


FEATURES	APPLICATIONS	
<ul style="list-style-type: none"> - ISM - Chip Type - Stable And Reliable Performance - 863-870MHz - SMT Process Compatible 	<ul style="list-style-type: none"> - ISM Band System - Wireless Alarm And Security System - Smart Meters - IOT Applications - Machine To Machine Communication 	

PART NUMBERING GUIDE

SUNTSU → **S** **AT** **CA** - **12A4A1G** - **IS** **B5** ←

ANTENNA → **AT**

CHIP ANTENNA → **CA**

FREQUENCY BAND (MHz)
B5: 863-870MHz

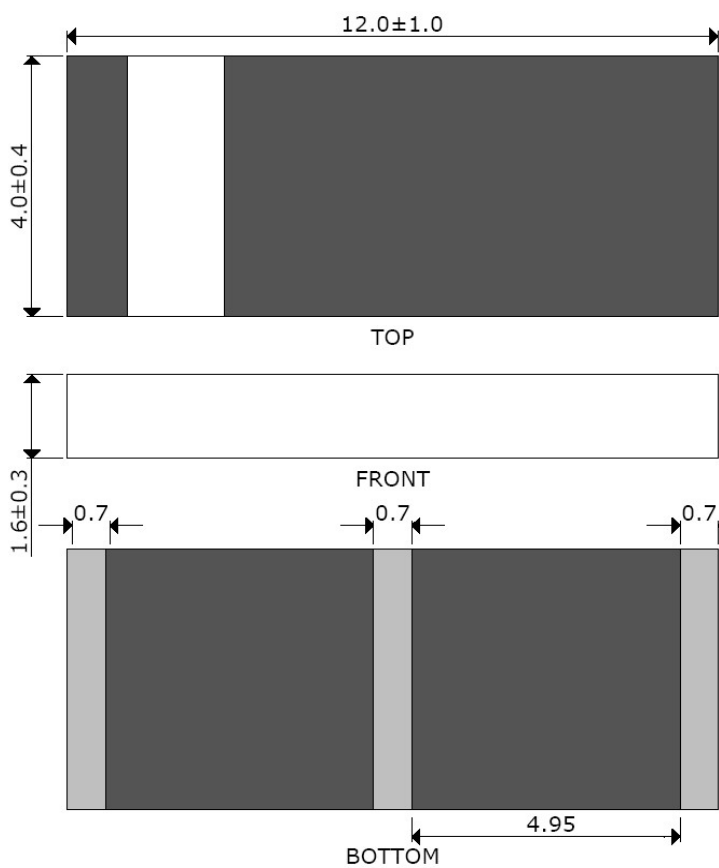
APPLICATION
IS: ISM

*** PACKAGE SIZE**
12A4A1G: 12.0mm x 4.0mm x 1.6mm

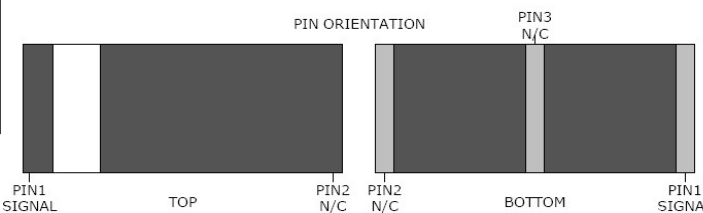
* Where letters denote decimal location A=.0, B=.1, C=.2, etc. Ex: B5=0.15, 3A5=3.05, 9A=9.0
To customize your parameters, contact a Suntsu representative.

ELECTRICAL PARAMETERS (At 25°C)	UNITS	MIN.	TYP.	MAX	REMARKS
Frequency Band	MHz	863		870	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		-0.6		At 868MHz
Efficiency	%		35.3		At 868MHz
VSWR				2	At Center Frequency
Operating Temperature	°C	-40		85	

