

SMD 1202 MHZ SAW FILTER



AFII-SW-0058

Request Samples



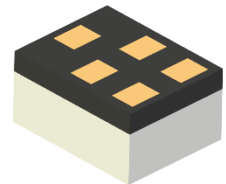
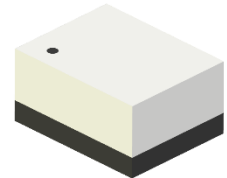
Check Inventory



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

Description

This advanced, ultra-miniature filter is engineered for next-generation, high-precision GNSS, supporting critical L2, G3, L3OC, E5a, E5b, B2a, and B2b bands. Despite its compact 1.4 x 1.1 x 0.7 mm footprint, it delivers exceptional performance with a low 1.8 dB insertion loss and strong out-of-band rejection (>28 dB). This ensures the signal integrity required for centimeter-level accuracy in demanding RTK systems, autonomous vehicles, and precision agriculture equipment, enabling reliable positioning in the most challenging applications. The component is RoHS compliant and rated MSL Level 3.



Features

- Supports GNSS L2/G3/L3OC/E5a/E5b/B2a/B2b Band
- 1.4 x 1.1 x 0.7 mm in Size
- Low Insertion Loss: 1.8 dB
- Out-of-Band Rejection: > 28 dB
- Maximum Input Power: +10 dBm
- [RoHS Compliant](#) | [MSL Level 3](#)

Applications

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

Ordering Information

Part Number	Description
AFII-SW-0058	SMD 1202 MHZ SAW FILTER on Cut Tape
AFII-SW-0058-T	SMD 1202 MHZ SAW FILTER on Tape & Reel
AFII-SW-0058-EVB	SMD 1202 MHZ SAW FILTER Evaluation Board

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

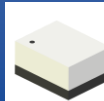


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Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency(f_c)	-	1202	-	MHz	-
VSWR	-	1.5	2.0		1166 ~ 1238MHz
Insertion Loss ⁽¹⁾	-	1.8	2.3	dB	1166 ~ 1238MHz
Amplitude Ripple	-	1.2	2.1		1166 ~ 1238MHz
Group Delay	-	12.8	38.0	ns	1166 ~ 1238MHz
Group Delay Ripple	-	0.19	0.86	ns	1166 ~ 1238MHz
Attenuation (Reference level from 0 dB) Amplitude Ripple ⁽¹⁾	28	34	-	dB	100 ~1106 MHz
	30	38	-		1106 ~1136 MHz
	14	28	-		1268 ~1318 MHz
	25	32	-		1318 ~1800 MHz
	30	40	-		1800 ~2000 MHz
	30	35	-		2400 ~2500 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 +25°C

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

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

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	-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

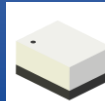


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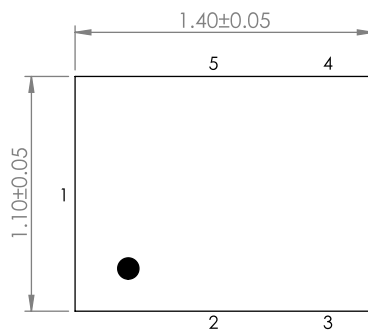


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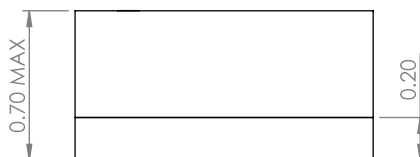


