SUNTSU

Chip Antenna

SATCA-3C1GF-WFB5

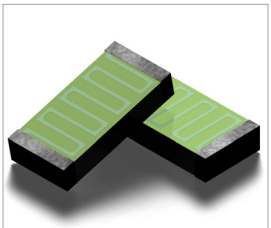
3.2mm x 1.6mm x 0.5mm

Features

- WiFi/HDMI
- Chip Type
- Stable And Reliable Performance
- 5150-5900MHz
- SMT Process Compatible

Applications

- IEEE802.11a (5150~5900 MHz)
- HDMI PCMCIA Cards Or USB Dongle
- Table PC
- Smart Hand Held Devices
- Machine To Machine Communication



Part Numbering Guide

S AT CA 3C1GF WF B5

- **S** — SUNTSU
- **AT** — ANTENNA
- **CA** — CHIP ANTENNA
- **3C1GF** — PACKAGE SIZE*: 3C1GF = 3.2mm x 1.6mm x 0.5mm
- **WF** — APPLICATION: WF = WiFi
- **B5** — FREQUENCY: B5 = 5150-5900MHz

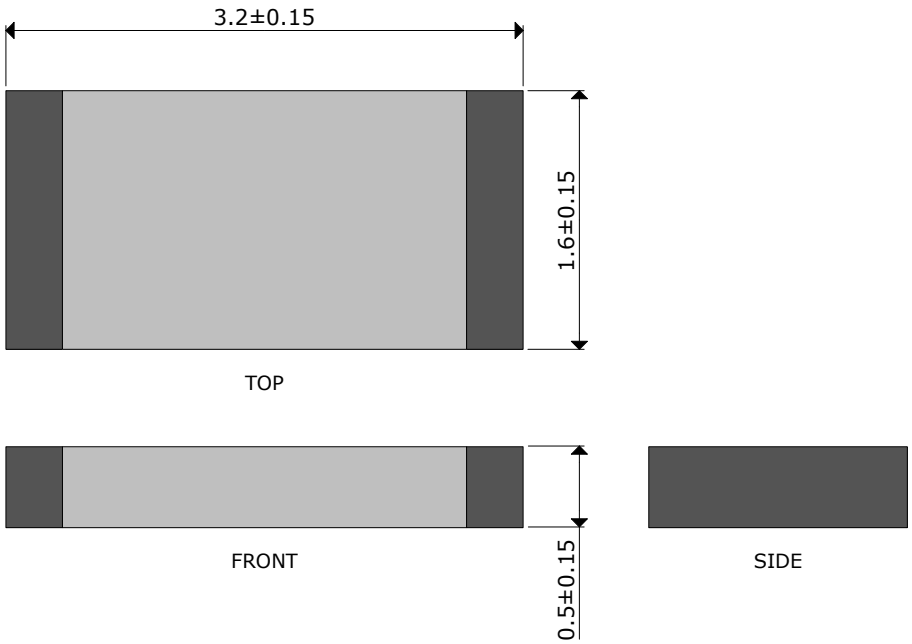
RoHS COMPLIANT

* Where letters denote decimal location (A=.0, B=.1, C=.2, etc.); e.g. B5=0.15, 3A5=3.05, 9A=9.0

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	5150		5900	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		3.4		At 5550MHz
Efficiency	%		80		At 5550MHz
VSWR				2	At Center Frequency
Operating Temperature	C	-40		85	

