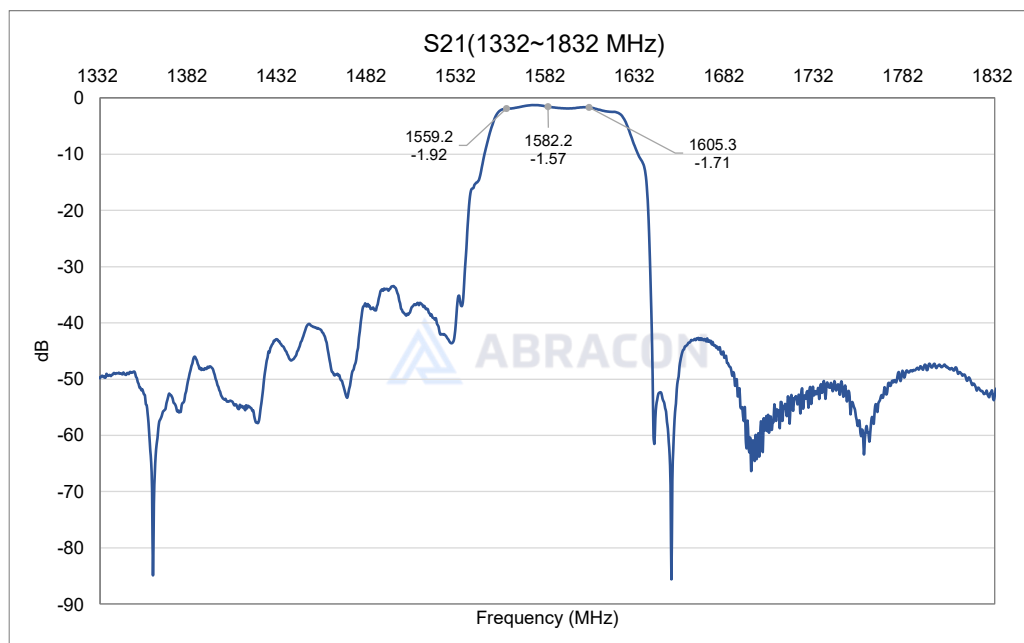
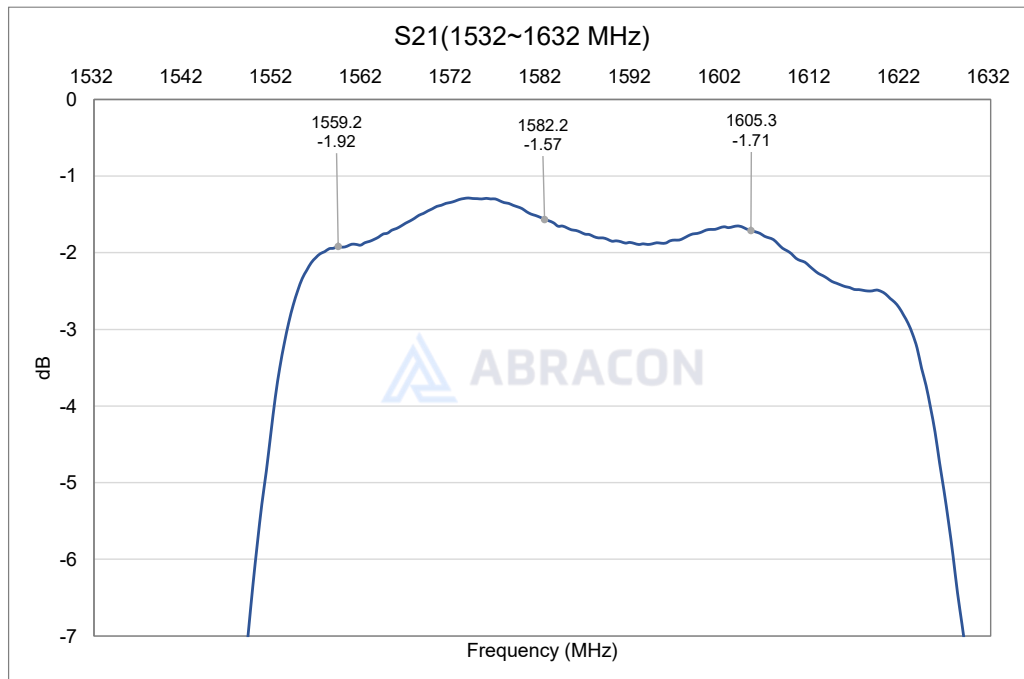
Check Inventory



