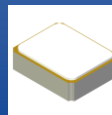


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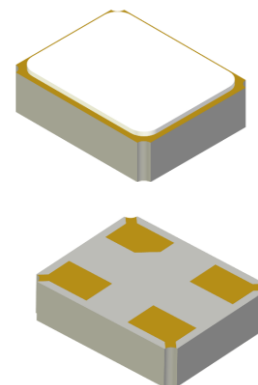
Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Description

Engineered for robust performance in high-precision applications, this GNSS L2 band filter delivers exceptional resilience with a high 20 dBm maximum input power. While housed in a compact 2.0 x 1.6 x 0.6 mm package, it is built to withstand demanding RF environments. This combination of power handling and effective out-of-band rejection (>20 dB) makes it an ideal choice for critical positioning in RTK systems, autonomous vehicles, and industrial telematics, where signal integrity and durability are paramount. The component is RoHS compliant and rated MSL Level 3.



Features

- Supports GNSS L2 Band
- 2.0 x 1.6 x 0.6 mm in Size
- Insertion Loss: 2.6 dB
- Out-of-Band Rejection: > 20 dB
- Maximum Input Power: 20 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
AFS20A20-1227.60	SMD 1227.6 MHZ SAW FILTER on Cut Tape
AFS20A20-1227.60-T3	SMD 1227.6 MHZ SAW FILTER on Tape & Reel
AFS20A20-1227.60-EVB	SMD 1227.6 MHZ SAW FILTER Evaluation Board

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

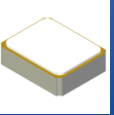


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2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency(f_c)	-	1227.6	-	MHz	-
VSWR	-	1.3	1.7		1217.6 ~ 1237.6MHz
Insertion Loss ⁽¹⁾	-	2.6	3.0	dB	1217.6 ~ 1237.6MHz
Amplitude Ripple ⁽¹⁾	-	0.8	2.0		1217.6 ~ 1237.6MHz
Group Delay ⁽¹⁾	-	12	26	ns	1217.6 ~ 1237.6MHz
Group Delay Ripple ⁽¹⁾	-	23	70	ns	1217.6 ~ 1237.6MHz
Attenuation ⁽²⁾ (Reference level from 0 dB)	15	20	-	dB	300 ~1152 MHz
	15	20	-		1302 ~1900 MHz
	15	21	-		1900 ~3000 MHz
Source Impedance ⁽³⁾ (single ended)	-	50	-	Ω	-
Load Impedance ⁽³⁾ (single ended)	-	50	-	Ω	-
Input Power Level	-	-	20	dBm	-
DC Voltage (V)	-	-	3	V	-

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
Filter Dimension	2.0 x 1.6 x 0.6 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-55°C ~ +105°C
Storage Temperature Range	-55°C ~ +105°C
MSL level	3
RoHS Compliant	Yes

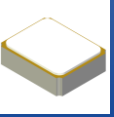


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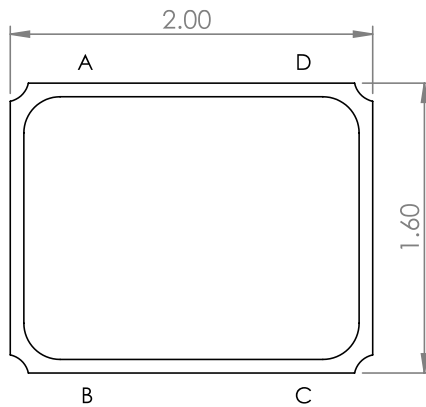


Check Inventory



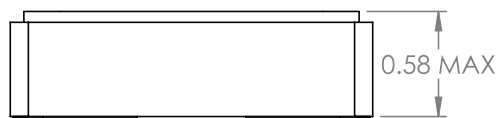
2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Product Dimensions

