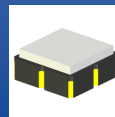


SMD 1584MHz SAW Filter



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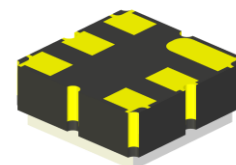
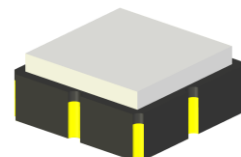
Check Inventory



3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

Description

Engineered for resilience, this multi-constellation GNSS filter supports GPS, GLONASS, BEIDOU, and GALILEO bands within a compact 3.0 x 3.0 x 1.25 mm package. It delivers robust performance with high +20dBm power handling and stable operation across an extreme -40°C to +125°C temperature range. This combination of durability and effective out-of-band rejection (>23 dB) makes it ideal for harsh-environment applications in automotive telematics, industrial asset tracking, and autonomous vehicles, ensuring reliable global positioning where it matters most. The component is RoHS compliant and rated MSL Level 2.



Features

- Supports GPS/GLONASS/BEIDOU/GALILEO Band
- just 3.0 x 3.0 x 1.25 mm in Size
- Low Insertion Loss: 2.0 dB
- Out-of-Band Rejection: > 23 dB
- 50 Ohms Single-Ended Input & Output
- Maximum Input Power: +20dBm
- Stable Performance Across -40°C ~ +125°C
- [RoHS Compliant](#) | [MSL Level 2](#)

Applications

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

Ordering Information

Part Number	Description
AFII-SW-0057	SMD 1584MHz SAW Filter on Cut Tape
AFII-SW-0057-T	SMD 1584MHz SAW Filter on Tape & Reel
AFII-SW-0057-EVB	SMD 1584MHz SAW Filter Evaluation Board

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

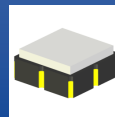


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3.0 x 3.0 x 1.25 mm

RoHS Compliant

MSL Level = 2

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1584	-	MHz	-
VSWR	-	1.7	2.0	-	1559.00 - 1609.00 MHz
Insertion Loss ⁽¹⁾	-	2.0	2.5	dB	1559.00 - 1609.00 MHz
Amplitude Ripple ⁽¹⁾	-	0.9	2.0	dB _{p-p}	1559.00 - 1609.00 MHz
Group Delay ⁽¹⁾	-	15	40	ns	1559.00 - 1609.00 MHz
Group Delay Ripple ⁽¹⁾	-	0.23	1.86	ns	1559.00 - 1609.00 MHz
Attenuation ⁽²⁾ (Reference level from 0 dB)	20.0	23.0	-	dB	DC - 1000.00MHz
	15.0	25.0	-		1539.00MHz
	15.0	25.0	-		1629.00MHz
	20.0	25.0	-		2000.00 - 3000.00MHz
Source Impedance ⁽³⁾ (single ended)	-	50	-	Ω	
Load Impedance ⁽³⁾ (single ended)	-	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).

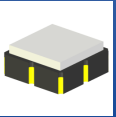
Mechanical Specification

Parameters	Specifications
Dimension	3.0 x 3.0 x 1.25 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40°C ~ +125°C
Storage Temperature Range	-40°C ~ +125°C
ESD (HBM)	>100 V
ESD (CDM)	>100 V
MSL level	2
RoHS Compliant	Yes

SMD 1584MHz SAW Filter



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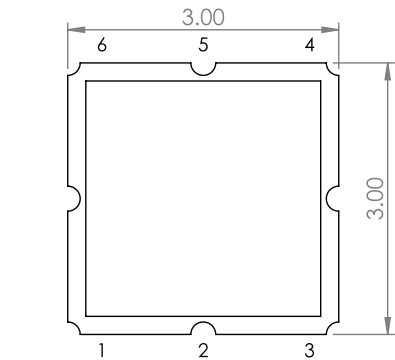


