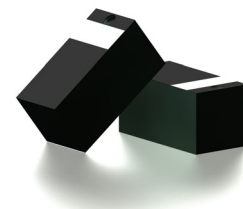


Features

- Dual Band WiFi
- Chip Type
- Stable And Reliable Performance
- 2400-2500MHz & 5150-5850MHz
- SMT Process Compatible

Applications

- Wireless Communication Devices
- WiFi Certified AC Applications
- IoT Applications
- Machine To Machine Communication
- Wireless PCMCIA Cards Or USB Dongles



Part Numbering Guide

S AT CA 3C1G1G WF B3

SUNTSU

ANTENNA

CHIP ANTENNA

PACKAGE SIZE*

3C1G1D = 3.2mm x 1.6mm x 1.6mm

APPLICATION

WF = WiFi

FREQUENCY

B3 = 2400-2500MHz
5150-5850MHz



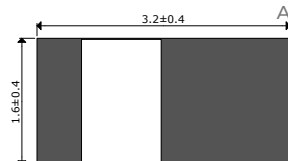
* Where letters denote decimal location (A=0, B=1, C=2, etc.); e.g. B5=0.15, 3A5=3.05, 9A=9.0

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	2400		2500	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		2.4		At 2442MHz
Efficiency	%		61		At 2442MHz
VSWR				2	At Center Frequency
Operating Temperature	C	-40		85	

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	2400		2500	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		1.8		At 5550MHz
Efficiency	%		56		At 5550MHz
VSWR				2.5	At Center Frequency
Operating Temperature	C	-40		85	

Outline Drawing

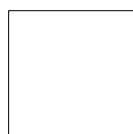
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



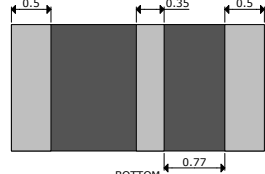
TOP



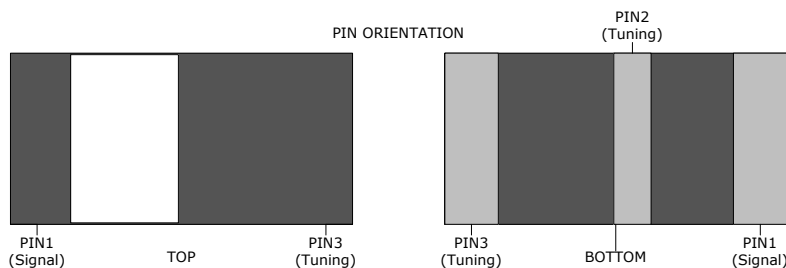
FRONT



SIDE

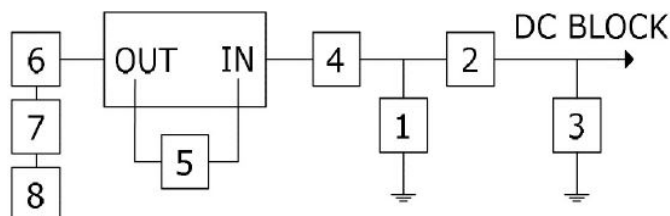
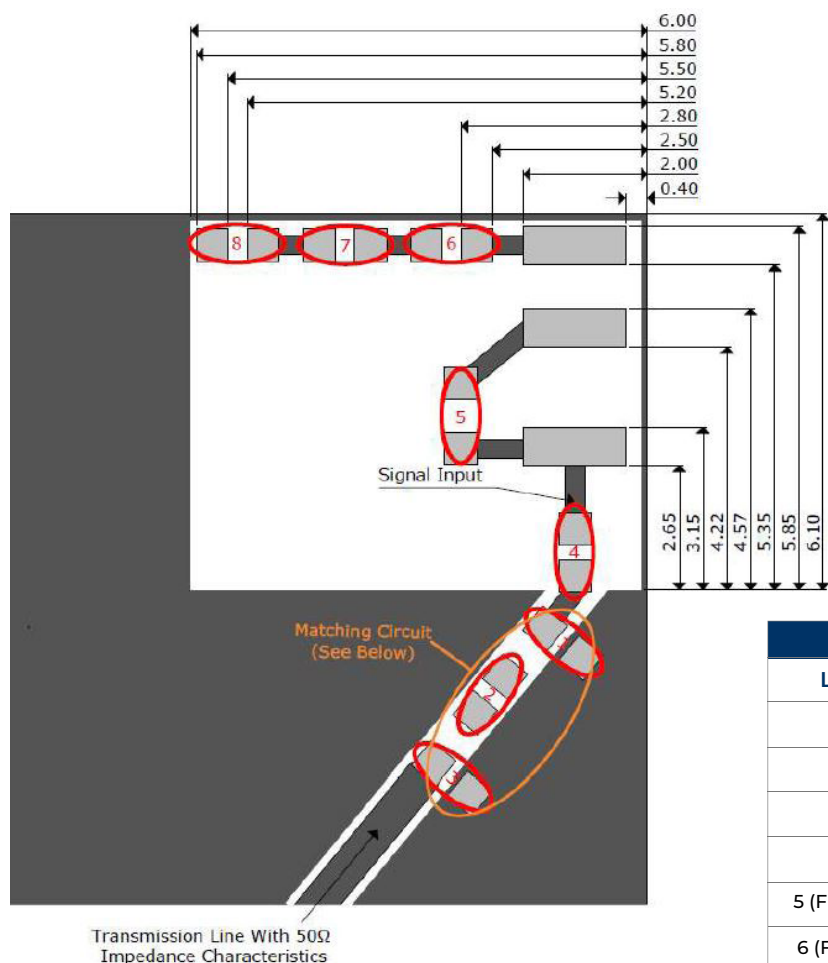


