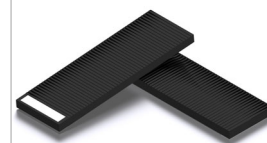


Features

- ISM
- Chip Type
- Stable And Reliable Performance
- 433.05-434.79MHz
- SMT Process Compatible

Applications

- ISM Band System
- Wireless Alarm And Security System
- Smart Meters
- IOT Applications
- Machine To Machine Communication



Part Numbering Guide

S AT CA 16A5BI IS B2



ANTENNA

CHIP ANTENNA

PACKAGE SIZE*

16A5BI = 16.0mm x 5.1mm x 0.8mm

APPLICATION

IS - ISM

FREQUENCY

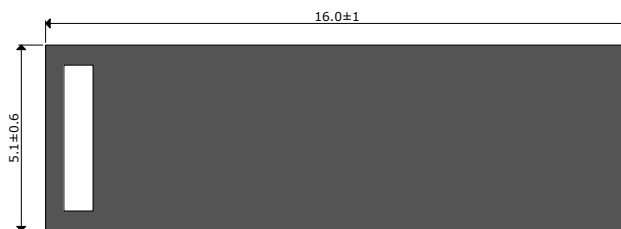
B2 = 433.05-434.79MHz

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

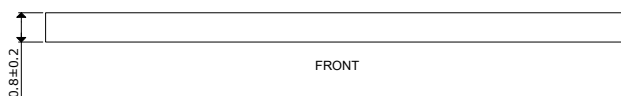
Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Band	MHz	433.05		434.79	
Impedance	Ω		50		
Polarization			Linear		
Peak Gain	dBi		-5.1		At 433MHz
Efficiency	%		16		At 433MHz
VSWR				2	At Center Frequency
Operating Temperature	C	-40		85	