Check Inventory

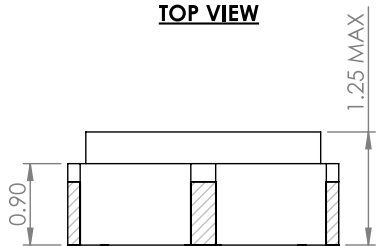


3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

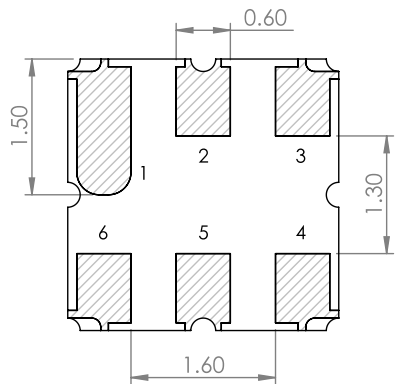
Product Dimensions



TOP VIEW



FRONT VIEW

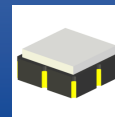


BOTTOM VIEW

Unit : mm

Pin No.	Description
2	Input
5	Output
1,3,4,6	Ground

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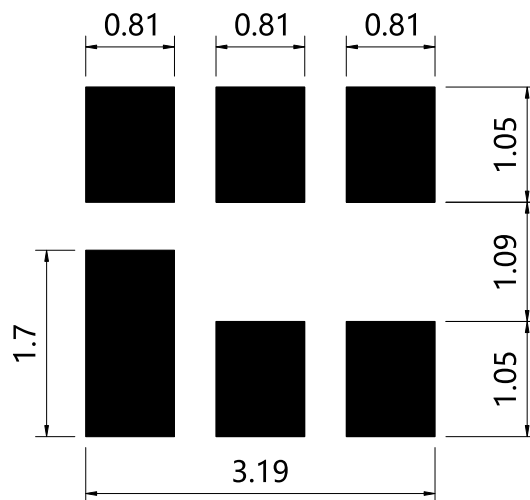


3.0 x 3.0 x 1.25 mm

RoHS Compliant

MSL Level = 2

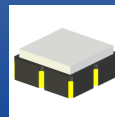
Recommended Land Pattern



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.

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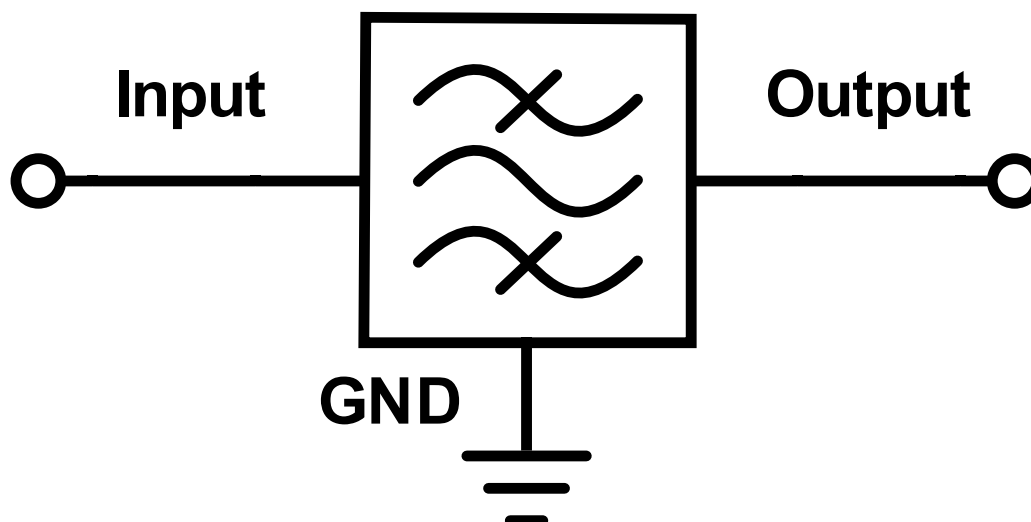