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

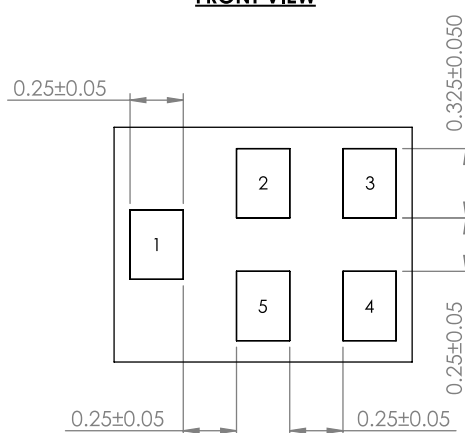
Product Dimensions



TOP VIEW



FRONT VIEW

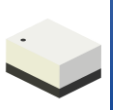


BOTTOM VIEW

Unit : mm

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

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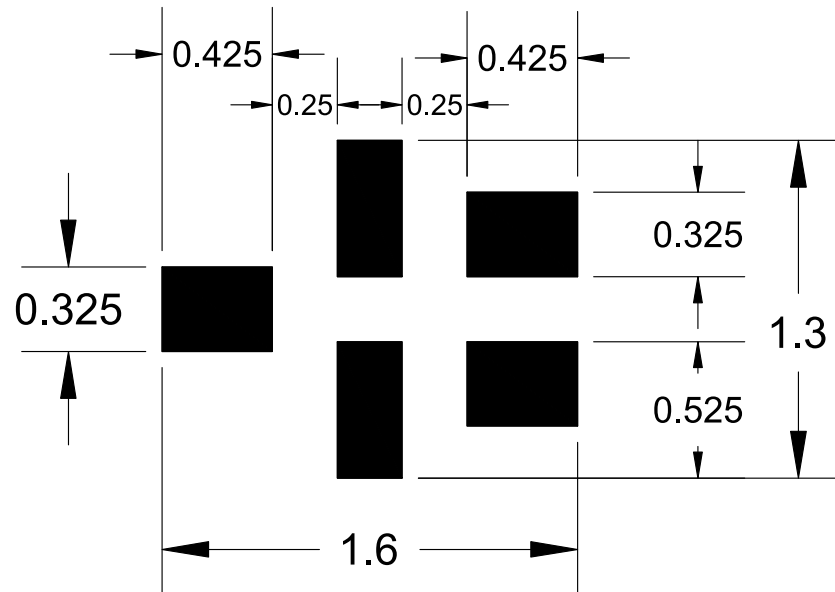


Check Inventory



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

Recommended Land Pattern

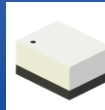


Land Pattern

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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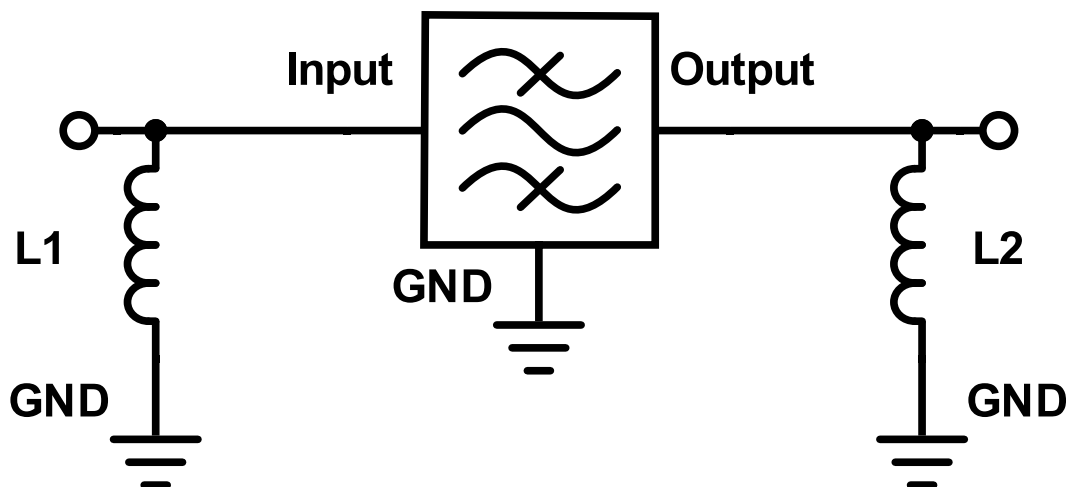


1.4 x 1.1 x 0.7 mm

RoHS Compliant

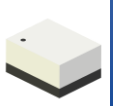
MSL Level = 3

Measurement Circuit



Port	Matching Component
Input (Pin 1)	L1: 8.2 nH
Output (Pin 4)	L2: 8.2 nH
Pin 2, 3, 5	Ground