Outline Drawing

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



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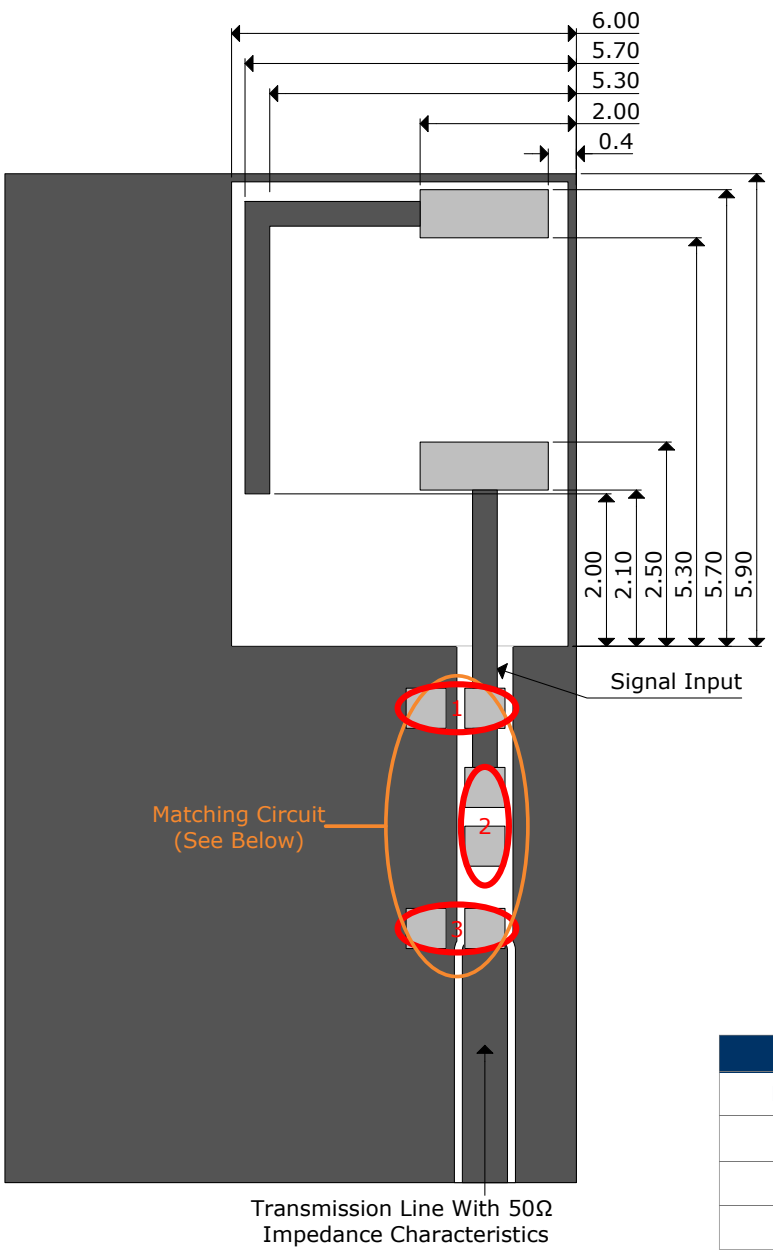
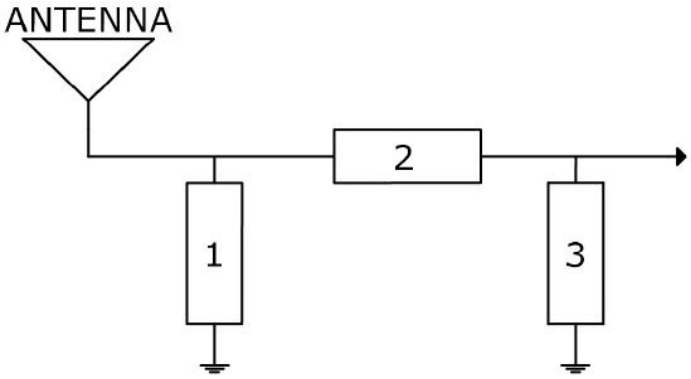
Recommended Land Pattern & Frequency Tuning Scenario Circuit

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.





For these suggested values for the matching and tuning of components, the average frequency will be around 5550MHz on a standard 40 x 40mm² Evaluation board.

Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

System Matching Circuit Components

Location	Description	Vendor	Tolerance
1	0.3pF, (0402)	DARFON	±0.05pF
2	4.7pF, (0402)	DARFON	±0.1pF
3	0.47pF, (0402)	DARFON	±0.05pF