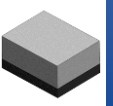
1.1 x 0.9 x 0.7 mm  
**RoHS Compliant**  
MSL Level = 1

## Frequency Characteristics

S21 narrow band



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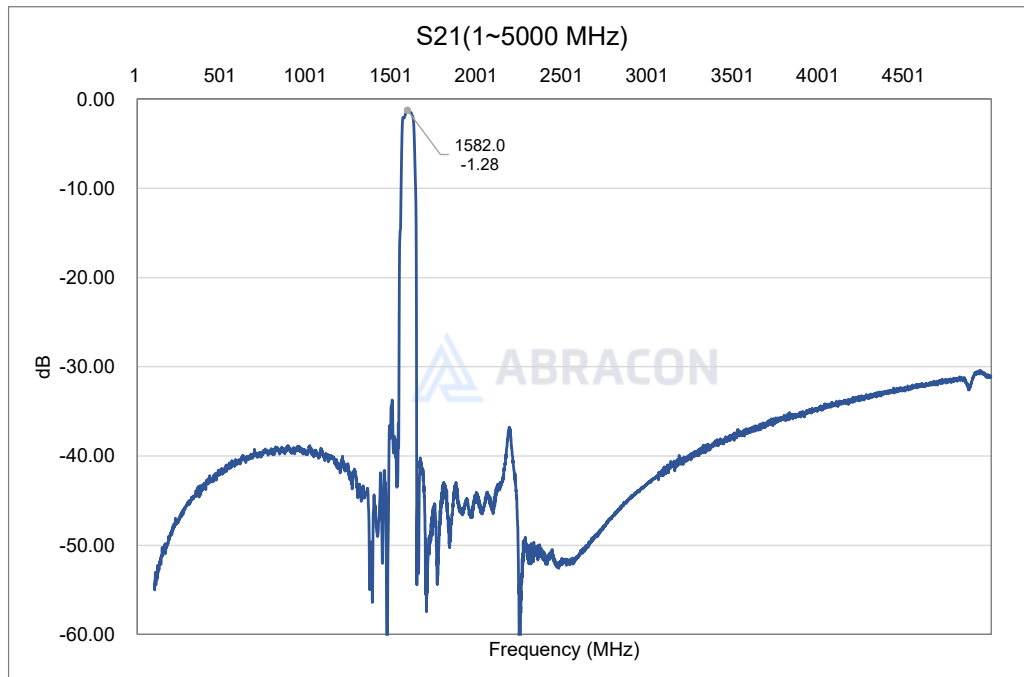


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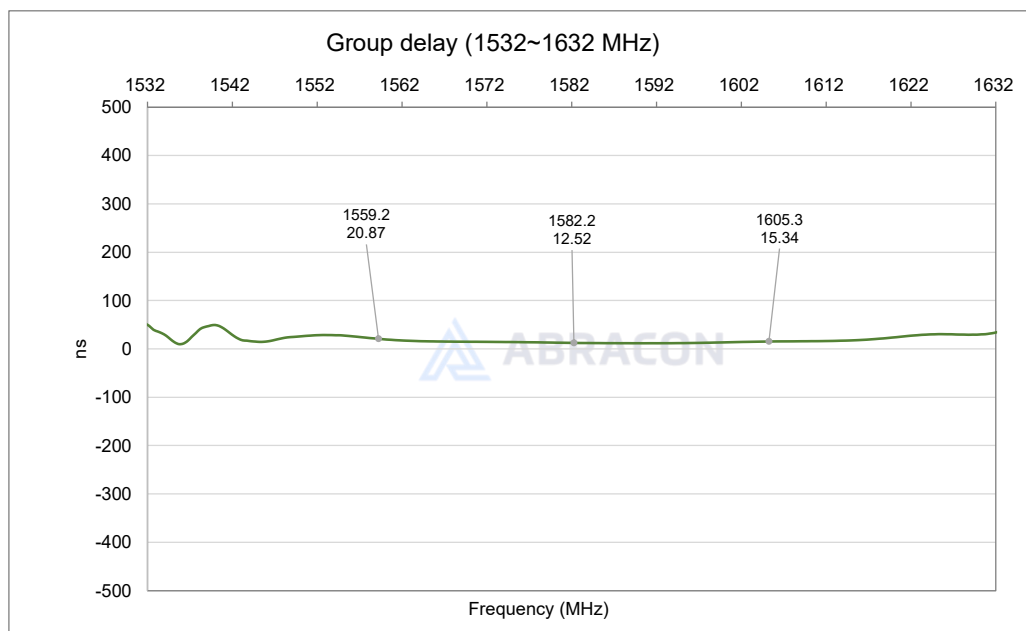


