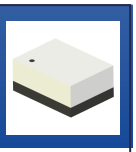
GNSS L1/L2+L5 SMD DUAL SAW FILTER



AFII-SW-0063-Q

Request Samples | Check Inventory

1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

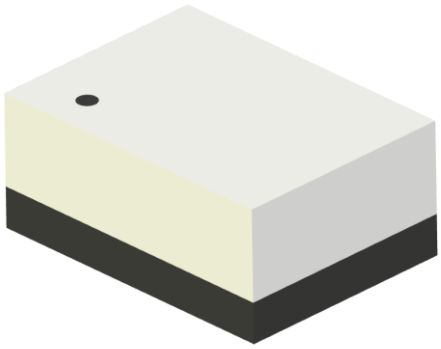
Features

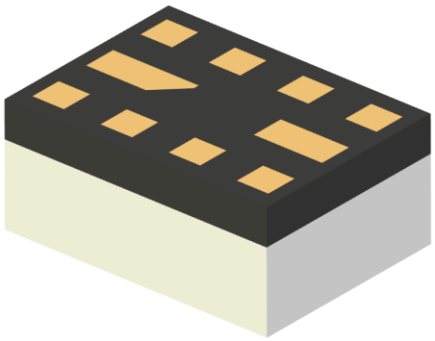
- AEC-Q200 GNSS L1/(L2+L5) Dual SAW Filter
- 1.5 x 1.1 x 0.65 mm in Size
- Insertion Loss: 2.0 dB (L1) / 2.6 dB (L2 + L5)
- Out-of-Band Rejection: > 35 dB
- Maximum Input Power: +15 dBm
- Stable Performance Across -40ºC ~ +105ºC

Applications

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

Product Image





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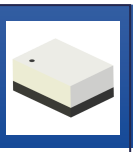

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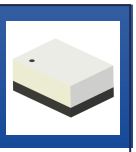
1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	1559.05		1605.89		
VSWR	-	1.6	2.1		1559.05 ~ 1605.89 MHz
Insertion Loss (1) (L1)	-	1.6	2.1	dB	1574.39 ~ 1576.45 MHz
Insertion Loss (1) (B1)	-	2.0	2.5		1559.05 ~ 1563.15 MHz
Insertion Loss (1) (G1)	-	2.2	2.5		1597.55 ~ 1605.89 MHz
Amplitude Ripple (1)	-	0.6	1.0	dB	1559.05 ~ 1605.89 MHz
Group Delay (1)	-	7	20	ns	1559.05 ~ 1605.89 MHz
Group Delay Ripple (1)	-	0.2	1.8	ns	1559.05 ~ 1605.89 MHz
Attenuation (Reference level from 0 dB)	37	42	-	dB	638 ~ 698 MHz
	35	41	-		698 ~ 748 MHz
	35	39	-		777 ~ 798 MHz
	30	36	-		807 ~ 915 MHz
	30	35	-		925 ~ 960 MHz
	35	39	-		1427 ~ 1463 MHz
	34	37	-		1710 ~ 1800 MHz
	33	38	-		1850 ~ 1910 MHz
	33	38	-		1910 ~ 1980 MHz
	35	40	-		2010 ~ 2025 MHz
	38	42	-		2300 ~ 2315 MHz
	38	43	-		2401 ~ 2483 MHz
	38	43	-		2496 ~ 2690 MHz
	40	45	-		5150 ~ 5925 MHz
Source Impedance (3) (single ended)	-	50	-	Ω	-
Load Impedance (3) (single ended)	-	50	-	Ω	-
RF Power Dissipation	-	15	-	dBm	

Notes: (1) Averaged values of linear S-Parameters at +25ºC
(2) Averaged values of linear S-Parameters at +25ºC
(3) A matching network is necessary (refer to the Measurement Circuits section)

