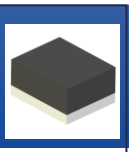
1176.5 MHz SMD SAW Filter



ABSTS5A2-210M011M

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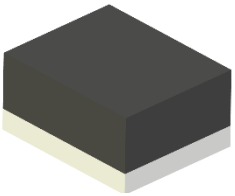
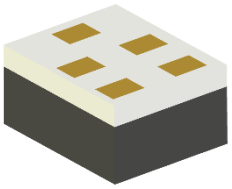
1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

Description

Engineered for next-generation precision, this ultra-miniature RF filter is optimized for the GNSS L5 band. Its compact 1.1 x 0.9 x 0.5 mm package delivers exceptional performance with a 25 MHz bandwidth and a low insertion loss of 1.8 dB. Superior out-of-band rejection (>42 dB) and high-power handling (13 dBm) ensure robust signal integrity in challenging environments. Ideal for high-accuracy RTK systems, autonomous vehicles, and asset tracking, this component is RoHS compliant and rated MSL 2a for reliable manufacturing.





Features

- Support GNSS L5 Band
- Bandwidth 25 MHz
- 1.1 x 0.9 x 0.5 mm in Size
- Low Insertion Loss: 1.8 dB
- Out-of-Band Rejection: > 42 dB
- Maximum Input Power: 13 dBm
- RoHS Compliant | MSL Level 2a

Applications

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

Ordering Information

Part Number	Description
ABSTS5A2-210M011M	1176.5 MHz SMD SAW Filter on Tape & Reel
ABSTS5A2-210M011M-EVB	1176.5 MHz SMD SAW Filter Evaluation Board

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

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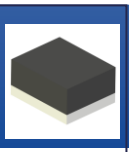

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1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

Electrical Specification

Parameters	Minimum	Typical	Maximum	Units	Notes
Center Frequency (fc)	-	1176.5	-	MHz	-
VSWR (1)	-	1.8	2.1	-	1164 ~ 1189MHz
Insertion Loss (1)	-	1.8	2.4	dB	1164 ~ 1189MHz
Amplitude Ripple (1)	-	0.5	1.3	dB	1164 ~ 1189MHz
Attenuation (1) (Reference level from 0 dB)	53	63	-	dB	100 ~ 814 MHz
	53	62	-		814 ~ 849 MHz
	51	57	-		849 ~ 980 MHz
	51	56	-		980 ~ 1010 MHz
	50	54	-		1010 ~ 1100 MHz
	40	46	-		1100 ~ 1130 MHz
	25	50	-		1250 ~ 1427 MHz
	45	50	-		1427 ~ 1463 MHz
	40	45	-		1710 ~ 2025 MHz
	38	42	-		2300 ~ 2690 MHz
	37	42	-		2690 ~ 3000 MHz
Group Delay (1)	-	27	33	ns	1164 ~ 1189MHz
Group Delay Ripple (1)	-	7	13	ns	1164 ~ 1189MHz
Source Impedance (2) (single ended)	-	50	-	Ω	-
Load Impedance (2) (single ended)	-	50	-	Ω	-
Input Power Level	-	13	-	dBm	-
DC Voltage	-	3	-	V	-
Temperature Coefficient	-	-36	-	ppm/K	-

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

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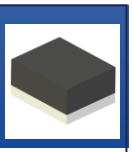

ABSTS5A2-210M011M

Request Samples Check Inventory

1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

Mechanical Specification

Parameters	Specifications
Filter Dimension	1.1 x 0.9 x 0.5 mm
Mounting Type	Surface Mount

Environmental Specification

Parameters	Specifications
Operating Temperature Range	-20°C to +85°C
Storage Temperature Range	-40°C to +85°C
MSL level	2a
ESD	50V (MM), 100V (HBM)
RoHS/ RoHS II Compliant	Yes

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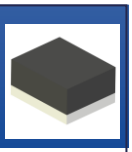

