

Datasheet

2.4-2.5GHz

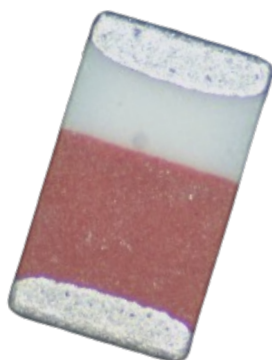
Chip antenna

Features:

High performing Wi-Fi & Bluetooth antenna with SMT mounting on PCB.

Applications:

- CPE - Router, Set-top boxes & Gateway
- IoT devices
- Wi-Fi & Bluetooth Mesh
- Smart Metering
- Robotics



2 × 1.2 × 0.6 mm

Chip Antenna



Electrical Specifications

Antenna Characteristics

Antenna Type	Radiation Pattern	Polarization	Max. Input Power	Impedance
Chip Antenna	Omni	Linear	2W	50Ω
Frequency (GHz)		2.4~2.5		
Return Loss (dB)@ Center Frequency		< -10 Typ.		
Peak Gain (dBi)		3.3		
Average Gain (dB)		-3.1		
Efficiency (%)		49		

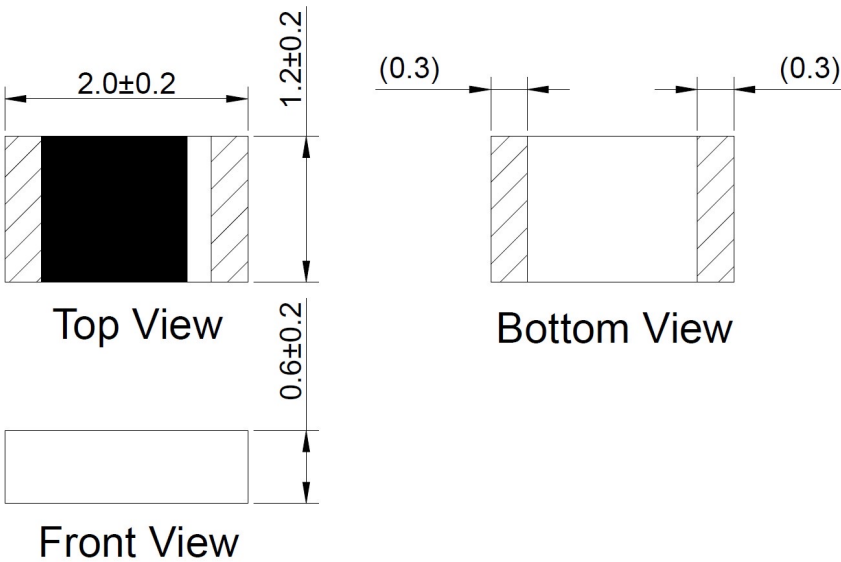
Mechanical Specifications

Mechanical	
Dimension (mm)	2.0 × 1.2 × 0.6
Material	Ceramic
Weight (g)	0.006

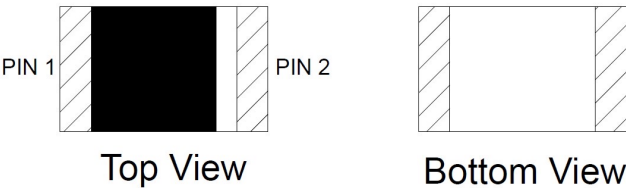
Environmental	
Temperature Range (°C)	-40 to 85
Humidity	Non-condensing 65°C 95% RH
RoHS Compliant	

