

WiFi 6E Chip Antenna

ACR1004A

Request Samples



Check Inventory



10.0 x 4.0 x 1.5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

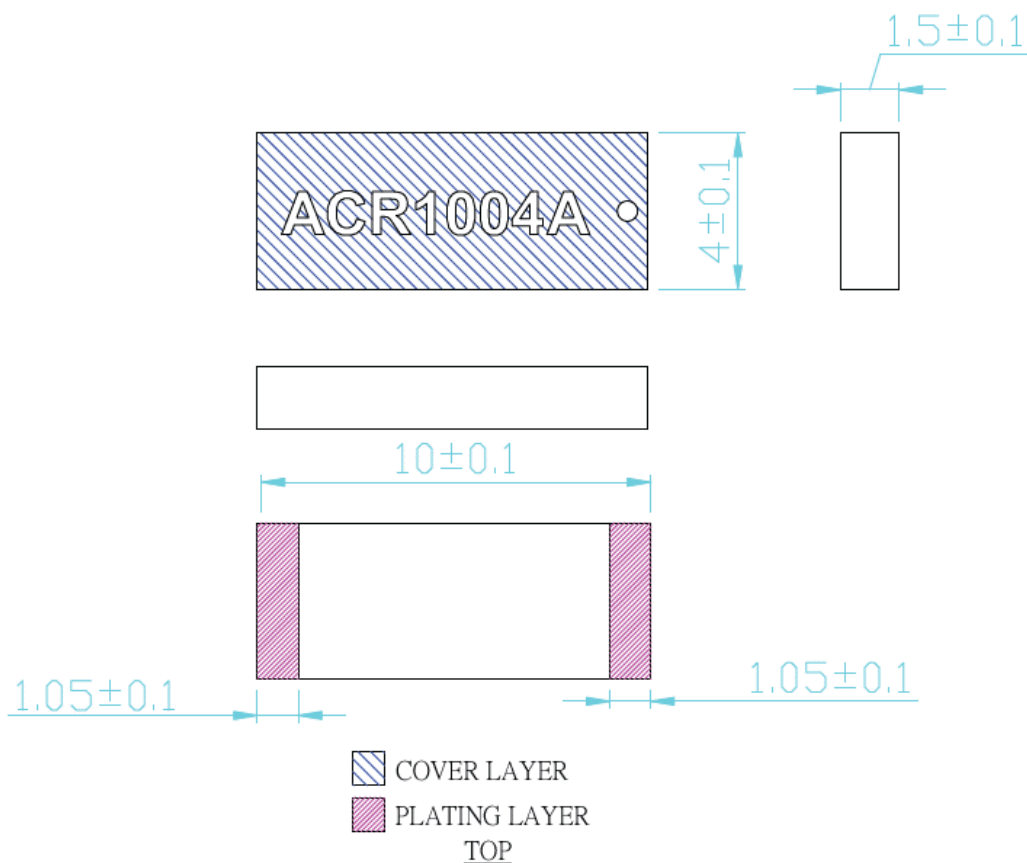
Features

- Compact
- Low Profile
- LTCC Chip Antenna
- High Peak Gain of 4 dBi
- Optimal Efficiency
- SMD Component

Applications

- IoT
- M2M
- Medical devices
- Smart Wearables
- Consumer Electronics
- VR/AR solutions
- Home / Building Automation

Product Dimensions



Unit : mm



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REVISED: 08-04-21

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Electrical Specification

Parameter	Specification			Unit
	Min	Typ	Max	
Operating Frequency	2400		2500	MHz
	5150		7125	
Peak Gain			4.02	dBi
Average Gain			-2.71	dBi
Efficiency	53		79	%
Impedance	50			Ω
Polarization	Linear			

Note : The chip antenna performance is evaluated as per the evaluation board dimension of 100 x 50 mm. Frequency detuning may occur based on the application materials and environment which can be compensated using a suitable matching circuit.

Mechanical Specification

Parameter	Specification
Antenna Dimension	10.0 x 4.0 x 1.5 mm
Evaluation Board Dimension	100.0 x 50.0 x 0.8 mm
Mounting Type	Surface Mount

Environmental Specification

Parameter	Specification
Operating Temperature	-30°C to +85°C
Storage Temperature	-40°C to +85°C
RoHS	Compliant
Termination	Ag
Pb-Free	Yes
Relative Humidity	0-95 %



