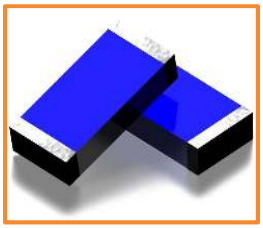
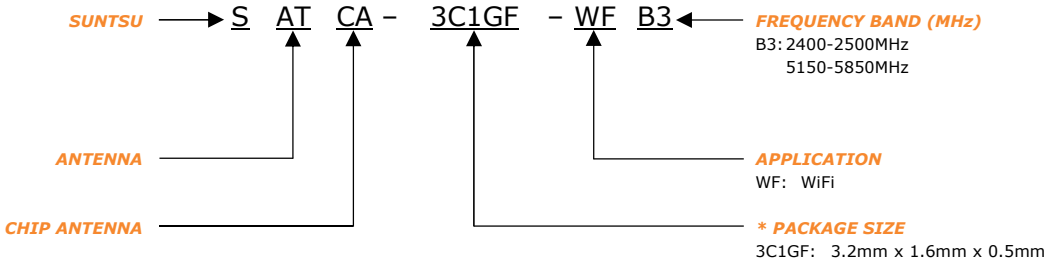
SATCA-3C1GF-WFB3

3.2mm x 1.6mm x 0.5mm CHIP ANTENNA

FEATURES	APPLICATIONS
- Dual Band WiFi - Chip Type - Stable And Reliable Performance - 2400-2500MHz & 5150-5850MHz - SMT Process Compatible	- Wireless Communication Devices - WiFi Certified AC Applications - IoT Applications - Machine To Machine Communication - Wireless PCMCIA Cards Or USB Dongles