Mechanical Drawing

Unit : mm

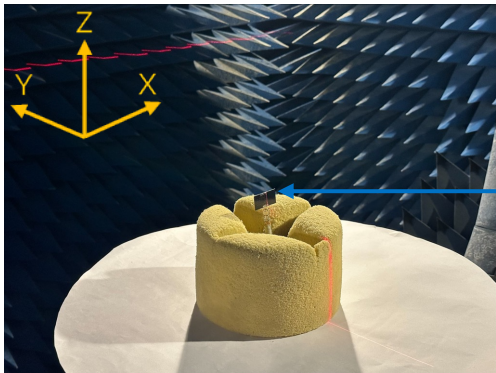


PIN Definitions



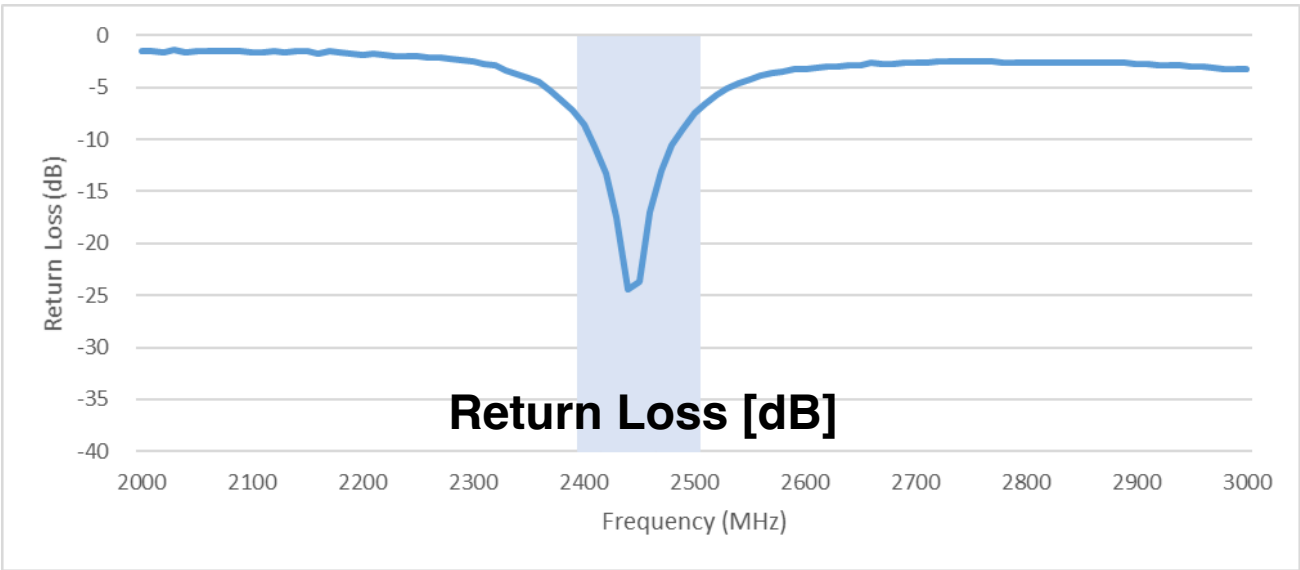
Pin	Soldering PAD
1	Signal Input
2	Tuning/Signal Output

