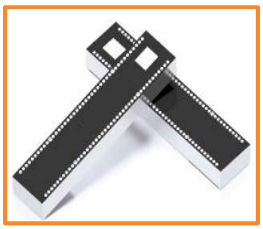
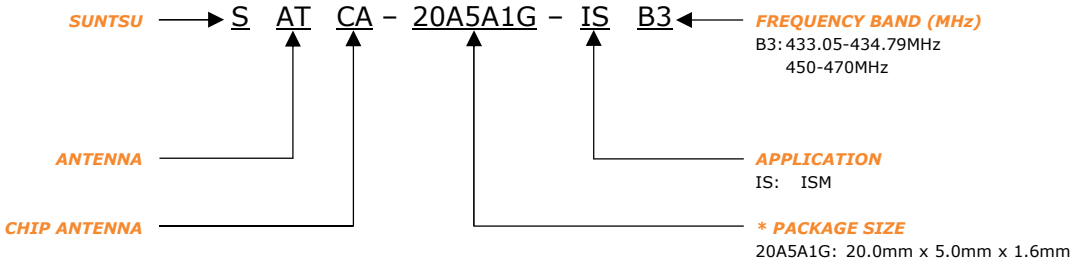
SATCA-20A5A1G-ISB3

20.0mm x 5.0mm x 1.6mm CHIP ANTENNA

FEATURES	APPLICATIONS
- ISM - Chip Type - Stable And Reliable Performance - 433MHz, 450MHz & 470MHz - SMT Process Compatible	- ISM Band System - Wireless Alarm And Security System - Smart Meters - IOT Applications - Machine To Machine Communication