3.0 x 3.0 x 1.25 mm

RoHS Compliant

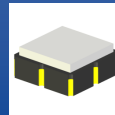
MSL Level = 2

Measurement Circuit



Pin No.	Description
2	Input Impedance: 50 Ω
5	Output Impedance: 50 Ω
1, 3, 4, 6	Ground

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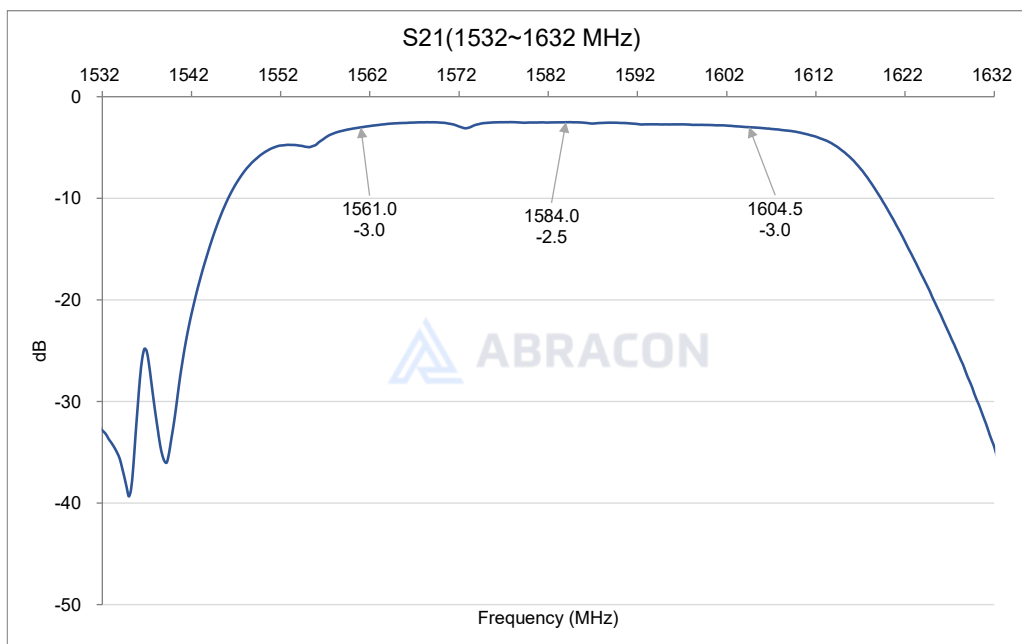
3.0 x 3.0 x 1.25 mm