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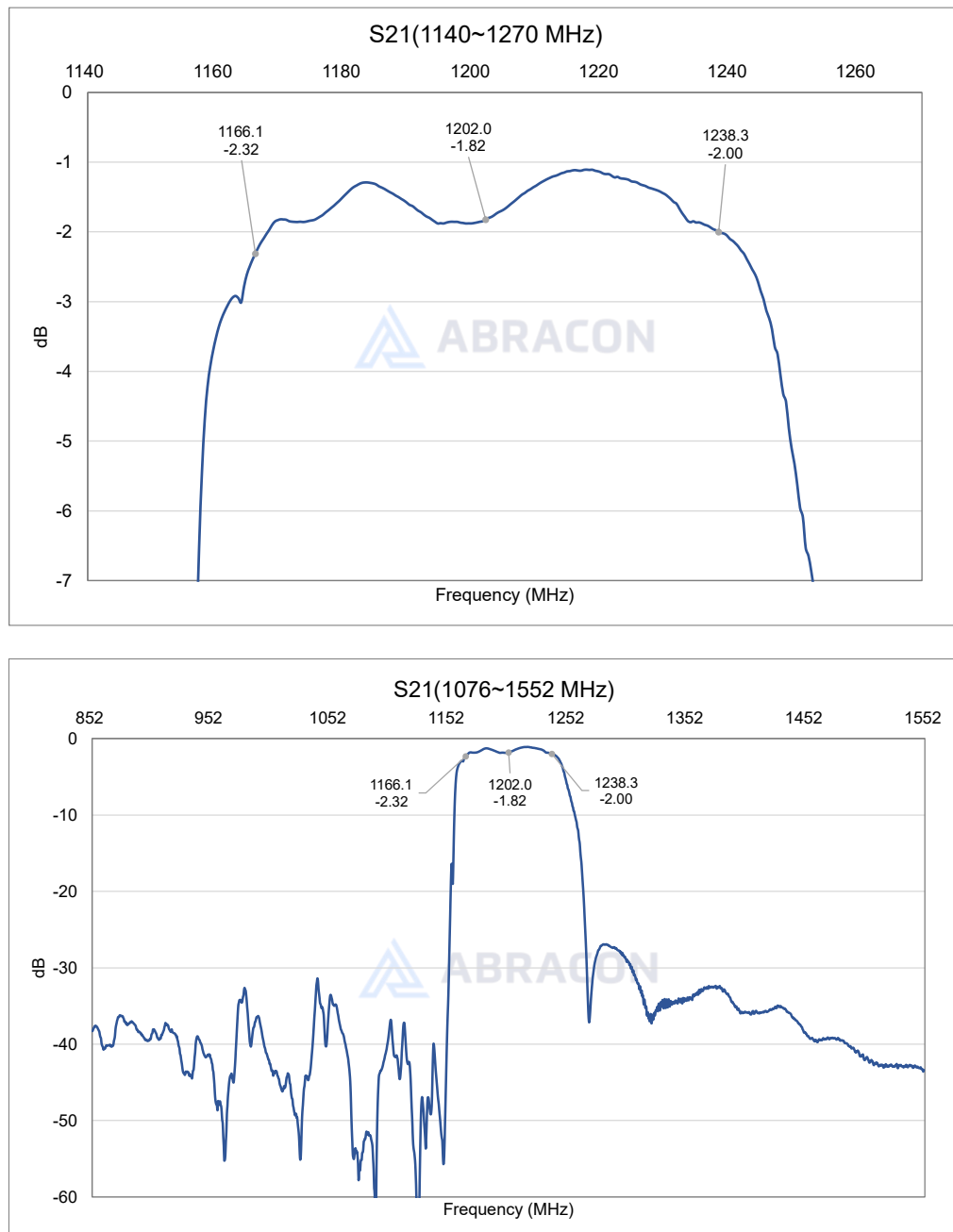
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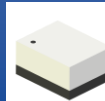
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Frequency Characteristics

