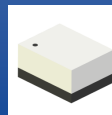


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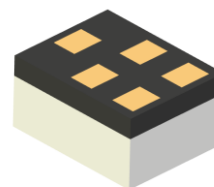
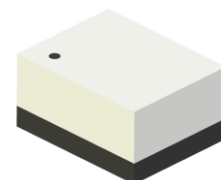
Check Inventory



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

Description

This high-performance GPS L1 band filter delivers exceptional signal clarity for precision navigation systems. Its compact 1.4 x 1.1 x 0.7 mm form factor houses advanced filtering technology that achieves a low 1.5 dB insertion loss while providing strong out-of-band rejection greater than 34.5 dB. These characteristics make it ideally suited for demanding applications in automotive telematics, autonomous vehicles, and precision agriculture where reliable positioning is critical. The component offers robust 10 dBm power handling and is RoHS compliant and rated MSL Level 3.



Features

- Supports GPS L1 Band
- 1.4 x 1.1 x 0.7 mm in Size
- Low Insertion Loss: 1.5 dB
- Out-of-Band Rejection: > 34.5 dB
- Maximum Input Power: 10 dBm
- [RoHS Compliant](#) | [MSL Level 3](#)

Applications

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

Ordering Information

Part Number	Description
AFS14A34-1588.66	SMD 1588.66MHz SAW Filter on Cut Tape
AFS14A34-1588.66-T3	SMD 1588.66MHz SAW Filter on Tape & Reel
AFS14A34-1588.66-EVB	SMD 1588.66MHz SAW Filter Evaluation Board

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

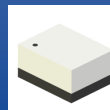


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1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1588.66	-	MHz	L1 Band
VSWR	-	1.34	1.58	-	1571.42~1605.89 MHz
Insertion Loss ⁽¹⁾	-	1.7	2.5	dB	1571.42~1605.89 MHz
Amplitude Ripple	-	0.7	1.5	dB	1571.42~1605.89 MHz
Group Delay ⁽¹⁾	-	18.9	27.5	ns	1571.42~1605.89 MHz
Group Delay Ripple ⁽¹⁾	-	2.0	7.9	ns	1571.42~1605.89 MHz
Attenuation (Reference level from 0 dB)	32	35	-	dB	D.C~824 MHz
	32	35	-		824~849 MHz
	32	34.5	-		849~880 MHz
	32	34.5	-		880~915 MHz
	30	34	-		915~1452 MHz
	32	37	-		1452~1525 MHz
	32	36	-		1710~1785 MHz
	32	36	-		1785~1850 MHz
	25	36	-		1850~6000 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)

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	-30°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
MSL level	3
RoHS Compliant	Yes