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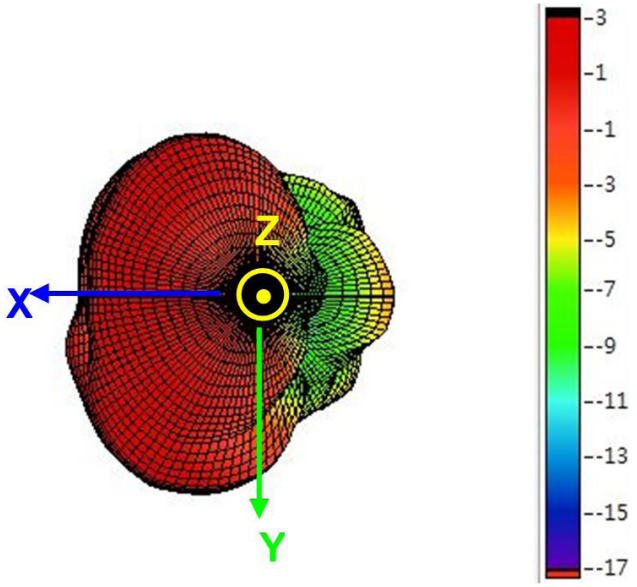
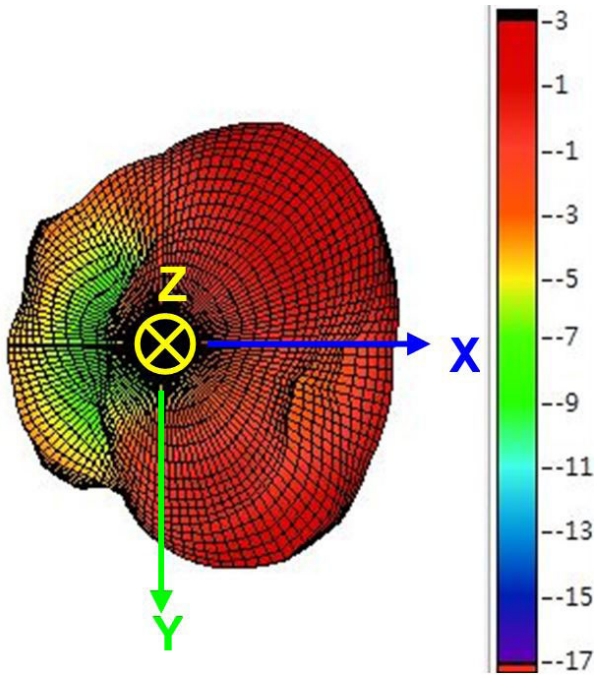
Radiation Pattern