GNSS L1/L2+L5 SMD DUAL SAW FILTER



AFII-SW-0063-Q

Request Samples | Check Inventory

1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	1166.22	-	1228.62		
VSWR	-	1.6	2.1		1166.22 ~ 1228.62 MHz
Insertion Loss (1) (L5)	-	2.5	2.9	dB	1166.22 ~ 1186.68 MHz
Insertion Loss (1) (B2)	-	2.3	2.8		1205.09 ~ 1209.19 MHz
Insertion Loss (1) (L2)	-	2.6	3.0		1226.58 ~ 1228.62 MHz
Amplitude Ripple	-	0.8	1.2	dB	1166.22 ~ 1228.62 MHz
Group Delay (1)	-	10	25	ns	1166.22 ~ 1228.62 MHz
Group Delay Ripple (1)	-	0.1	0.6	ns	1166.22 ~ 1228.62 MHz
Attenuation (2) (Reference level from 0 dB)	40	46	-	dB	0 ~ 748 MHz
	35	43	-		777 ~ 798 MHz
	32	38	-		807 ~ 915 MHz
	32	37	-		925 ~ 960 MHz
	25	31	-		1427 ~ 1463 MHz
	25	32	-		1626.5 ~ 1660.5 MHz
	28	35	-		1695 ~ 1785 MHz
	32	36	-		1850 ~ 2025 MHz
	32	37	-		2300 ~ 2400 MHz
	32	37	-		2400 ~ 2483 MHz
	30	34	-		2496 ~ 2690 MHz
	25	30	-		3400 ~ 3800 MHz
	27	31	-		4400 ~ 4900 MHz
	27	32	-		5150 ~ 5925 MHz
Source Impedance (3) (single ended)	-	50	-	Ω	
Load Impedance (3) (single ended)	-	50	-	Ω	
RF Power Dissipation	-	15	-	dBm	

Notes: (1) Averaged values of linear S-Parameters at +25ºC
(2) Averaged values of linear S-Parameters at +25ºC
(3) A matching network is necessary (refer to the Measurement Circuits section).

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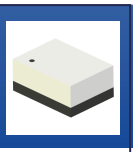

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1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Mechanical Specification

Parameters	Specifications
Filter Dimension	1.5 x 1.1 x 0.65 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-40ºC ~ +105ºC
Storage Temperature Range	-40ºC ~ +85ºC
ESD Voltage (HBM)	＞125 V
ESD Voltage (MM)	＞100 V
ESD Voltage (CDM)	＞175 V
MSL level	3
RoHS Compliant	Yes

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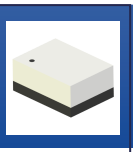

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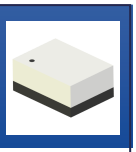
1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Ordering Information

Part Number	Description
AFII-SW-0063-Q	GNSS L1/L2+L5 SMD DUAL SAW FILTER on Cut Tape
AFII-SW-0063-Q-T	GNSS L1/L2+L5 SMD DUAL SAW FILTER on Tape & Reel
AFII-SW-0063-Q-EVB	GNSS L1/L2+L5 SMD DUAL SAW FILTER Evaluation Board

Note: Other options not listed may be available upon request via Abracon online support

GNSS L1/L2+L5 SMD DUAL SAW FILTER

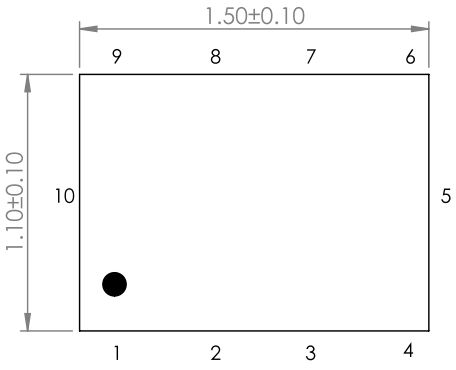


AFII-SW-0063-Q

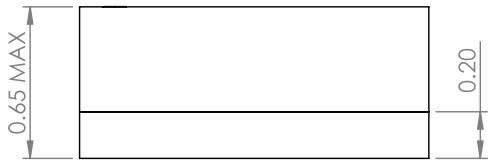
Request Samples | Check Inventory

1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

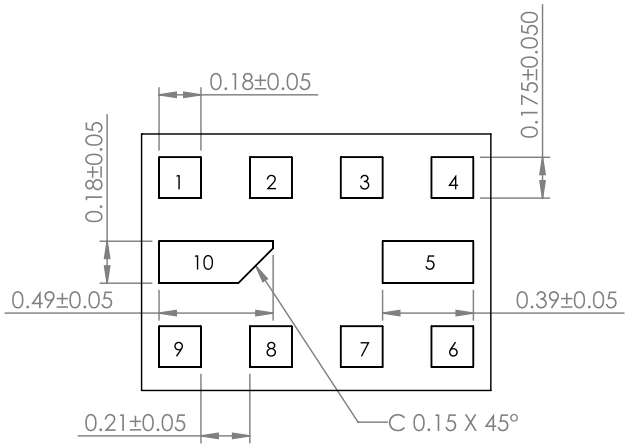
Product Dimensions



TOP VIEW



FRONT VIEW



BOTTOM VIEW

Unit : mm

Pin No.	Description
1	Input
6	L1 Output
9	L2+L5Output
2, 3, 4, 5, 7, 8, 10	Ground