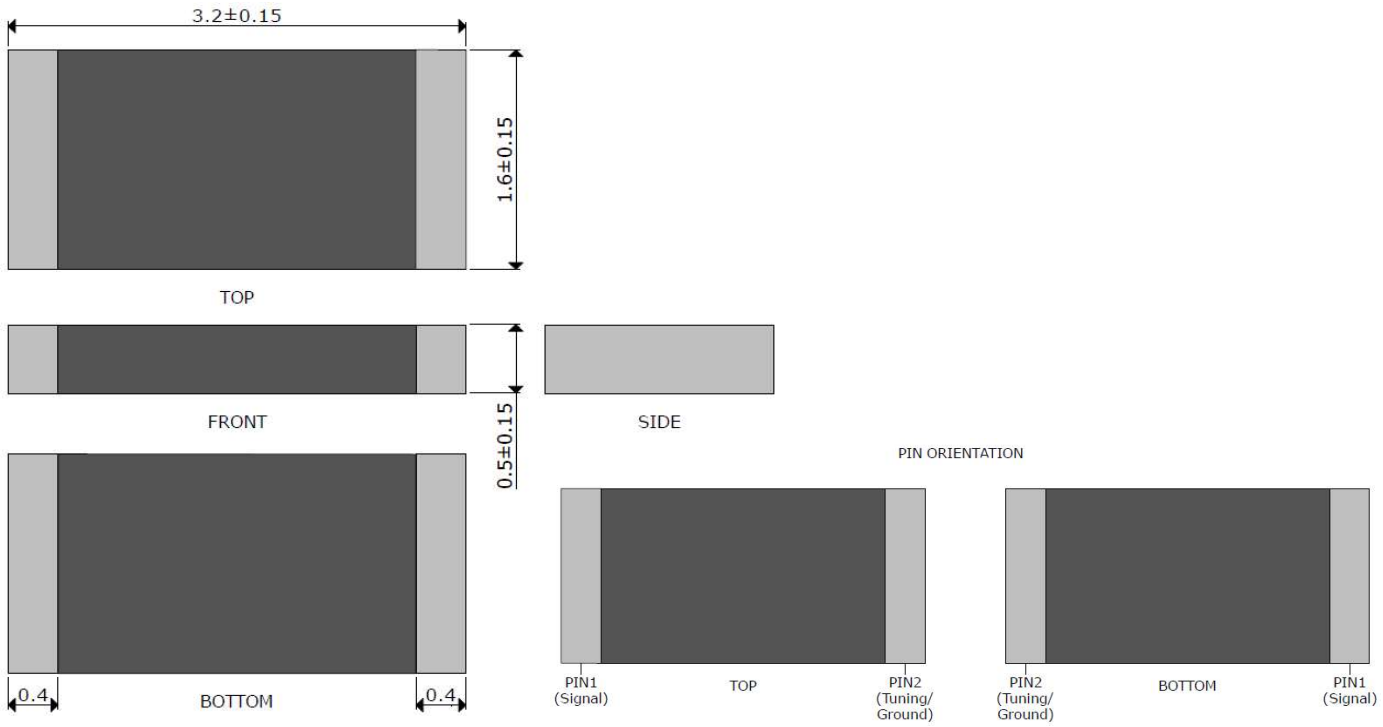
PART NUMBERING GUIDE



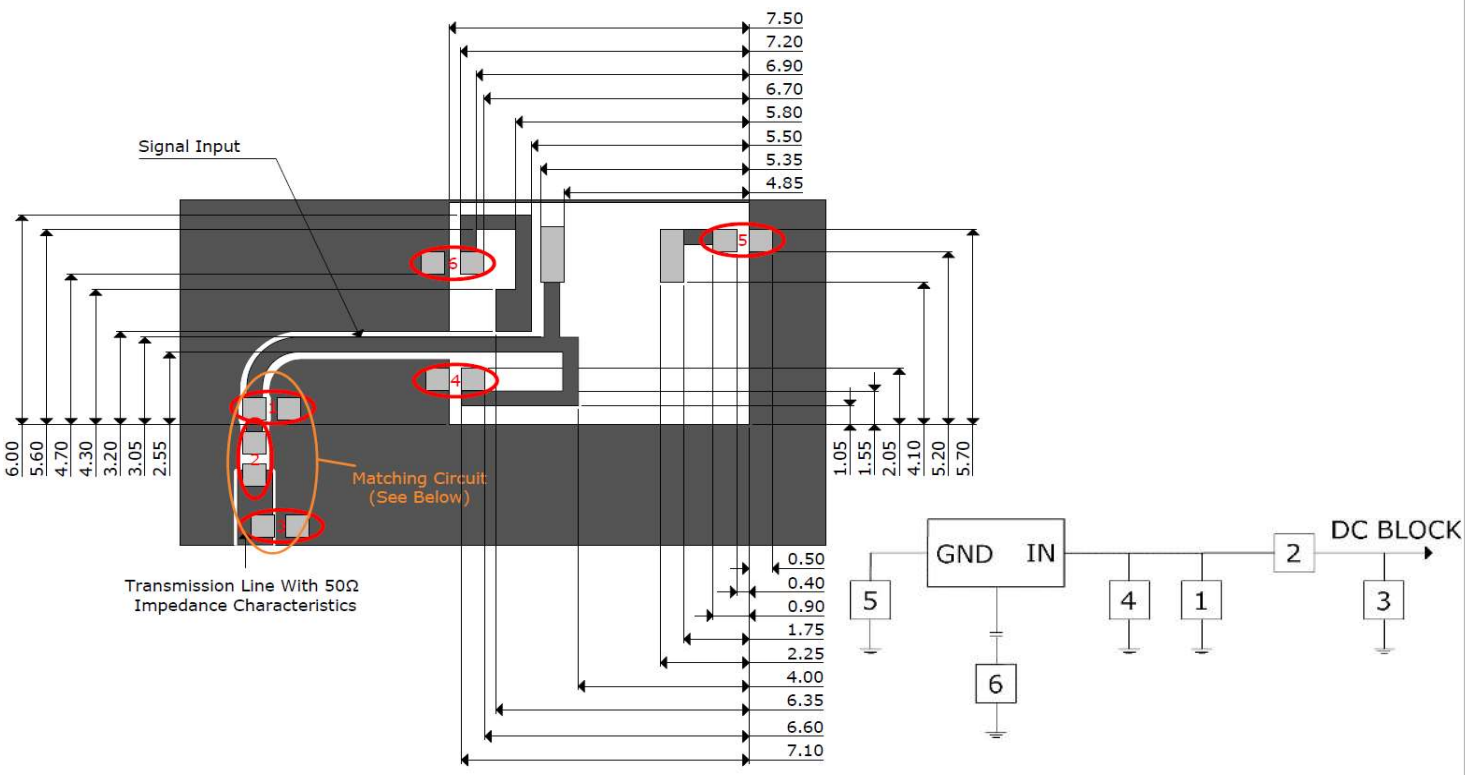
* Where letters denote decimal location A=.0, B=.1, C=.2, etc. Ex: B5=0.15, 3A5=3.05, 9A=9.0
To customize your parameters, contact a Suntsu representative.

ELECTRICAL PARAMETERS (At 25ºC)	UNITS	MIN.	TYP.	MAX	REMARKS
Frequency Band	MHz	2400		2500	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		1.4		At 2442MHz
Efficiency	%		76		At 2442MHz
VSWR				2	At Center Frequency
Operating Temperature	ºC	-40		85	
Frequency Band	MHz	5150		5850	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		2.3		At 5550MHz
Efficiency	%		67		At 5550MHz
VSWR				2	At Center Frequency
Operating Temperature	ºC	-40		85	

OUTLINE DRAWING (NOTE: All dimensions are in millimeters [mm], unless otherwise noted. Drawings are not to scale.)