Outline Drawing

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



TOP



FRONT



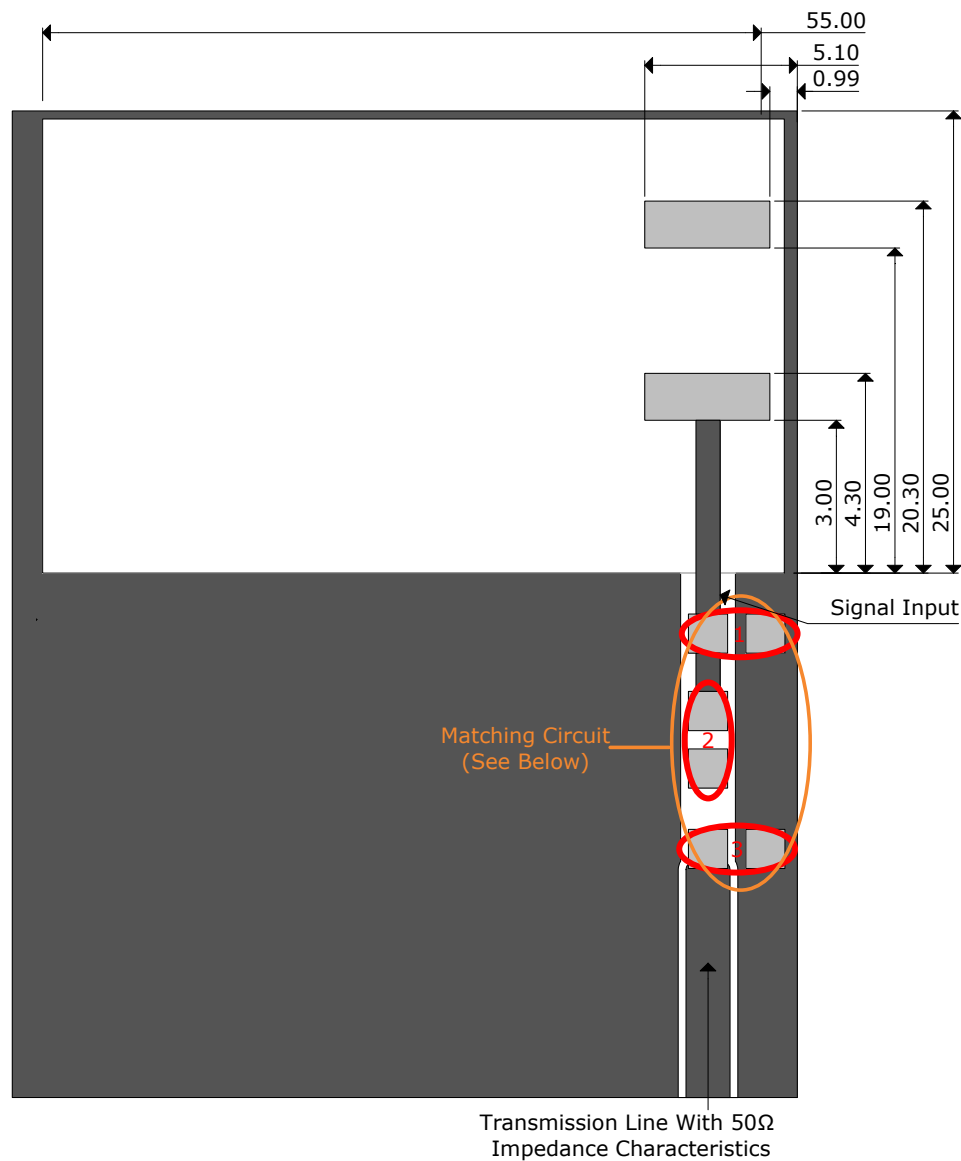
SIDE



BOTTOM

Recommended Land Pattern & Frequency Tuning Scenario Circuit

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

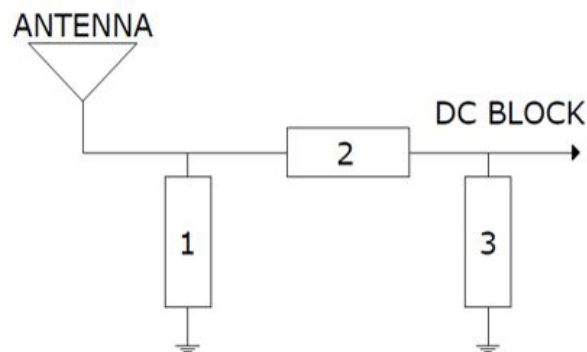


System Matching Circuit Components

Location	Description	Vendor	Tolerance
1	N/A	-	-
2	56nH, (0402)	TDK (0402)	±5%
3	N/A	-	-

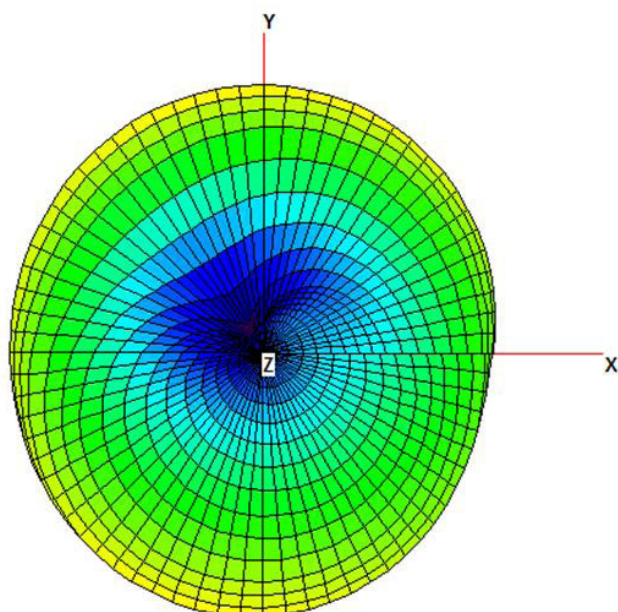
For these suggested values for the matching and tuning of components, the average frequency will be 433MHz on a standard 100 x 55mm² Evaluation board.