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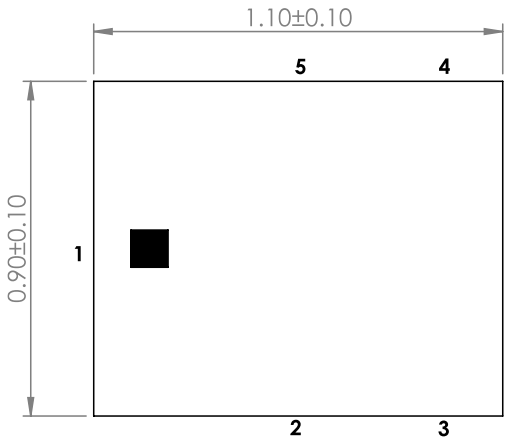
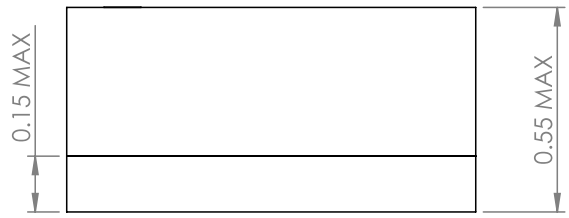
1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

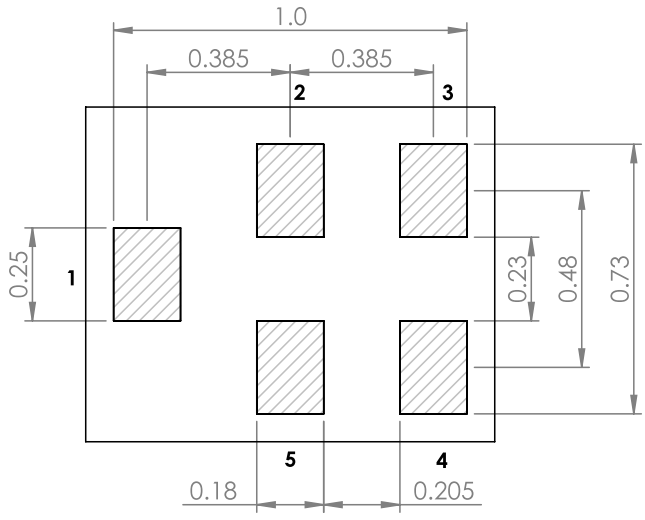
Package Dimensions



TOP VIEW

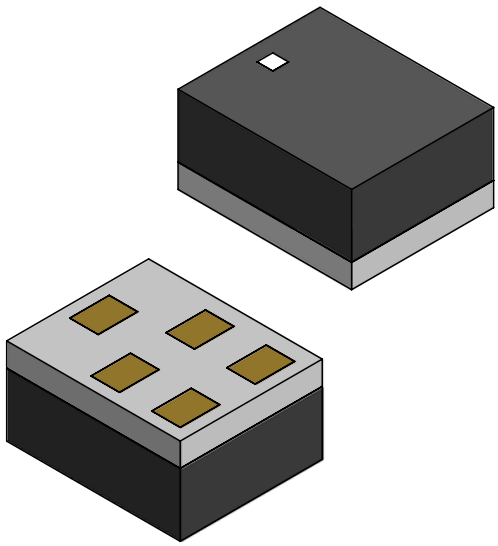


FRONT VIEW



BOTTOM VIEW

PIN #	SYMBOL	FUNCTION
1	IN	INPUT
2	GND	GROUND
3	GND	GROUND
4	OUT	OUTPUT
5	GND	GROUND



Unit: mm

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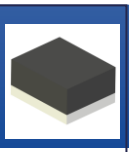