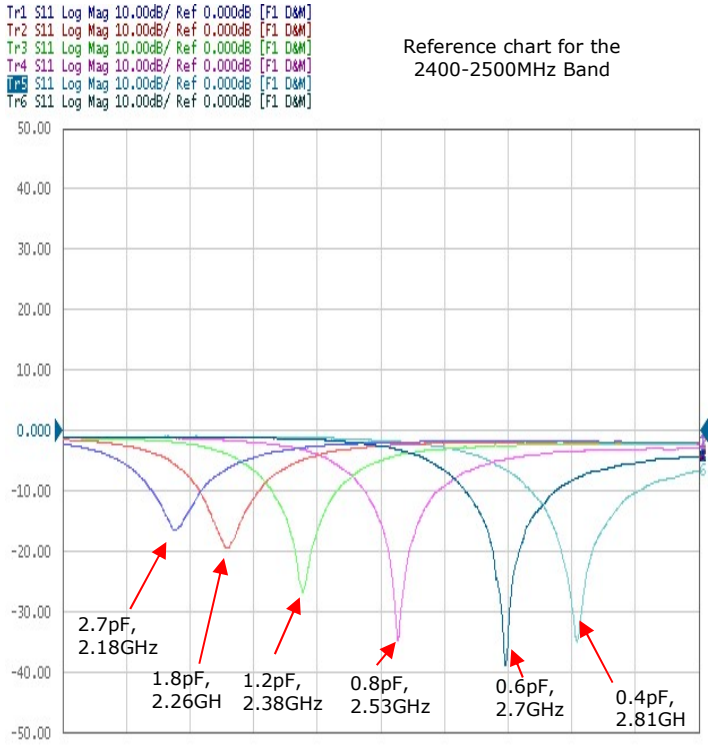
RECOMMENDED LAND PATTERN & FREQUENCY TUNING SCENARIO CIRCUIT (NOTE: All dimensions are in mm, unless otherwise noted. Drawings are not to scale.)



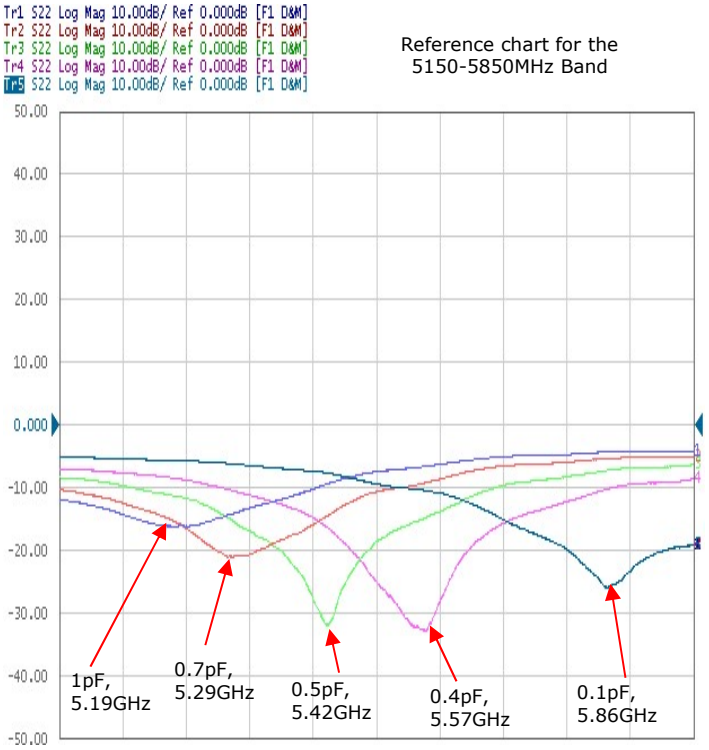
System Matching Circuit Components			
Location	Description	Vendor	Tolerance
1	N/A	-	-
2	1nH (0402)	DARFON	±0.3nH
3	0.2pF (0402)	DARFON	±0.05pF
4	22pF (0402)	DARFON	±5%
5 (Fine Tuning)	1pF (0402)	DARFON	±0.05pF
6 (Fine Tuning)	0.2pF (0402)	DARFON	±0.05pF

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 80 x 40mm^2 Evaluation board.

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



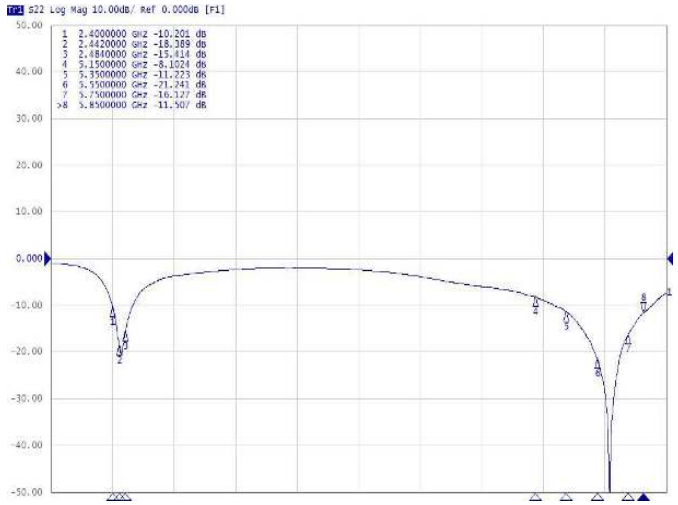
Reference chart for the 2400-2500MHz Band