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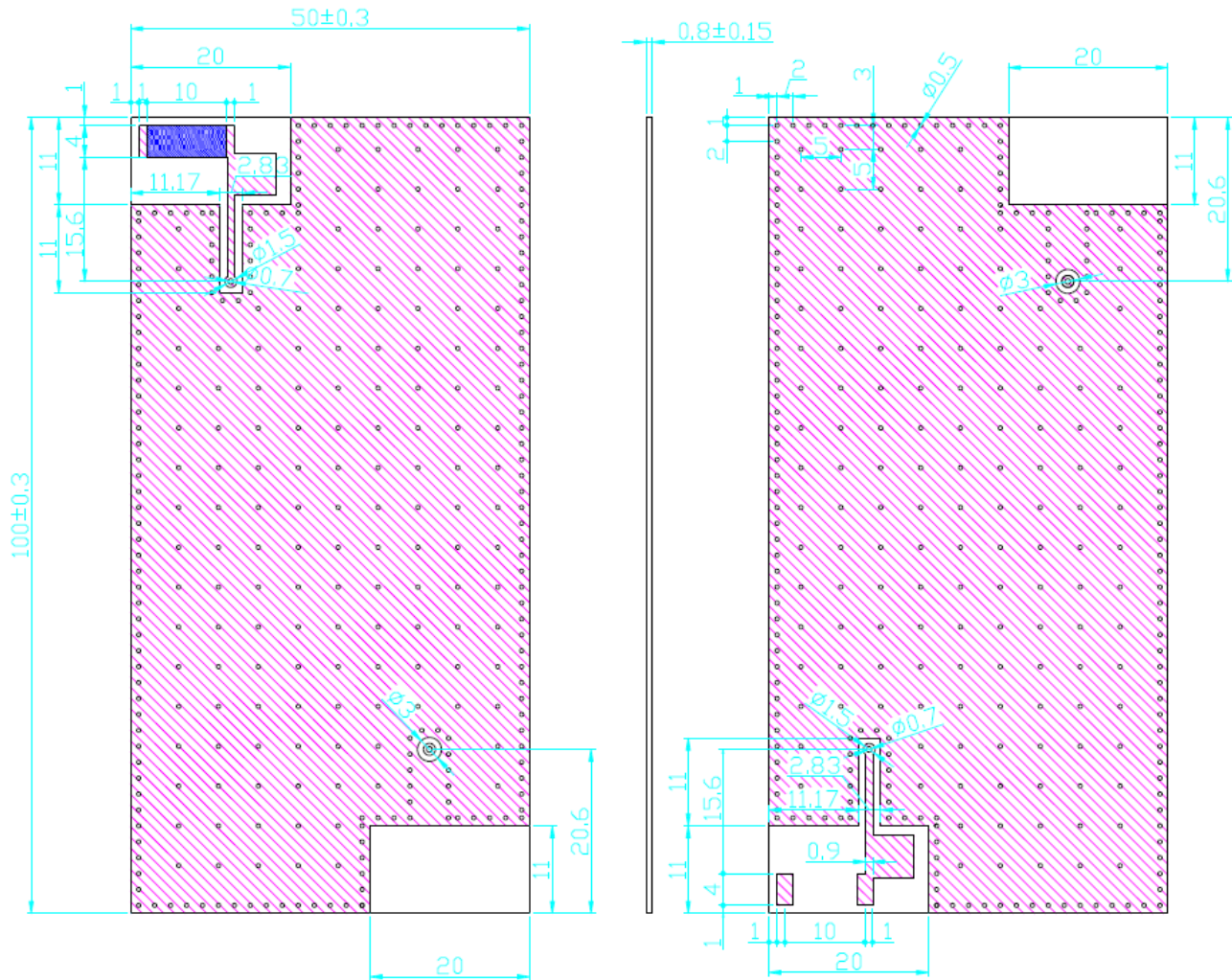


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Evaluation Board Dimensions



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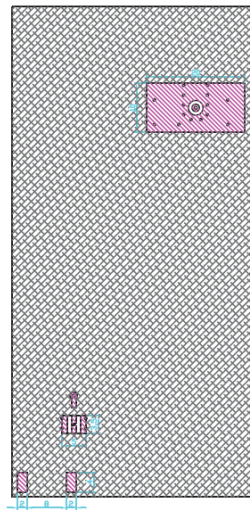
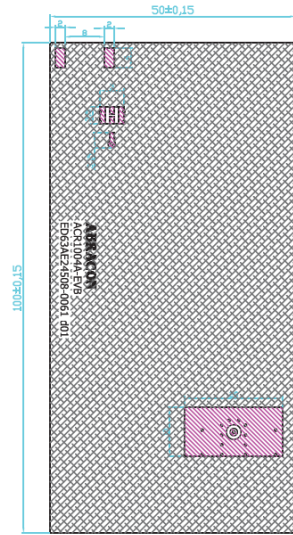


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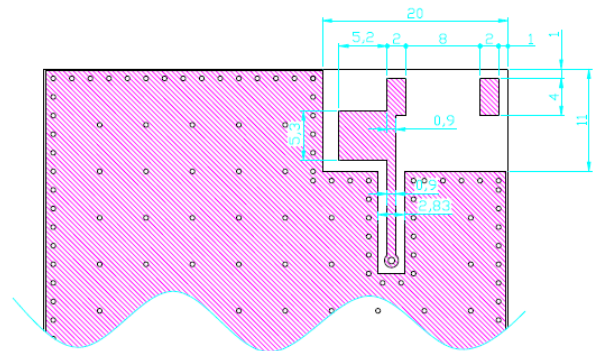
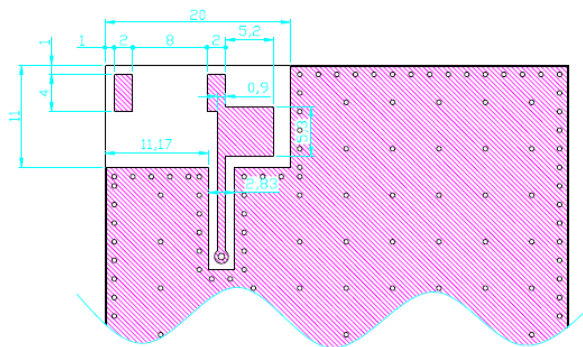
Evaluation Board Marking