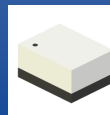


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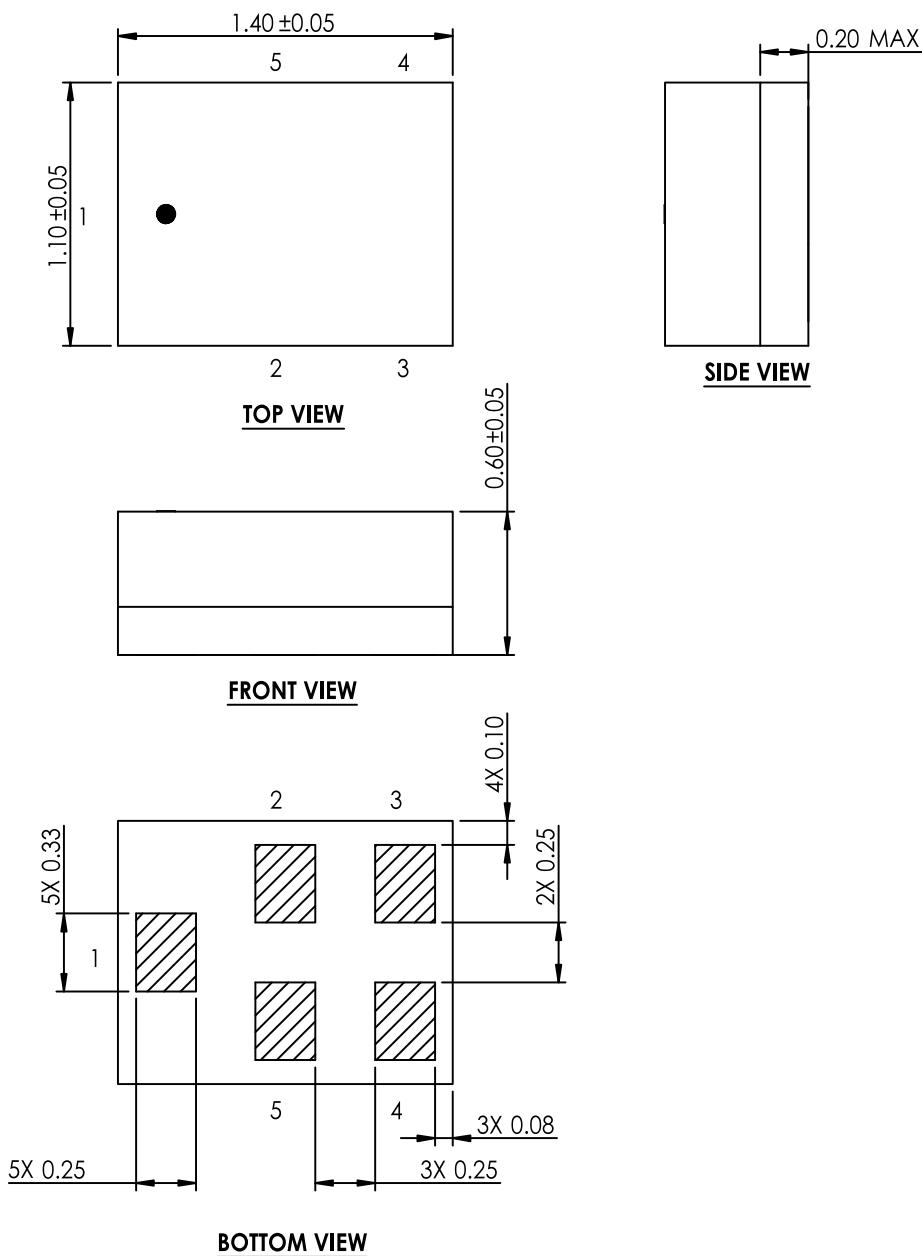


Check Inventory



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

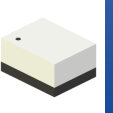
Product Dimensions



Unit : mm

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

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Request Samples



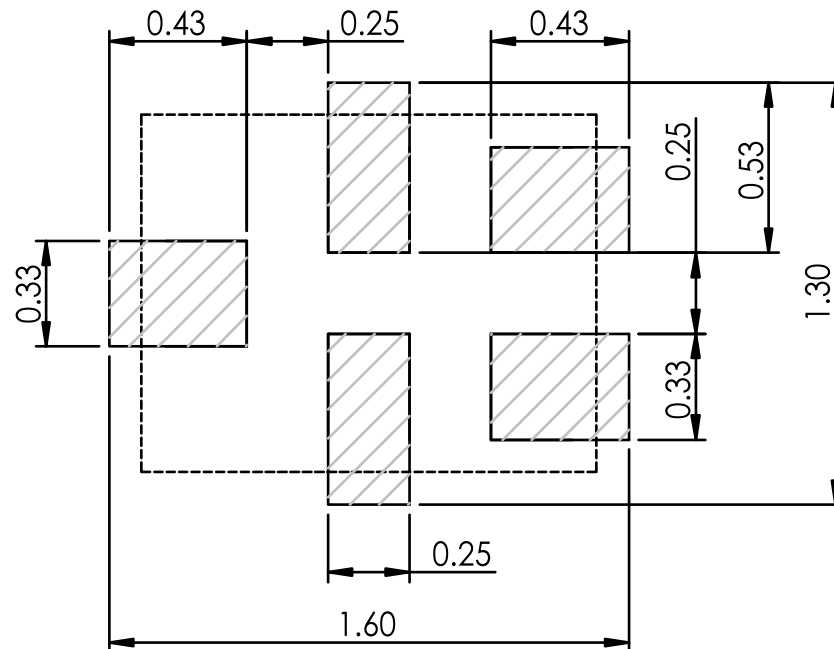
Check Inventory



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

Recommended Land Pattern

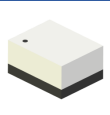
RECOMMENDED LAND PATTERN



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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Request Samples