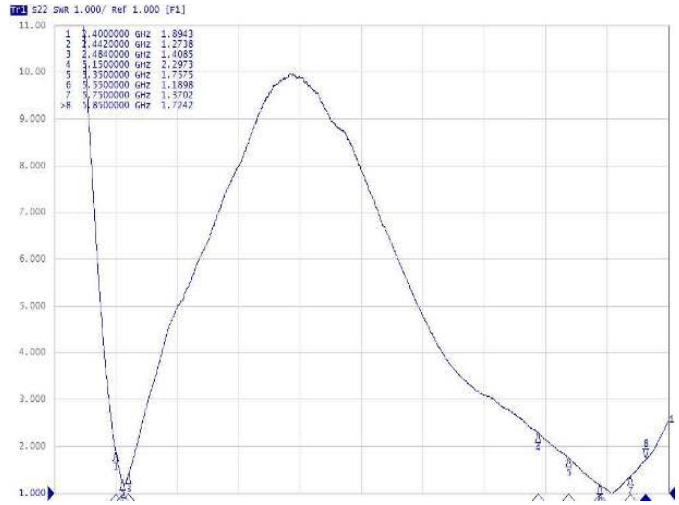
Reference chart for the 5150-5850MHz Band

ELECTRICAL TEST

Return Loss

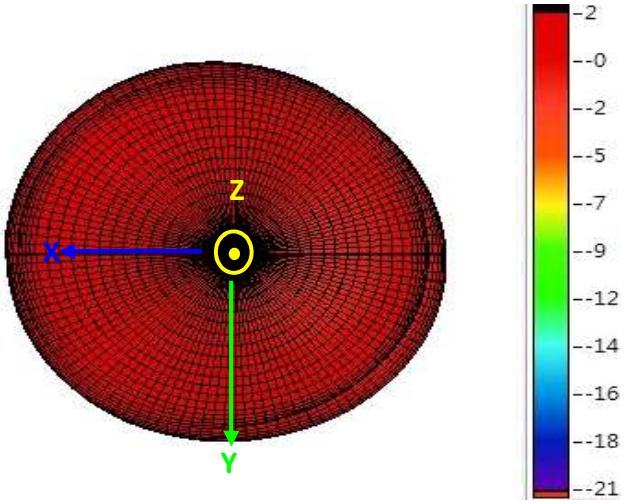


VSWR

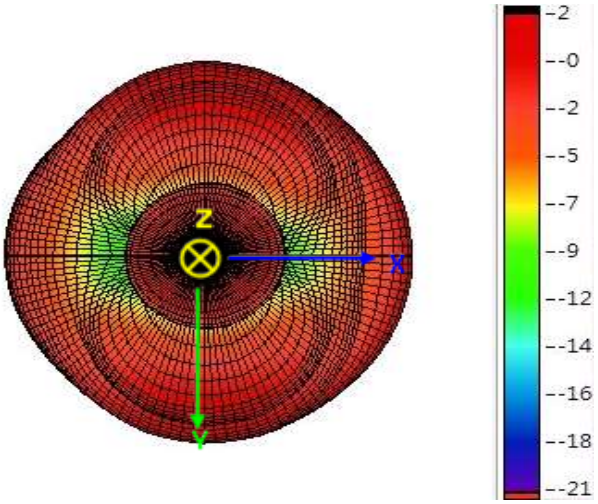


3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY

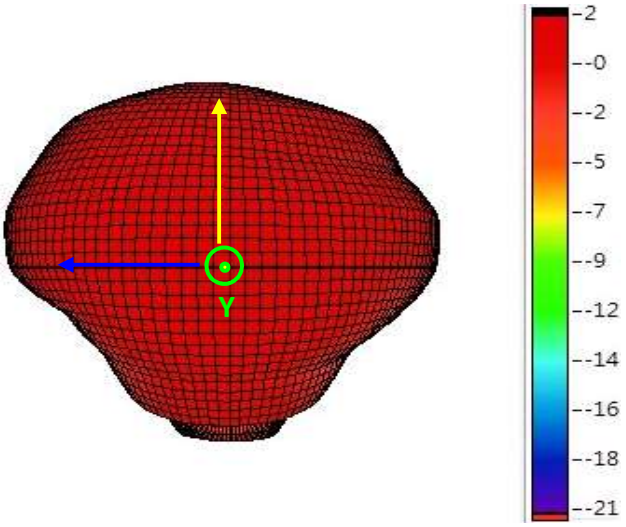
2442MHz



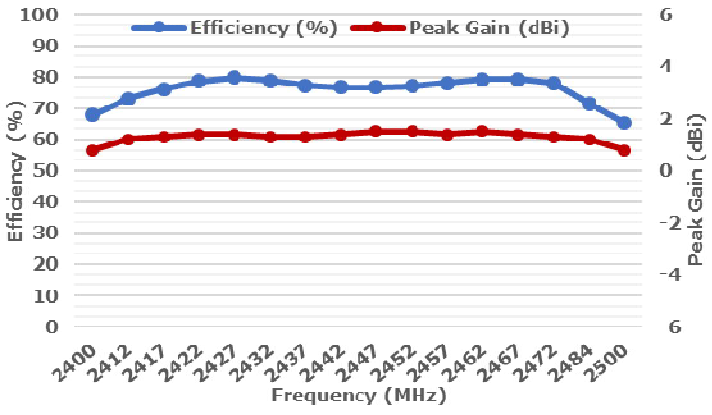
2442MHz



2442MHz