Welding point TOP Layer
Bare copper area

Welding point Bottom Layer
Bare copper area

Layout Dimensions



Unit: mm



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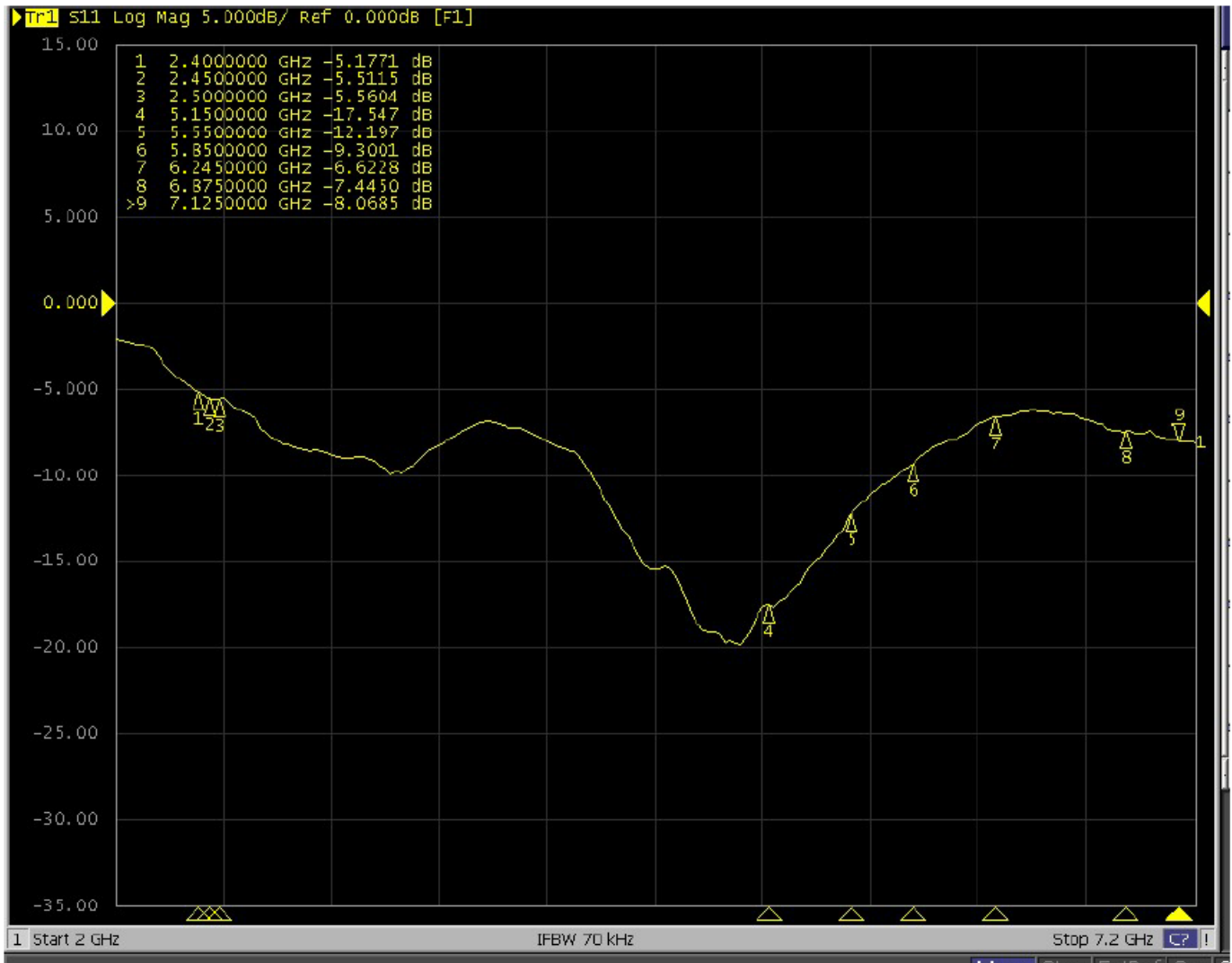


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Reflection Characteristics – Return Loss



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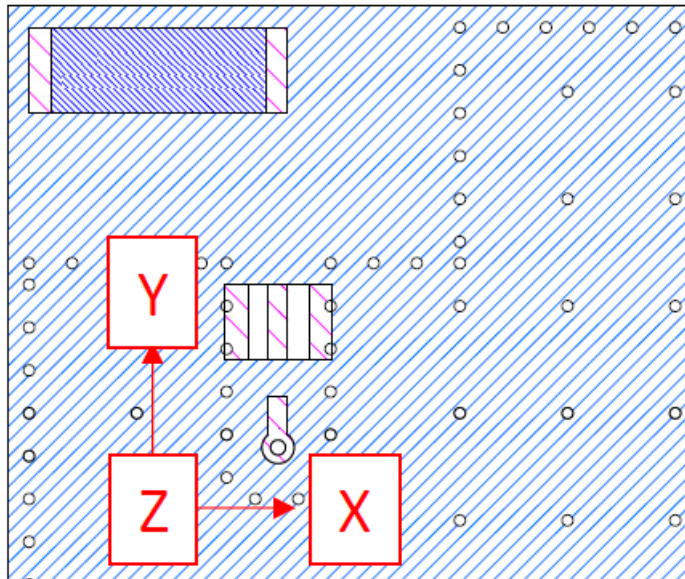