BOTTOM



Recommended Land Pattern & Frequency Tuning Scenario Circuit

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



System Matching Circuit Components

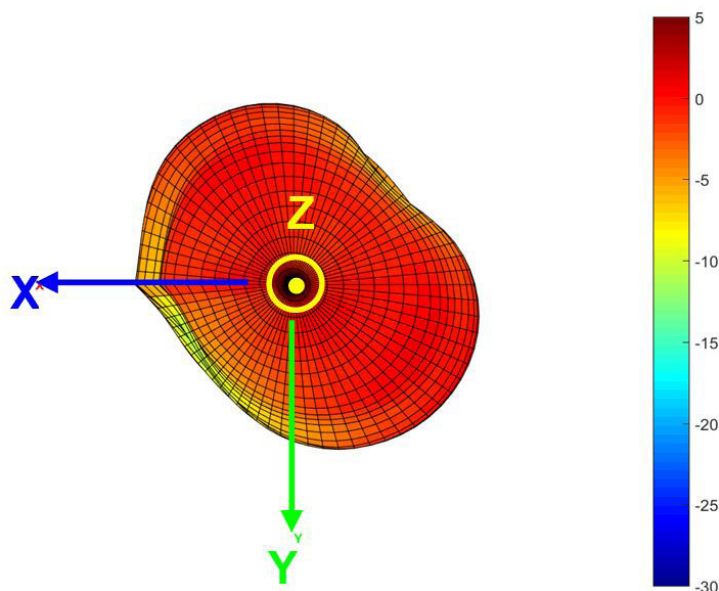
Location	Description	Vendor	Tolerance
1	0.3pF, (0402)	MURATA	±0.05pF
2	15pF, (0402)	MURATA	±5%
3	2.2nH, (0402)	MURATA	±0.1nH
4	1.5nH, (0402)	MURATA	±0.1nH
5 (Fine Tuning)*	7.5nH, (0402)	MURATA	±2%
6 (Fine Tuning)	0Ω (0201)	-	-
7 (Fine Tuning)	N/C	-	-
8 (Fine Tuning)	N/A	-	-

*For fine tuning element 5, we highly recommend using Murata LQG15WZ_G02# series inductor which has 2% tolerance in inductance and high Q factor. In general, the inductance of this inductor that can be used for fine tuning element 5 is 5nH ~ 10nH in most circumstances.