Antenna Testing Includes Evaluation Board

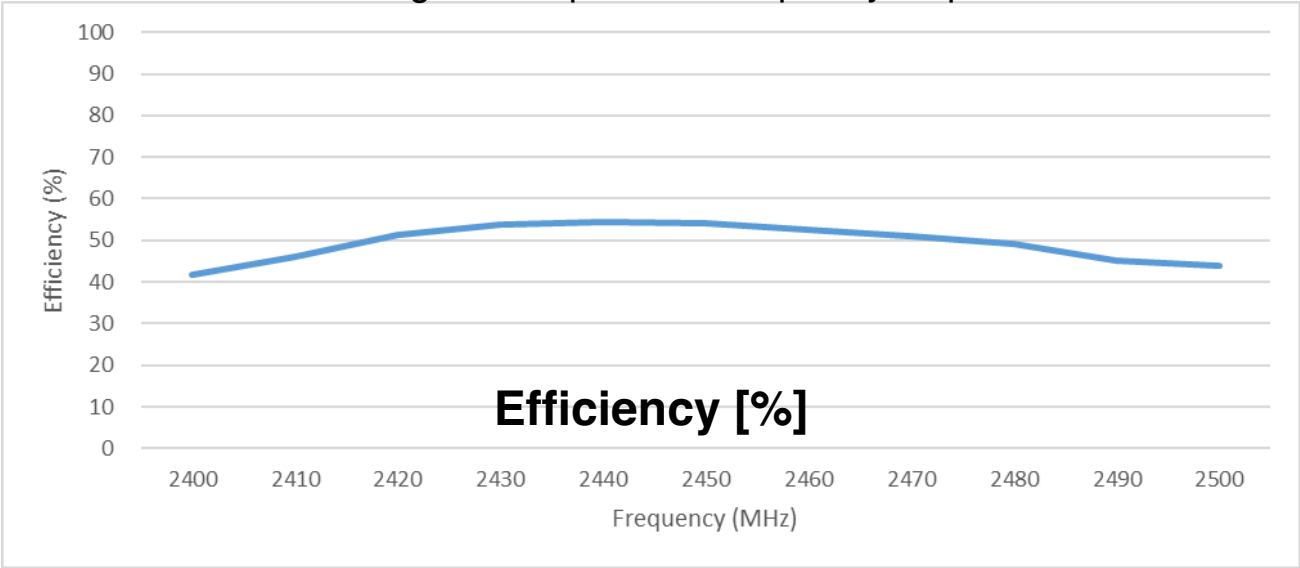


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Test setup, measurement performed in 3D anechoic chamber.

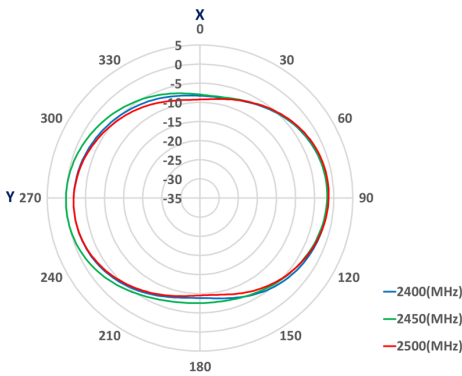


Blue background represents frequency response.