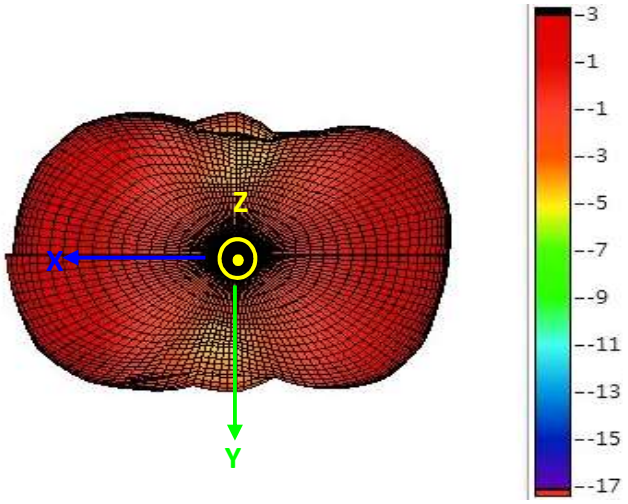
2442MHz



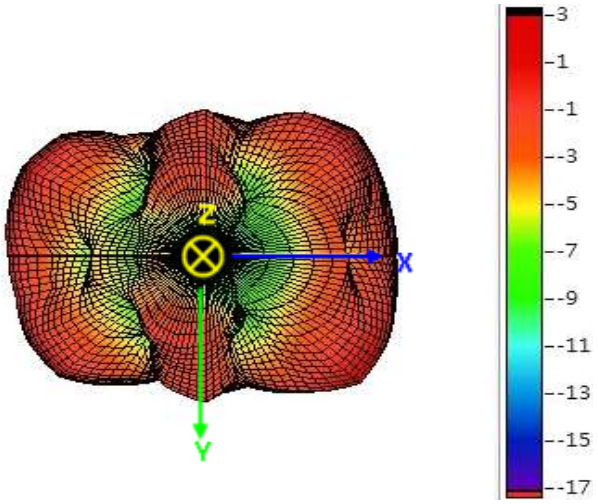
Freq.	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Eff. (%)	67.9	73.2	76.1	78.7	79.9	78.8	77.4	76.8	76.8	77.2	78.1	79.3	79.2	78.1	71.5	65.5
P.G.	0.8	1.2	1.3	1.4	1.4	1.3	1.3	1.4	1.5	1.5	1.4	1.5	1.4	1.3	1.2	0.8

3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY (CONT.)