**1.1 x 0.9 x 0.7 mm**  
**RoHS Compliant**  
**MSL Level = 1**

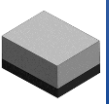
S21 wide band



Group Delay



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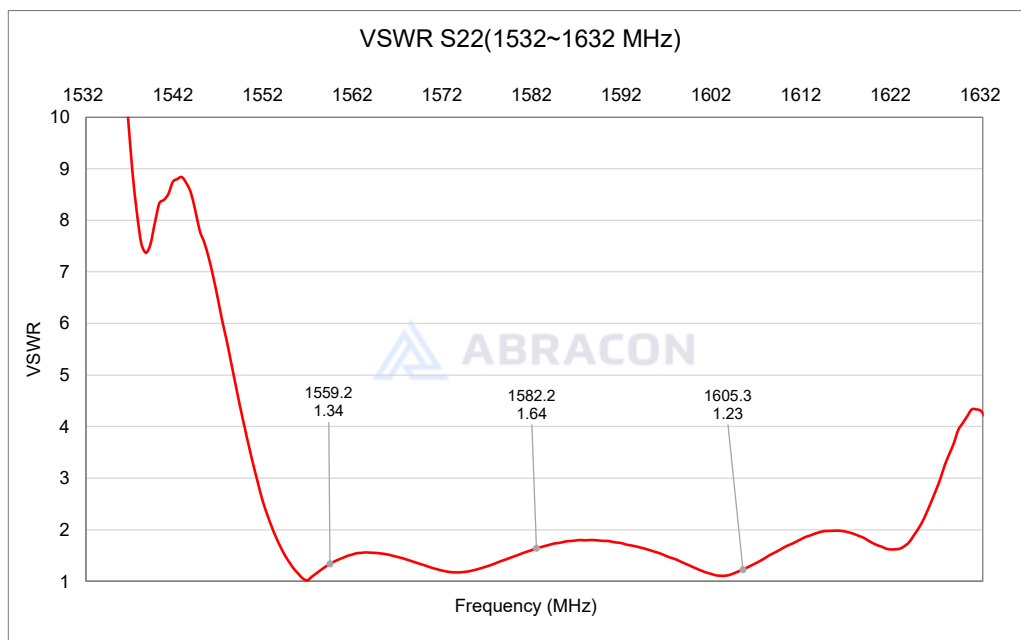
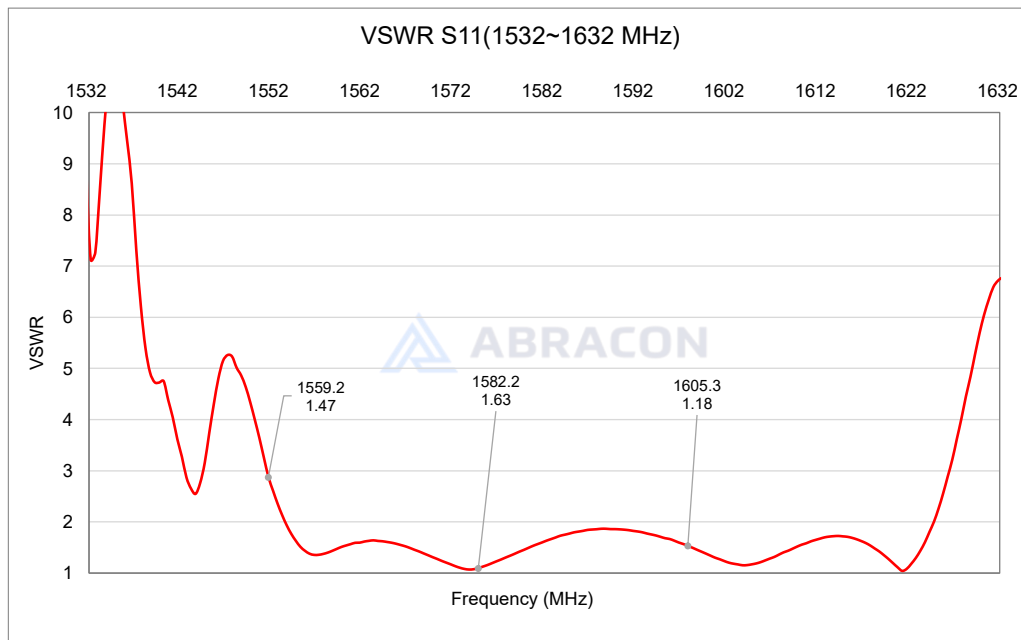