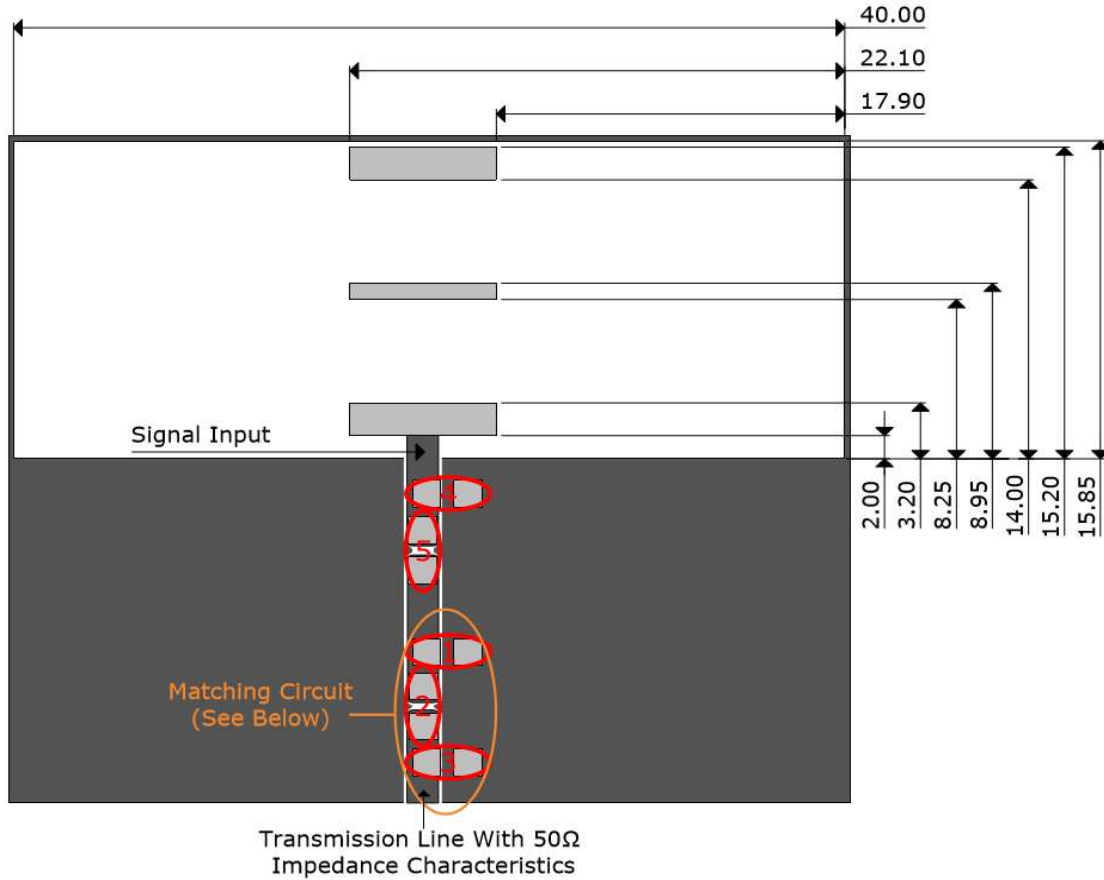
OUTLINE DRAWING (NOTE: All dimensions are in millimeters [mm], unless otherwise noted. Drawings are not to scale.)



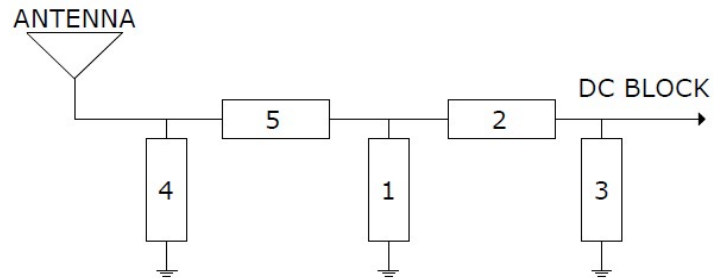
PIN ORIENTATION



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



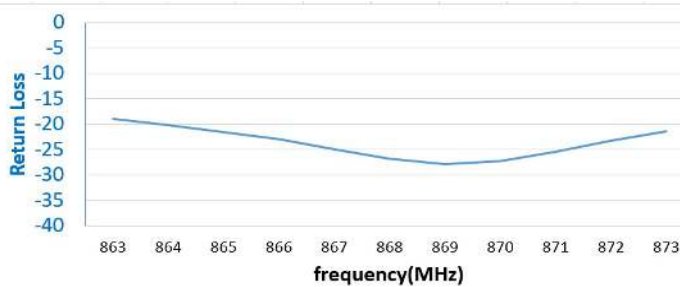
System Matching Circuit Components			
Location	Description	Vendor	Tolerance
1	1.8pF, (0402)	MURATA	±0.05pF
2	0Ω	-	-
3	N/A	-	-
4 (Fine Tuning)	N/A	-	-
5 (Fine Tuning)	8.2nH, (0402)	MURATA	±5%