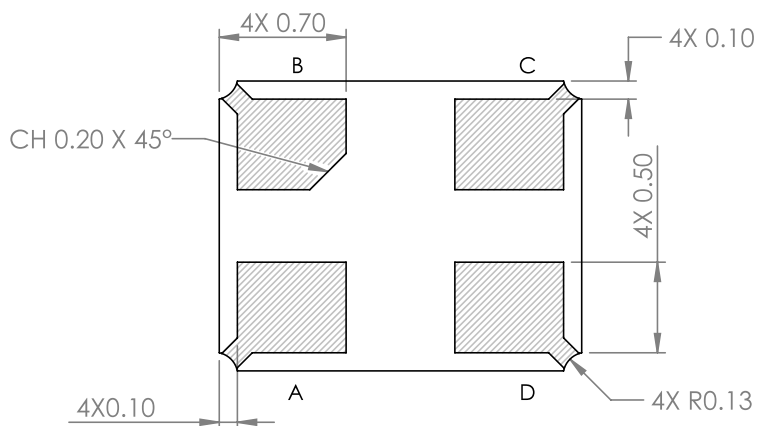


TOP VIEW

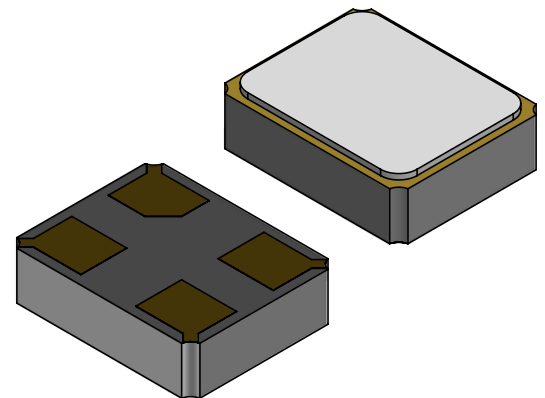
PIN #	FUNCTION
B	INPUT
D	OUTPUT
A,C	GROUND



FRONT VIEW



BOTTOM VIEW



Unit : mm

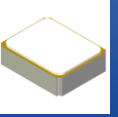


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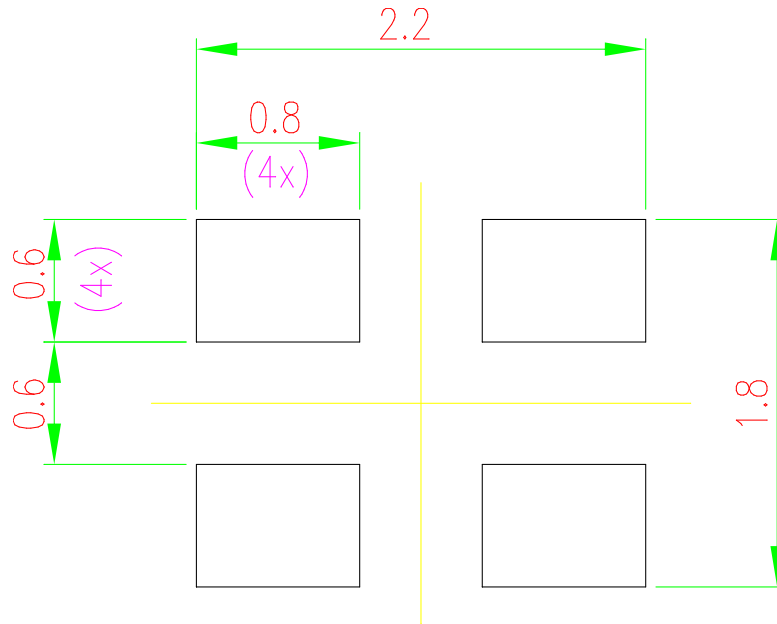


Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

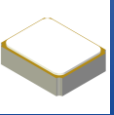
Recommended Land Pattern



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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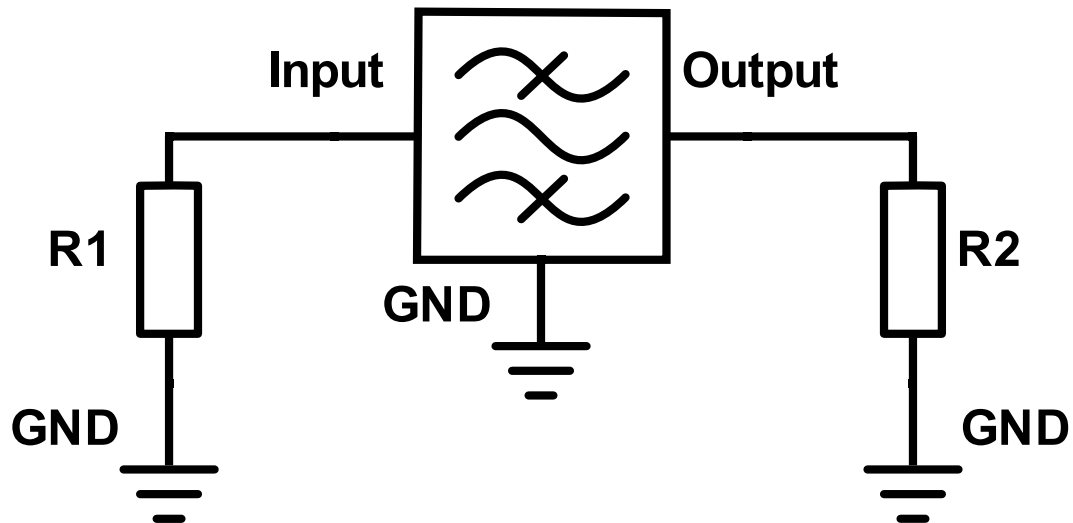


2.0 x 1.6 x 0.6 mm

RoHS Compliant

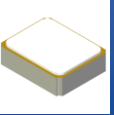
MSL Level = 3

Measurement Circuit



Port	Matching Component
Input (Pin B)	R1: 50 Ω
Output (Pin D)	R2: 50 Ω

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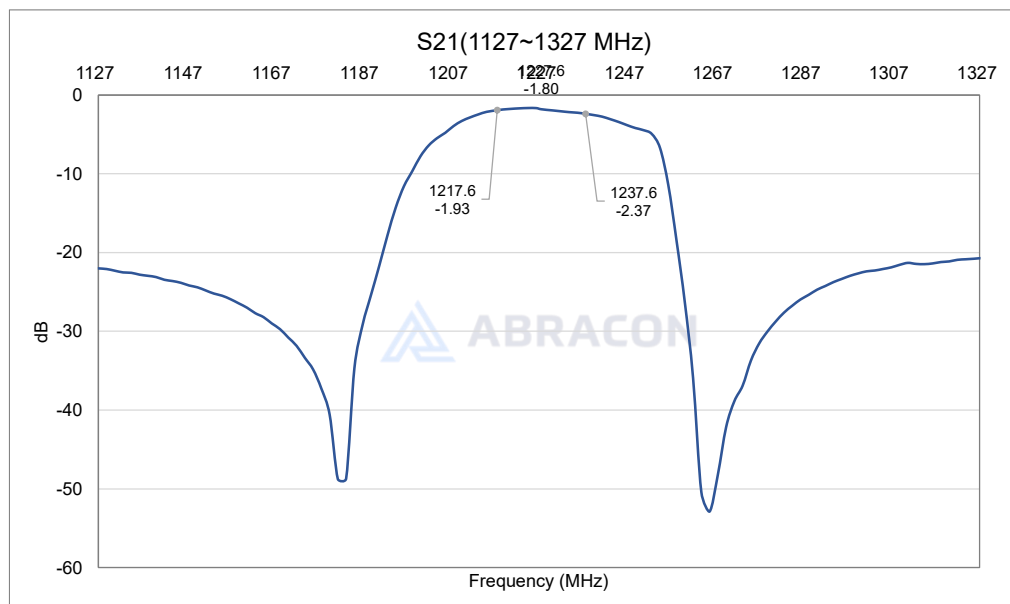
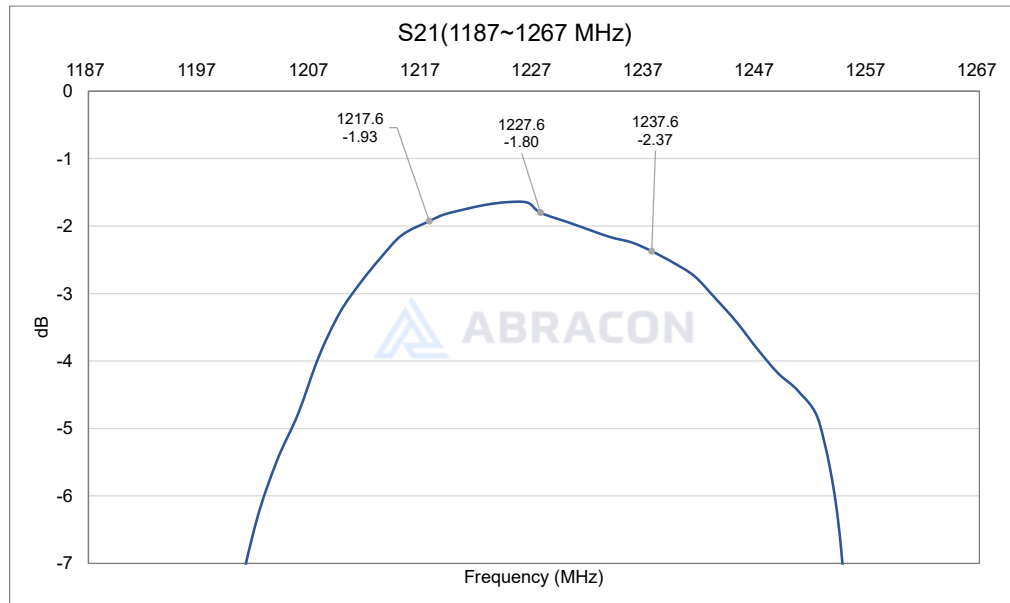
Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Frequency Characteristics