5150MHz



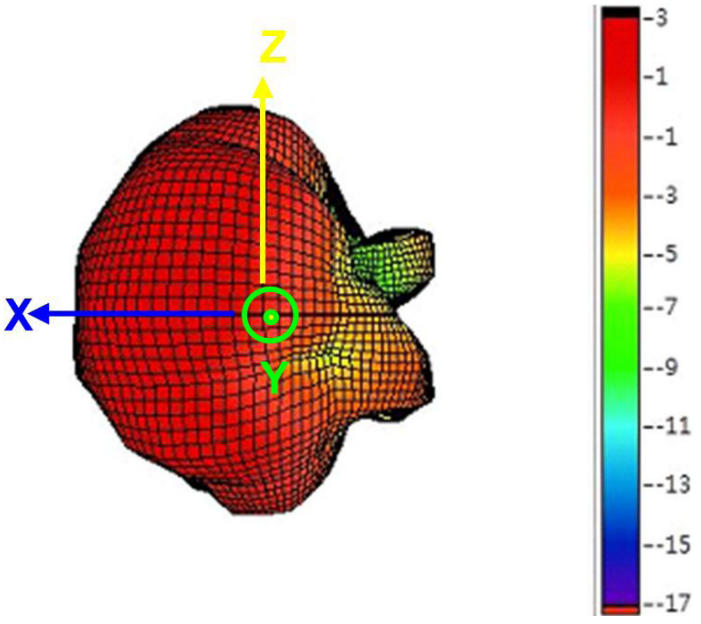
Radiation Pattern

5150MHz



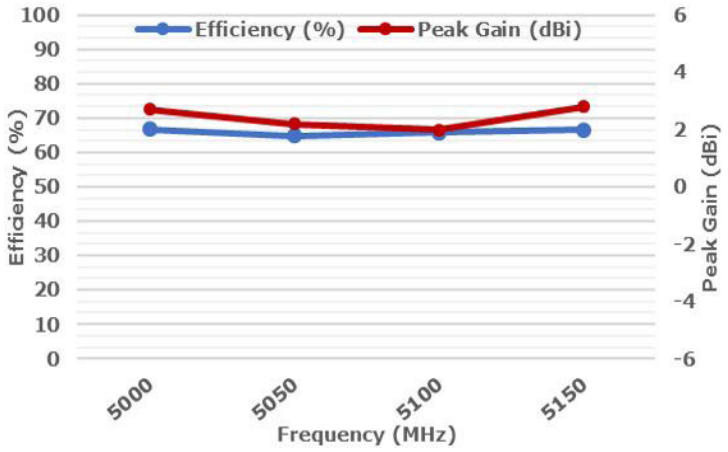
Radiation Pattern

5150MHz



Efficiency V's Frequency

5150MHz



Freq.	5000	5050	5100	5150
Eff. (%)	66.8	64.9	65.8	66.5
P.G.	2.7	2.2	2	2.8

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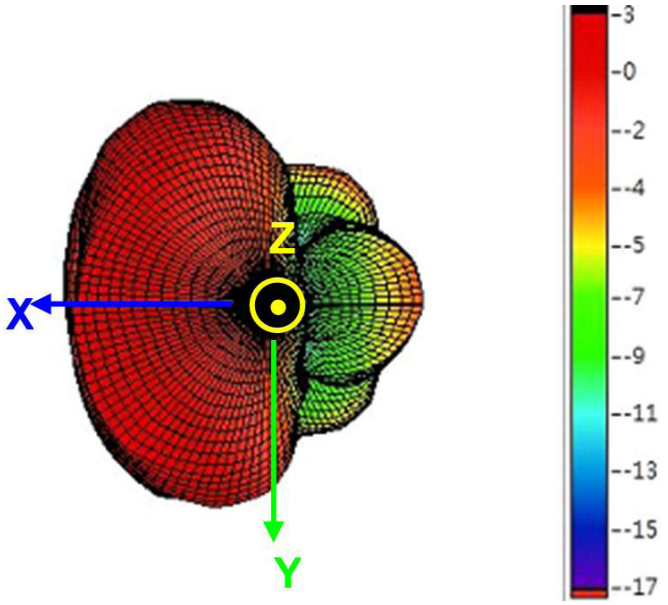
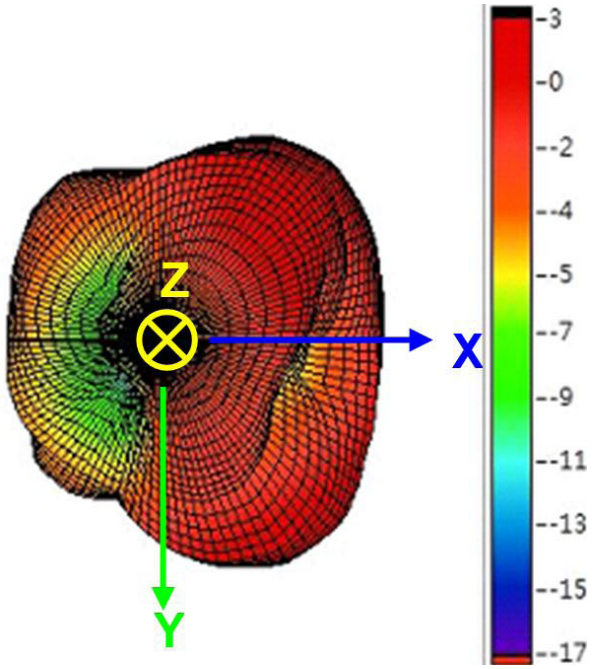
Radiation Pattern