S21 narrow band



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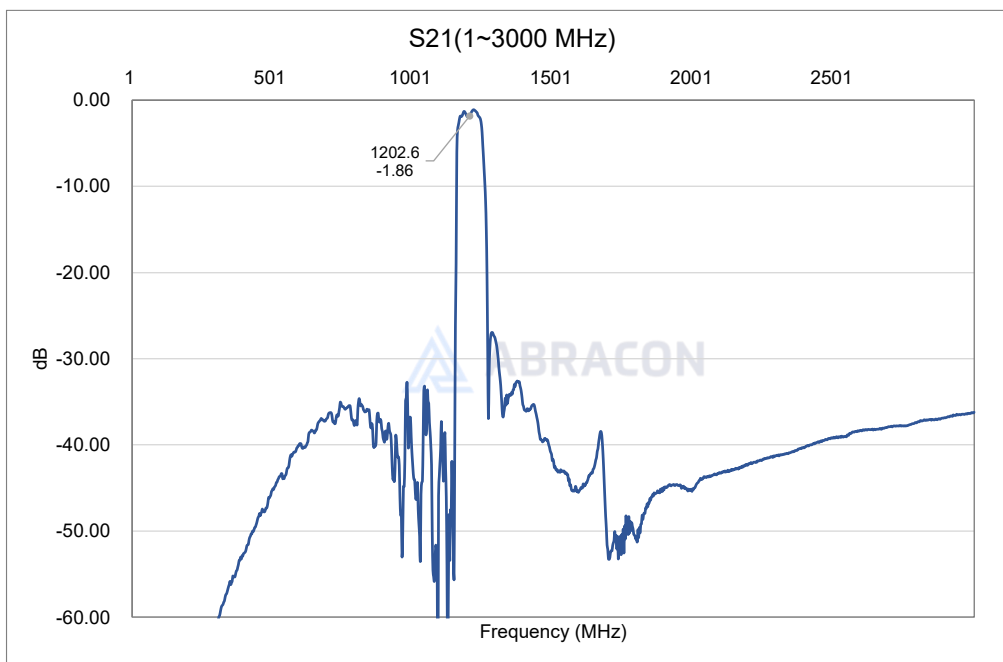


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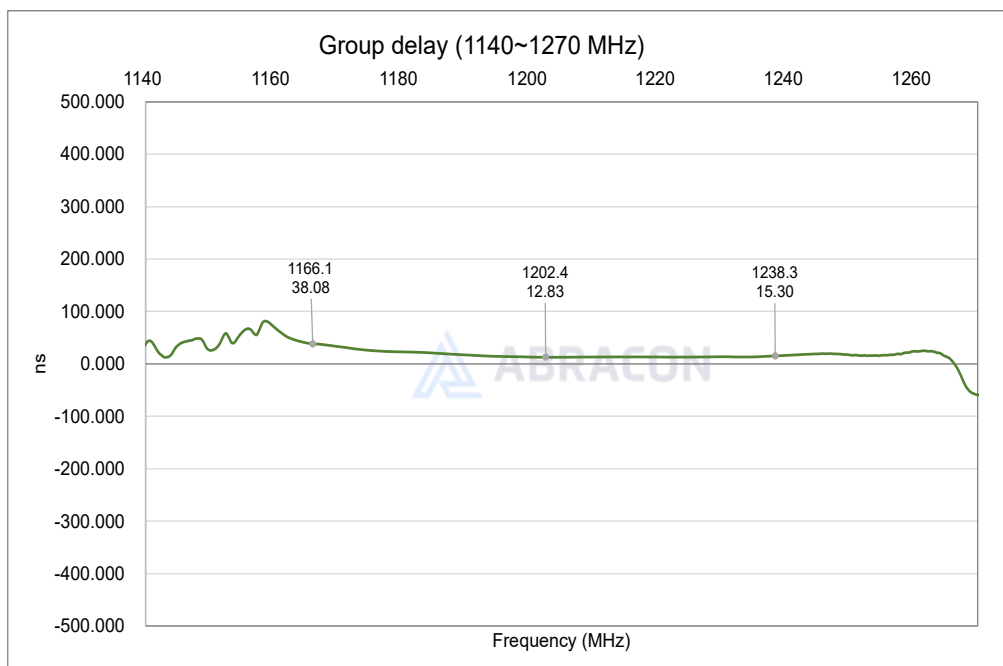