S21 narrow band

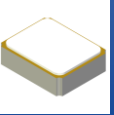


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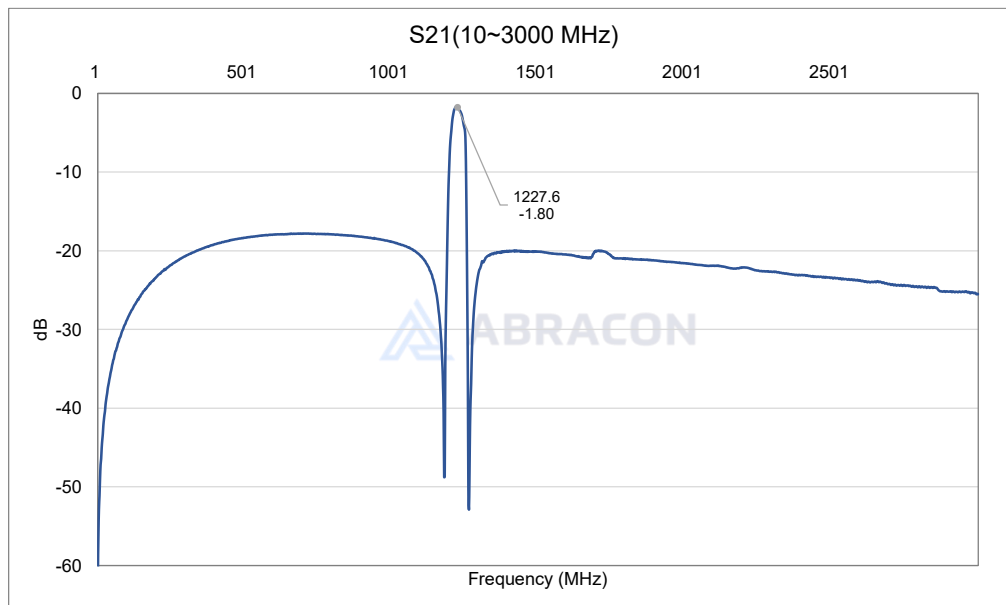