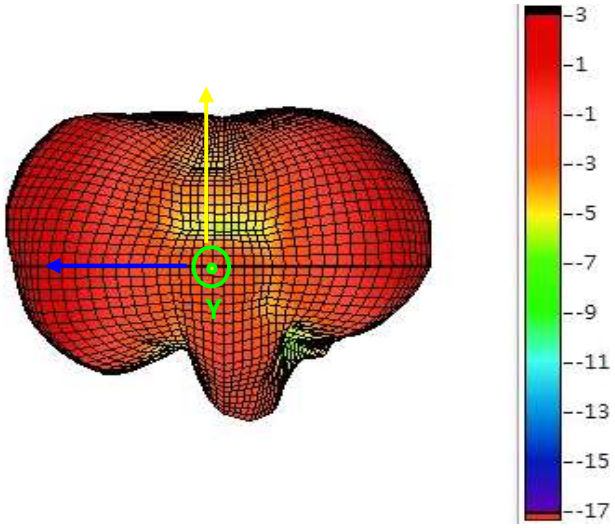
5150MHz



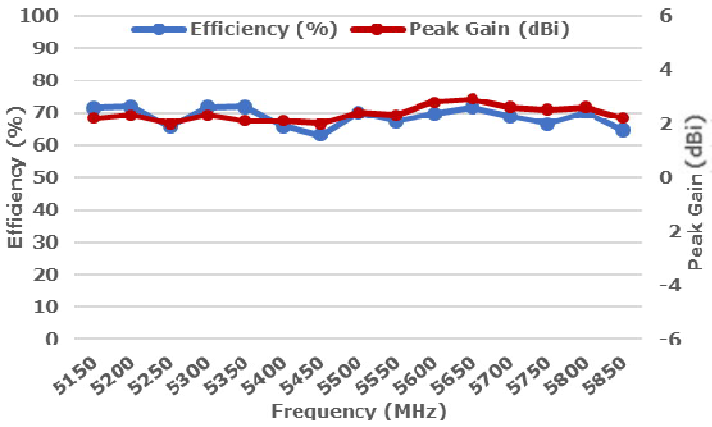
5150MHz



5150MHz

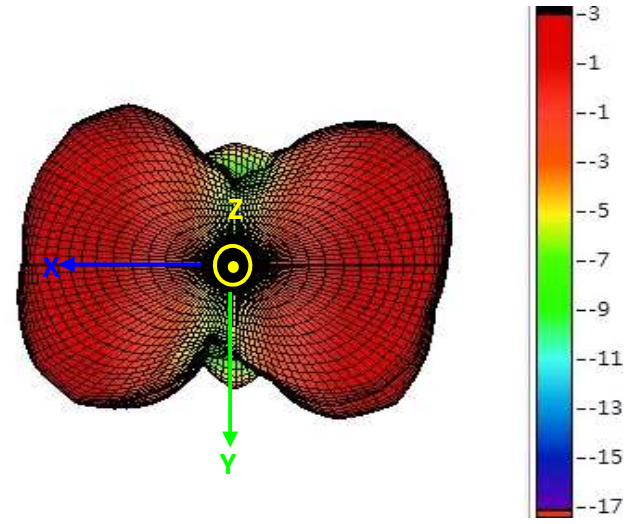


5150MHz

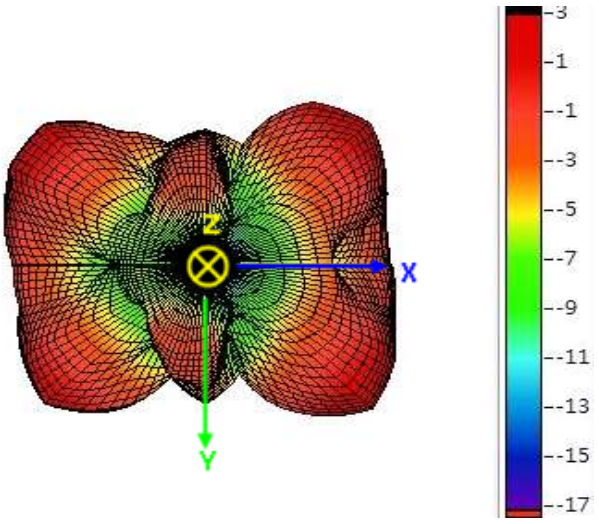


Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	71.5	71.9	65.7	71.6	71.9	65.8	63.2	69.9	67.3	69.6	71.7	68.9	66.6	70.1	64.6
P.G.	2.2	2.3	2	2.3	2.1	2.1	2	2.4	2.3	2.8	2.9	2.6	2.5	2.6	2.2

5550MHz

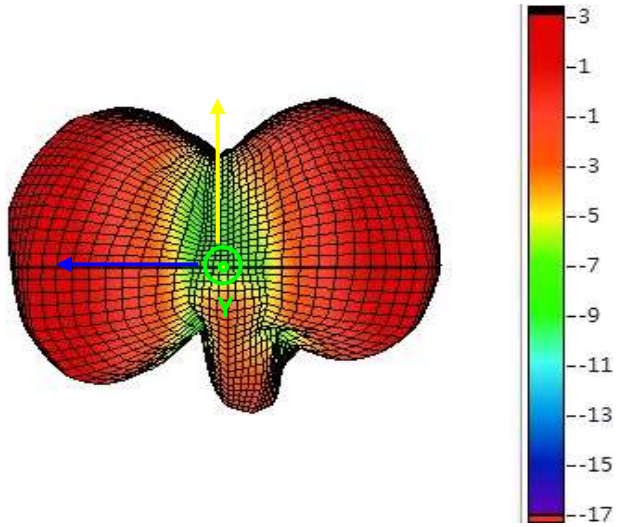


5550MHz

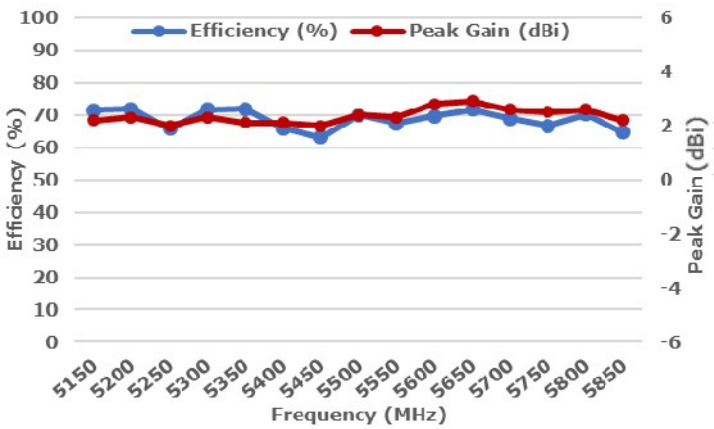


3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY (CONT.)