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

S21 Wide Band



Group Delay

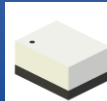


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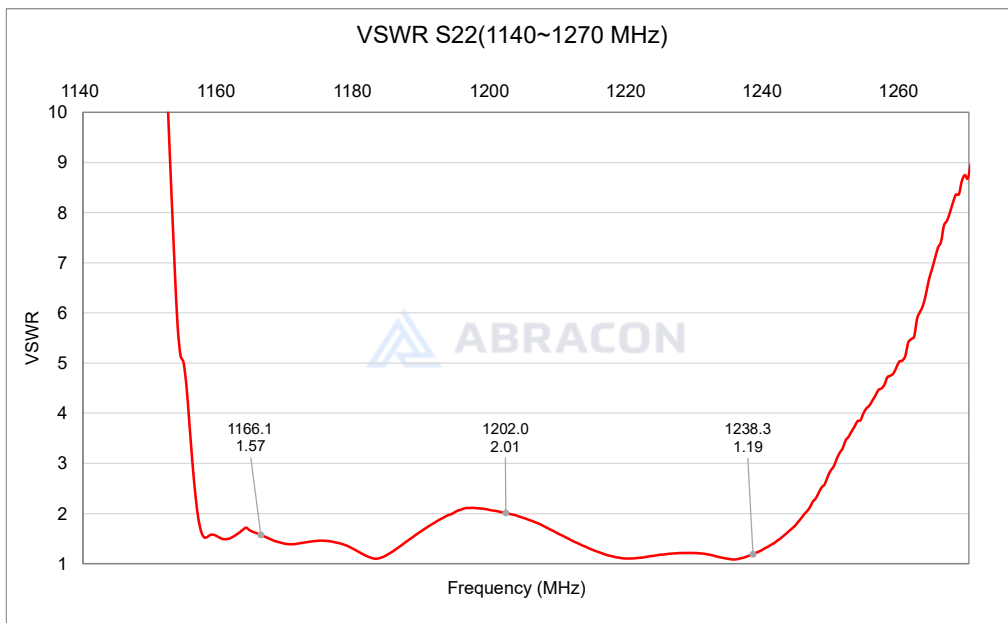
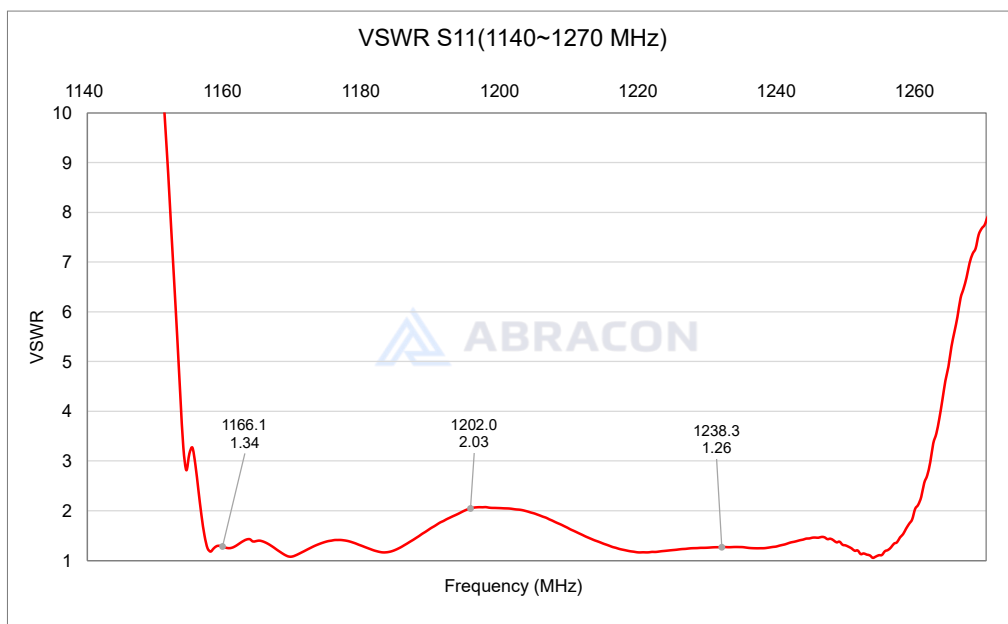