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



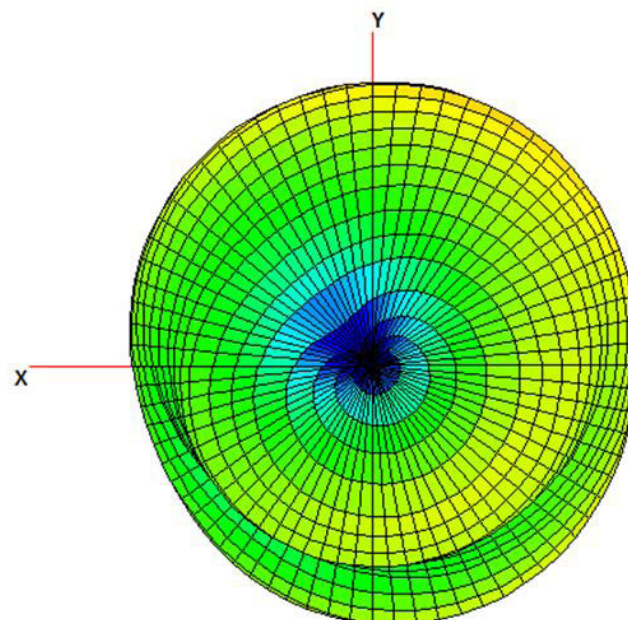
Radiation Pattern

433MHz



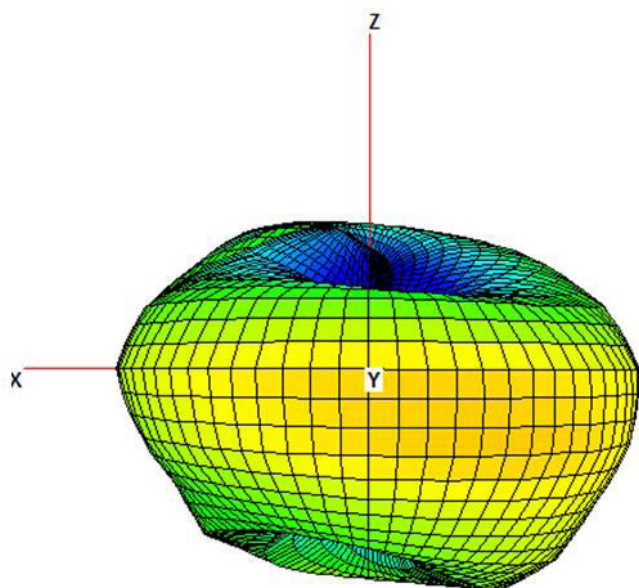
Radiation Pattern

433MHz



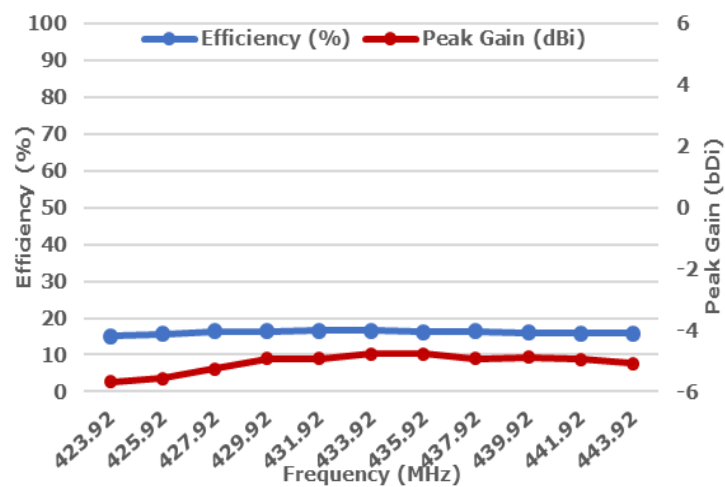
Radiation Pattern

433MHz



Efficiency V's Frequency

433MHz



Freq.	424	426	428	430	432	434	436	438	440	442	444
Eff. (%)	15.1	15.7	16.3	16.3	16.6	16.6	16.2	16.3	16.1	15.8	15.8
P.G.	-5.68	-5.57	-5.25	-4.93	-4.93	-4.77	-4.77	-4.92	-4.87	-4.94	-5.08