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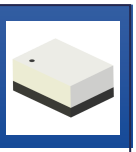

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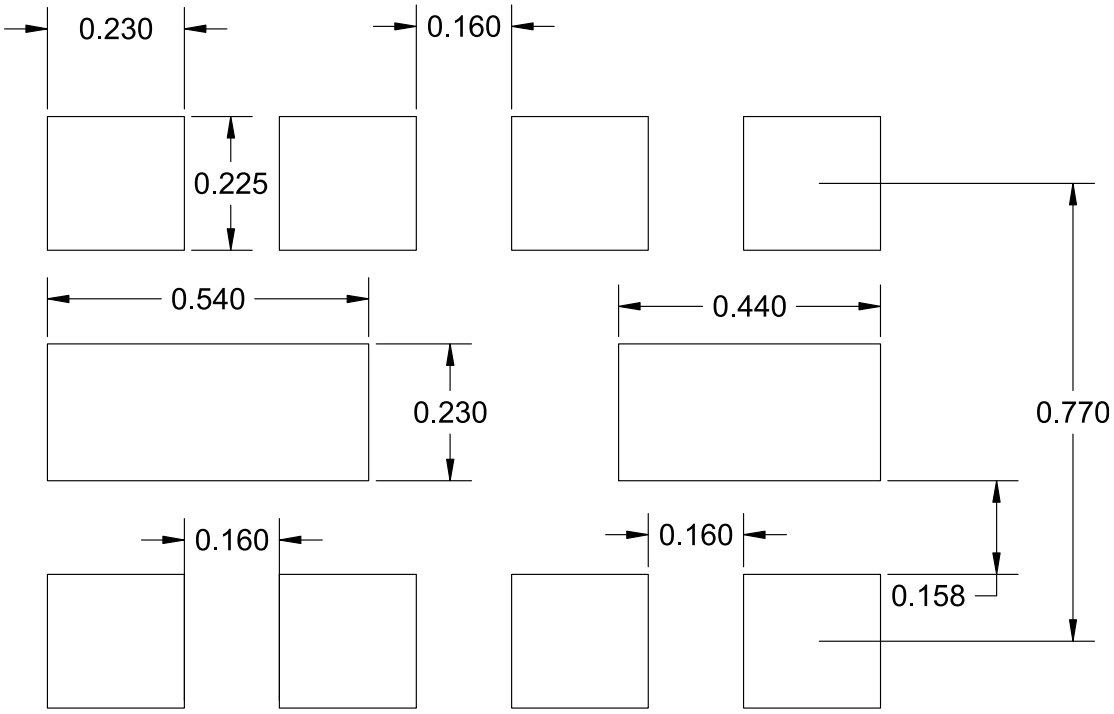
1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

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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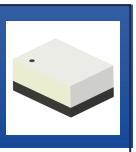

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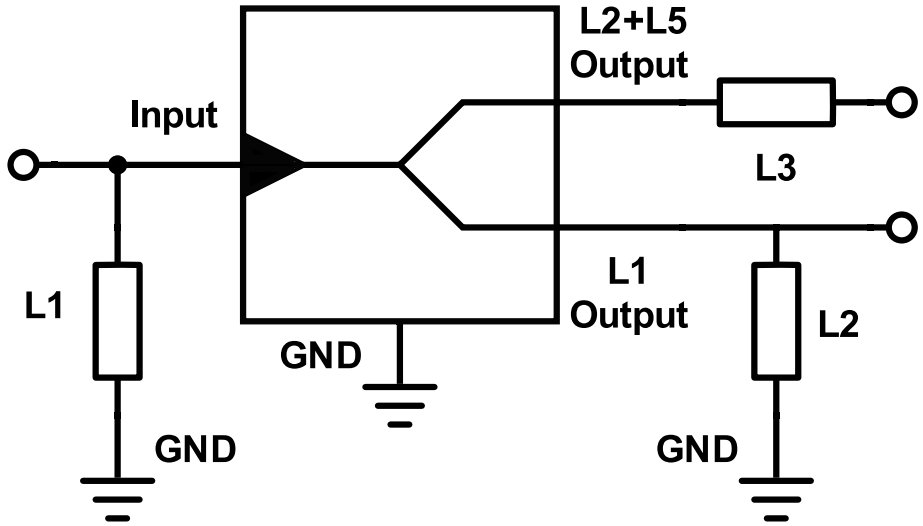
1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Measurement Circuit