5350MHz



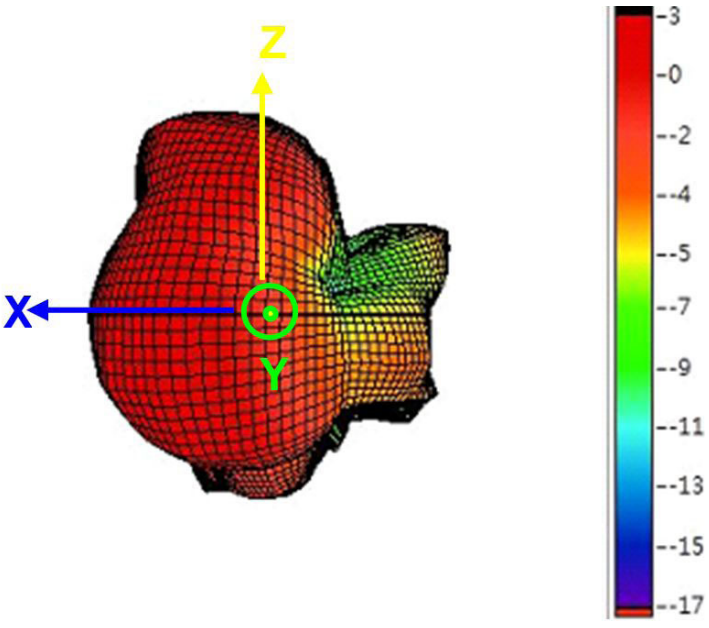
Radiation Pattern

5350MHz



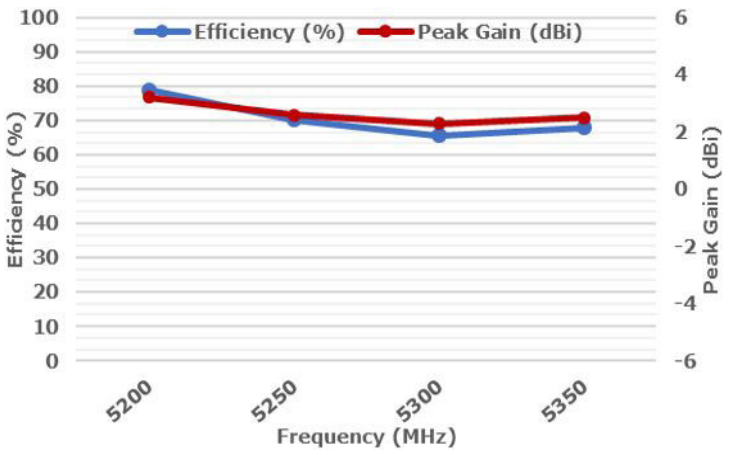
Radiation Pattern

5350MHz



Efficiency V's Frequency

5350MHz



Freq.	5200	5250	5300	5350
Eff. (%)	78.9	70.2	65.6	67.9
P.G.	3.2	2.6	2.3	2.5

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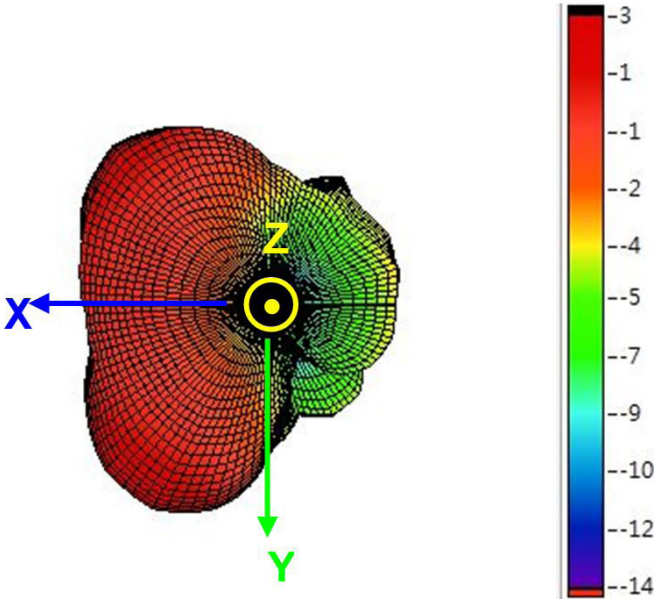
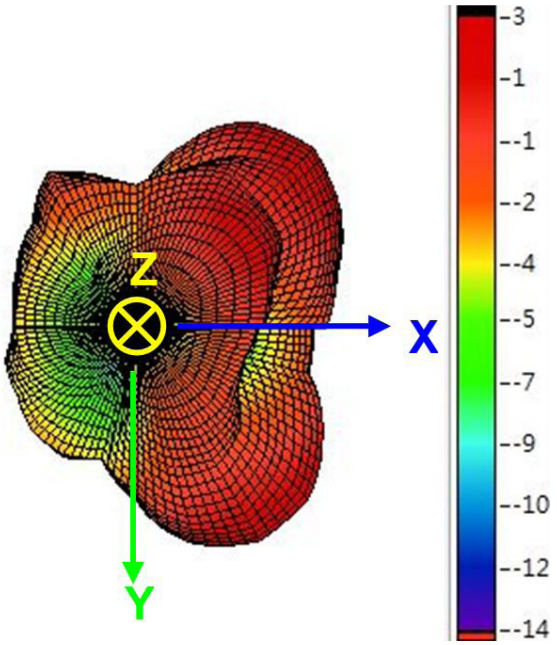
Radiation Pattern