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1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

VSWR (S11 & S22)

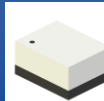


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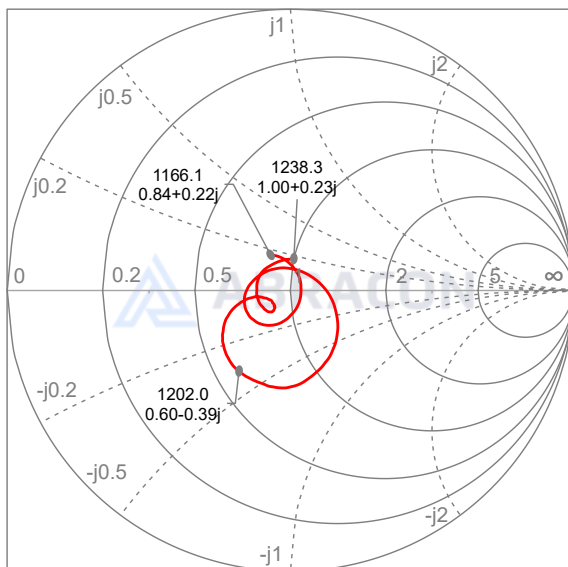
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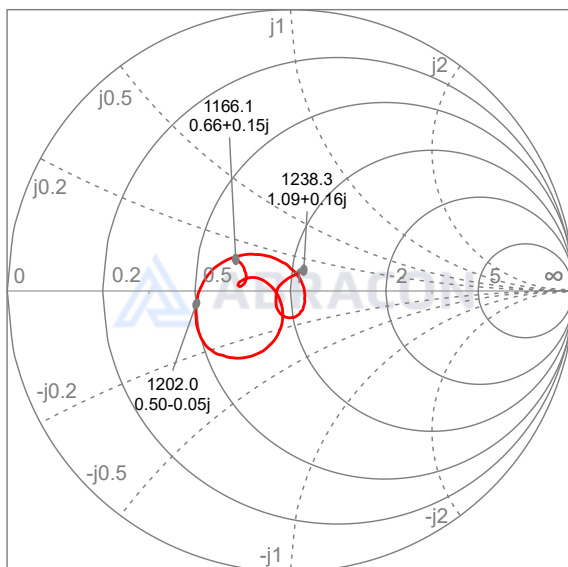
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RoHS Compliant
MSL Level = 3

Smith Chart (S11 & S22)

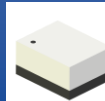
Smith chart S11 (1166~1238MHz)



Smith chart S22 (1166~1238MHz)



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RoHS Compliant
MSL Level = 3

Reflow Profile [JEDEC J-STD-020]

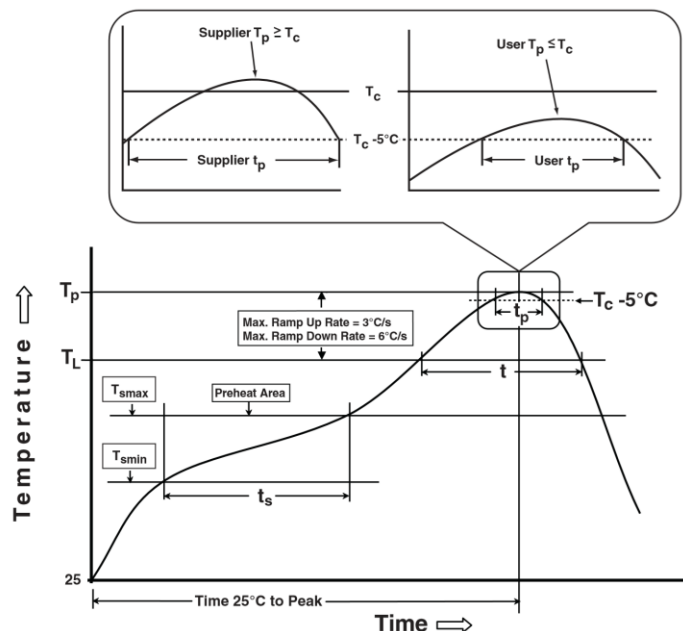


Table 1

SnPb Eutectic Process

Classification Temperatures (Tc)