Port	Matching Component
Input (Pin 1)	L1: 4.3 nH
L1 Output (Pin 6)	L2: 15 nH
L2+L5 Output (Pin 9)	L3: 3.6 nH

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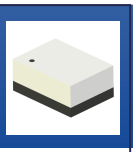

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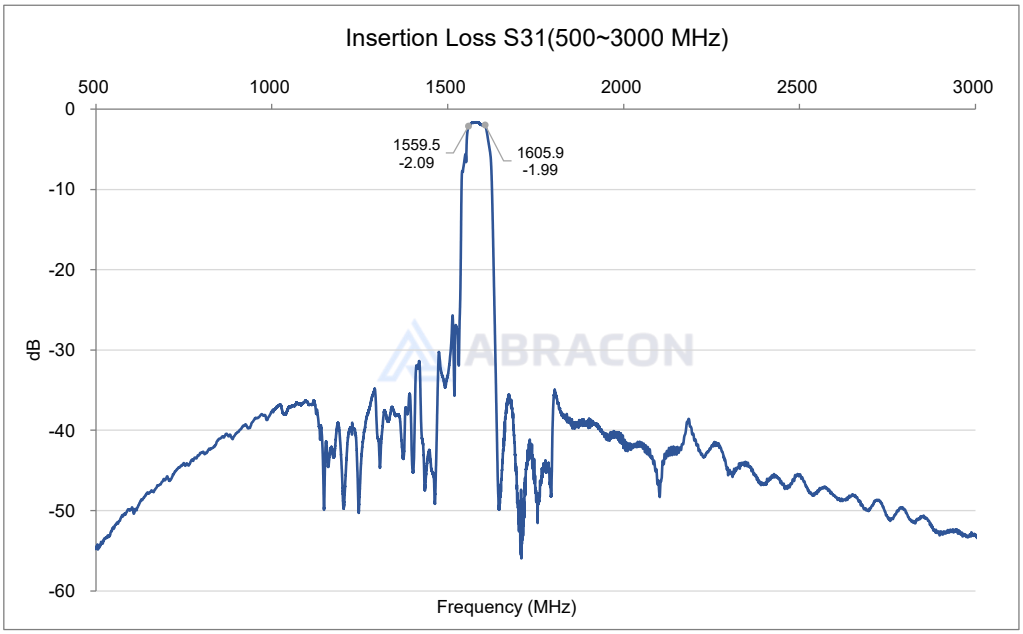
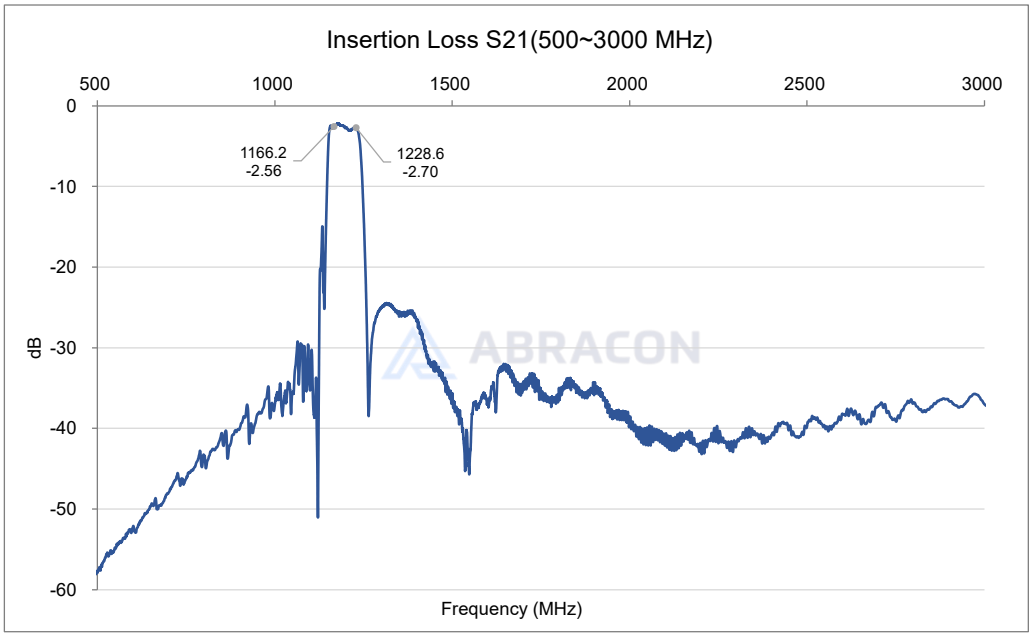
1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Frequency Characteristics