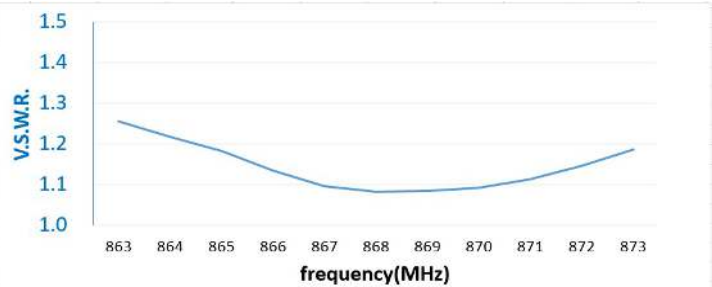
For these suggested values for the matching and tuning of components, the average frequency will be 868MHz on a standard 80 x 40mm² Evaluation board.
Please note, these are average reference values which may need to be changed when different circuit boards or manufactures are used.

ELECTRICAL TEST

Return Loss

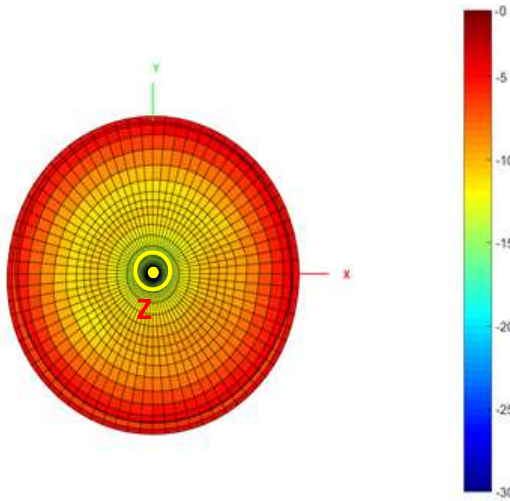


VSWR

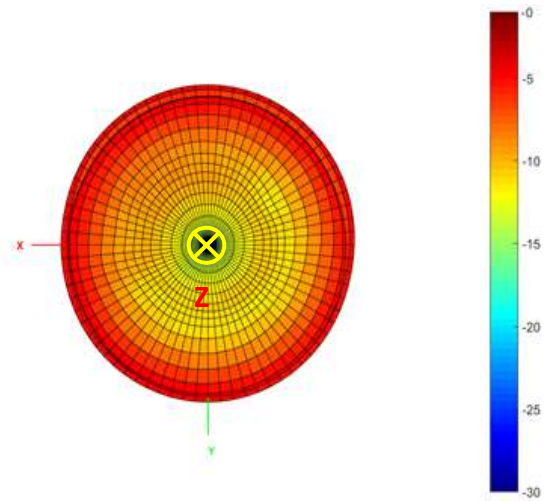


3D RADIATION PATTERN (UNIT: dBi) AND EFFICIENCY vs FREQUENCY