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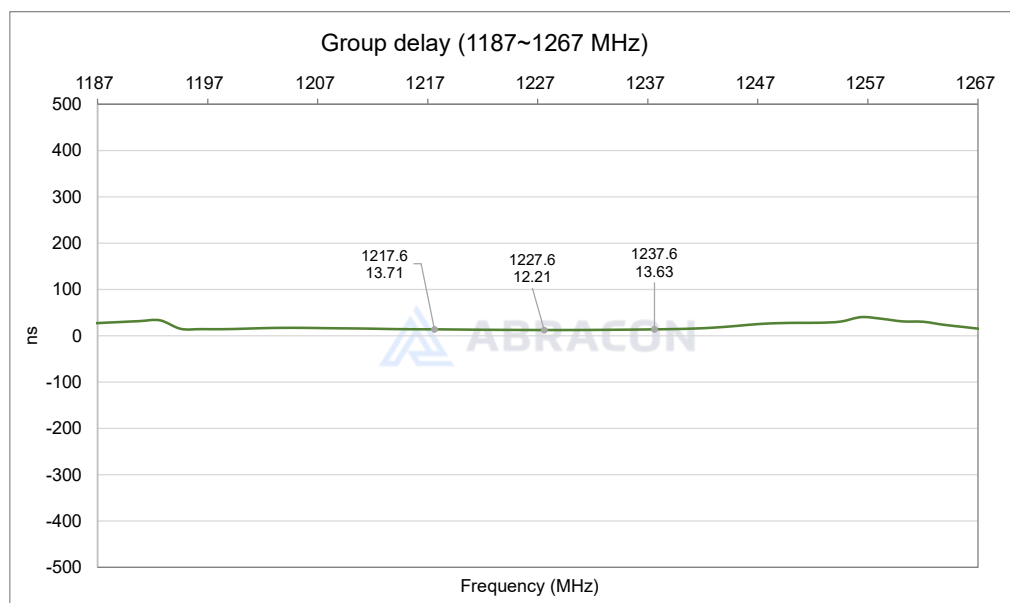


2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

S21 Wide Band



Group Delay

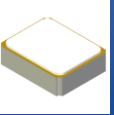


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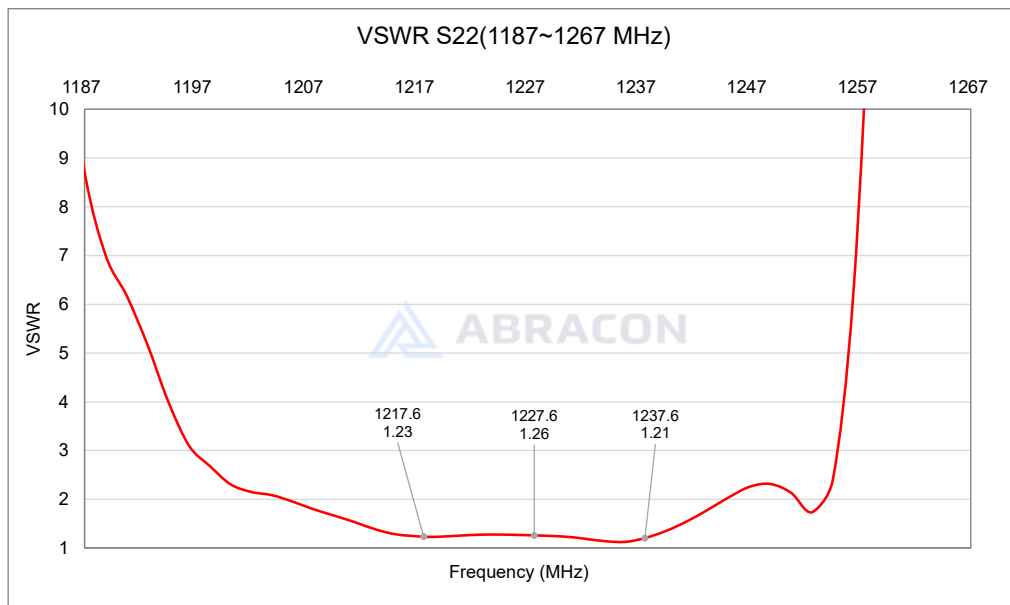
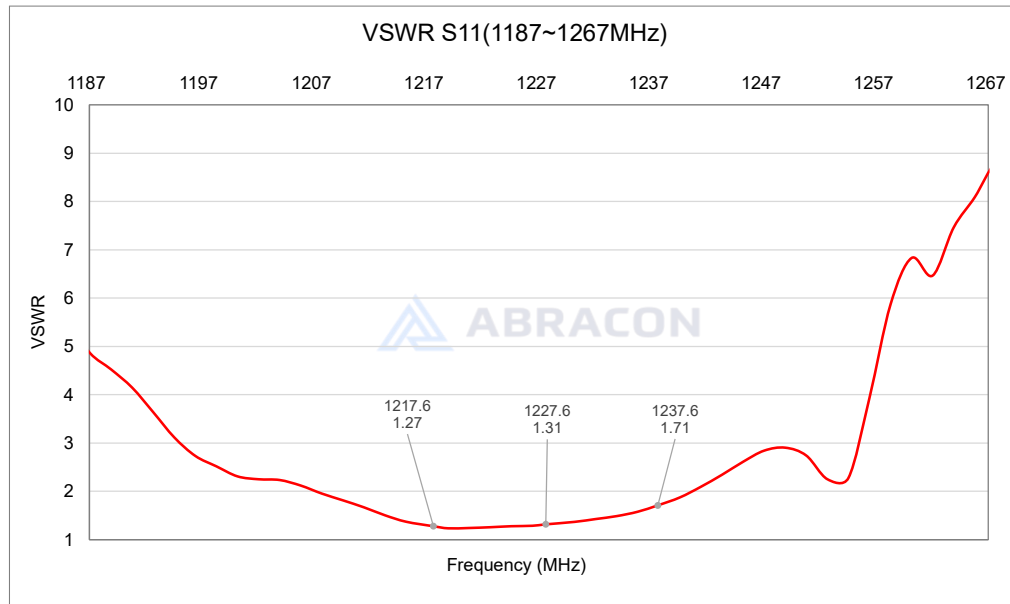


Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

VSWR (S11 & S22)

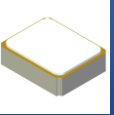


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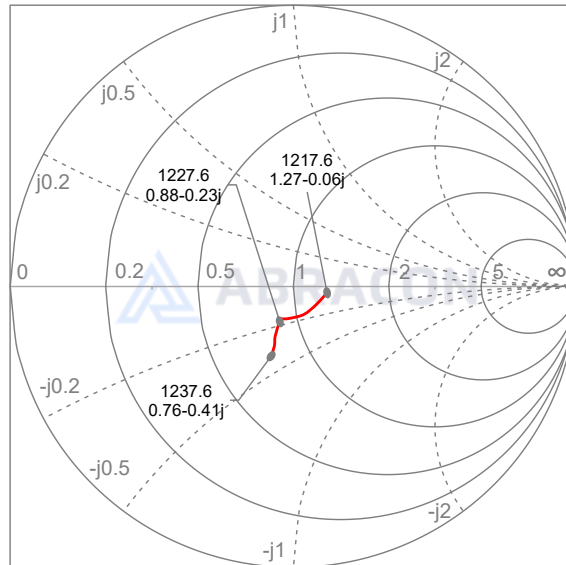
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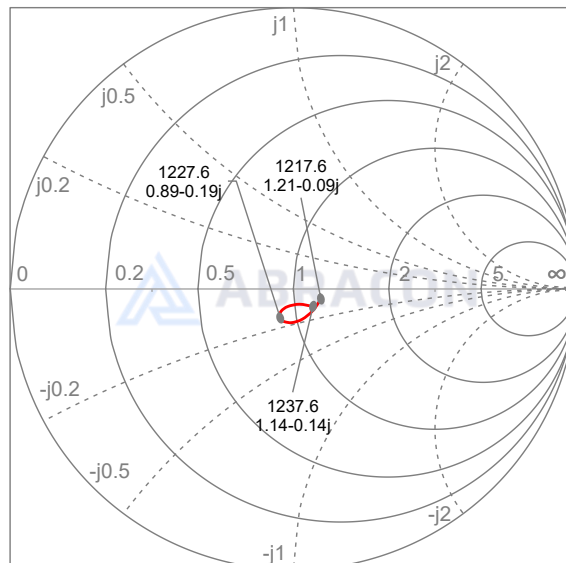
2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Smith Chart (S11 & S22)

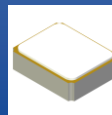
Smith chart S11 (1217~1237MHz)



Smith chart S22 (1217~1237MHz)



SMD 1227.6 MHZ SAW FILTER



AFS20A20-1227.60

Request Samples



Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
MSL Level = 3

Reflow Profile [JEDEC J-STD-020]