Insertion Loss (L1) 500 - 3000MHz



Insertion Loss (L2+L5) 500 - 3000MHz



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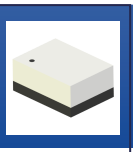

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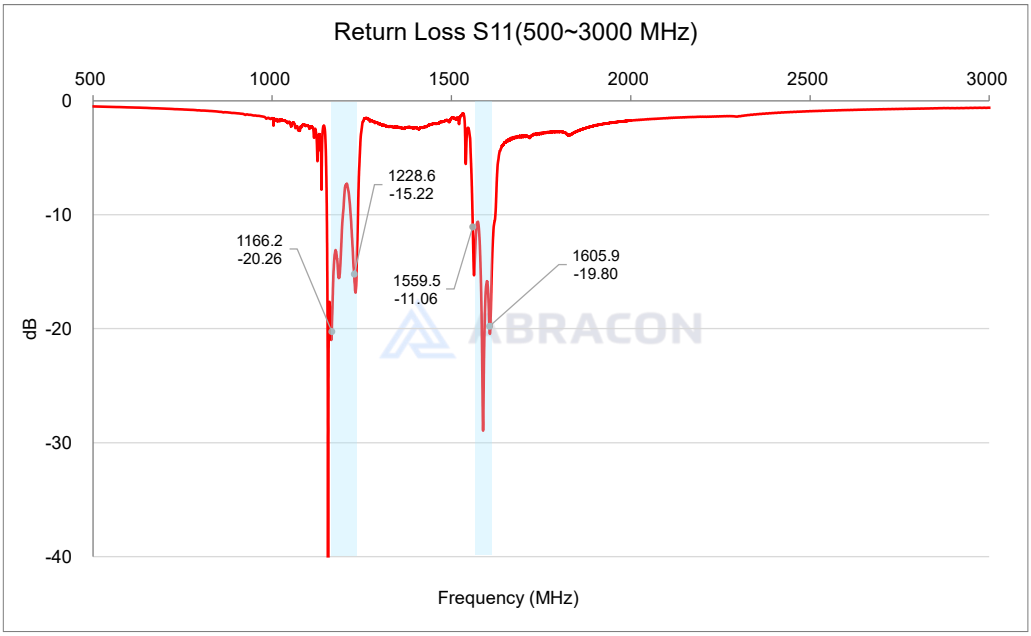
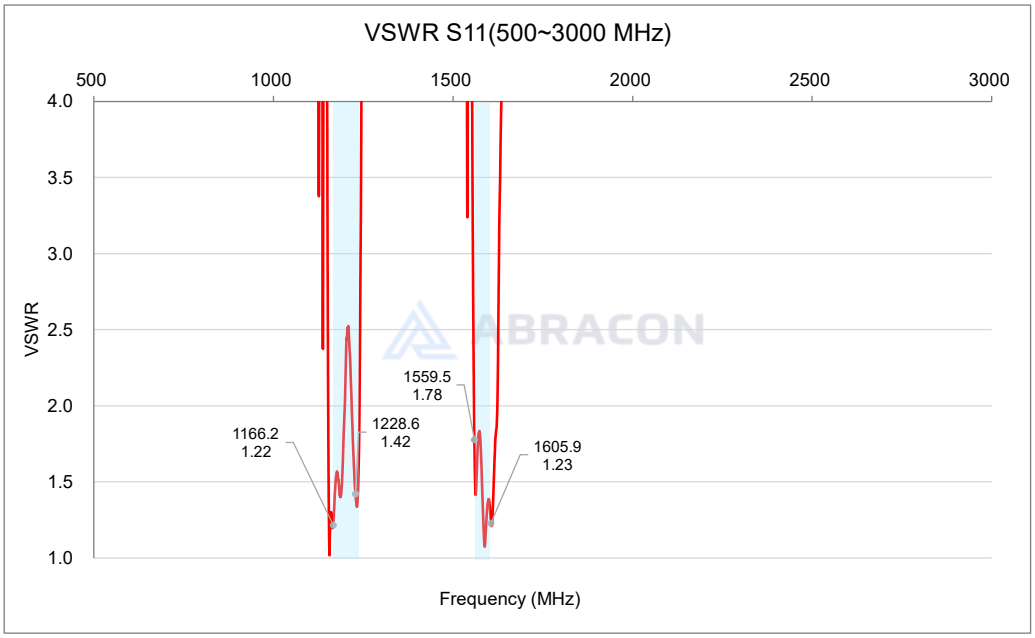
Request Samples | Check Inventory