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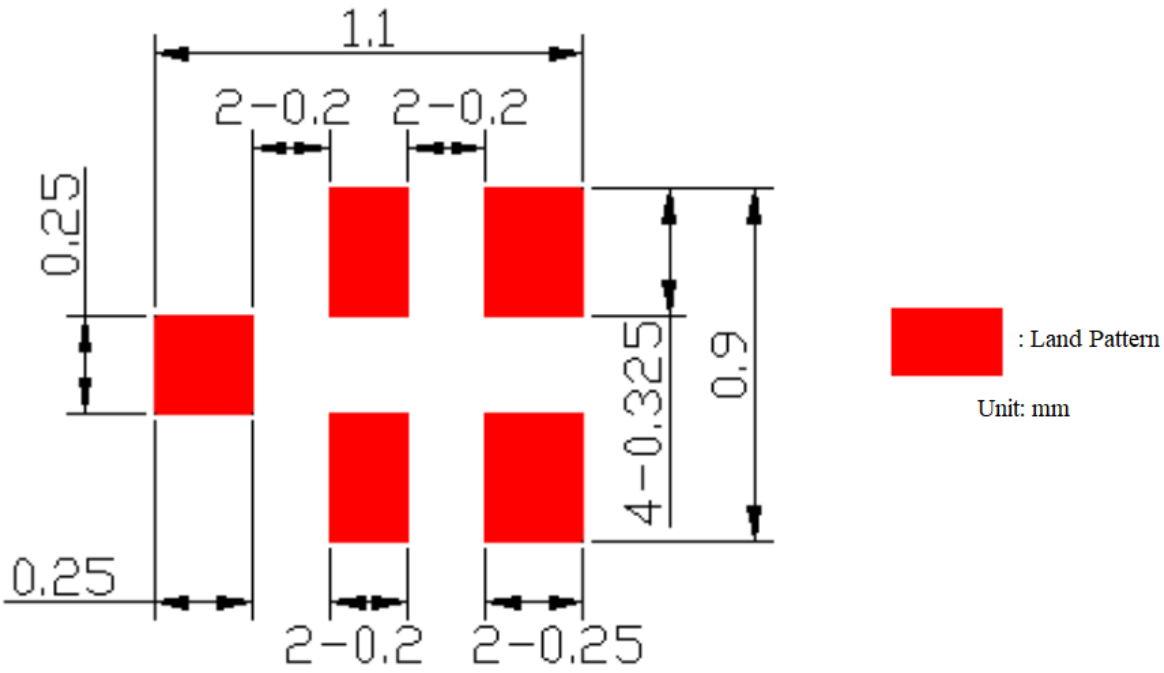
1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

Land Pattern



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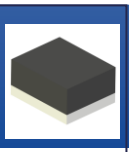

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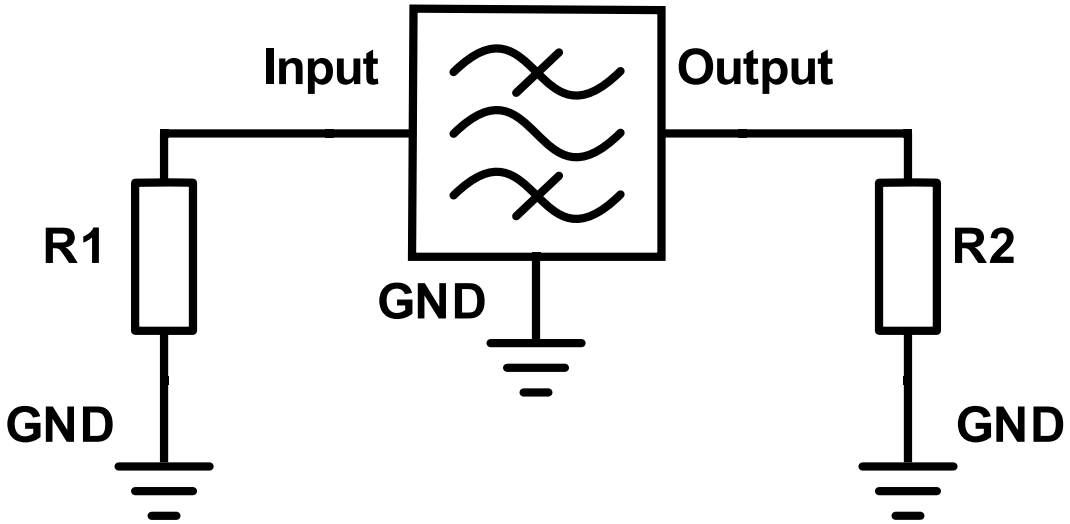
MSL Level = 2a

Measurement Circuit



Port	Matching Component
Input (Pin 1)	R1: 50 Ω
Output (Pin 4)	R2: 50 Ω

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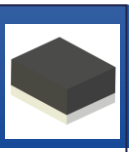