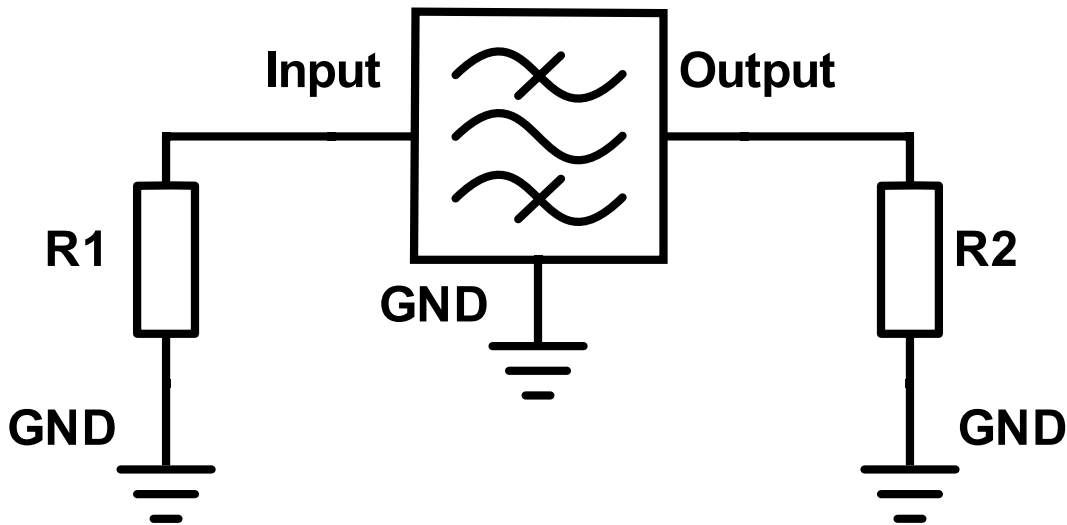


Check Inventory



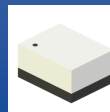
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Measurement Circuit