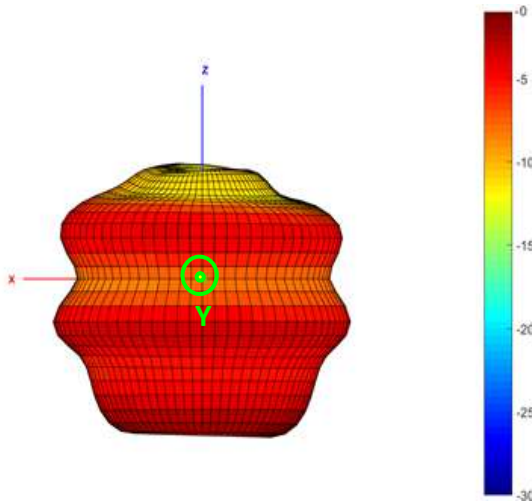
868MHz



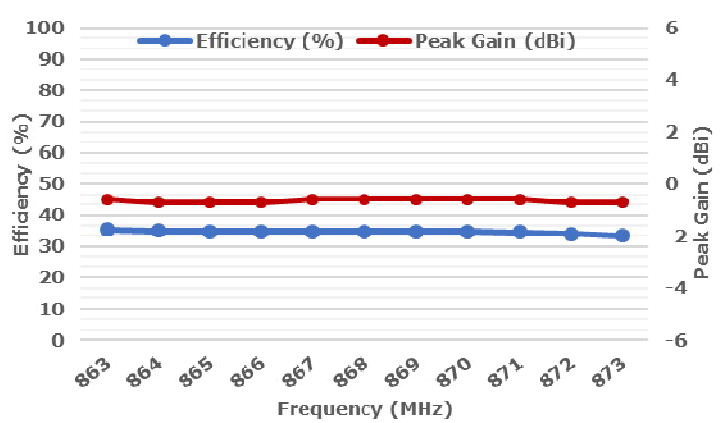
868MHz



868MHz



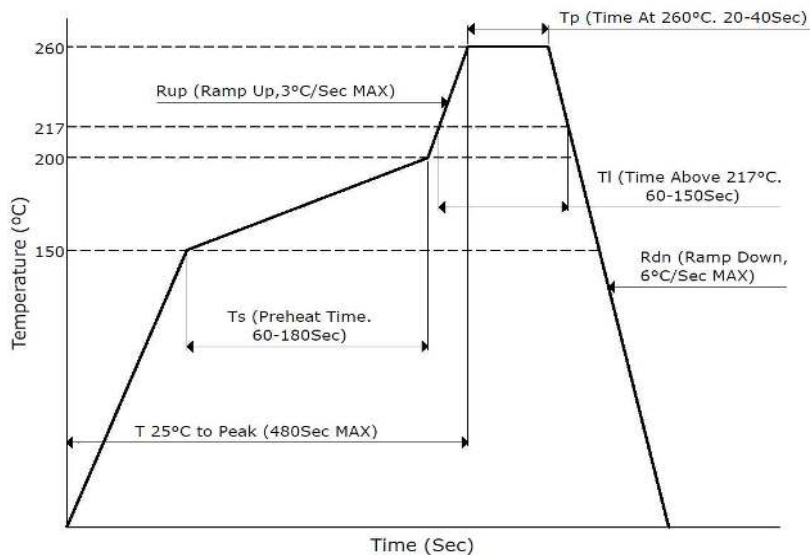
868MHz



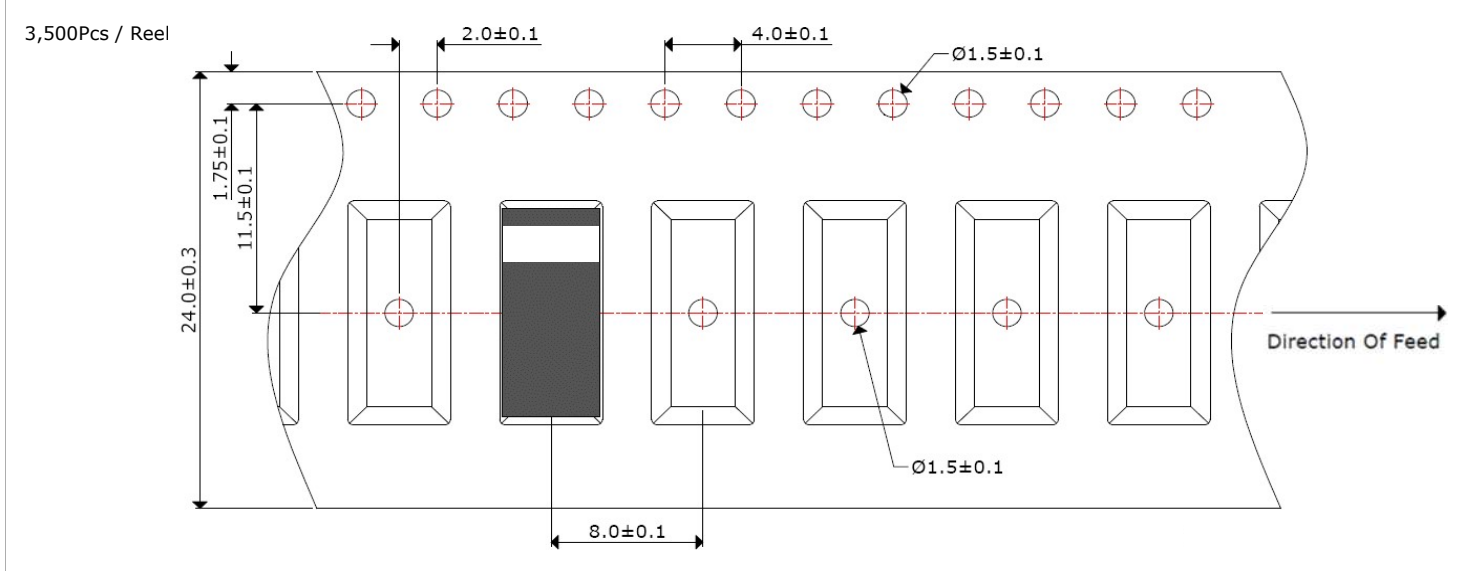
Freq.	863	864	865	866	867	868	869	870	871	872	873
Eff. (%)	35.3	35	34.8	34.7	34.7	34.8	34.8	34.8	34.5	33.9	33.4
P.G.	-0.6	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7

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.)



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.