1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Return Loss (S11) 500 - 3000MHz



VSWR (S11) 500 - 3000MHz



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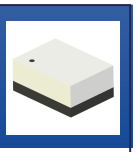

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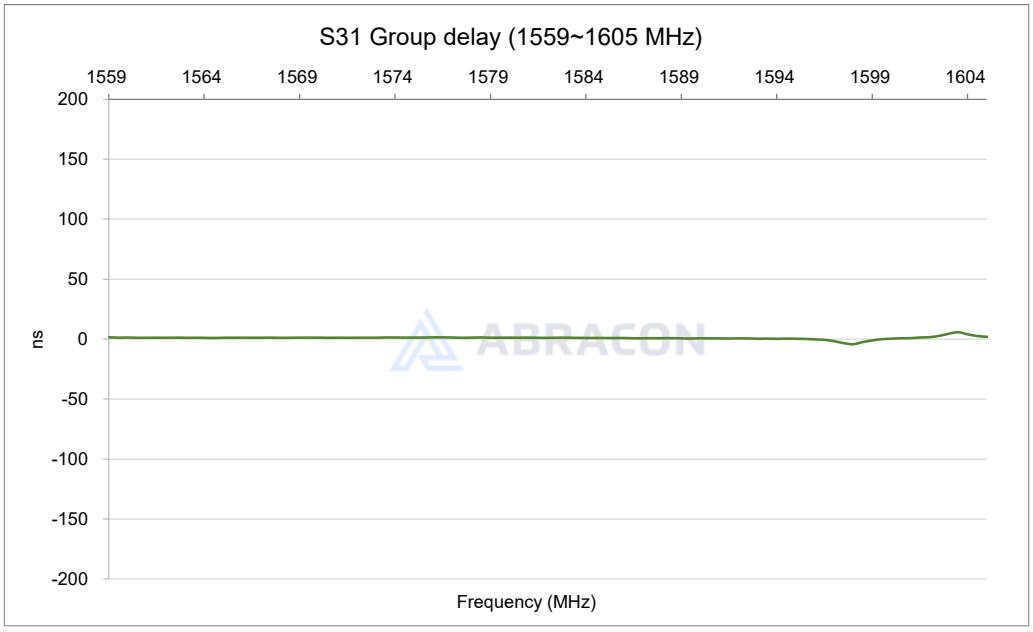
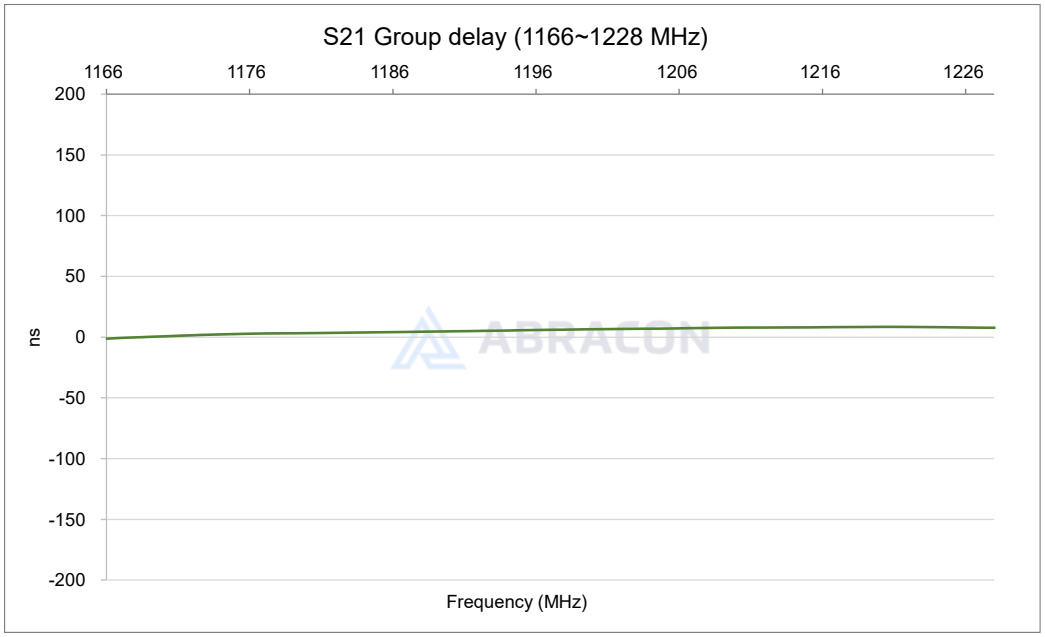
RoHS Compliant
MSL Level = 3