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

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Request Samples



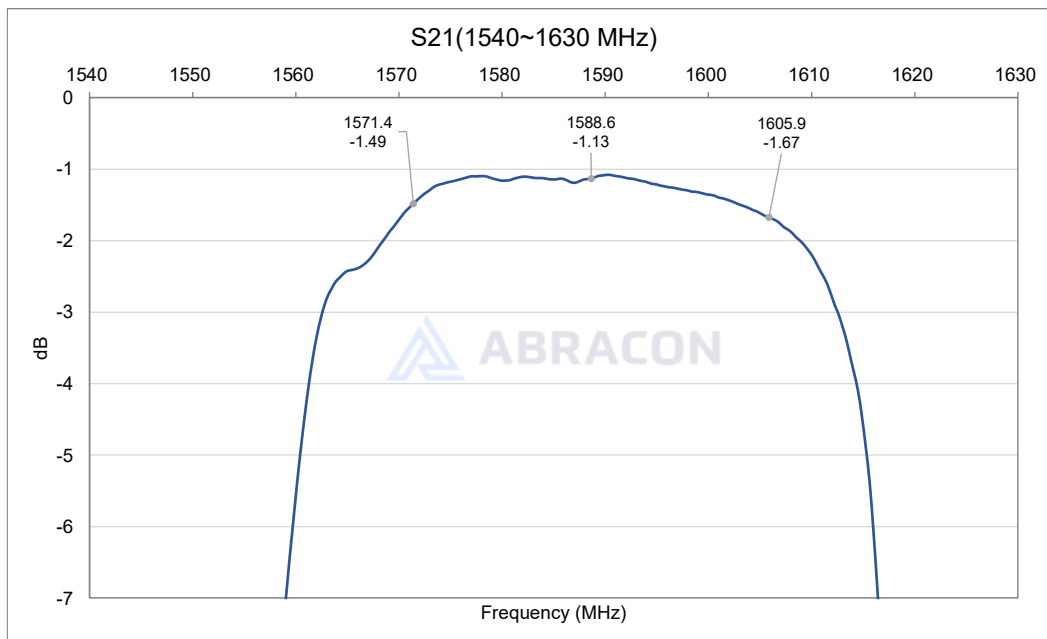
Check Inventory



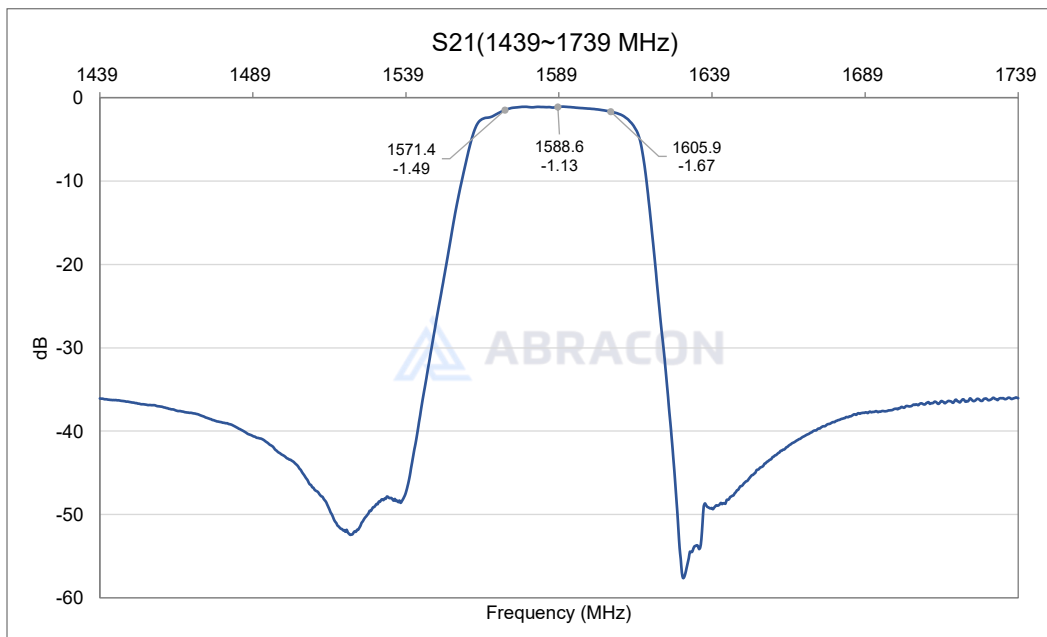
1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Frequency Characteristics