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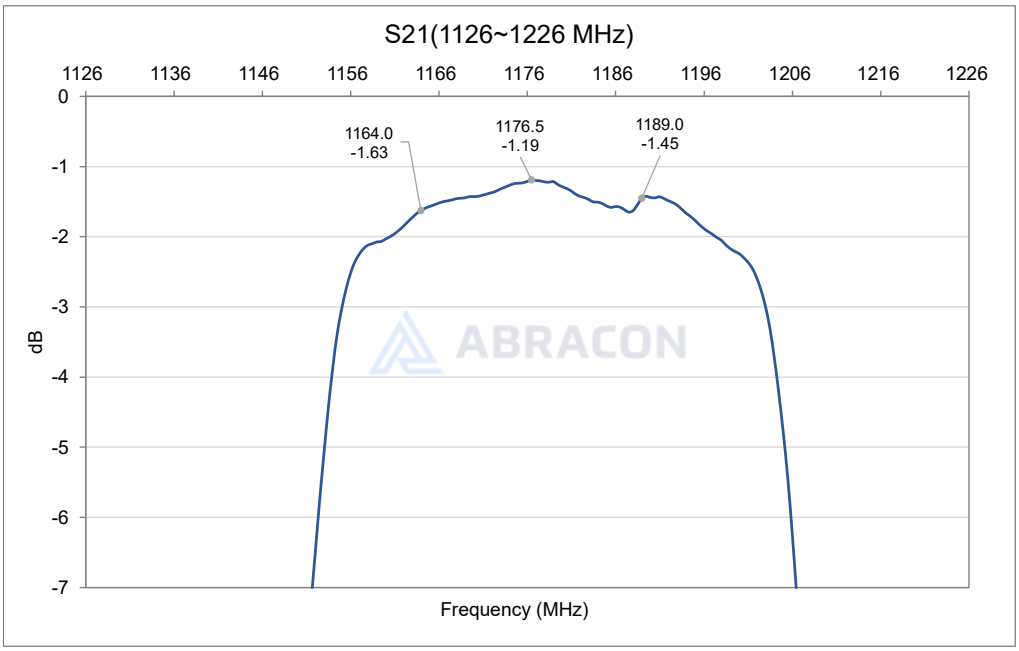
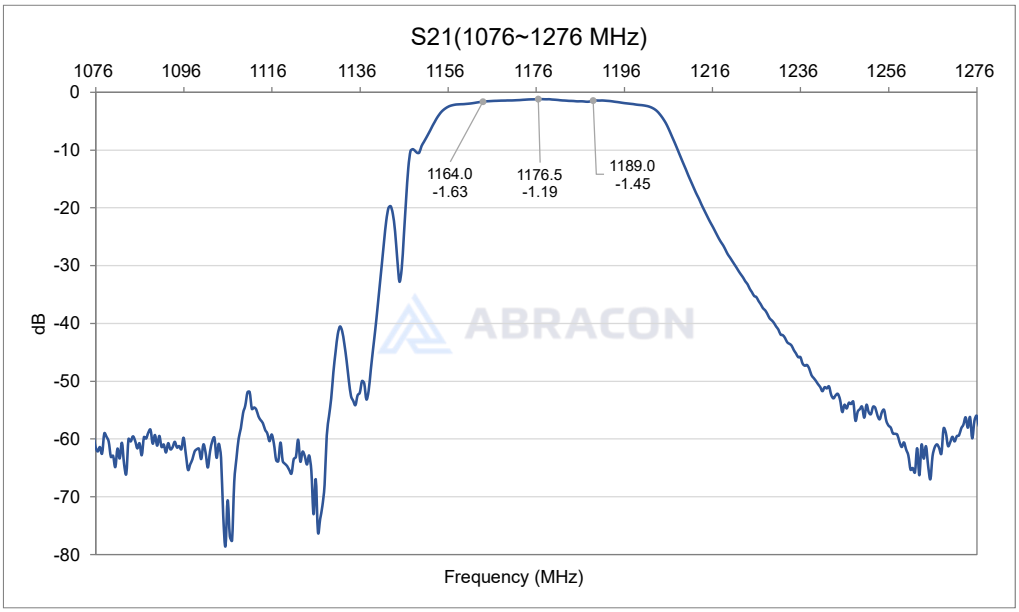
1.1 x 0.9 x 0.5 mm
RoHS/RoHS II Compliant
MSL Level = 2a