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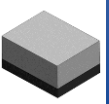
**1.1 x 0.9 x 0.7 mm**  
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VSWR (S11 & S22)





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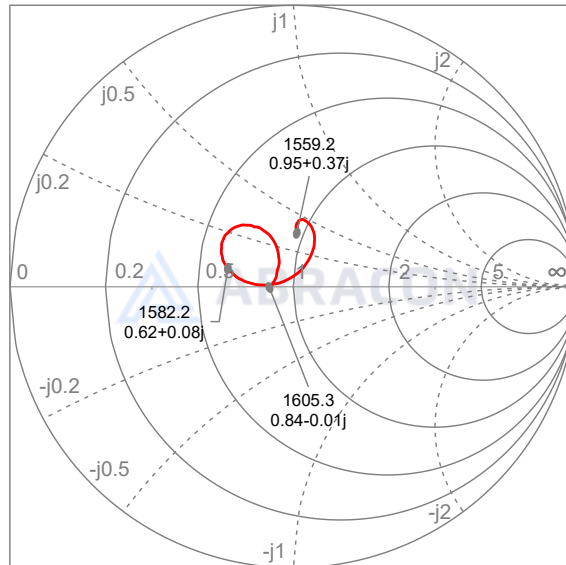
Check Inventory



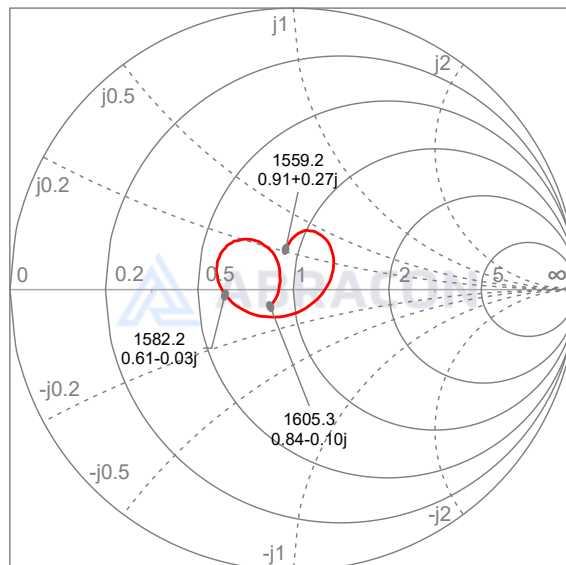
1.1 x 0.9 x 0.7 mm  
**RoHS Compliant**  
MSL Level = 1

Smith Chart (S11 & S22)

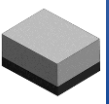
Smith chart S11 (1559~1605MHz)



Smith chart S22 (1559~1605MHz)



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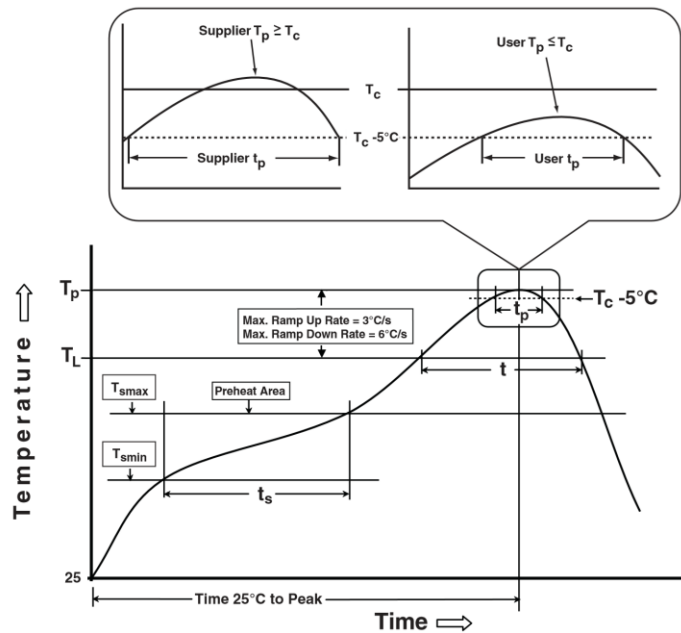