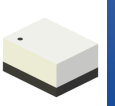
S21 narrow band



S21 wide band



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Request Samples

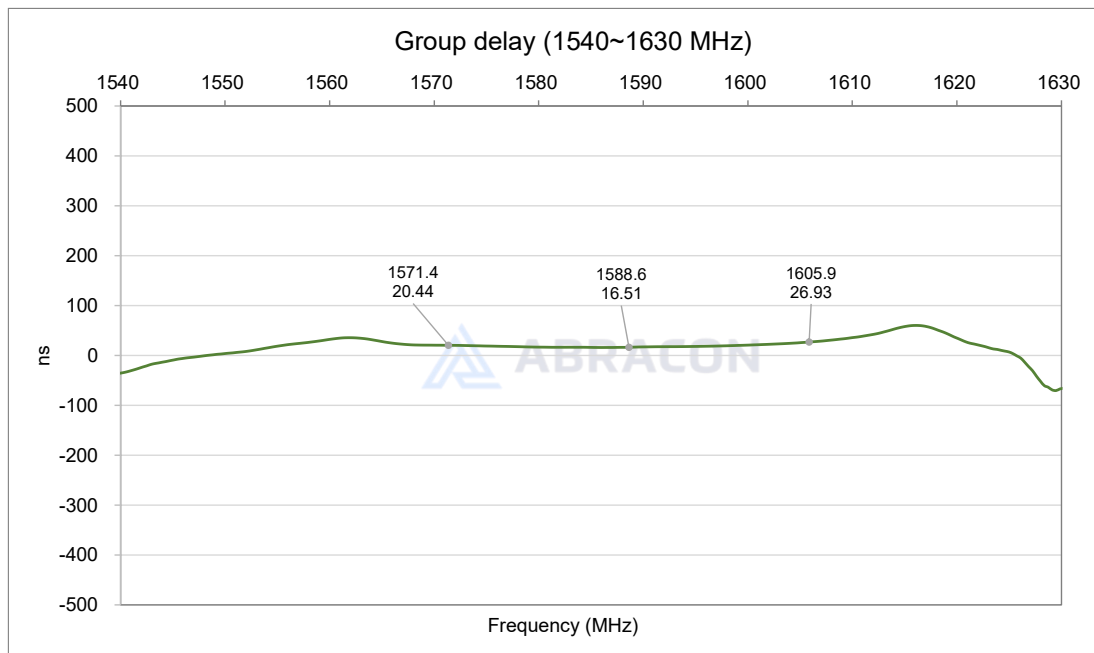


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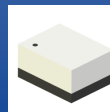


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

Group Delay



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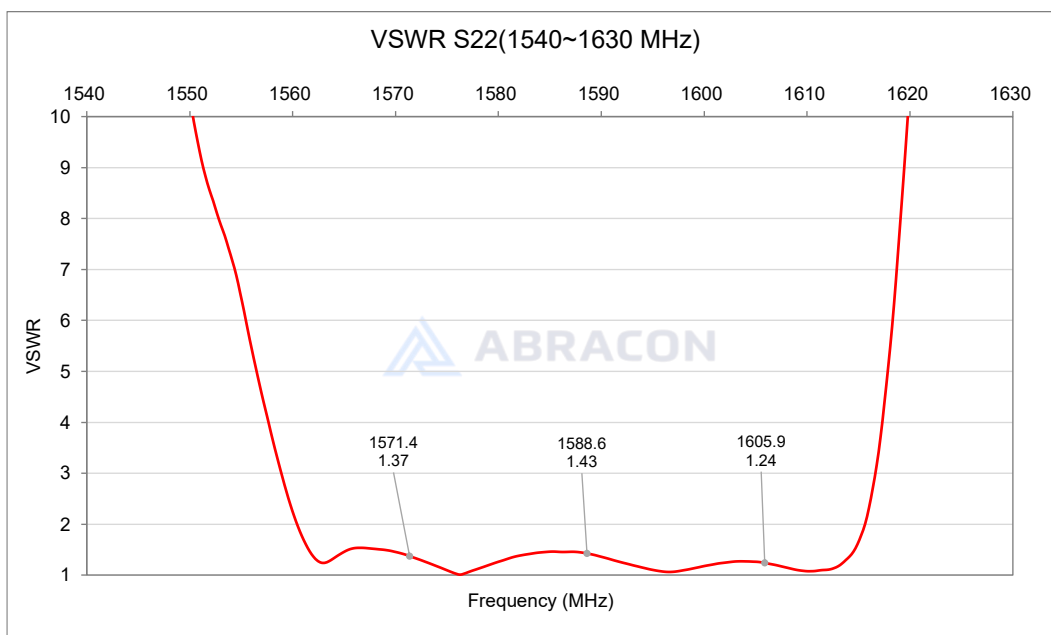
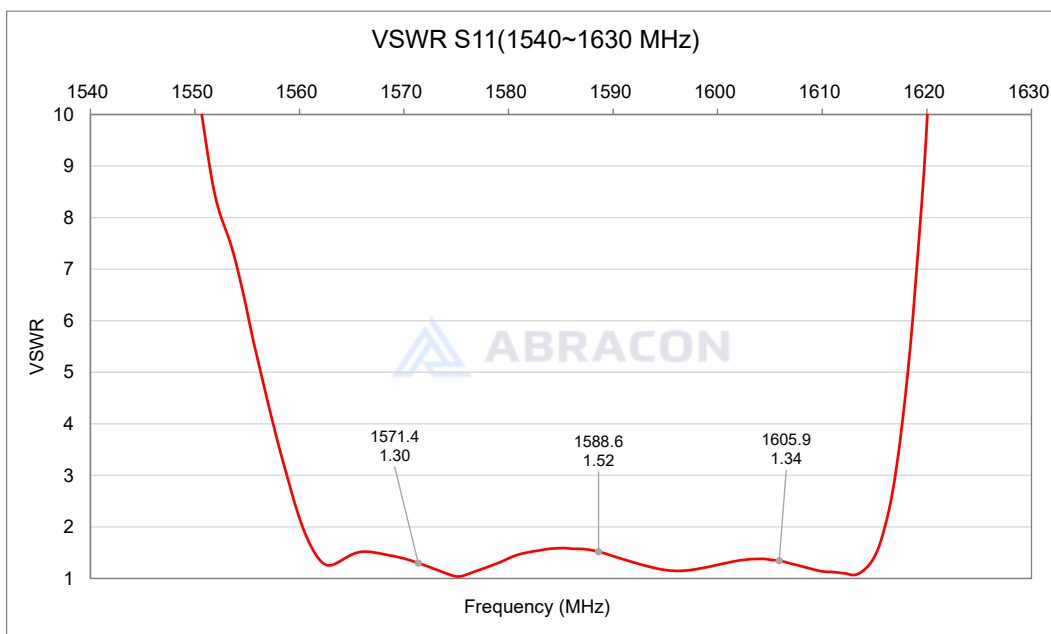