Frequency Characteristics

S21 narrow band





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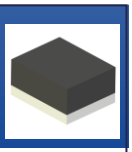

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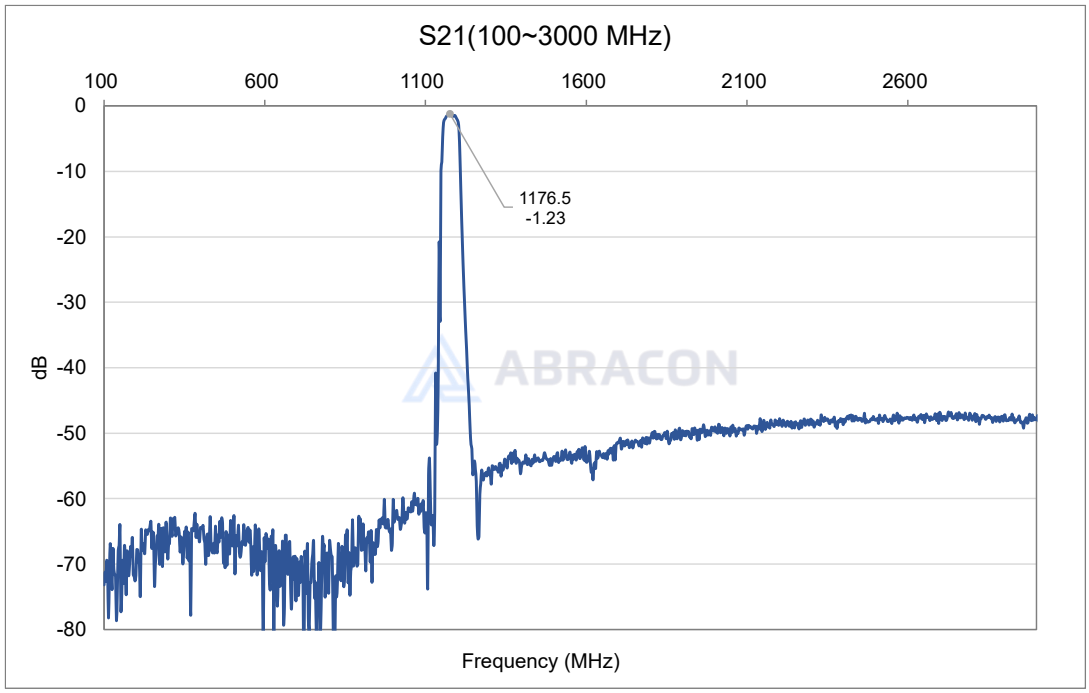
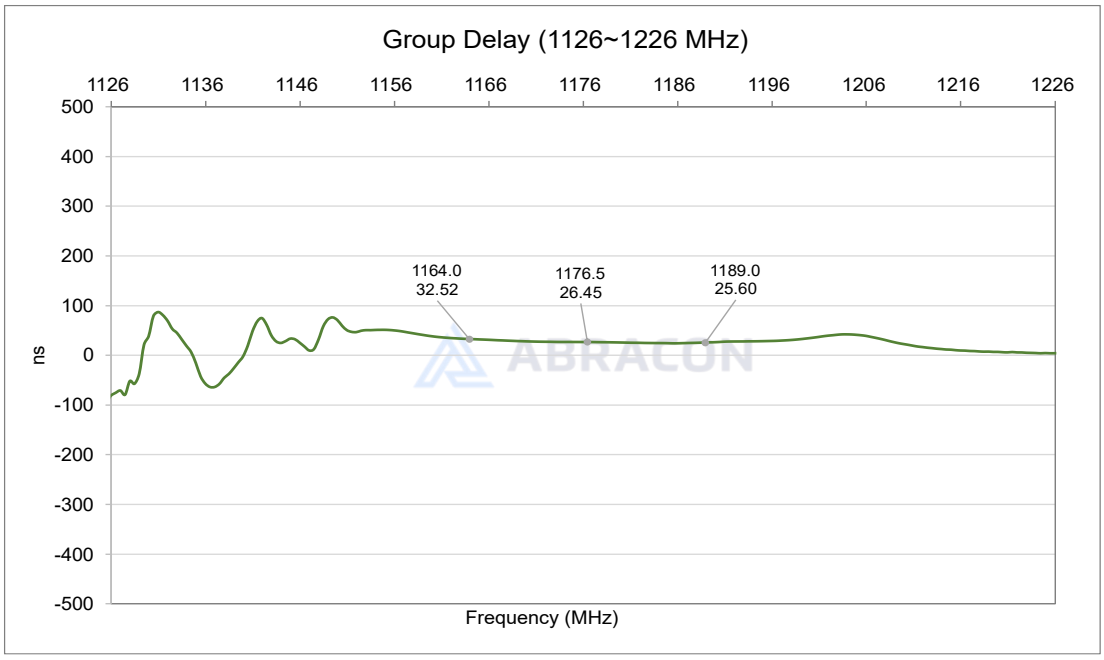
MSL Level = 2a