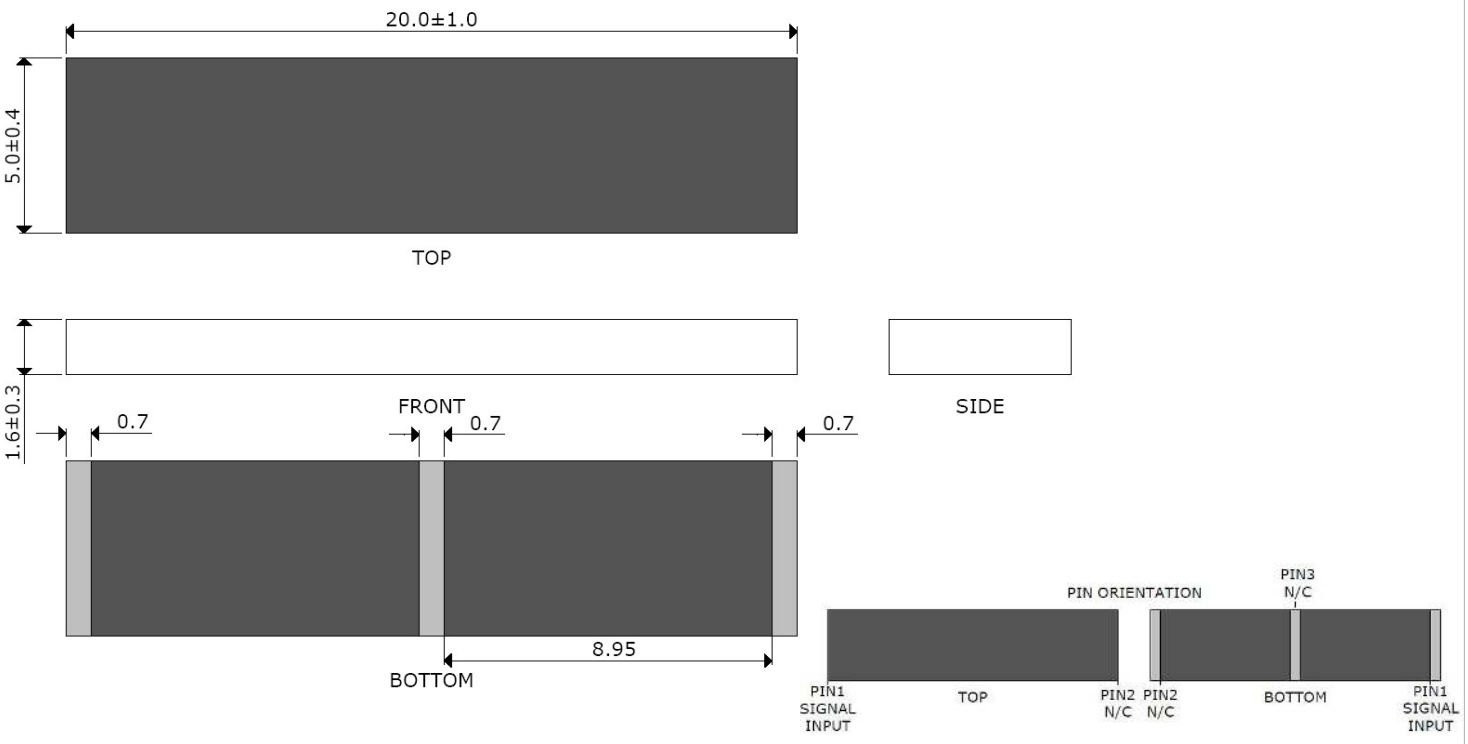
PART NUMBERING GUIDE



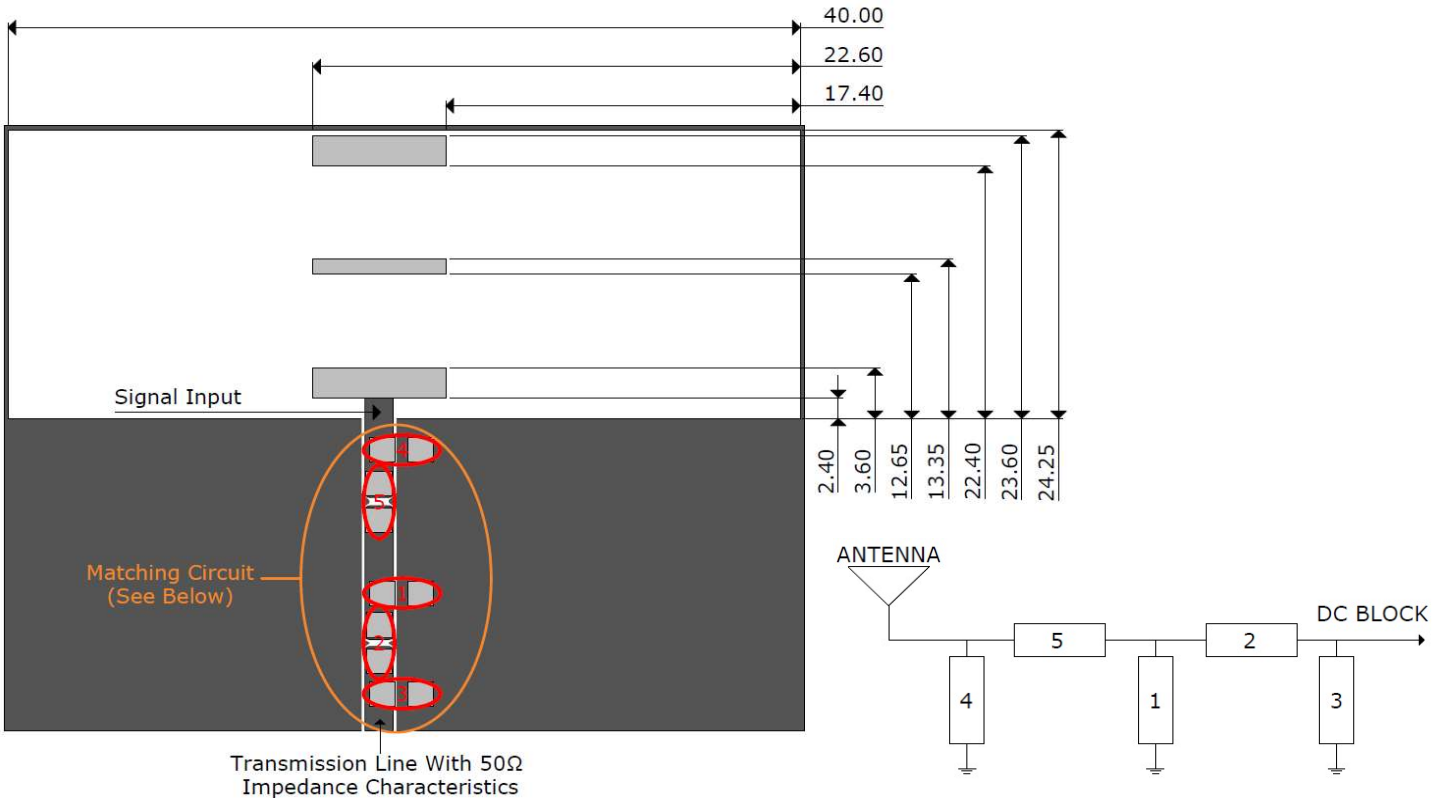
* Where letters denote decimal location A=.0, B=.1, C=.2, etc. Ex: B5=0.15, 3A5=3.05, 9A=9.0
To customize your parameters, contact a Suntsu representative.