Check Inventory



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

VSWR (S11 & S22)



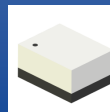
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Smith Chart (S11 & S22)

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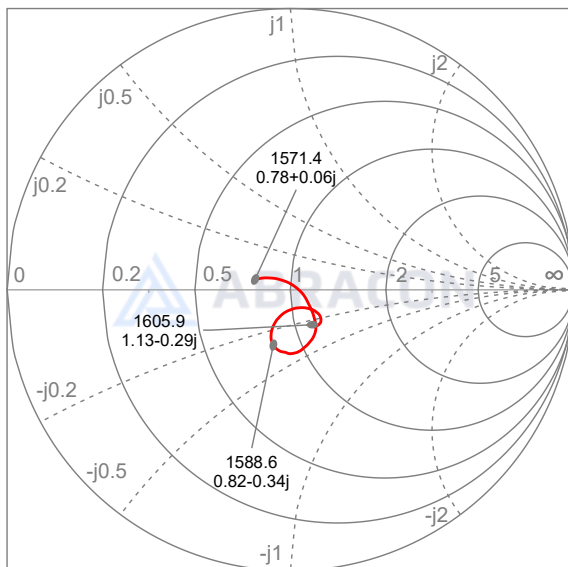


Check Inventory

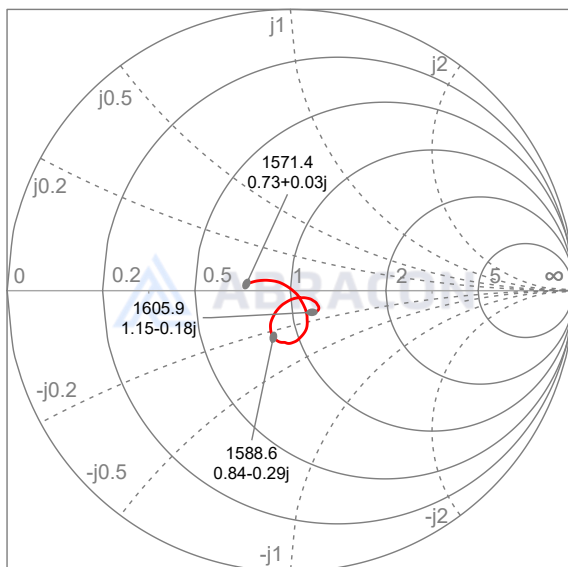


1.4 x 1.1 x 0.7 mm
RoHS Compliant
MSL Level = 3

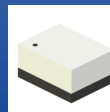
Smith chart S11 (1571~1605MHz)



Smith chart S22 (1571~1605MHz)



SMD 1588.66MHz SAW Filter



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Request Samples



Check Inventory



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

Reflow Profile [JEDEC J-STD-020]