5700MHz



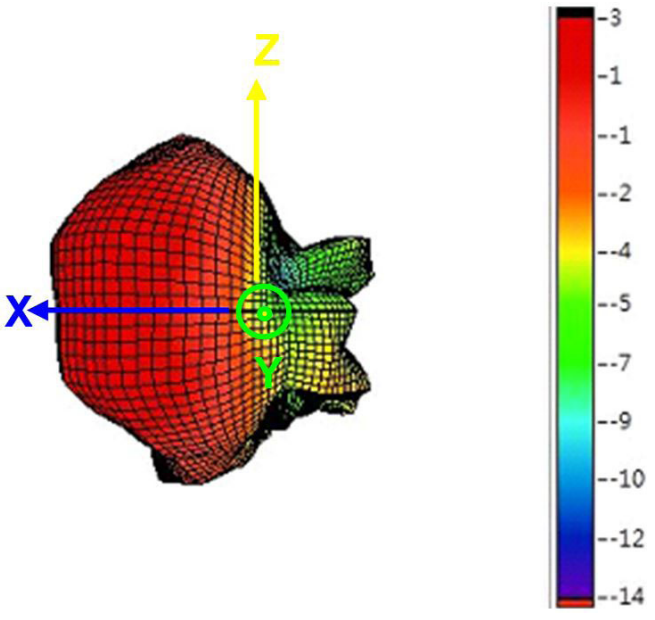
Radiation Pattern

5700MHz



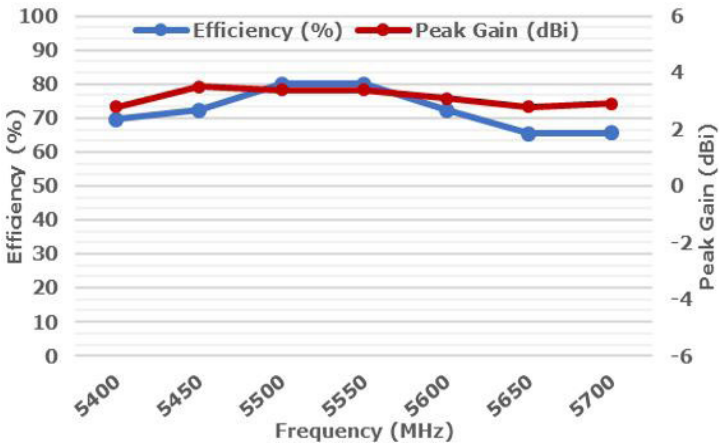
Radiation Pattern

5700MHz



Efficiency V's Frequency

5700MHz



Freq.	5400	5450	5500	5550	5600	5650	5700
Eff. (%)	69.7	72.3	80	80	72.4	65.5	65.6
P.G.	2.8	3.5	3.4	3.4	3.1	2.8	2.9

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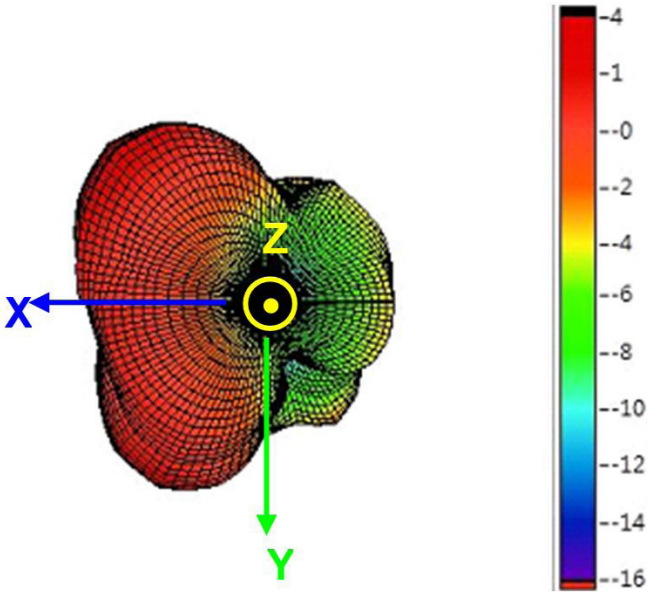
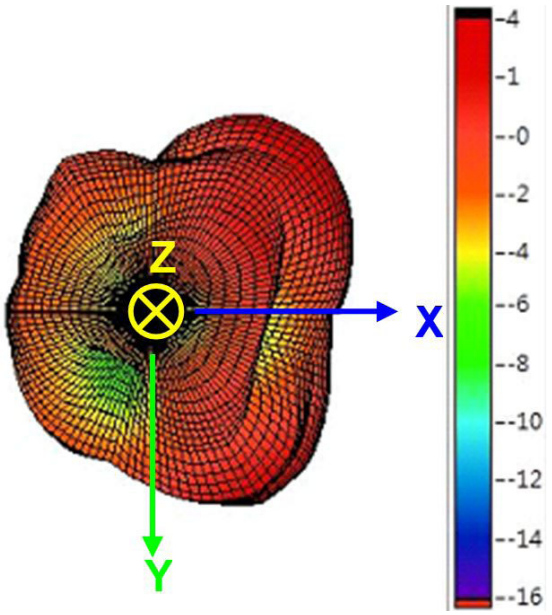
Radiation Pattern