ELECTRICAL PARAMETERS (At 25ºC)	UNITS	MIN.	TYP.	MAX	REMARKS
Frequency Band	MHz	433.05		434.79	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		-0.2		At 433MHz
Efficiency	%		32		At 433MHz
VSWR				2	At Center Frequency
Operating Temperature	ºC	-40		85	
Frequency Band	MHz	450		470	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		-0.2		At 460MHz
Efficiency	%		35		At 460MHz
VSWR				2.5	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.)

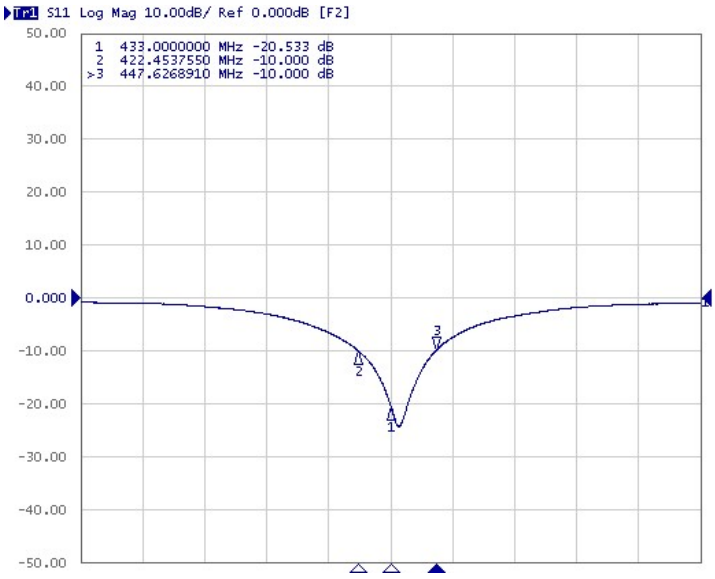


System Matching Circuit Components			
Location	Description	Vendor	Tolerance
1	N/A	-	-
2	0Ω, (0402)	-	-
3	N/A	-	-
4 (Fine Tuning)	0.4pF, (0402)	MURATA	±0.05pF
5 (Fine Tuning)	56nH, (0402)	MURATA	±3%

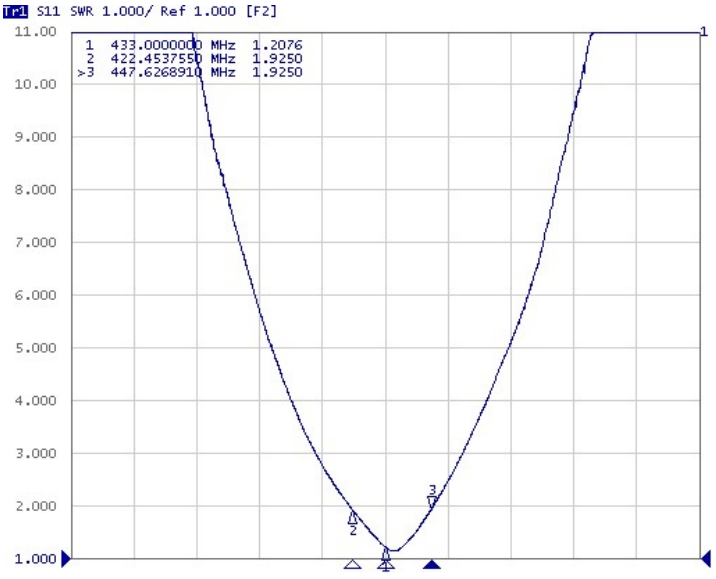
For these suggested values for the matching and tuning of components, the average frequency will be 433MHz on a standard 80 x 40mm^2 Evaluation board.
Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