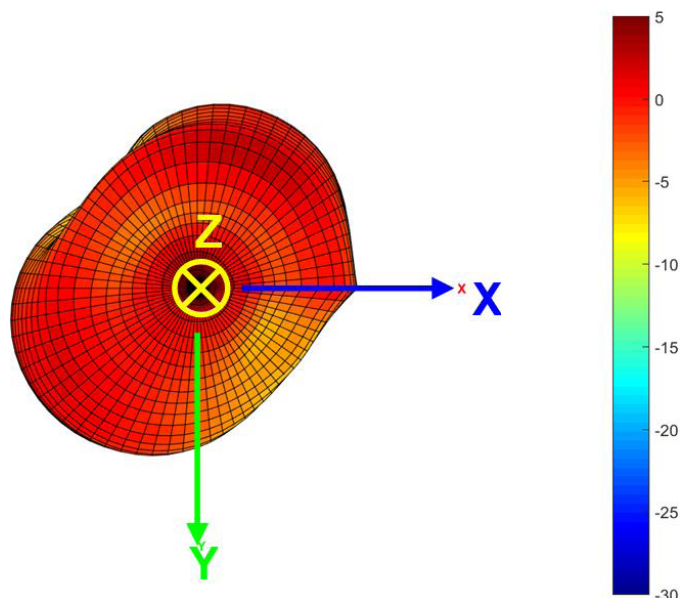
For these suggested values for the matching and tuning of components, the average frequency will be around 2442Mhz for the lower Band and around 5550MHz for the higher on a standard 40 x 40mm² Evaluation board.