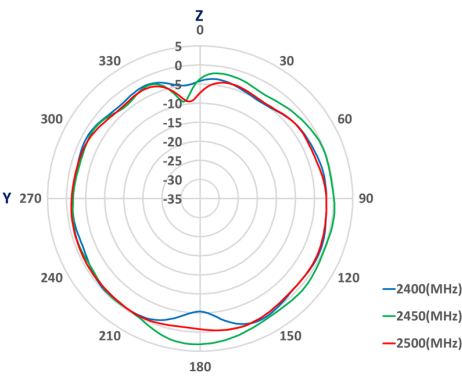


Radiation Pattern - Free Space

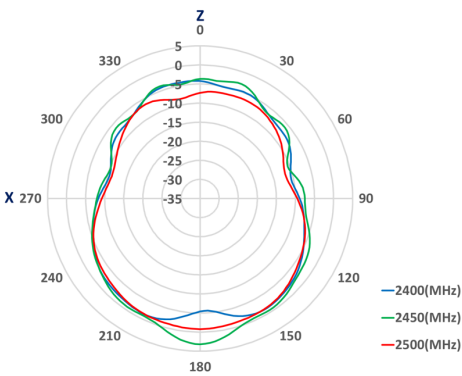
XY - Plane



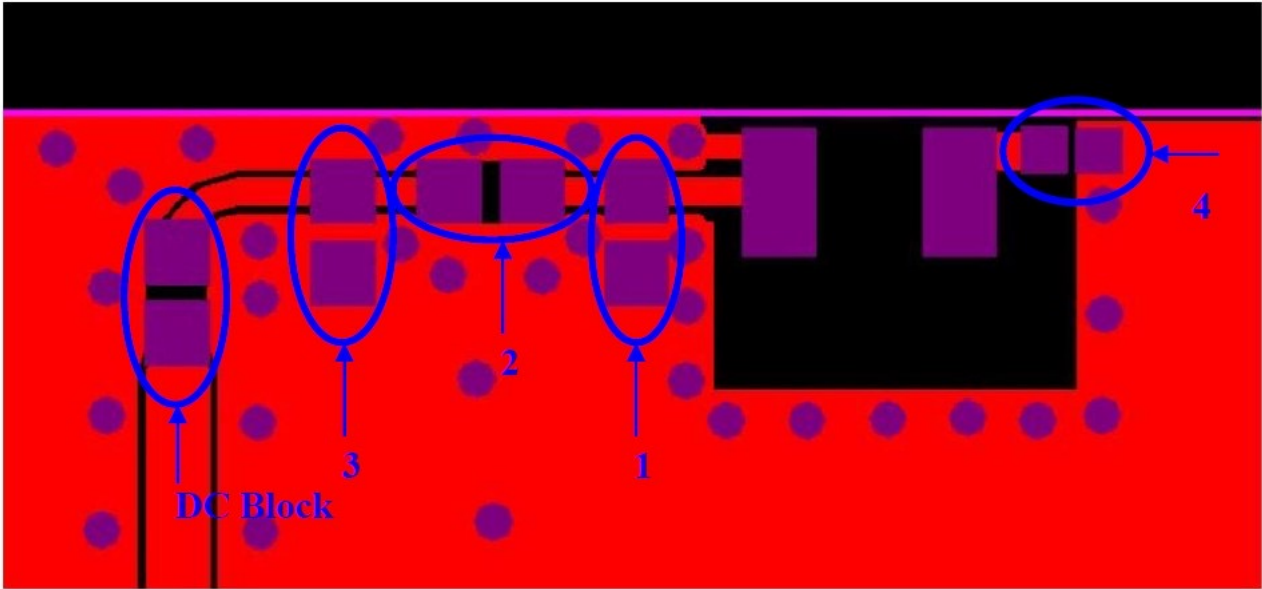
YZ - Plane



XZ - Plane



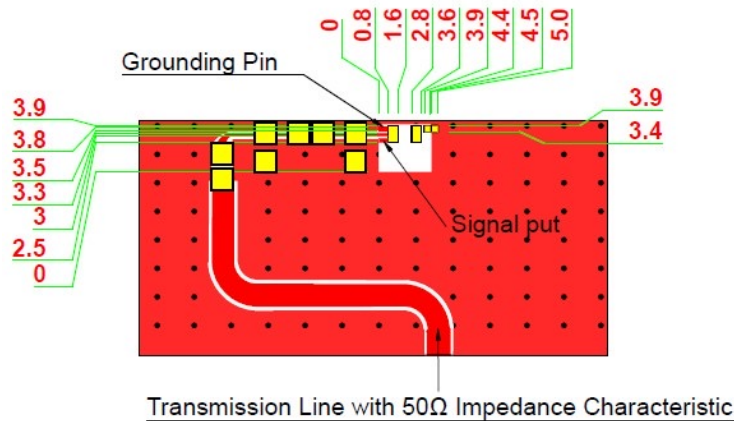
Matching Circuit Design



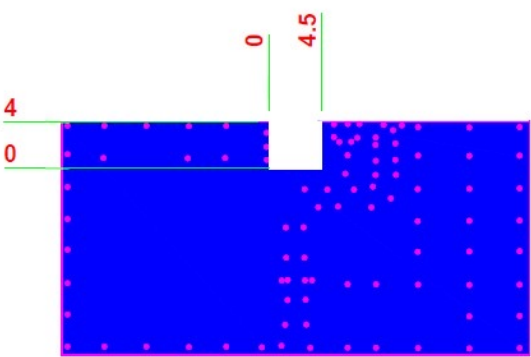
- \* To make the antenna have this resonance must be matched with the matching circuit.
- \* The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

Circuit Matching Components		
Circuit Symbol	Size	Description
1	0402	None
2	0402	0.5 pF Capacitor
3	0402	0.8 pF Capacitor
4	0402	2 pF Capacitor
DC Block	0402	22 pF Capacitor