S21 Wide Band



Group Delay



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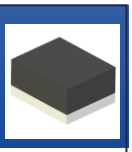

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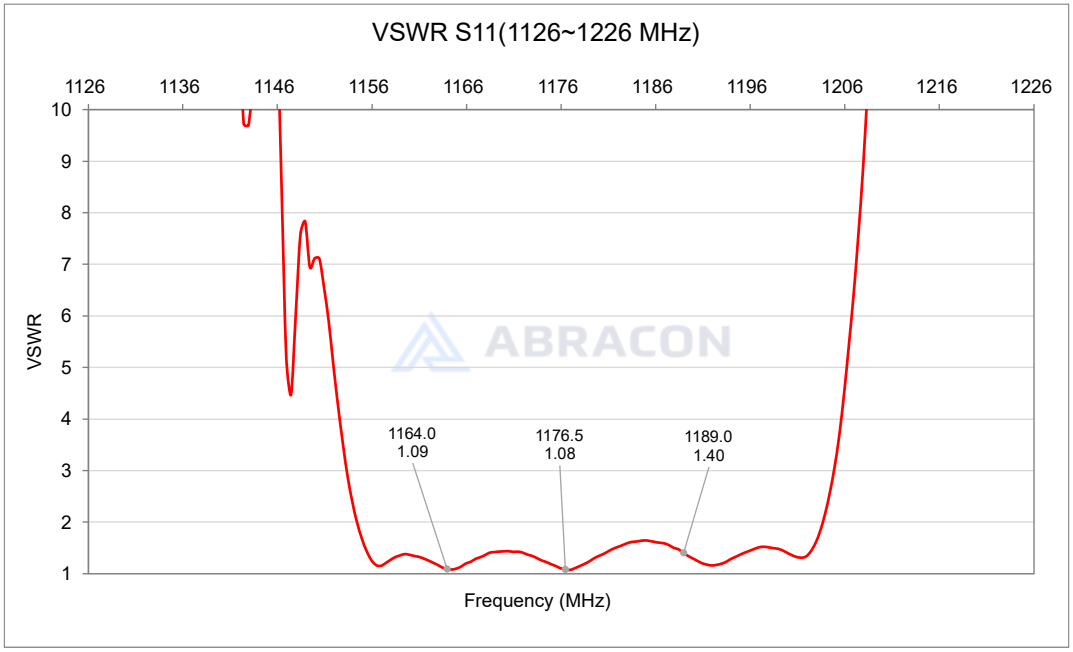
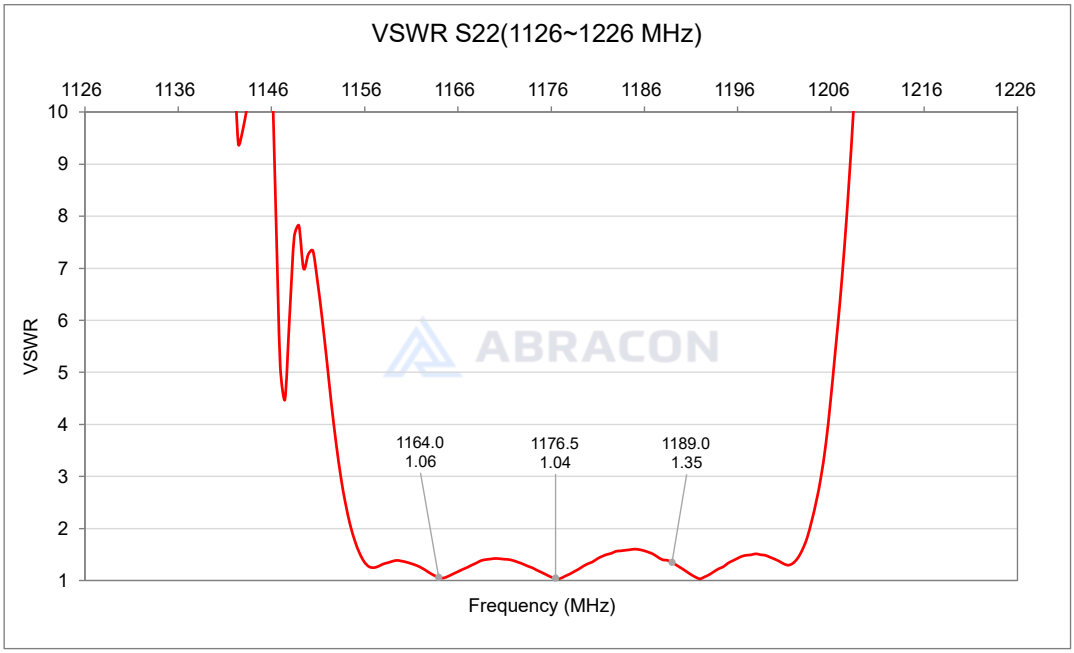
MSL Level = 2a