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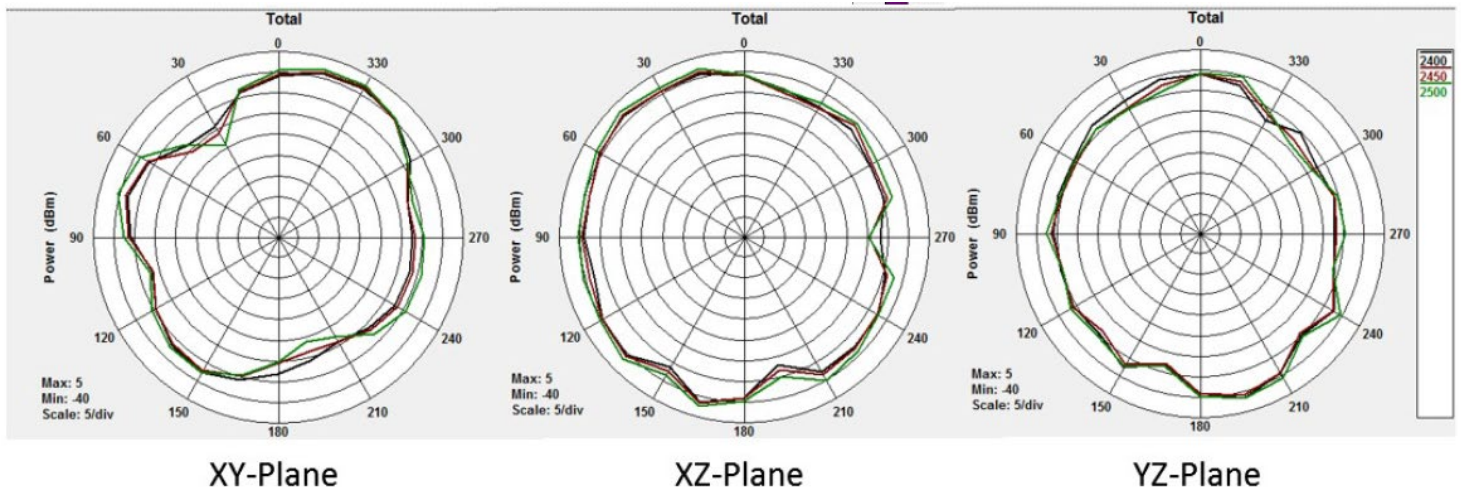
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Radiation Characteristics



2D Pattern

2450MHz



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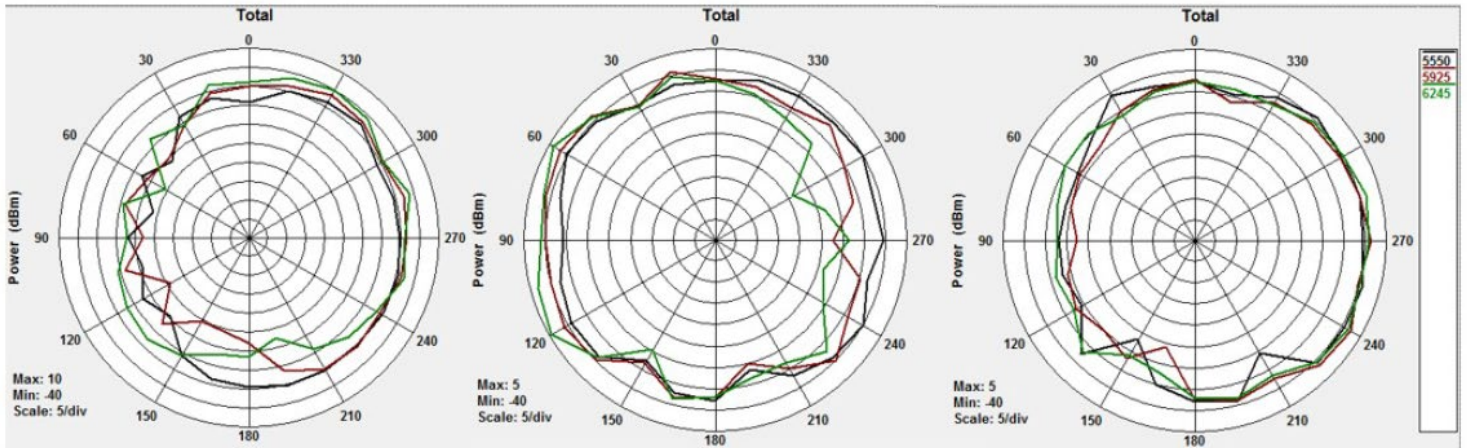


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10.0 x 4.0 x 1.5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