Group Delay (L1)



Group Delay (L2+L5)



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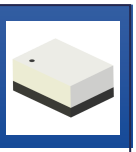

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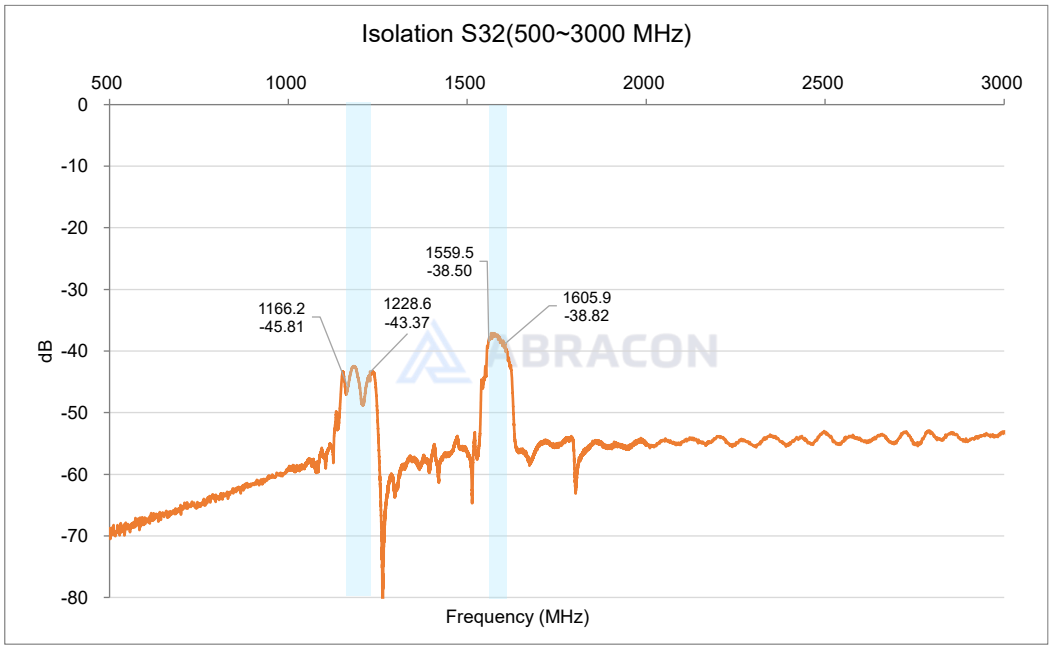
RoHS Compliant
MSL Level = 3

Isolation (S32) 500 - 3000MHz



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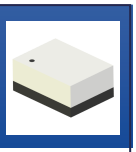

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RoHS Compliant
MSL Level = 3

Reflow Profile [JEDEC J-STD-020]