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

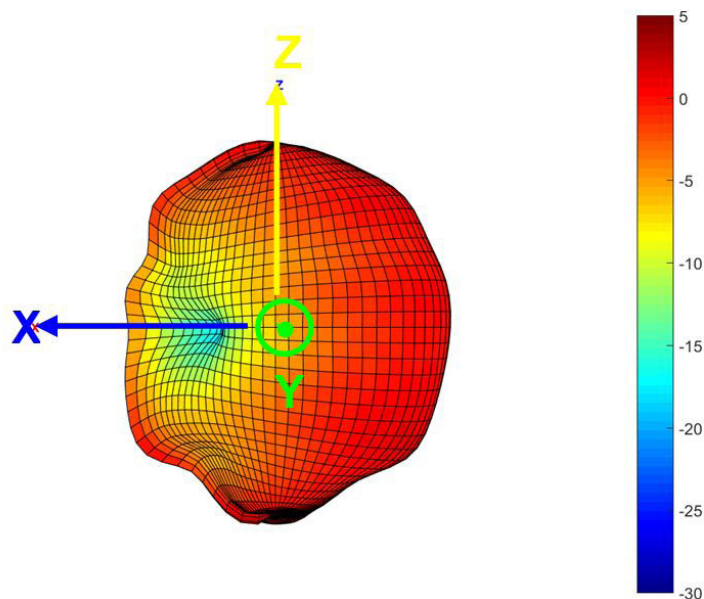
Radiation Pattern
2450MHz



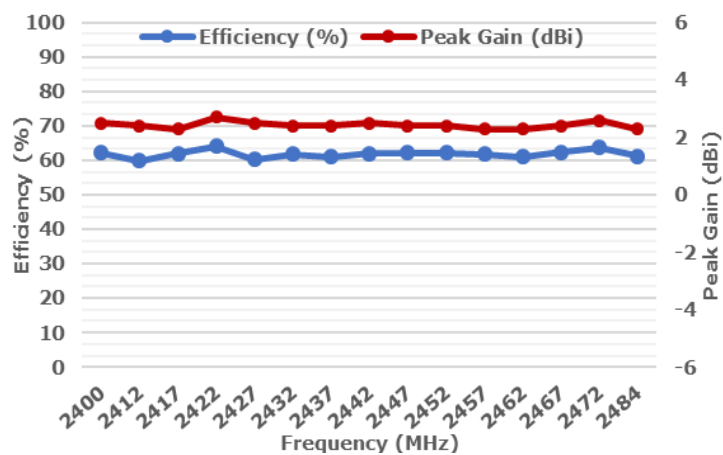
Radiation Pattern
2450MHz



Radiation Pattern
2442MHz

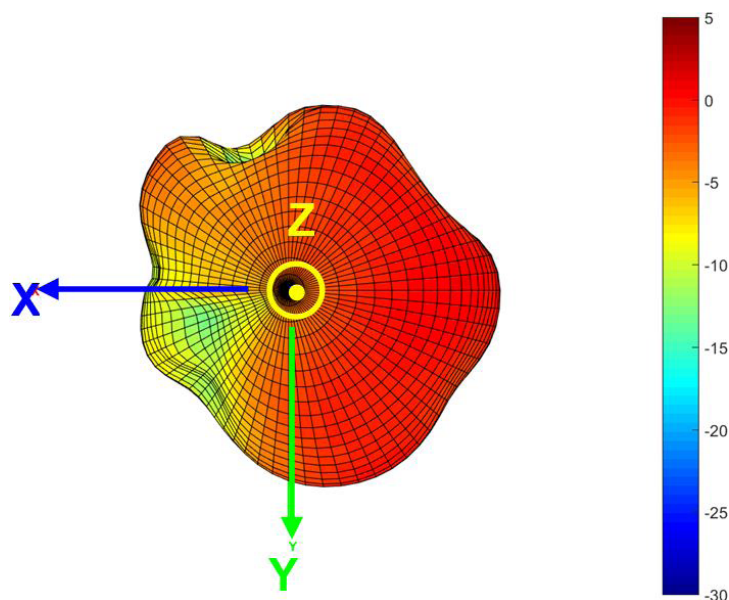


Efficiency V's Frequency
2450MHz

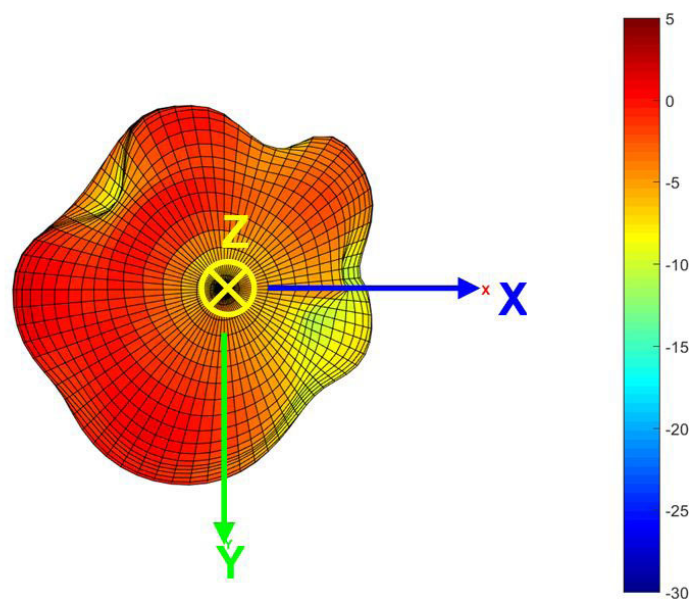


Freq.	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
Eff. (%)	62.2	59.8	61.9	64.1	60.3	61.7	61.10	61.90	62.1	62.2	61.7	61.1	62.4	63.7	61.3
P.G.	2.5	2.4	2.3	2.7	2.5	2.4	2.4	2.5	2.4	2.4	2.3	2.3	2.4	2.6	2.3