5550MHz

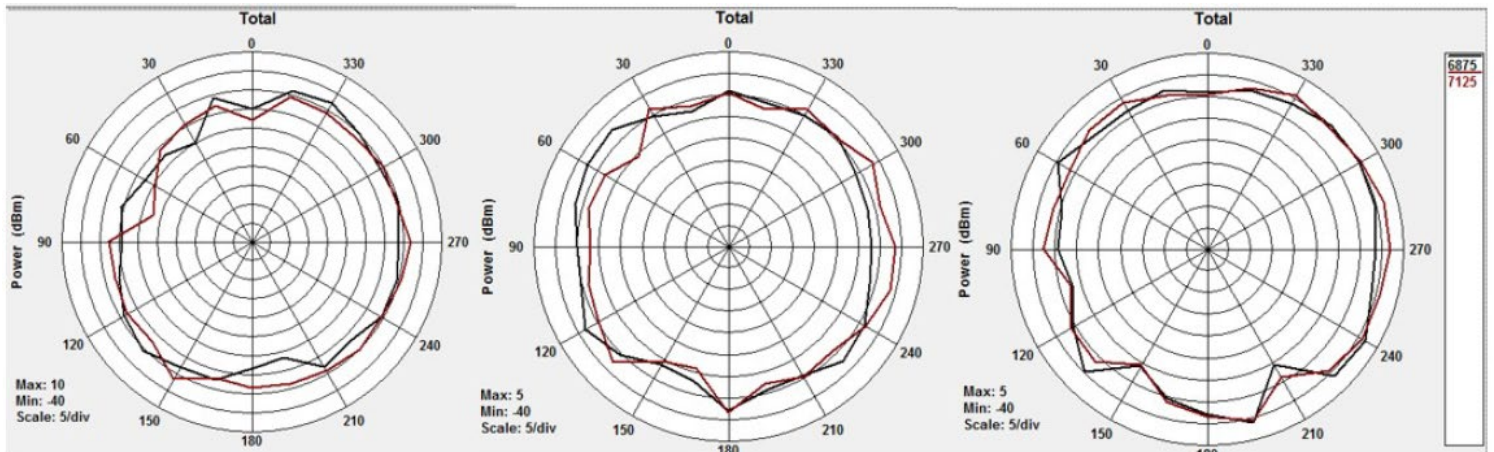


XY-Plane

XZ-Plane

YZ-Plane

6875MHz



XY-Plane

XZ-Plane

YZ-Plane



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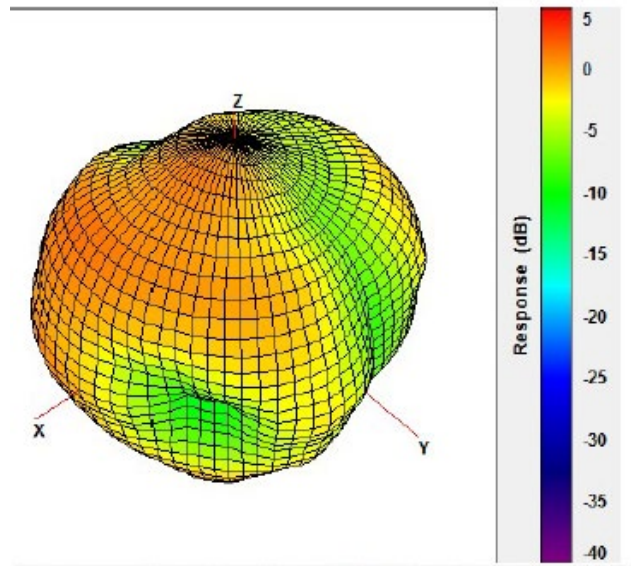
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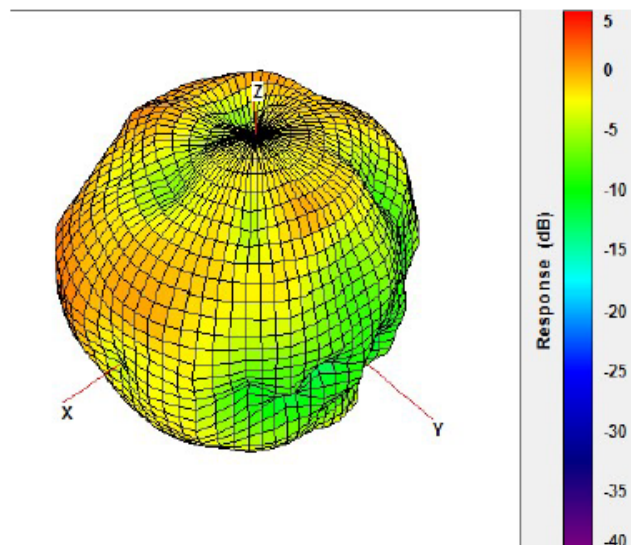
10.0 x 4.0 x 1.5 mm
RoHS/RoHS II Compliant
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3D pattern

2400 MHz



5550 MHz



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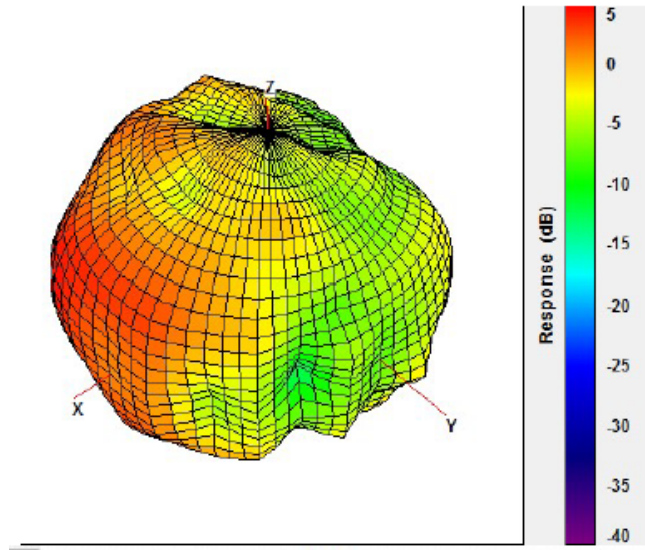