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 (Tc)

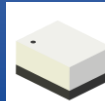
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T _{smmin})	100°C	150°C
Temperature maximum (T _{smmax})	150°C	180°C
Time (T _{smmin} to T _{smmax}) (ts)	60 – 120 sec.	60 – 90 sec.
Average ramp-up rate (T _{smmax} to Tp)	3°C/sec. max	3°C/sec. max
Liquidous temperature (TL)	183°C	220°C
Time at Liquidous (TL)	60 – 150 sec.	50 – 80 sec.
Peak package body temperature (Tp)*	See Table 1	See Table 2
Time (Tp)** within 5°C of the specified classification temperature (Tc)	20 sec.	20 ~ 40 sec.
Ramp-down rate (Tp to T _{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 (Tp) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.

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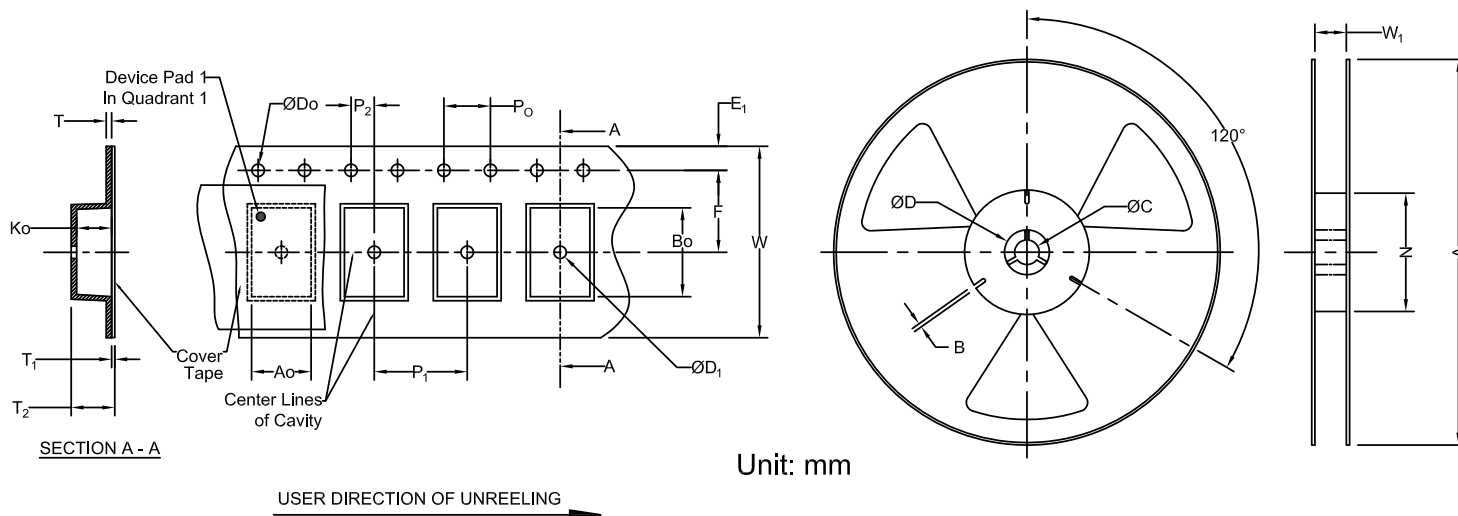
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MSL Level = 3

Packaging

Tape & Reel Dimension



Carrier Tape Specifications (mm)

Do	D1	E1	P0	P2	F	P1	W	A0	B0	K0	Reel Qty
1.55 ± 0.05	0.60 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	3.5 ± 0.05	4.0 ± 0.1	8.0 ± 0.1	1.30 ± 0.05	1.60 ± 0.05	0.77 ± 0.05	5,000

Reel Specifications (mm)

A	W1	N	C
178.0 ± 1.0	8.48 ± 0.15	57.12 ± 0.15	13.12 ± 0.15

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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