RoHS Compliant

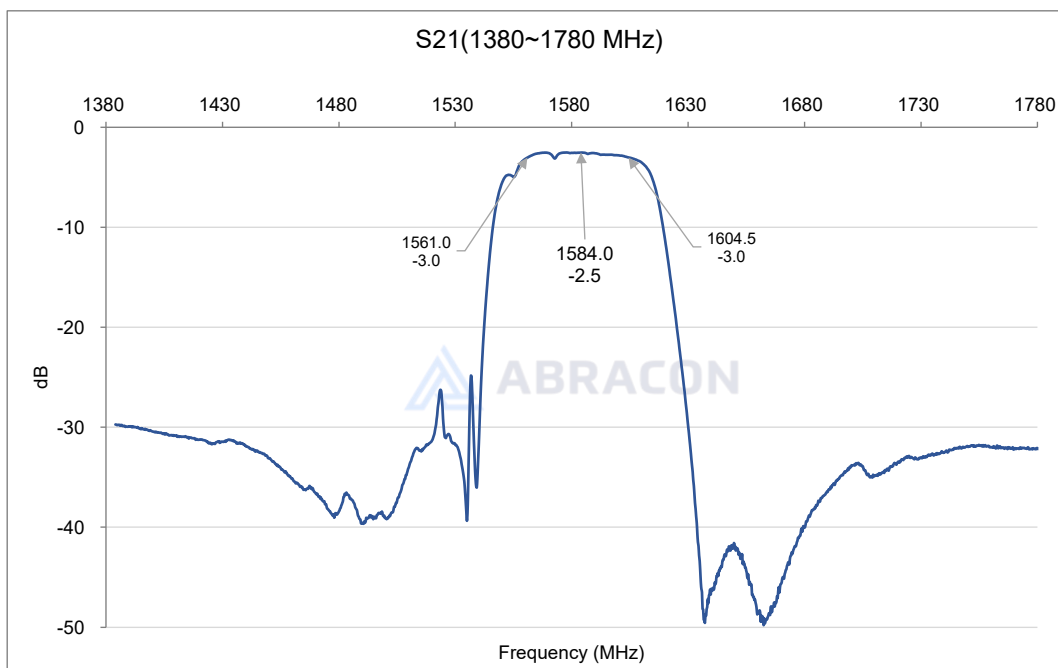
MSL Level = 2

Frequency Characteristics

S21 narrow band



S21 wide band

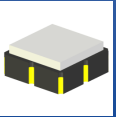


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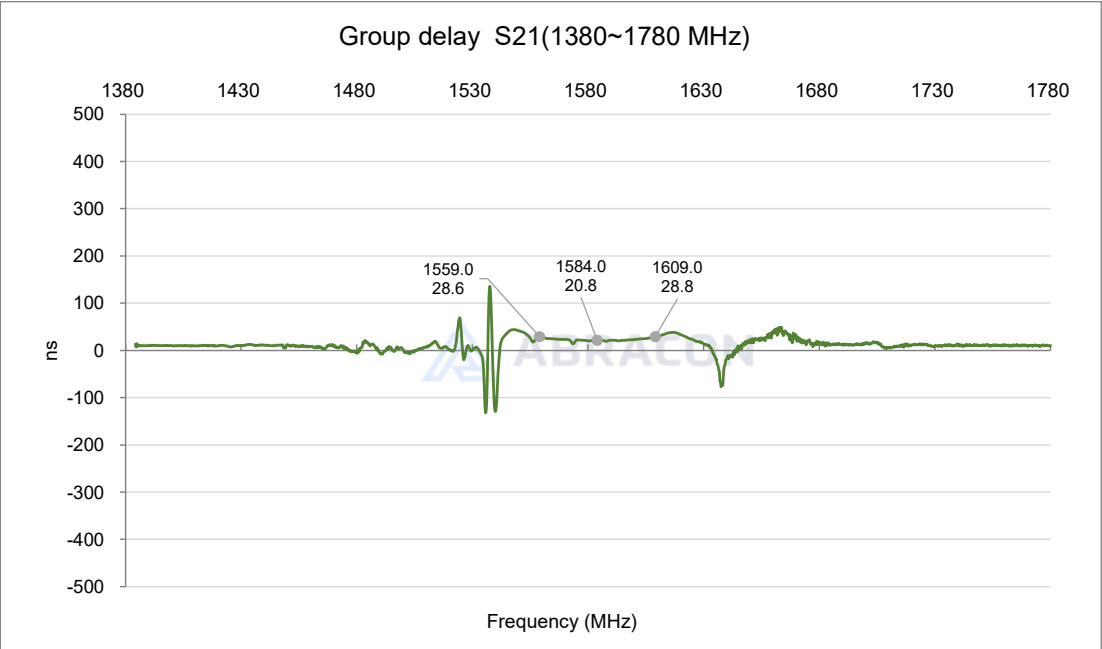