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**1.1 x 0.9 x 0.7 mm**  
**RoHS Compliant**  
**MSL Level = 1**

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



**Table 1**

**SnPb Eutectic Process**  
**Classification Temperatures ( $T_c$ )**

Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ $\geq 350$
<2.5mm	235°C	220°C
$\geq 2.5\text{mm}$	220°C	220°C

**Table 2**

**Pb-Free Process**  
**Classification Temperatures ( $T_c$ )**

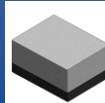
Package Thickness	Volume $\text{mm}^3$ <350	Volume $\text{mm}^3$ 350-2000	Volume $\text{mm}^3$ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum ( $T_{\text{smmin}}$ )	100°C	150°C
Temperature maximum ( $T_{\text{smmax}}$ )	150°C	180°C
Time ( $T_{\text{smmin}}$ to $T_{\text{smmax}}$ ) ( $t_s$ )	60 – 120 sec.	60 – 90 sec.
Average ramp-up rate ( $T_{\text{smmax}}$ 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 $T_{\text{smmax}}$ )	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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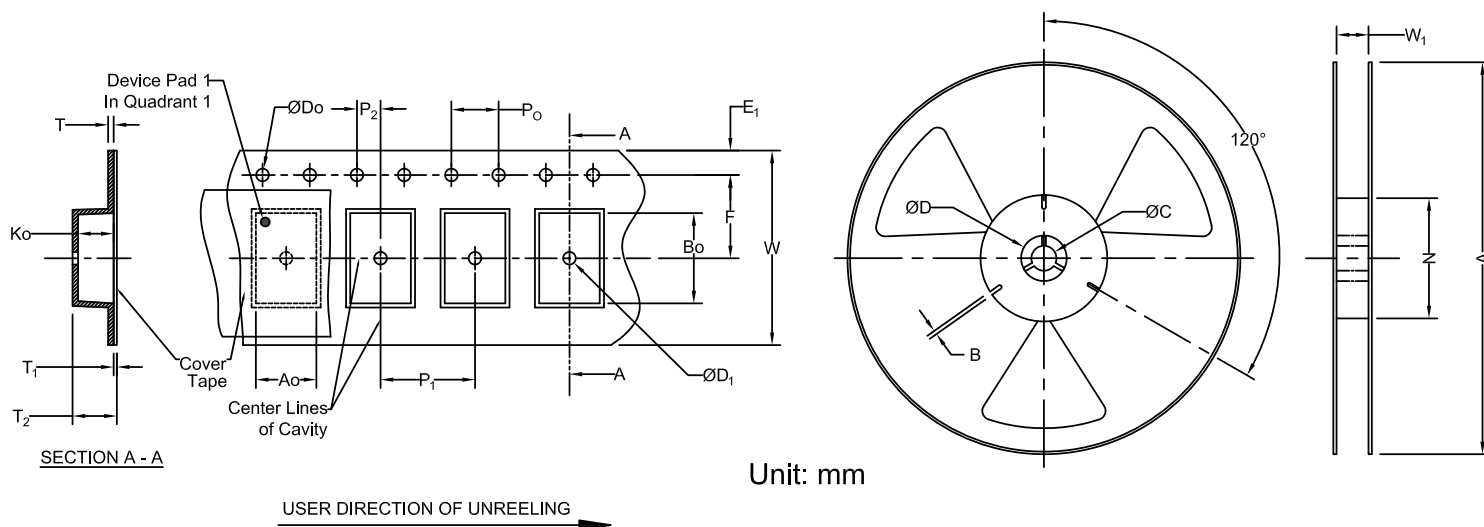


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**MSL Level = 1**

## Packaging

**Tape & Reel (10,000 pcs / reel)**

### 1. Tape & Reel Dimension



**Carrier Tape Specifications (mm)**

Do	D1	E1	P0	P2	T	F	P1	W	A0	B0	K0	Reel Qty
1.50 ± 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	10,000

**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

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