5850MHz



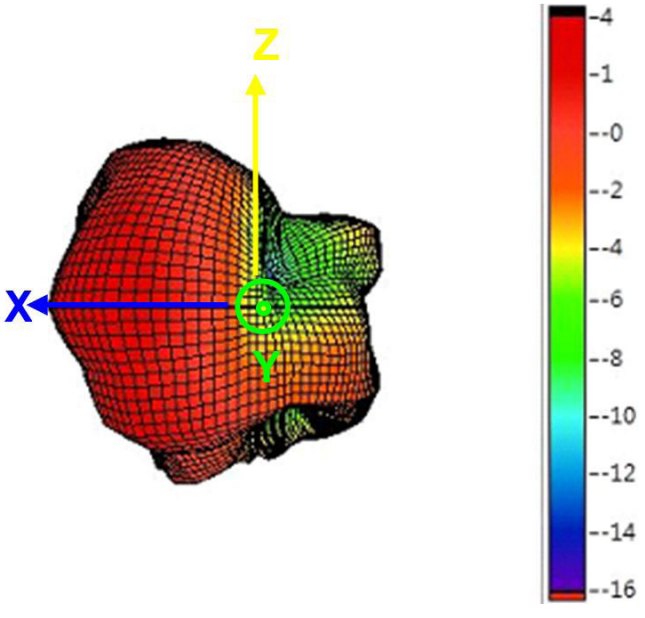
Radiation Pattern

5850MHz



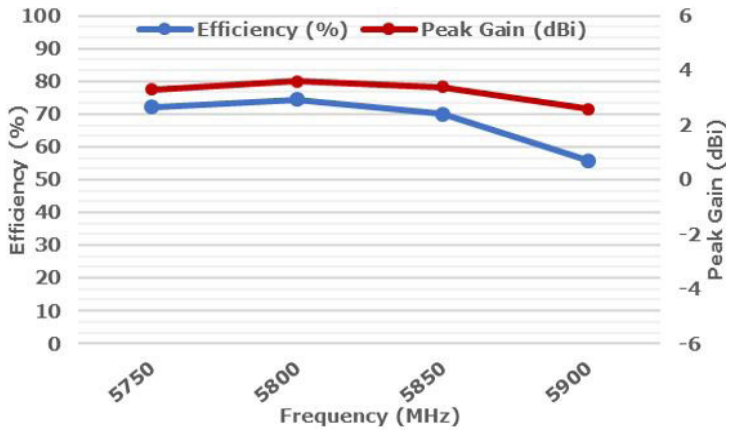
Radiation Pattern

5850MHz



Efficiency V's Frequency

5850MHz



Freq.	5750	5800	5850	5900
Eff. (%)	72.1	74.5	70	55.9
P.G.	3.3	3.6	3.4	2.6

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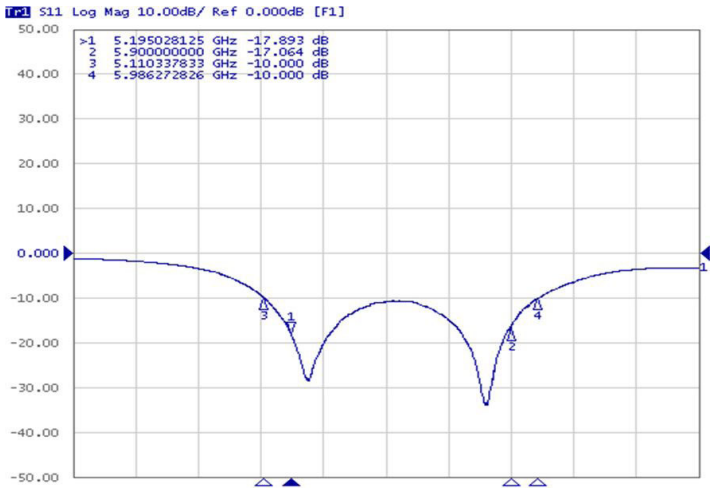
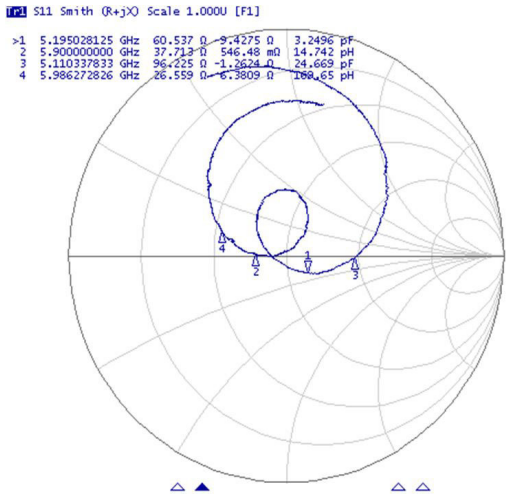
Electrical Test

Return Loss



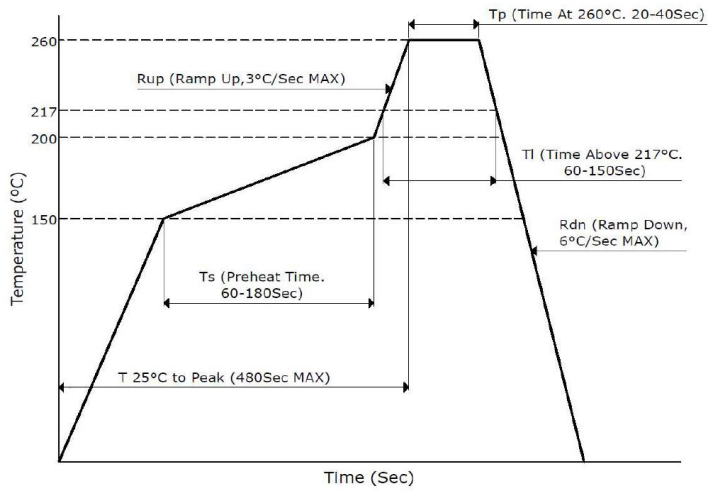
Electrical Test

Smith Chart



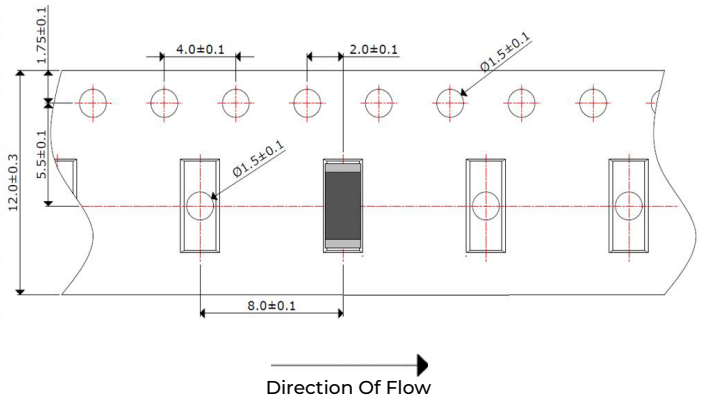
Soldering Conditions

Typical Soldering Profile For Lead-Free Process



Packaging - Tape And Reel

5000Pcs / Reel



Environmental & Mechanical Specifications

High Temperature Test	85°C for 500 hours, and then to normal temperature/humidity for 24hours.
Low Temperature Test	-30°C for 500 hours, and then to normal temperature/humidity for 24hours.
Humidity Test	85°C / 90-95%RH for 96 hours, and then to normal temperature/humidity for 24hours.
Thermal Shock Test	-30°C for 30 min and +85°C for 30 min. 5 cycles, then expose to normal temperature/humidity for 24 hours or more.
Vibration Test	5 to 200 to 5Hz, swept in 10min, 4.5G at max(2mm amplitude), in X and Y directions for 2 hours each and in Z direction for 4 hours.

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