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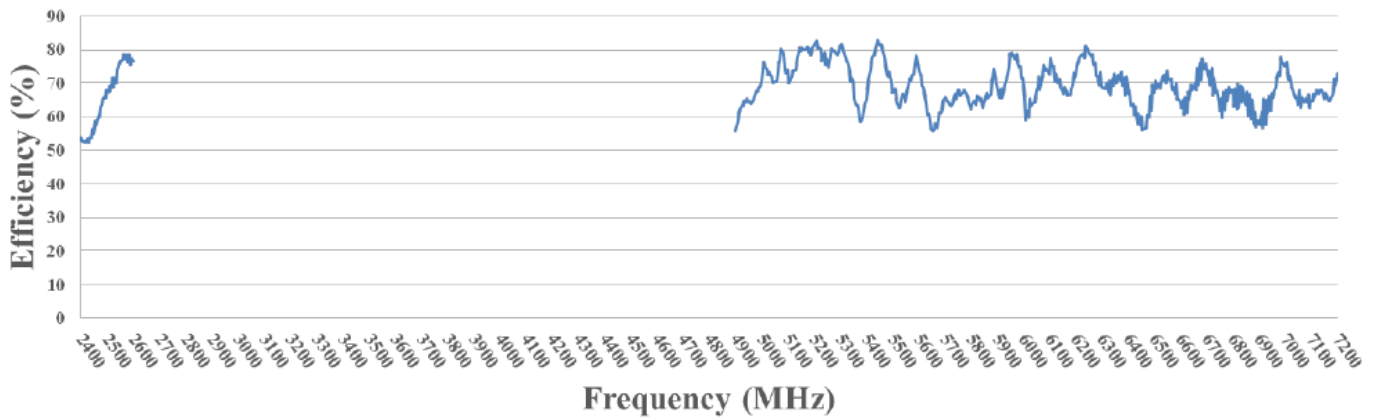


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6875 MHz



Efficiency



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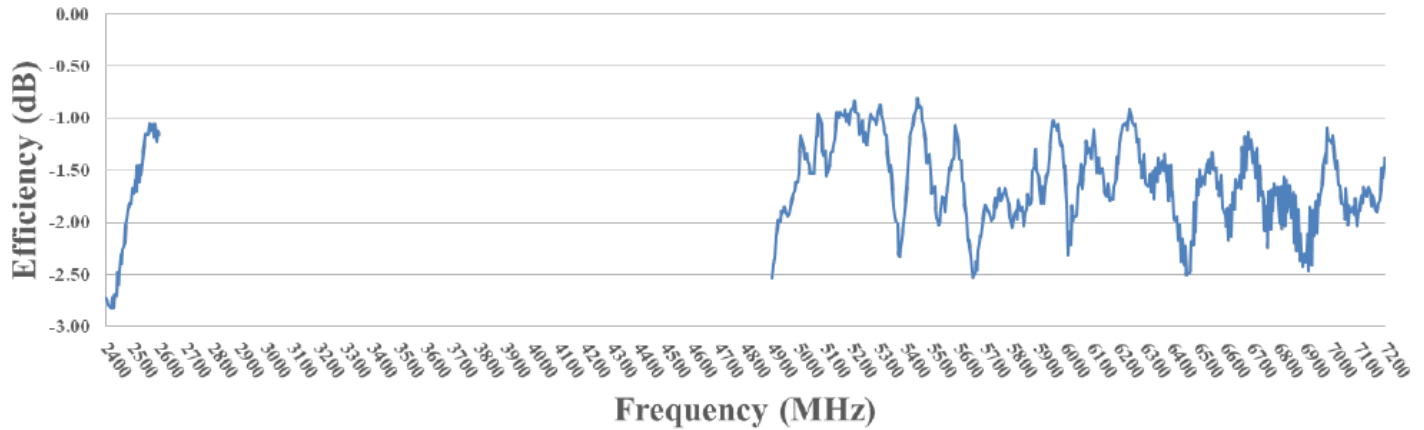


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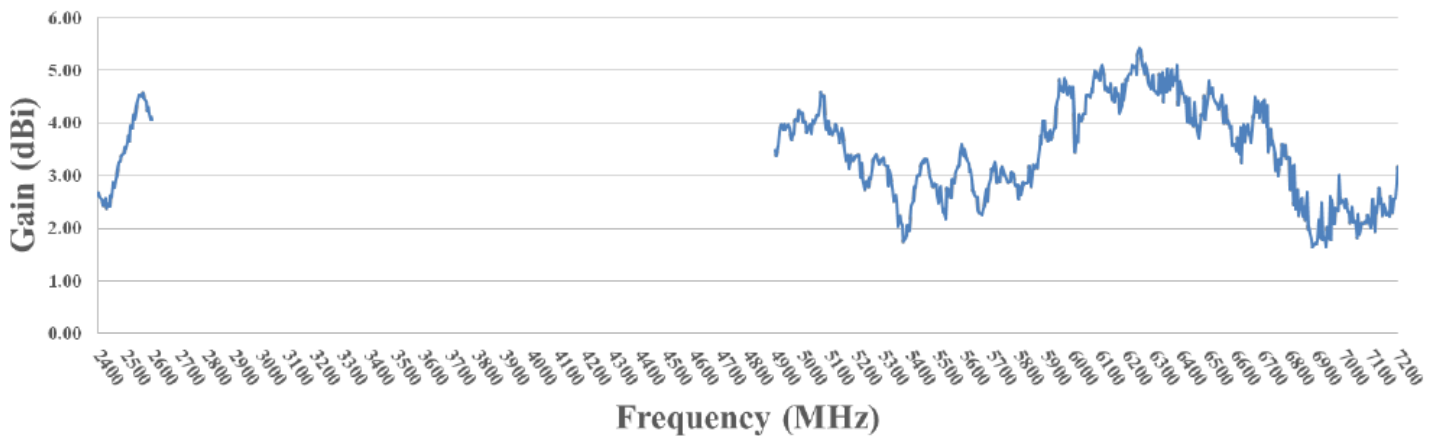


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Average Gain



Peak Gain



Frequency (MHz)	2400	2450	2500	5150	5550	5925	6425	6875	7125
Efficiency (%)	53.55	54.98	67.95	79.58	64.54	68.34	60.61	64.98	67.59
Average Gain (dB)	-2.71	-2.60	-1.68	-0.99	-1.90	-1.65	-2.17	-1.87	-1.70
Peak Gain (dBi)	2.66	2.59	3.54	3.78	2.57	3.74	4.02	2.00	2.29