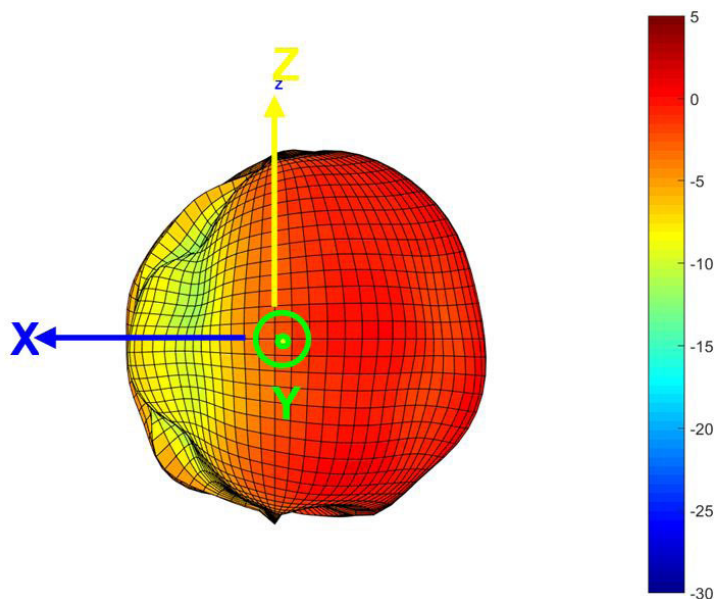
Radiation Pattern
 5150MHz



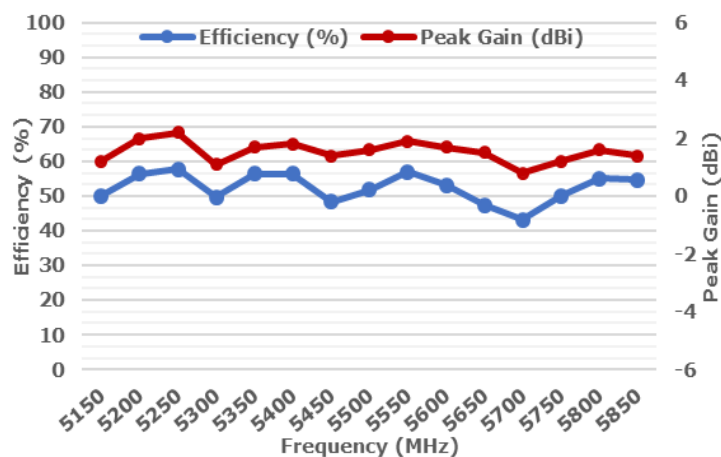
Radiation Pattern
 5150MHz



Radiation Pattern
 5150MHz

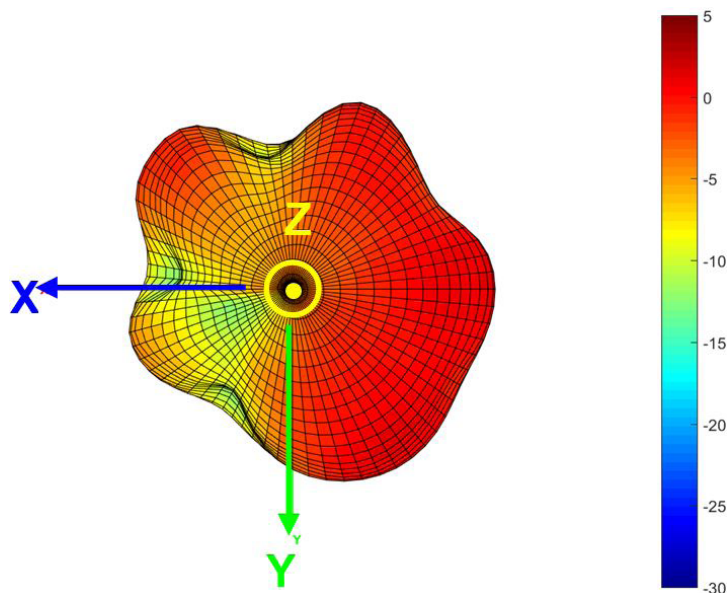


Efficiency V's Frequency
 5150MHz

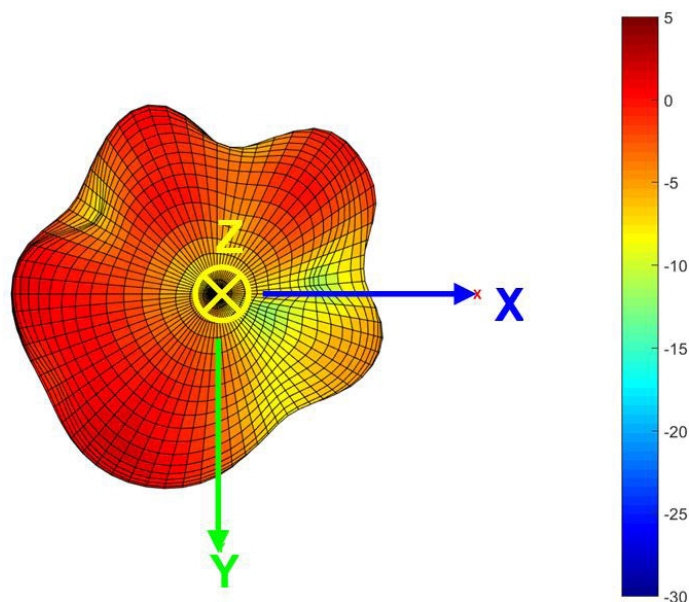


Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	50.1	56.5	57.8	49.7	56.4	56.4	48.30	51.90	56.9	53.2	47.3	43.2	50	55	54.6
P.G.	1.2	2	2.2	1.1	1.7	1.8	1.4	1.6	1.9	1.7	1.5	0.8	1.2	1.6	1.4