Check Inventory

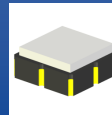


3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

Group Delay



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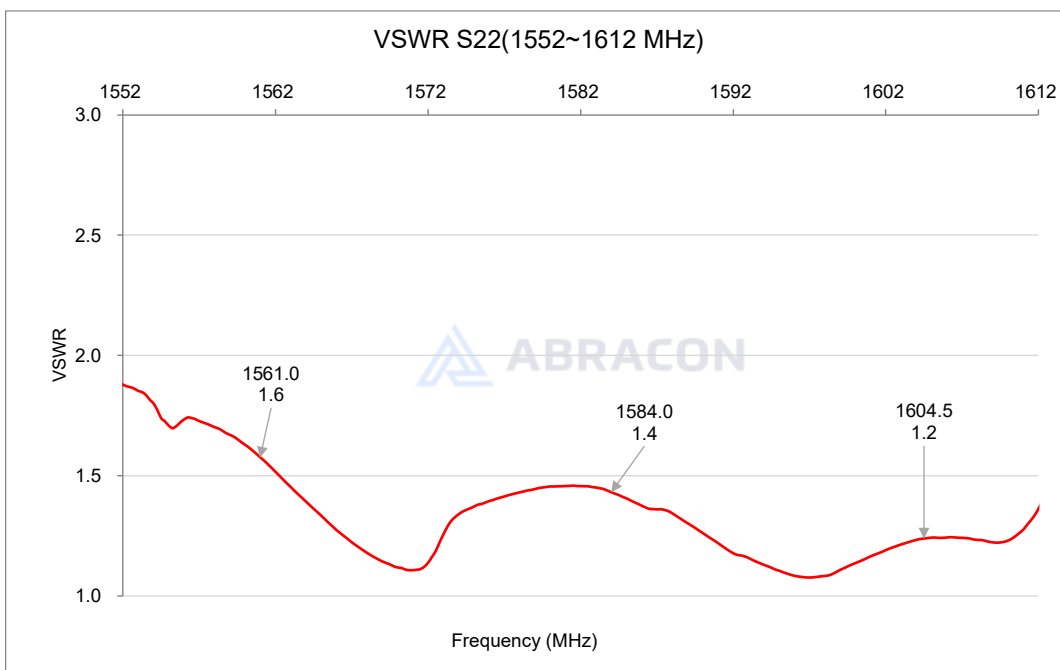
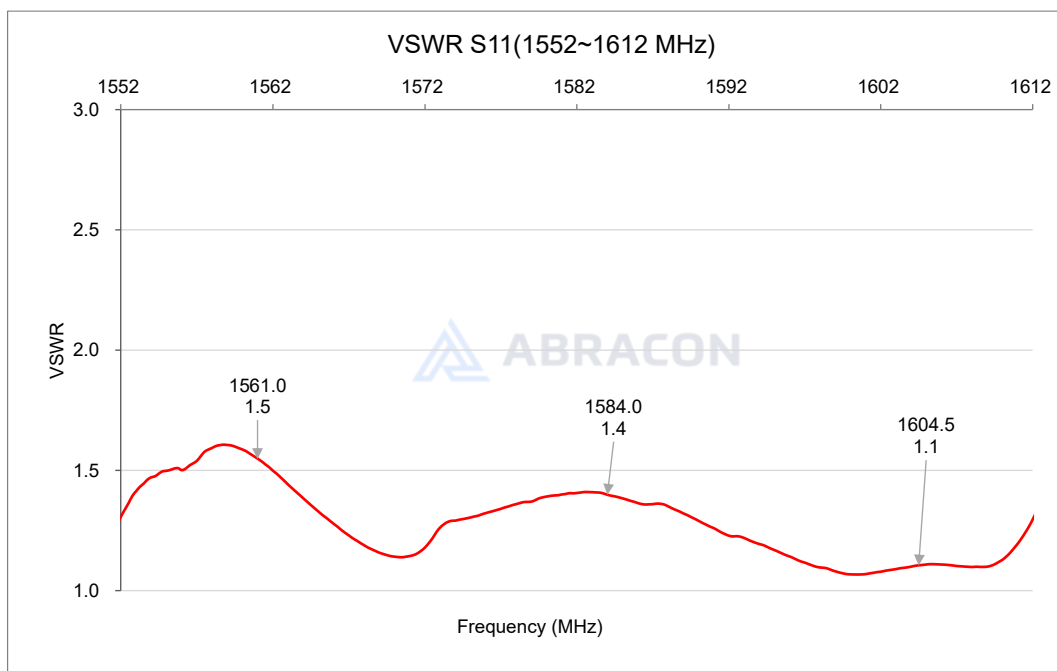