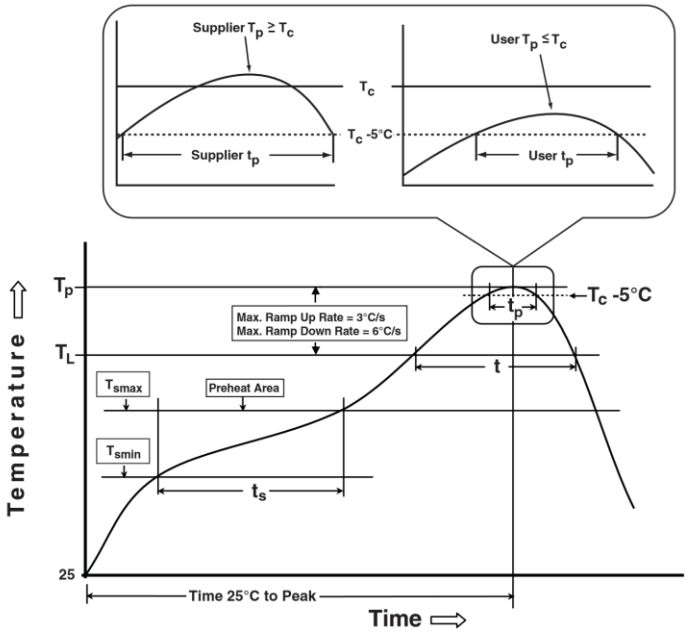

Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	**Volume mm³ <350**	**Volume mm³ ≧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 mm³ <350**	**Volume mm³ 350-2000**	**Volume mm³ >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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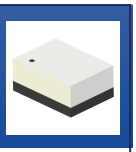


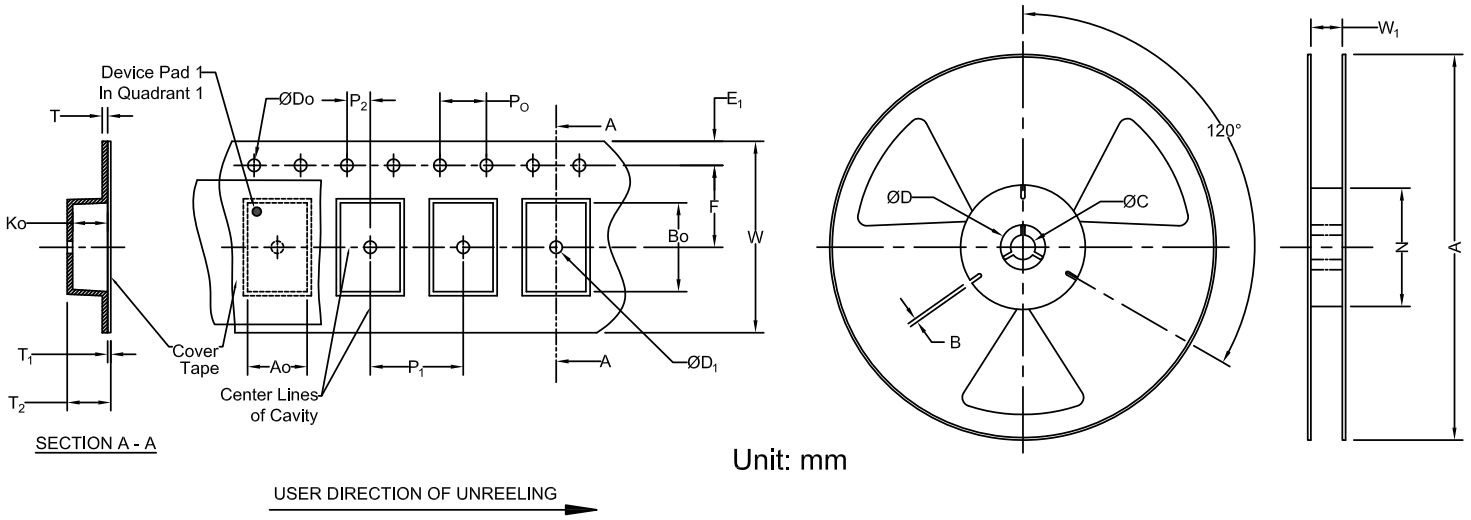
AFII-SW-0063-Q

Request Samples | Check Inventory

1.5 x 1.1 x 0.65 mm
RoHS Compliant
MSL Level = 3

Packaging

Tape & Reel Dimension



Unit: mm

Carrier Tape Specifications (mm)											
Do	D_1	E_1	P_0	P_2	F	P_1	W	A_0	B_0	K_0	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	1.70 ± 0.05	0.65 ± 0.05	4,000

Reel Specifications (mm)			
A	W_1	N	C
178.0 ± 1.0	8.48 ± 0.15	57.12 ± 0.15	13.12 ± 0.15

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