ELECTRICAL TEST FOR 433MHz BAND

Return Loss
For 433MHz Band

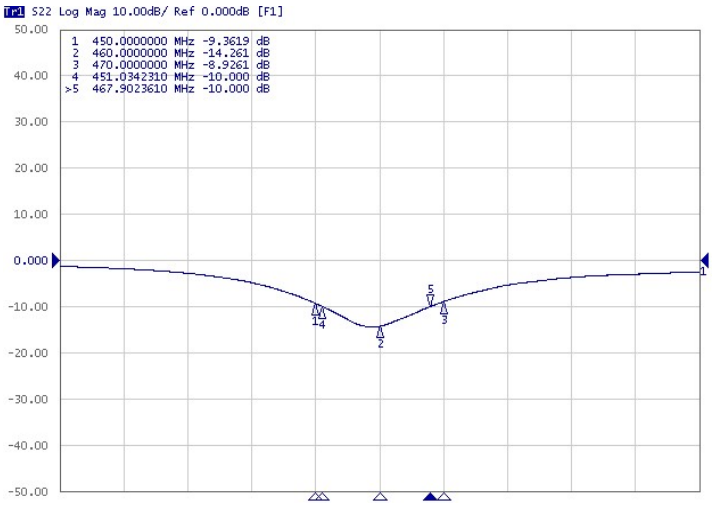


VSWR
For 433MHz Band

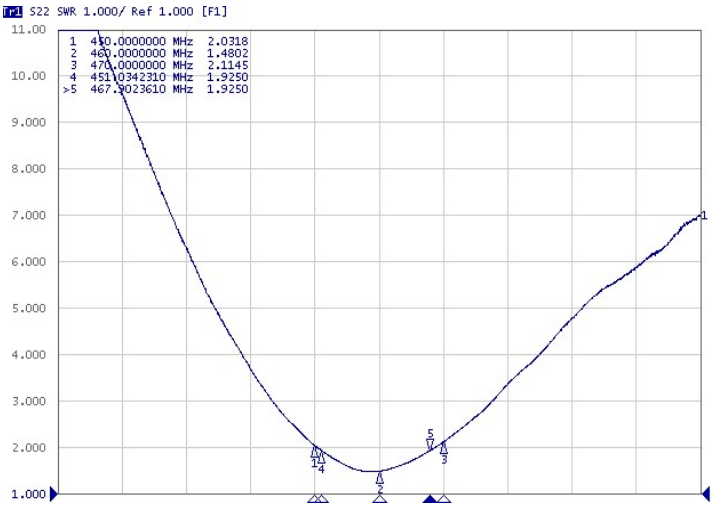


ELECTRICAL TEST FOR 450-470MHz BAND

Return Loss
For 450-470MHz Band

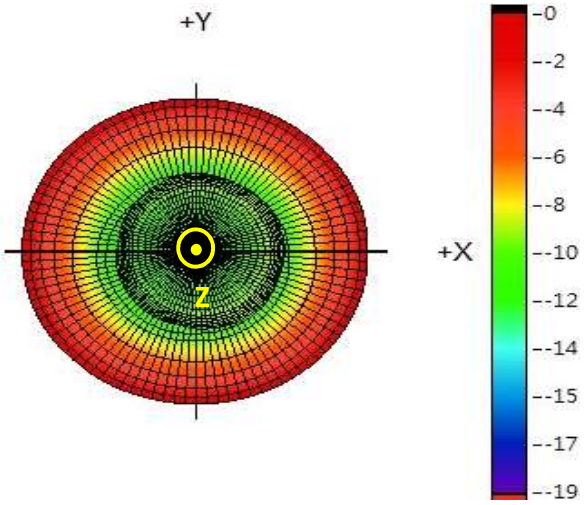


VSWR
For 450-470MHz Band

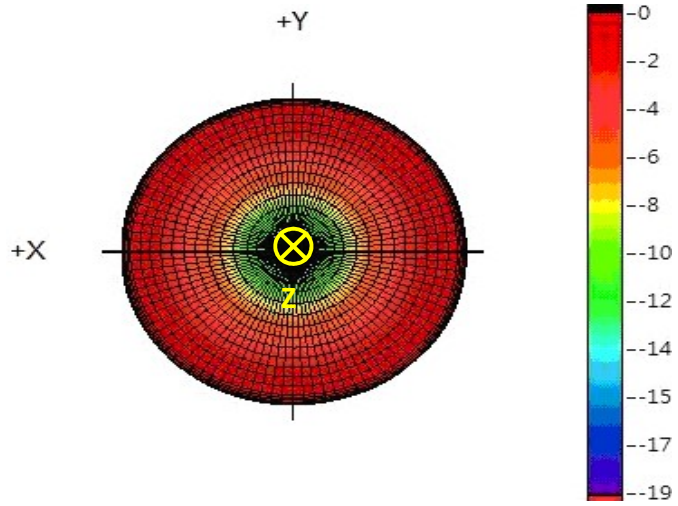


3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY FOR 433MHz BAND