5550MHz

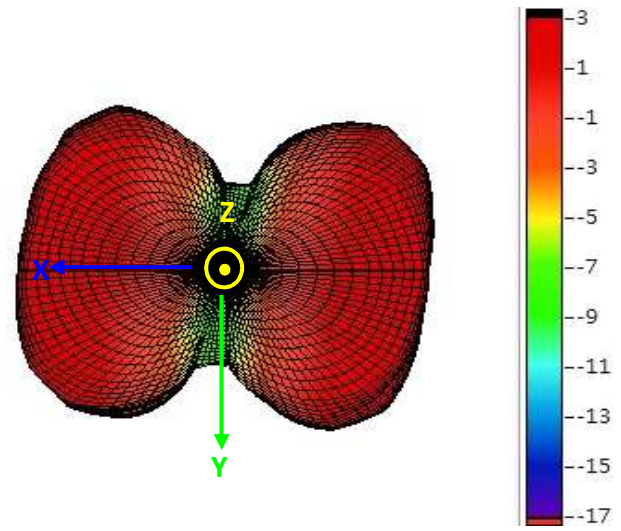


5550MHz

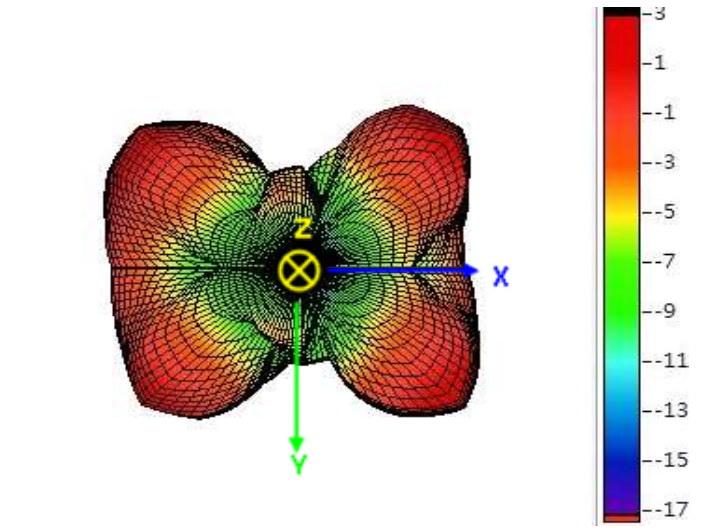


Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	71.5	71.9	65.7	71.6	71.9	65.8	63.2	69.9	67.3	69.6	71.7	68.9	66.6	70.1	64.6
P.G.	2.2	2.3	2	2.3	2.1	2.1	2	2.4	2.3	2.8	2.9	2.6	2.5	2.6	2.2