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Reliability Test Report

Test Item	Test Condition / Method	Specification
Humidity Test	The device is subjected to +85°C and 90%~95% for 96h~98h, then dry out at normal temperature	After the test, examine its appearance and functions
High Temperature Exposure	Device is subjected to 85°C temperature for 16h, and measured after 24h leaving in 25°C±5°C and less than 65% relative humidity.	After the test, examine its appearance and functions
Low Temperature	Device is subjected to -40°C temperature for 16h, and measured after 24h leaving in 25°C±5°C and less than 65% relative humidity.	After the test, examine its appearance and functions
Sinusoidal Vibration Test	Frequency : 5Hz~200Hz~5Hz Total amplitude : 2.0 mm Test times : 4hrs (Two hrs each in X and Y directions) and 4hrs in Z direction.	After the test, examine its appearance and functions
Vibration test in Packaged condition	Frequency : 15Hz~60Hz~15Hz Total amplitude : 2.0 mm Test times : 6hrs (Two hrs each in X,Y and Z direction.)	After the test, examine its appearance and functions
Solder Ability	Soaked in solder bath at 270°C±5°C for 10s±0.5s and then left for 1hr or more at 25±5°C	After the test, examine its appearance and functions
Adhesion test	Device is subjected to be soldered on test PCB. Then apply 5N of force for 10s±1s in the direction parallel to the substrate	After the test, examine its appearance and functions
Free fall test in packaged condition	Drop the object, to a concrete surface from the height of 90 cm on one corner, 3 edges and six faces once each i.e 10 times in total	After the test, examine its appearance and functions



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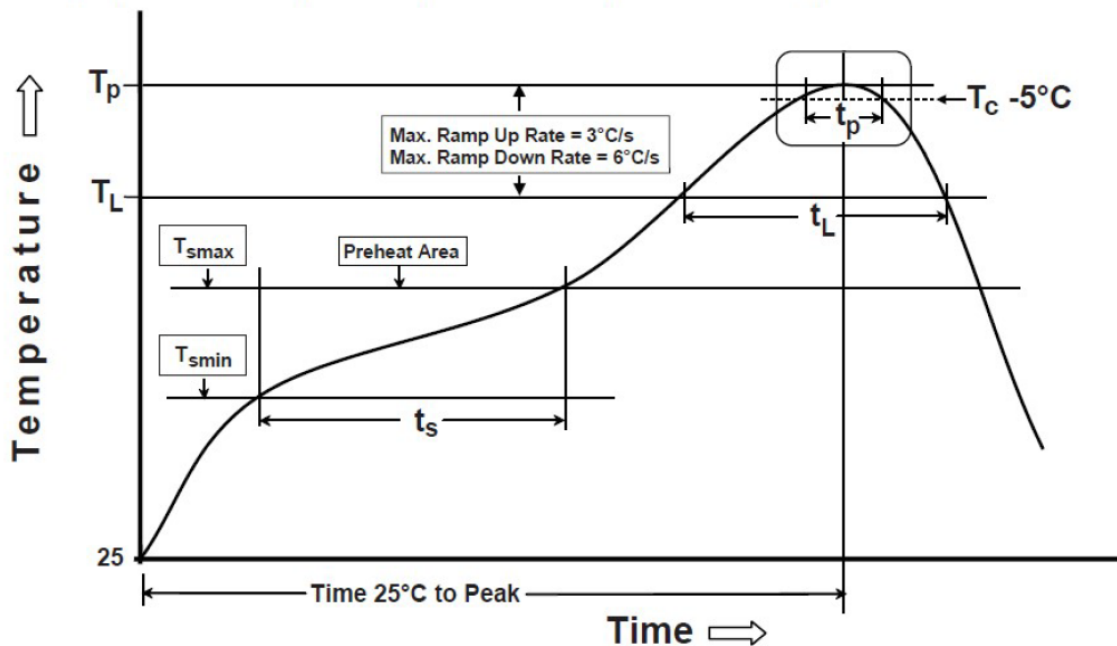


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Recommended Soldering Profile



Phase	Profile features	Pb-Free Assembly (SnAgCu)
Preheat	-Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(t_s) form (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Ramp-up	Avg. Ramp-up Rate (T_{smax} to T_p)	3°C/second(max)
Reflow	-Temperature(T_L) -Total Time above T_L (t_L)	217°C 30-100 seconds
Peak	-Temperature(T_p) -Time(t_p)	260°C 20-30 second
Ramp-down	Rate	6°C / second max.
Time from 25°C to Peak Temperature		8 minutes max.
Composition of solder paste		96.5Sn/3Ag/0.5Cu
Solder Paste Model		SHENMAO PF606-P26