Clearance Area Design



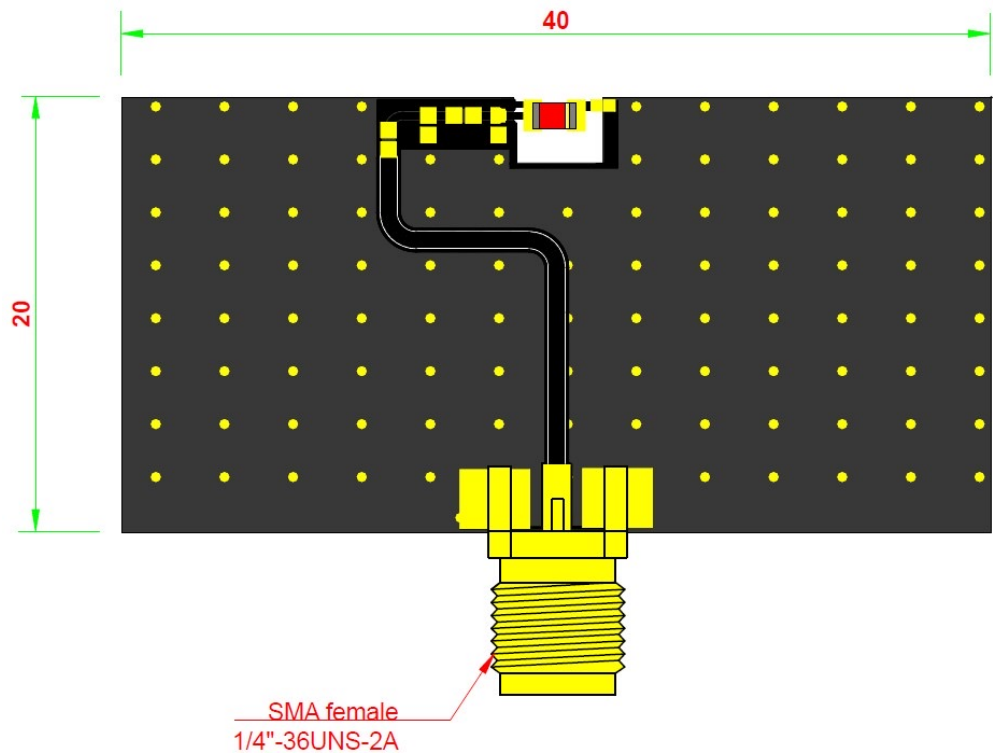
Top View



Bottom View

Evaluation Board

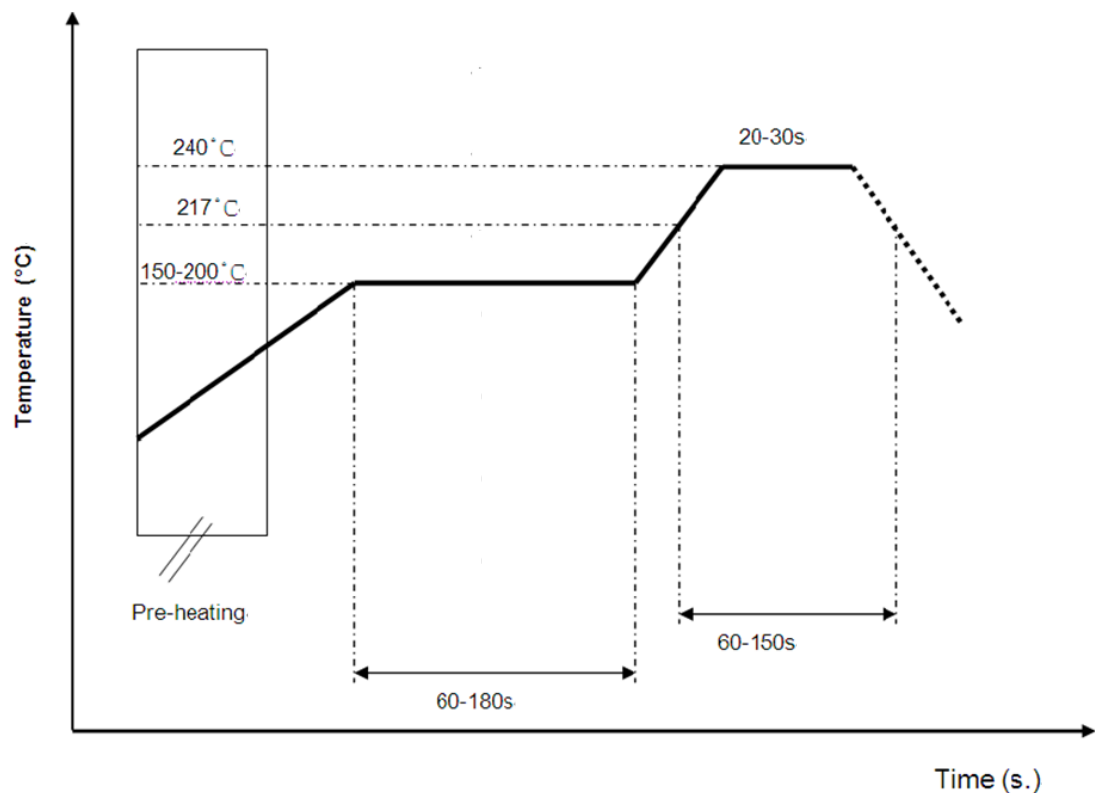
Unit : mm



Base Material : FR-4, T=1.0

Recommended Reflow Temperature Profile

Recommended solder paste alloy:  
SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste



Revisions				
Rev.	Description	Date	ECN	Approval
A	Initial Release	2023-02-21	ST0243-00-N01-U-RA00	ATC

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