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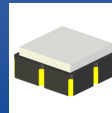


3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

VSWR (S11 & S22)



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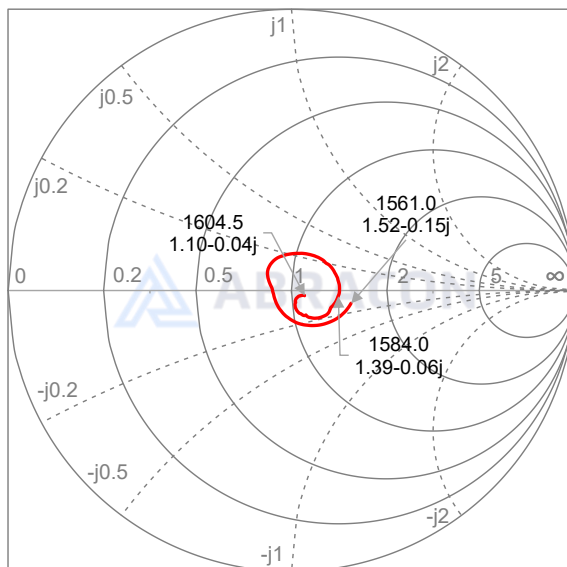
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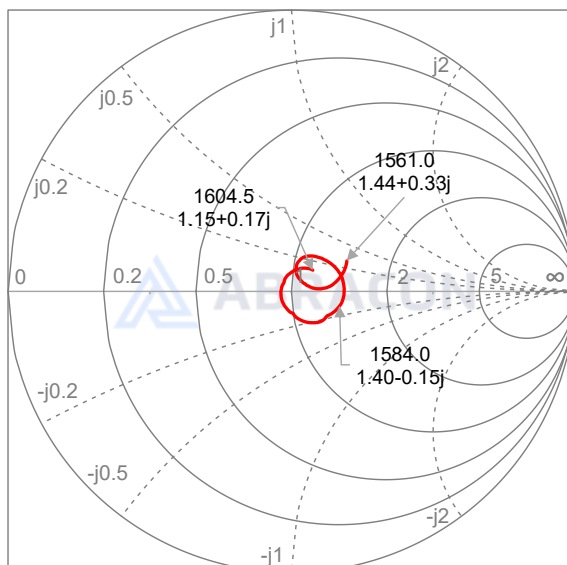
3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

Smith Chart (S11 & S22)

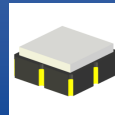
Smith chart S11 (1561~1604MHz)



Smith chart S22 (1561~1604MHz)



SMD 1584MHz SAW Filter



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3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

Reflow Profile [JEDEC J-STD-020]

Solder Paste: Ag3.0/Cu0.5/Sn

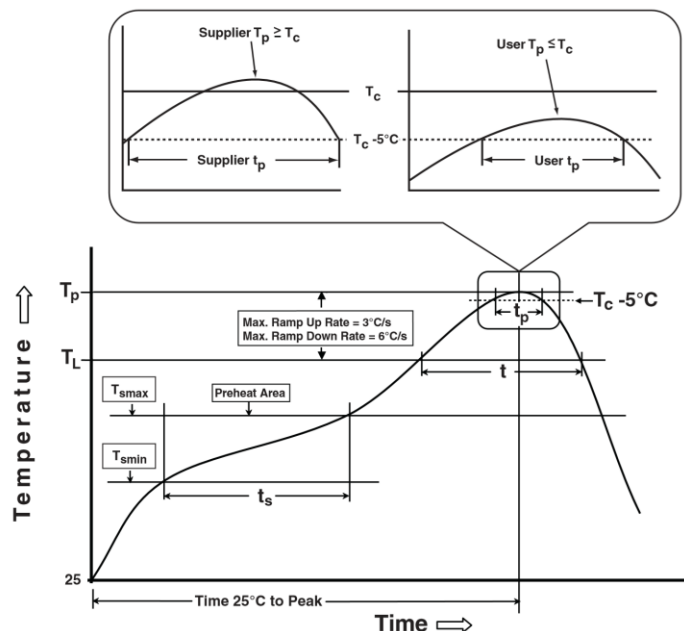


Table 1

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)