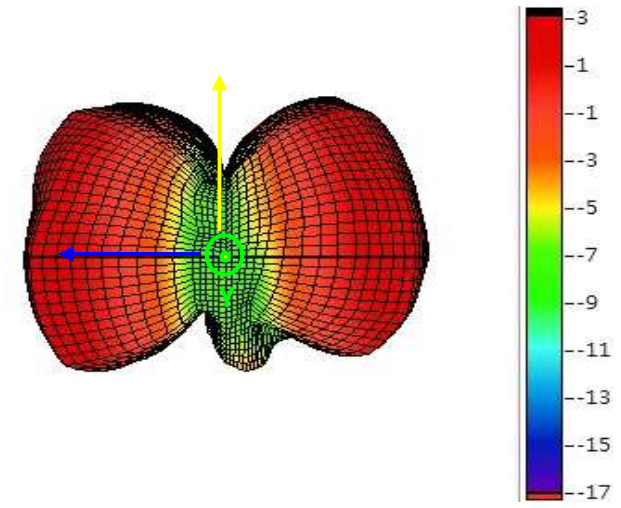
5850MHz



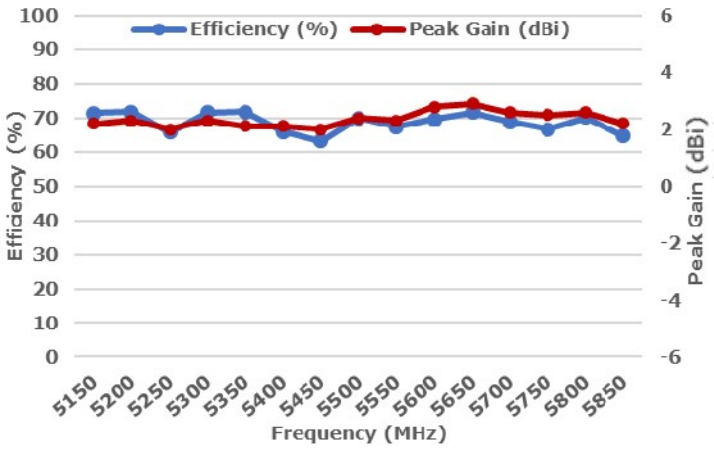
5850MHz



5850MHz



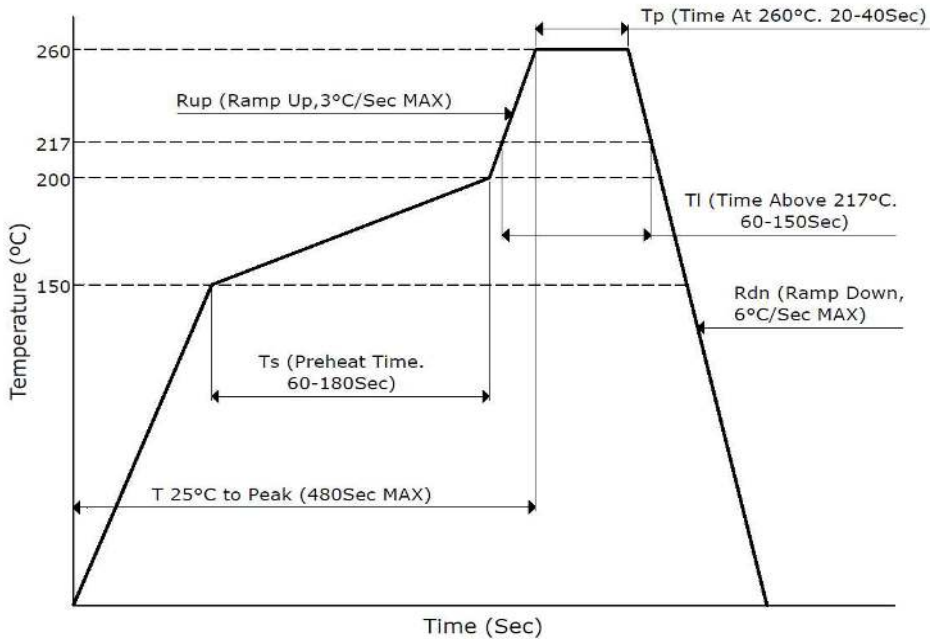
5850MHz



Freq.	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Eff. (%)	71.5	71.9	65.7	71.6	71.9	65.8	63.2	69.9	67.3	69.6	71.7	68.9	66.6	70.1	64.6
P.G.	2.2	2.3	2	2.3	2.1	2.1	2	2.4	2.3	2.8	2.9	2.6	2.5	2.6	2.2

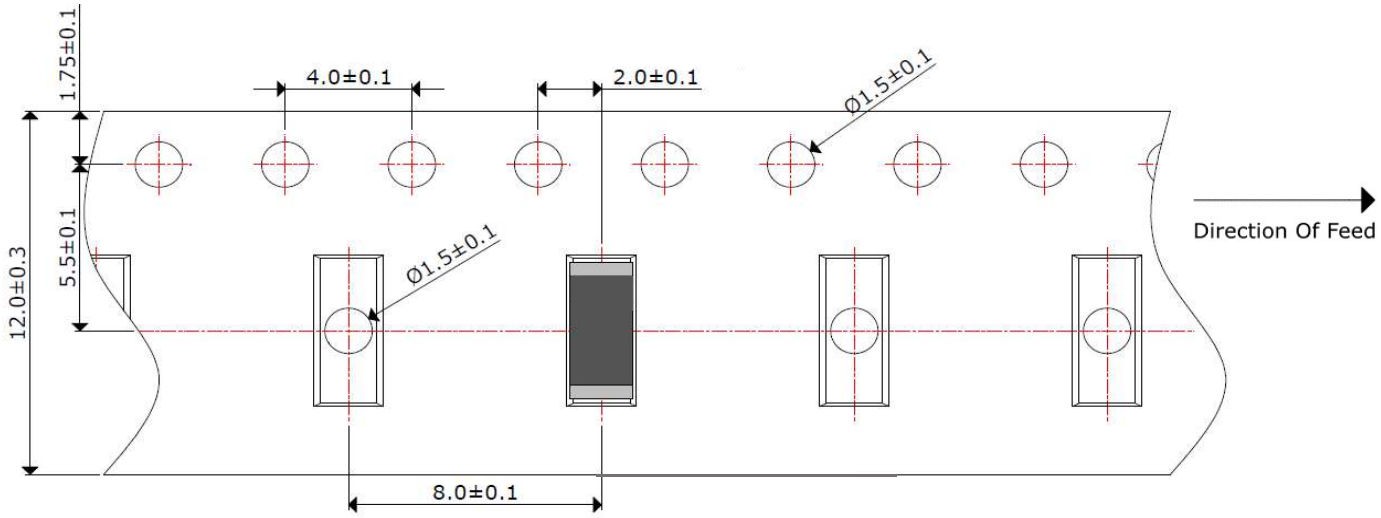
SOLDERING CONDITIONS

Typical Soldering Profile For Lead-Free Process



PACKAGING - TAPE AND REEL (NOTE: All dimensions are in mm, unless otherwise noted. Drawings are not to scale.)

5,000pcs / 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% 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.