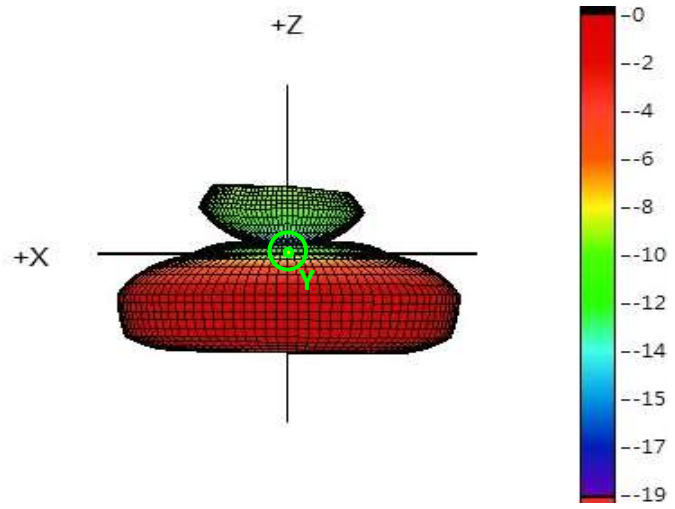
433MHz



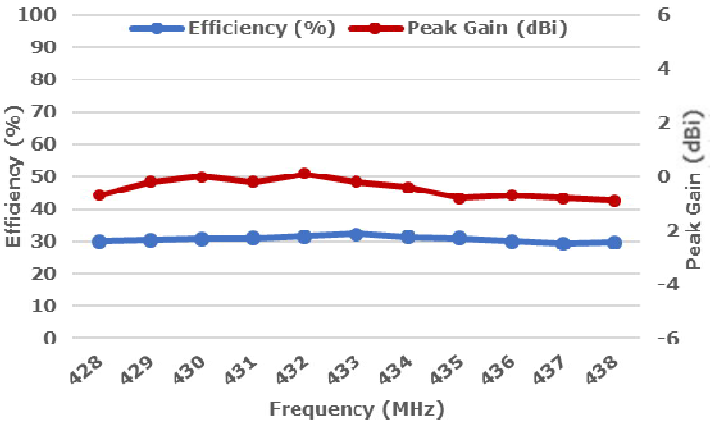
433MHz



433MHz



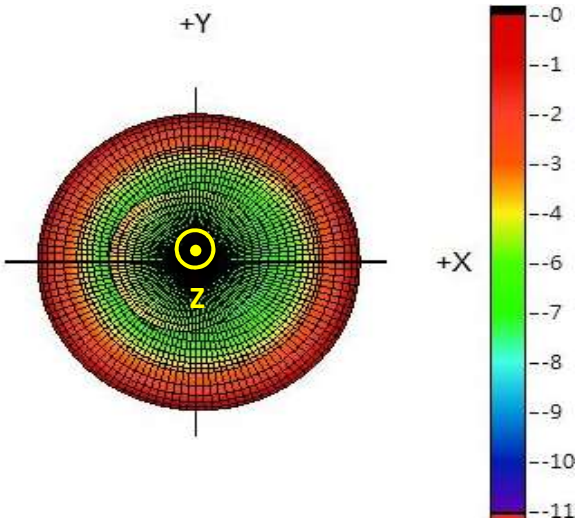
433MHz



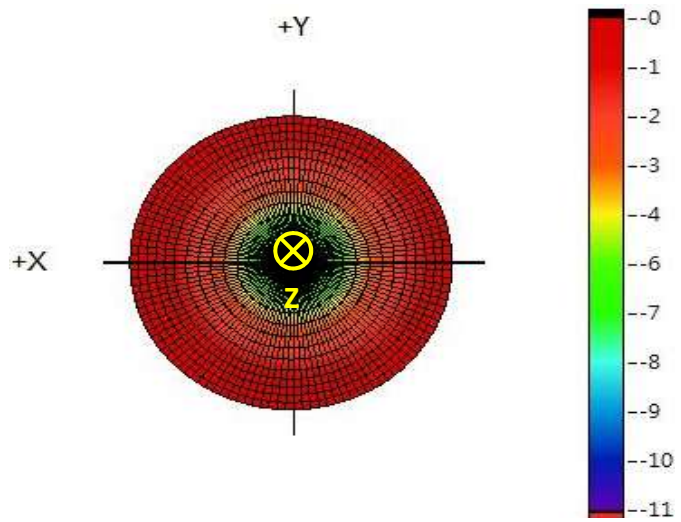
Freq.	428	429	430	431	432	433	434	435	436	437	438
Eff. (%)	29.9	30.2	30.6	30.9	31.4	32.2	31.2	30.8	29.9	29.2	29.5
P.G.	-0.7	-0.2	0	-0.2	0.1	-0.2	-0.4	-0.8	-0.7	-0.8	-0.9