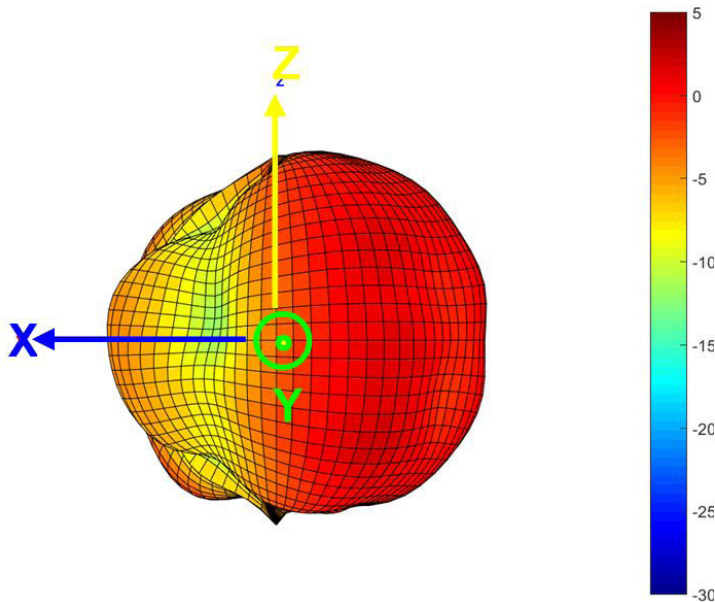
Radiation Pattern
5550MHz



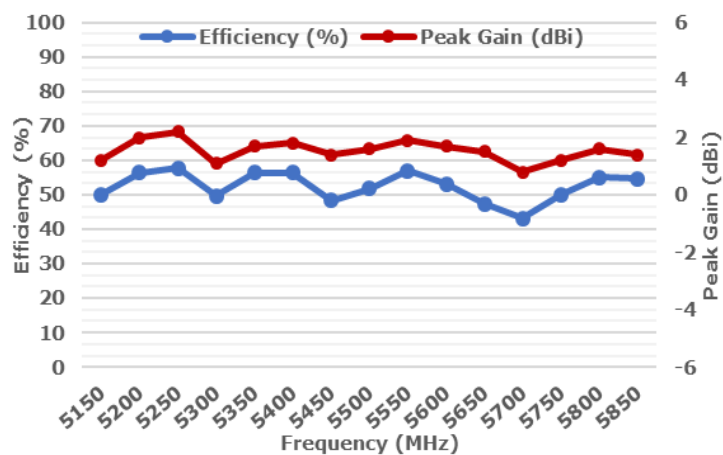
Radiation Pattern
5550MHz



Radiation Pattern
5550MHz

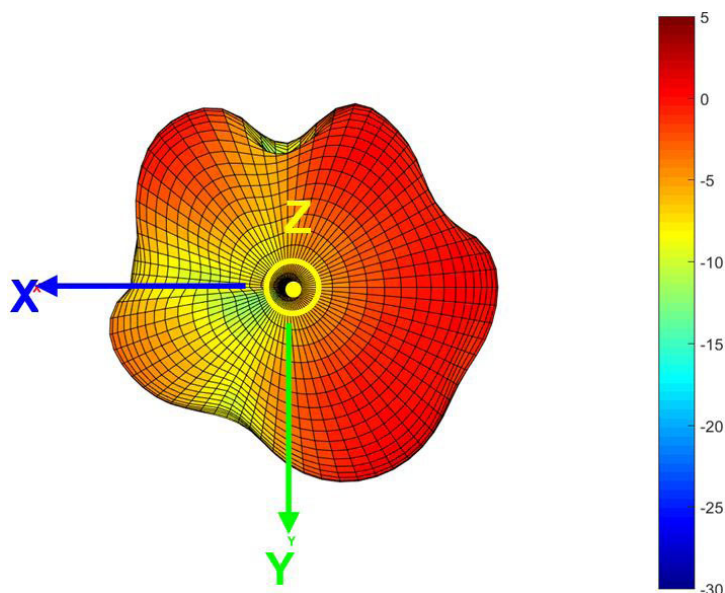


Efficiency V's Frequency
5550MHz

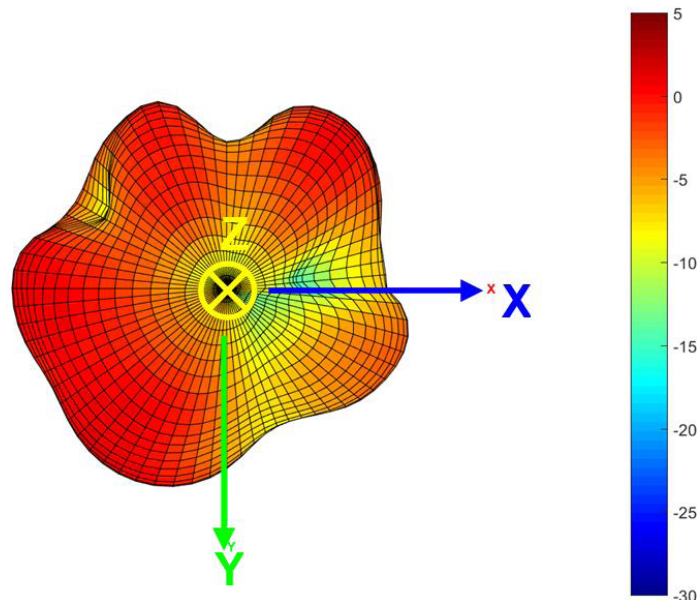


Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	50.1	56.5	57.8	49.7	56.4	56.4	48.30	51.90	56.9	53.2	47.3	43.2	50	55	54.6
P.G.	1.2	2	2.2	1.1	1.7	1.8	1.4	1.6	1.9	1.7	1.5	0.8	1.2	1.6	1.4