VSWR (S11 & S22)





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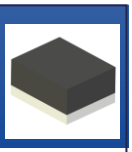

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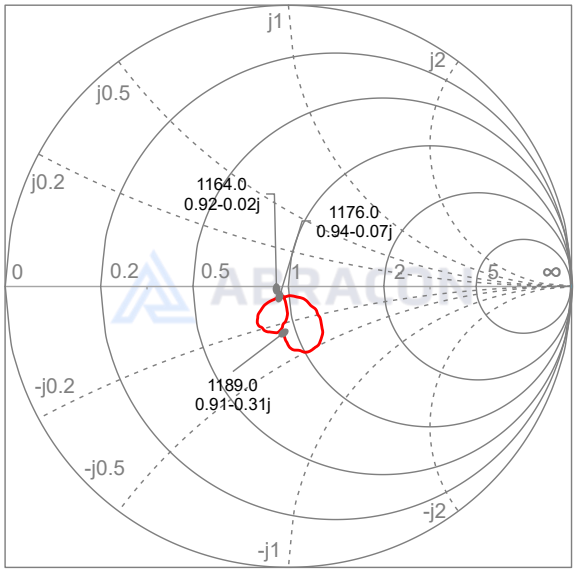
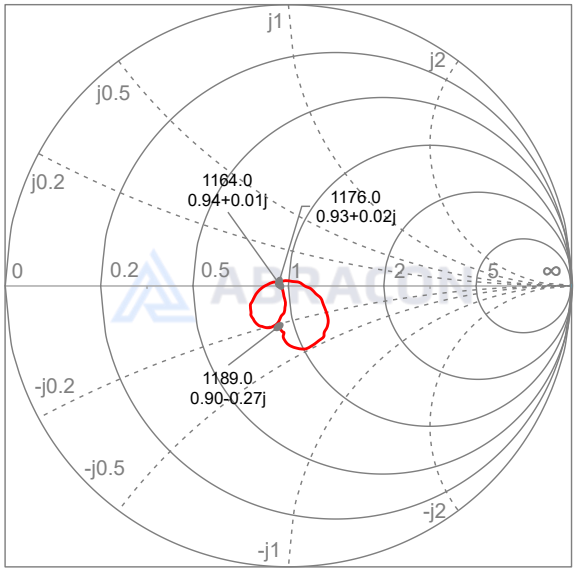
MSL Level = 2a

Smith Chart (S11 & S22)

Smith chart S11 (1164~1189MHz)



Smith chart S22 (1164~1189MHz)



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