3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY FOR 450-470MHz BAND

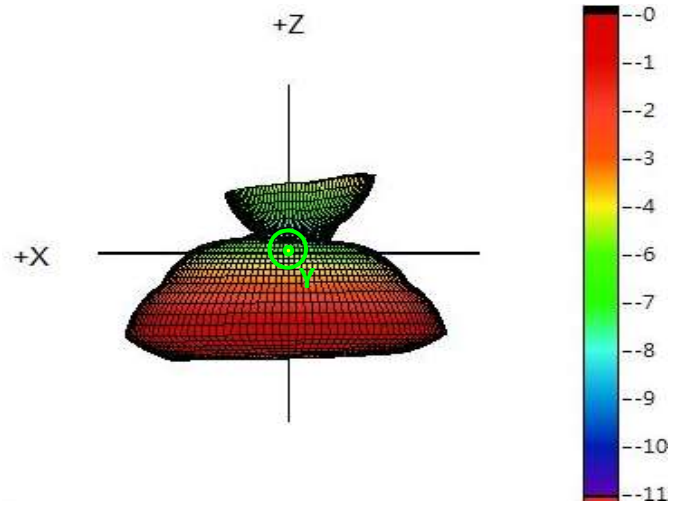
460MHz



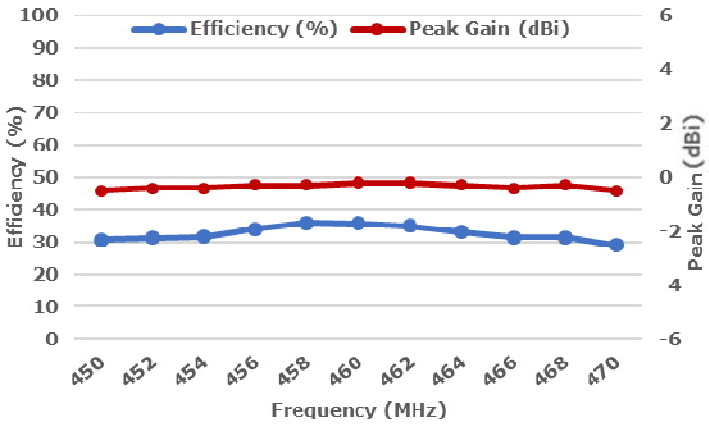
460MHz



460MHz



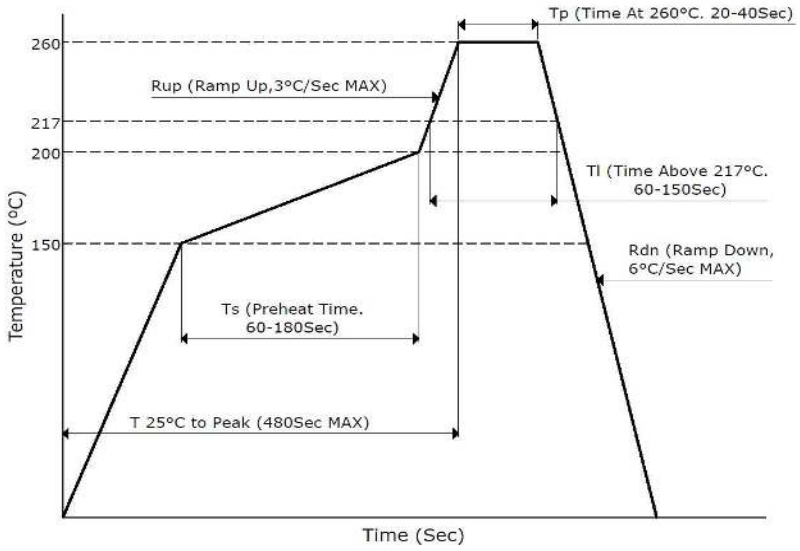
460MHz



Freq.	450	452	454	456	458	460	462	464	466	468	470
Eff. (%)	30.7	31.2	31.6	34	35.8	35.6	34.9	33.1	31.4	31.4	29
P.G.	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3	-0.4	-0.3	-0.5

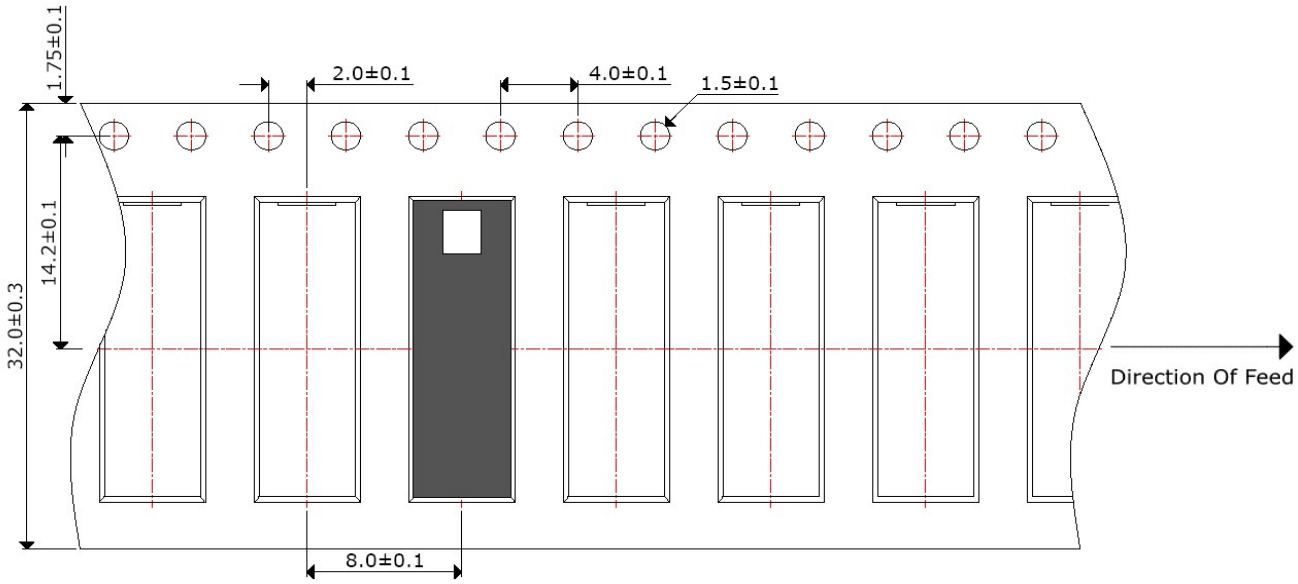
SOLDERING CONDITIONS

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.)

3,500Pcs / 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.