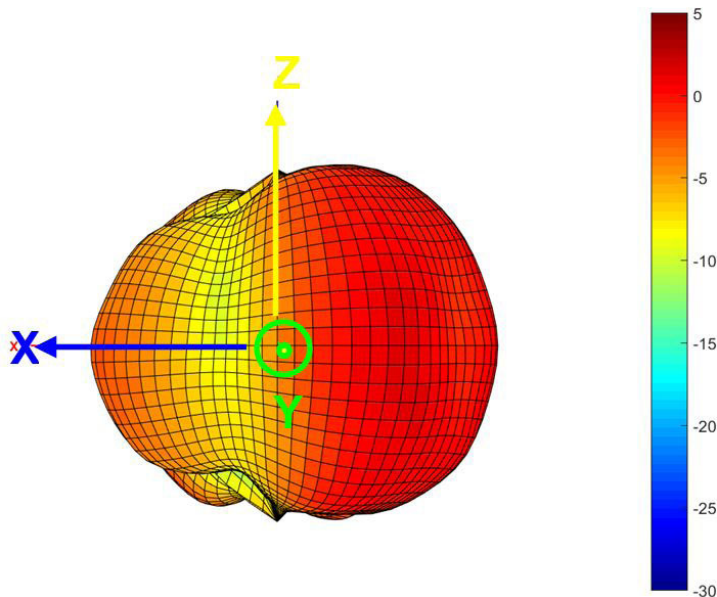
Radiation Pattern
5850MHz



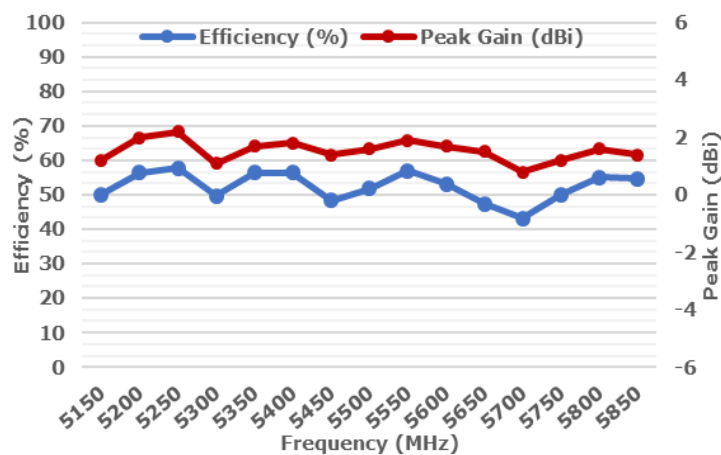
Radiation Pattern
5850MHz



Radiation Pattern
5850MHz



Efficiency V's Frequency
5850MHz

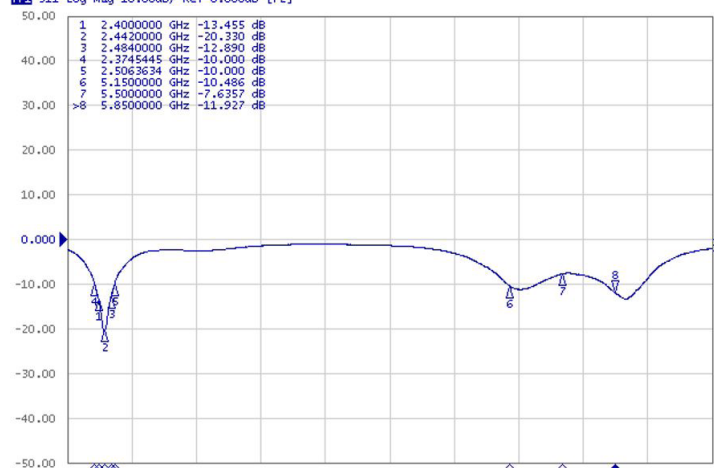


Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	50.1	56.5	57.8	49.7	56.4	56.4	48.30	51.90	56.9	53.2	47.3	43.2	50	55	54.6
P.G.	1.2	2	2.2	1.1	1.7	1.8	1.4	1.6	1.9	1.7	1.5	0.8	1.2	1.6	1.4