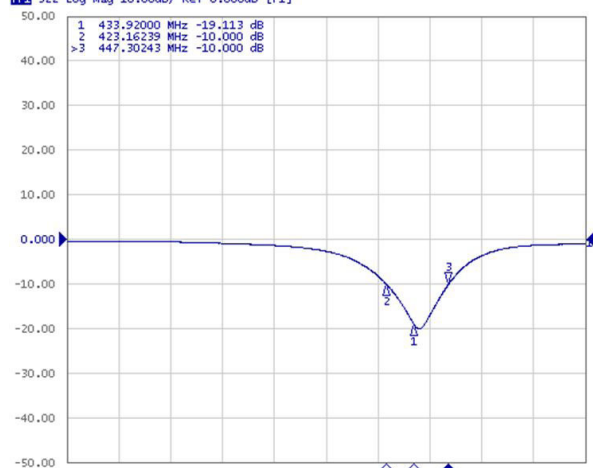
Electrical Test

Return Loss

1 433.92000 MHz -19.113 dB

2 423.16239 MHz -10.000 dB

>3 447.30243 MHz -10.000 dB



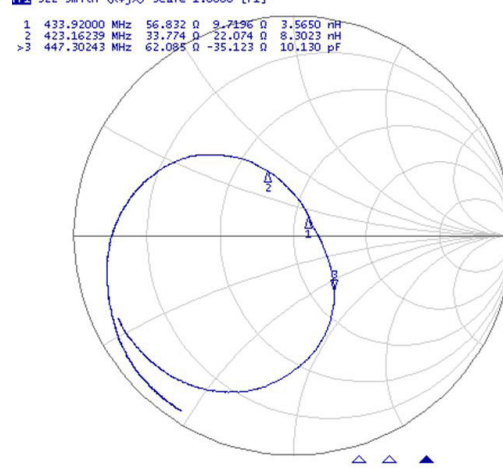
Electrical Test

Smith Chart

1 433.92000 MHz 56.832 Ω 9.7196 Ω 3.5650 nH

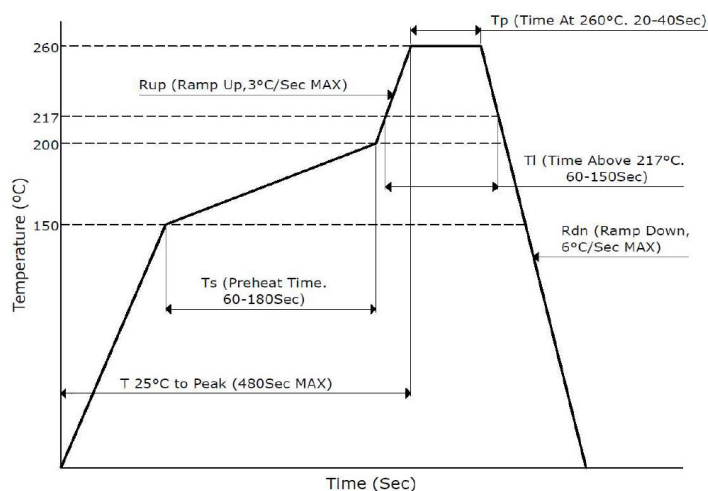
2 423.16239 MHz 33.774 Ω 22.074 Ω 8.3023 nH

>3 447.30243 MHz 62.085 Ω 35.123 Ω 10.130 pF



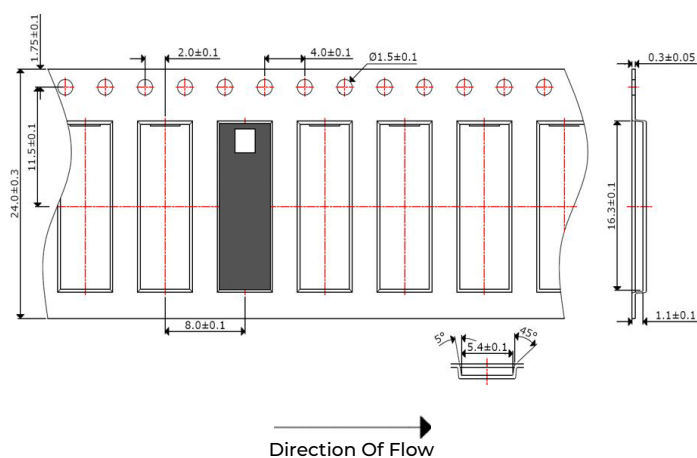
Soldering Conditions

Typical Soldering Profile For Lead-Free Process



Packaging - Tape And Reel

6000Pcs / 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.