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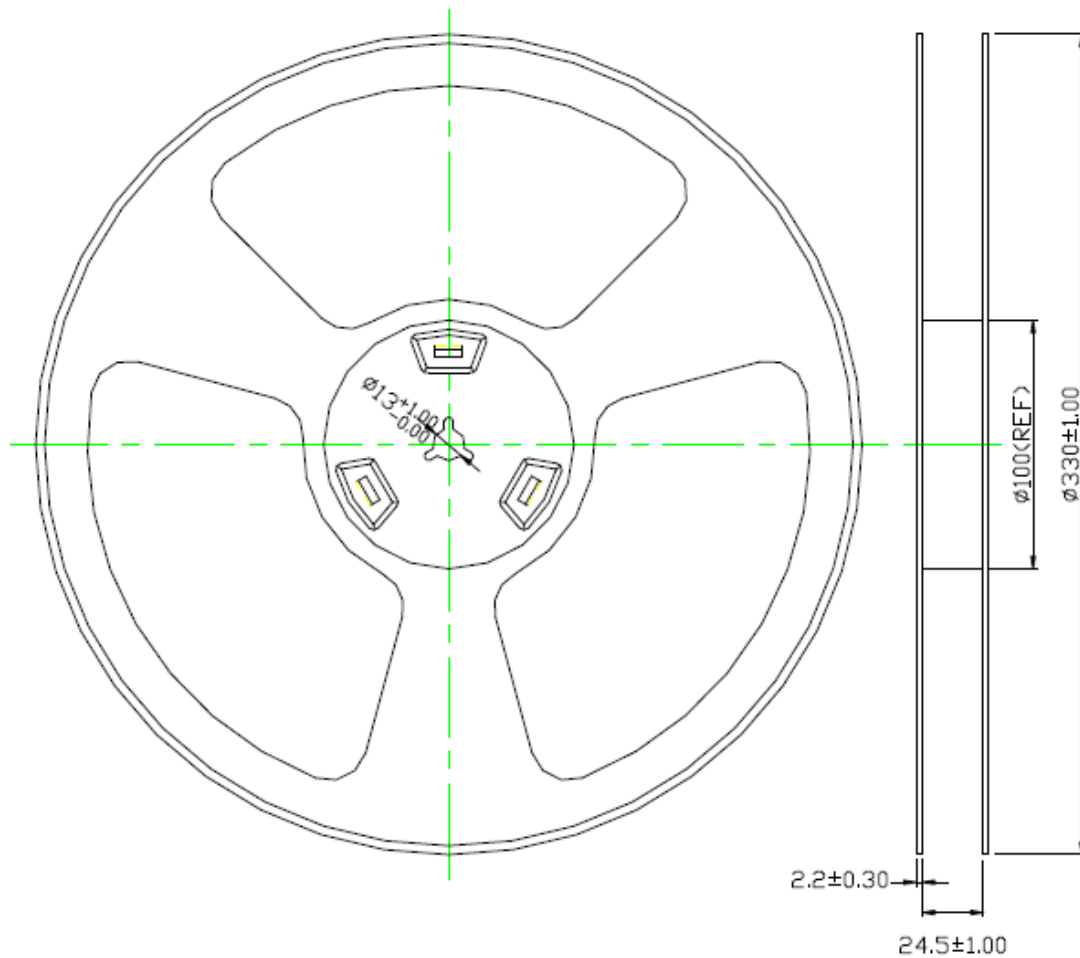


10.0 x 4.0 x 1.5 mm
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Packaging

Packaging Type : Tape & Reel
Number of Pieces per Reel : 2000

Reel Specifications



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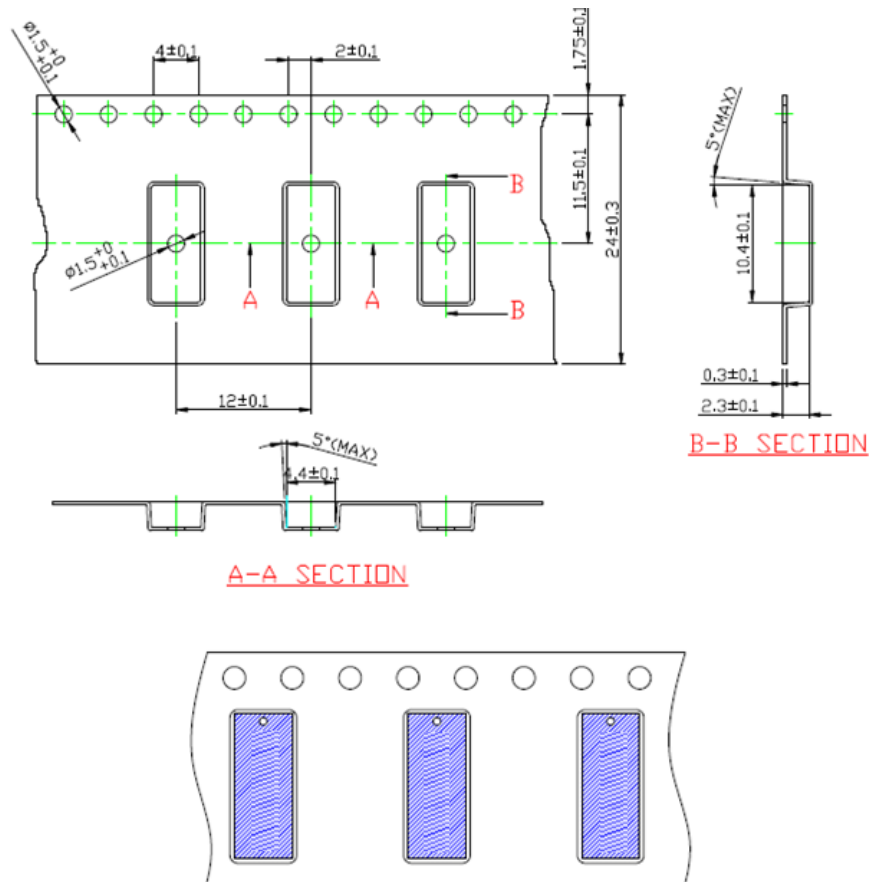


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Tape Specifications



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