Electrical Test

Return Loss

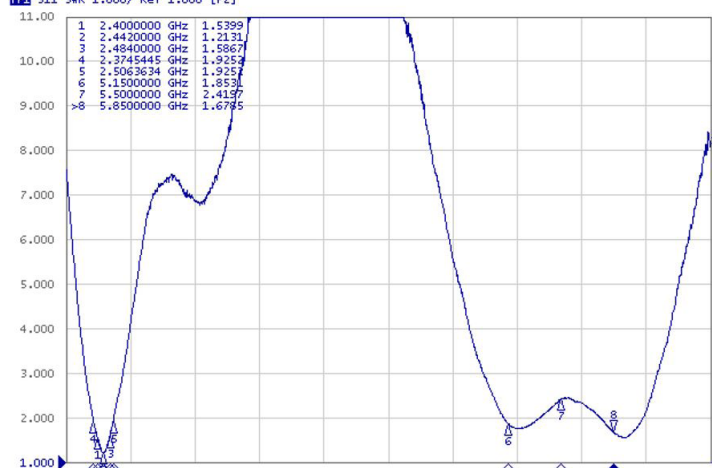
[F2] S11 Log Mag 10.00dB/ Ref 0.000dB [F2]



Electrical Test

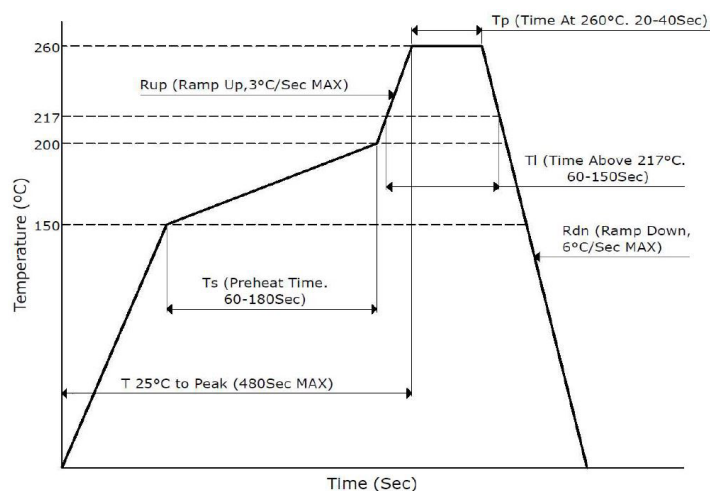
VSWR

[F2] S11 SWR 1.000/ Ref 1.000 [F2]



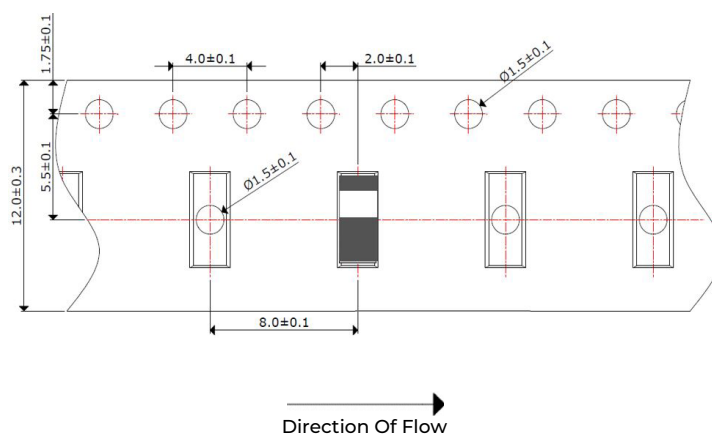
Soldering Conditions

Typical Soldering Profile For Lead-Free Process



Packaging - Tape And Reel

2,000Pcs / 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.