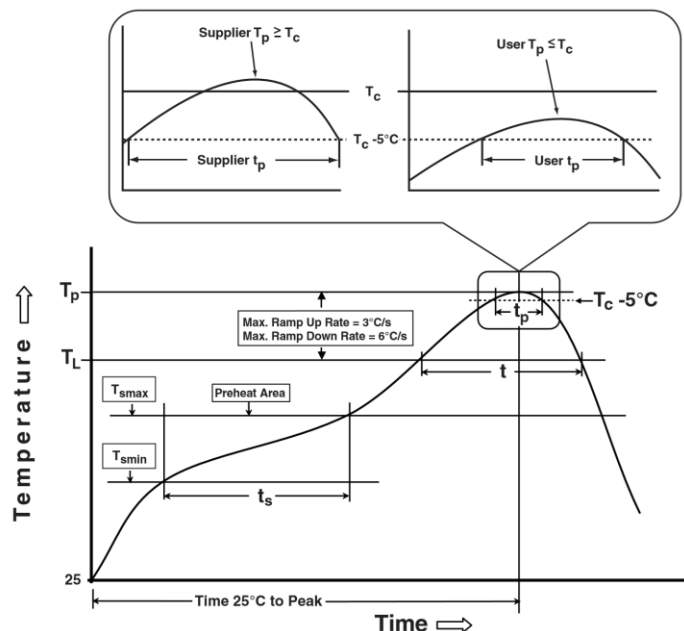


Table 1

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)

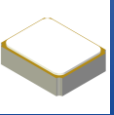
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

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.

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

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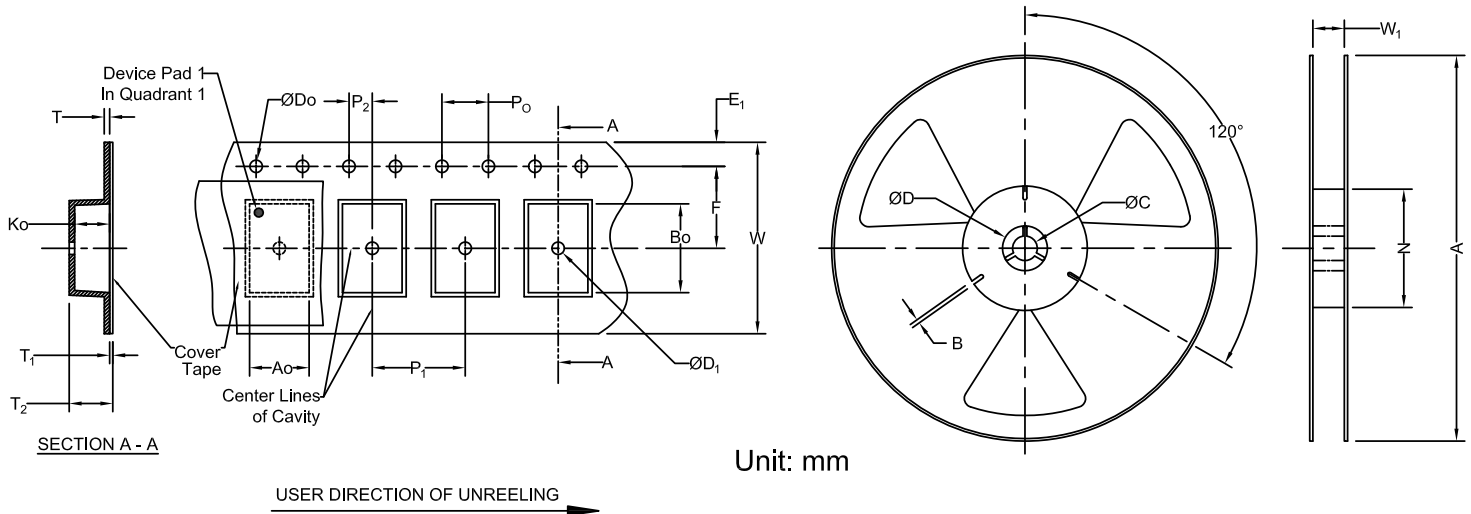
Check Inventory



2.0 x 1.6 x 0.6 mm
RoHS Compliant
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	0.50 ± 0.05	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	3.5 ± 0.05	4.0 ± 0.1	8.0 ± 0.3	1.9 ± 0.05	2.3 ± 0.05	0.9 ± 0.05	3,000

Reel Specifications (mm)

A	W1	N	C
330.0 ± 1.0	12.0 ± 0.15	100 ± 0.15	13.0 ± 0.15

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