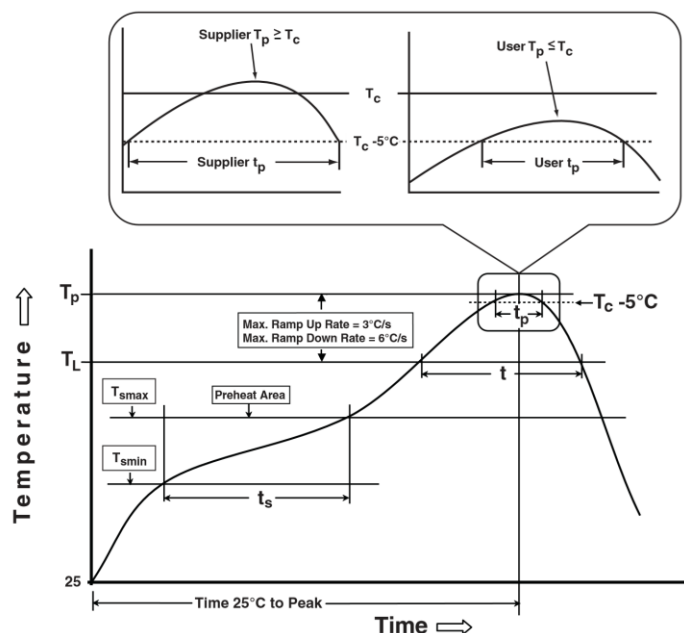


Table 1

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)

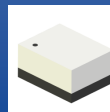
Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

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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Request Samples



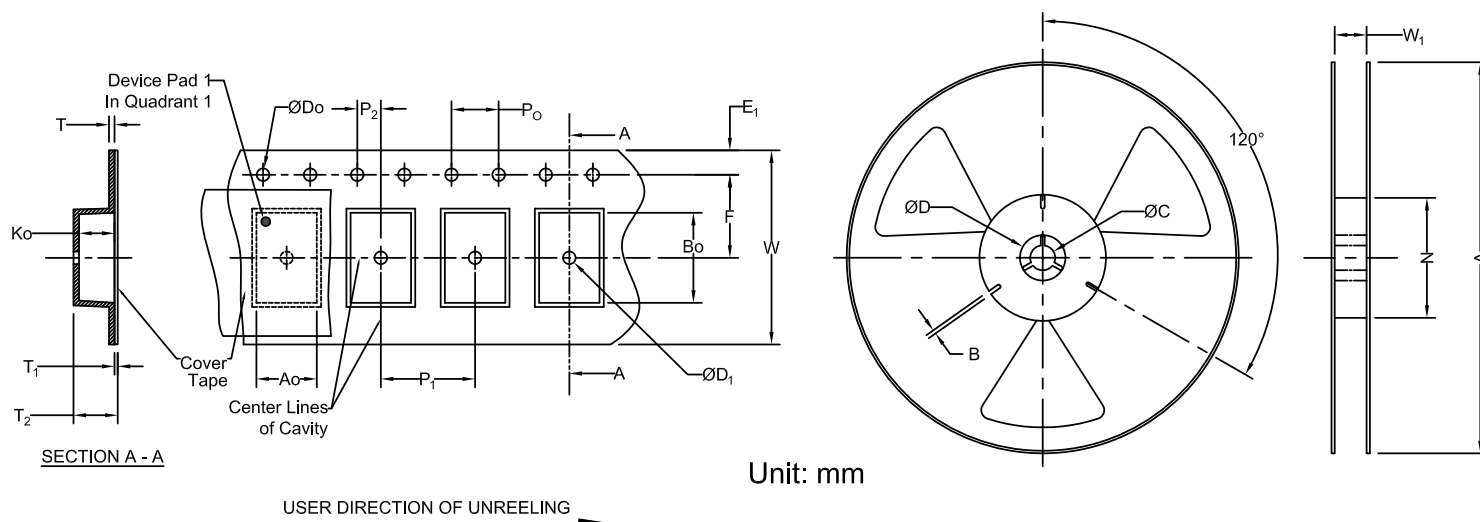
Check Inventory



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

Packaging

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	1.0	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.2 ± 0.05	3.5 ± 0.05	4.0 ± 0.1	8.0 ± 0.3	1.47 ± 0.1	1.73 ± 0.1	0.75 ± 0.1	3,000

Reel Specifications (mm)

A	W1	N	C	B
178.0 ± 1.0	8.4	72.0 ± 1.0	13.0 ± 0.2	2.5

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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