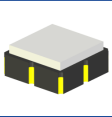
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	240°C	240°C	240°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T _{Amin})	100°C	150°C
Temperature maximum (T _{smax})	150°C	200°C
Time (T _{Amin} 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.	5 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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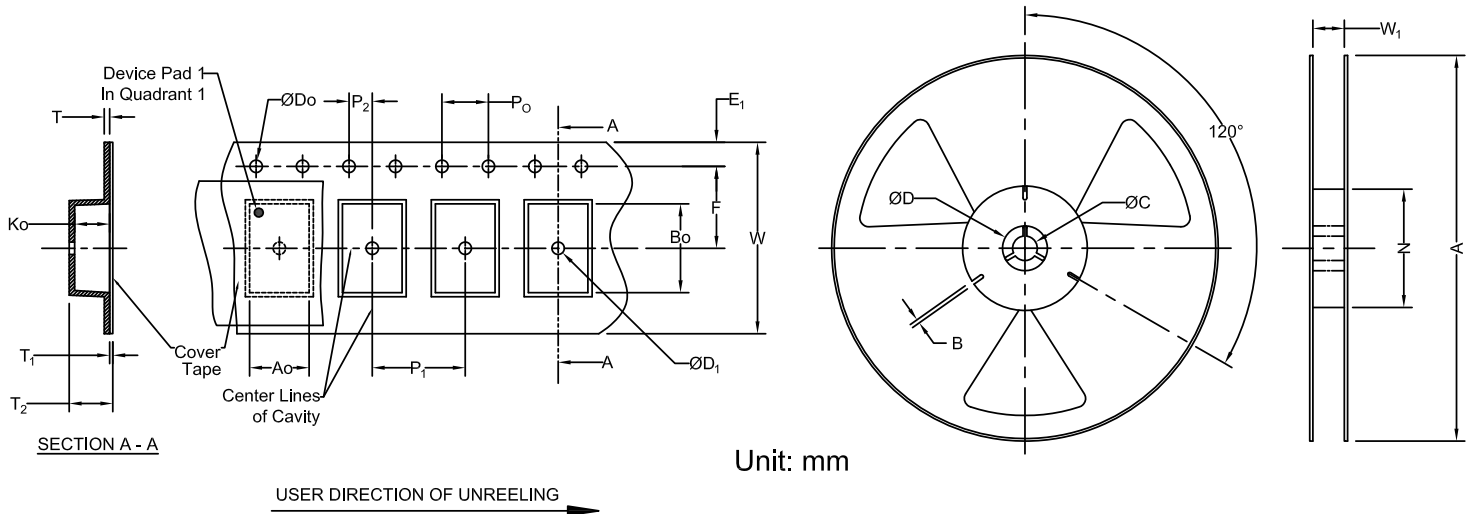
Check Inventory



3.0 x 3.0 x 1.25 mm
RoHS Compliant
MSL Level = 2

Packaging

Tape & Reel Dimension



Unit: mm

Carrier Tape Specifications (mm)

Do	T ₂	E ₁	P ₀	P ₂	T	F	P ₁	W	A ₀	B ₀	Reel Qty
1.50 ± 0.1	1.60 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.10	0.3 ± 0.05	5.5 ± 0.10	4.0 ± 0.1	12.0 ± 0.10	3.2 ± 0.05	3.2 ± 0.05	1,000

Reel Specifications (mm)

A	W ₁	N	C	B
178.0	12.4 ± 0.1	60.00	13.00 ± 0.50	2.0 ± 0.50

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