

### Datasheet

## 0.61-0.96GHz & 1.7-5.9GHz

Chip antenna

### Features:

High performing 5G FR1 antenna with SMT mounting on PCB.

### Applications:

- Sub-6 Mesh
- Smart Metering
- Robotics
- Intelligent Transport Systems
- Internet of Things (IoT)
- High Definition Video Broadcast Systems



35 × 5 × 4 mm

**Chip Antenna**



## Electrical Specifications

### Antenna Characteristics

Antenna Type	Radiation Pattern	Polarization	Max. Input Power	Impedance
Chip Antenna	Omni	Linear	5W	50Ω

Frequency (GHz)	0.617~0.96	1.71~2.17	2.3~2.69	3.3~5.0	5.15~5.925
Return Loss (dB)	< -2.9	< -3.5	< -3.5	< -3.5	< -3.5
Peak Gain (dBi)	2.5	4.7	4.3	5.5	3.8
Average Gain (dB)	-2.5	-1.3	-1.8	-2.3	-3.0
Efficiency (%)	57	74	66	59	50

**Mechanical Specifications**

**Mechanical**

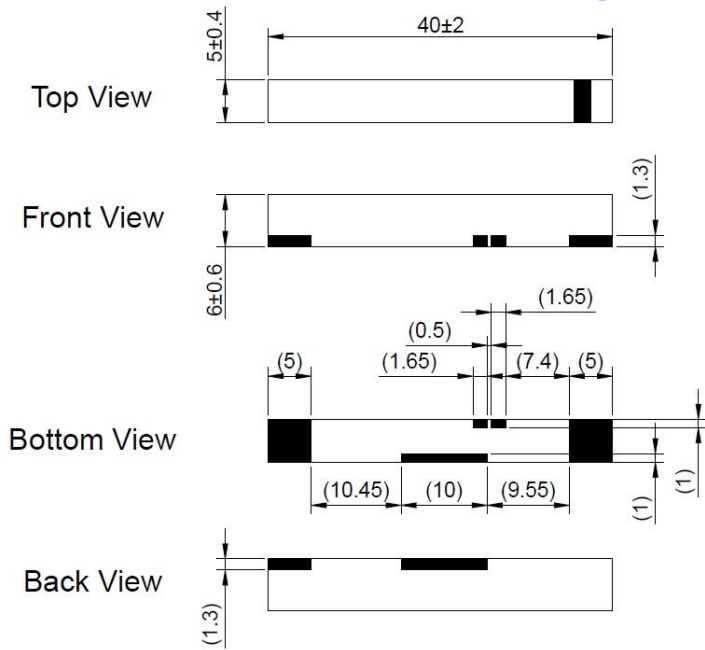
Dimension (mm)	40.0 × 5.0 × 6.0
Material	Ceramic
Weight (g)	4.0

**Environmental**

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

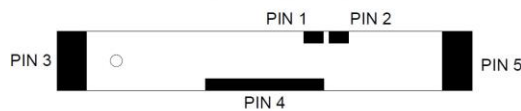
RoHS Compliant

**Mechanical Drawing**



Unit : mm

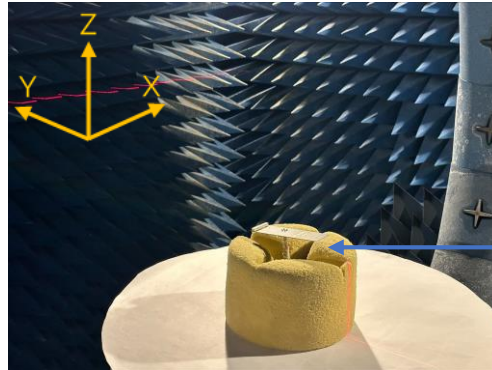
**PIN Definitions**



**Bottom View**

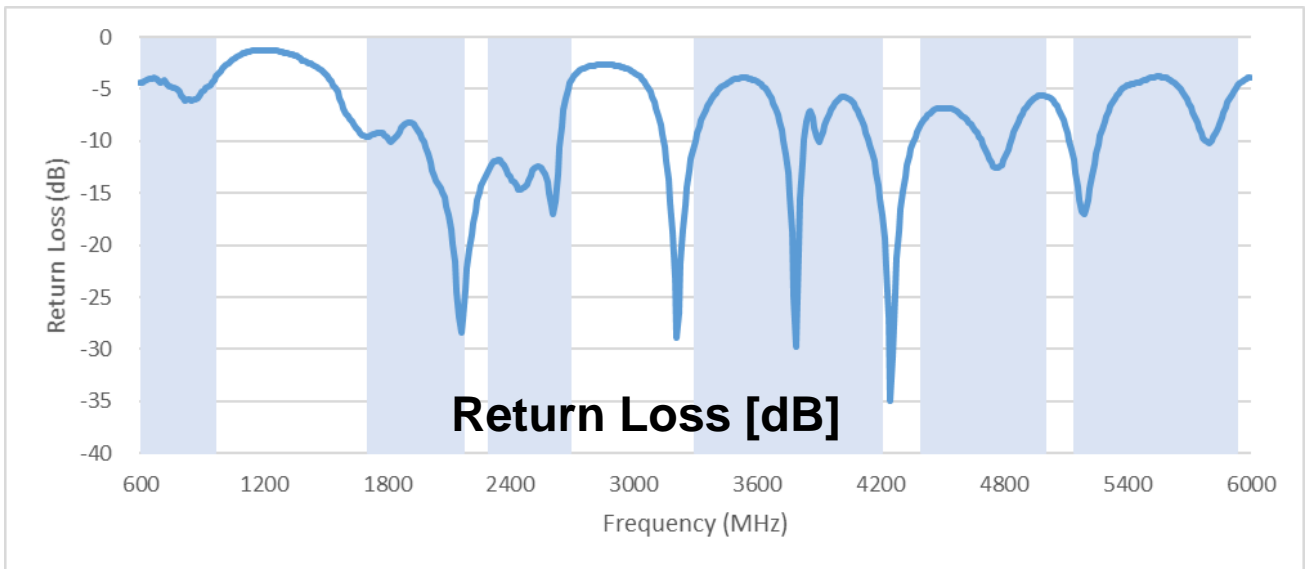
Pin	Soldering PAD
1	Tuning/Ground
2	Signal
3~5	Fixing

## Antenna Testing Includes Evaluation Board

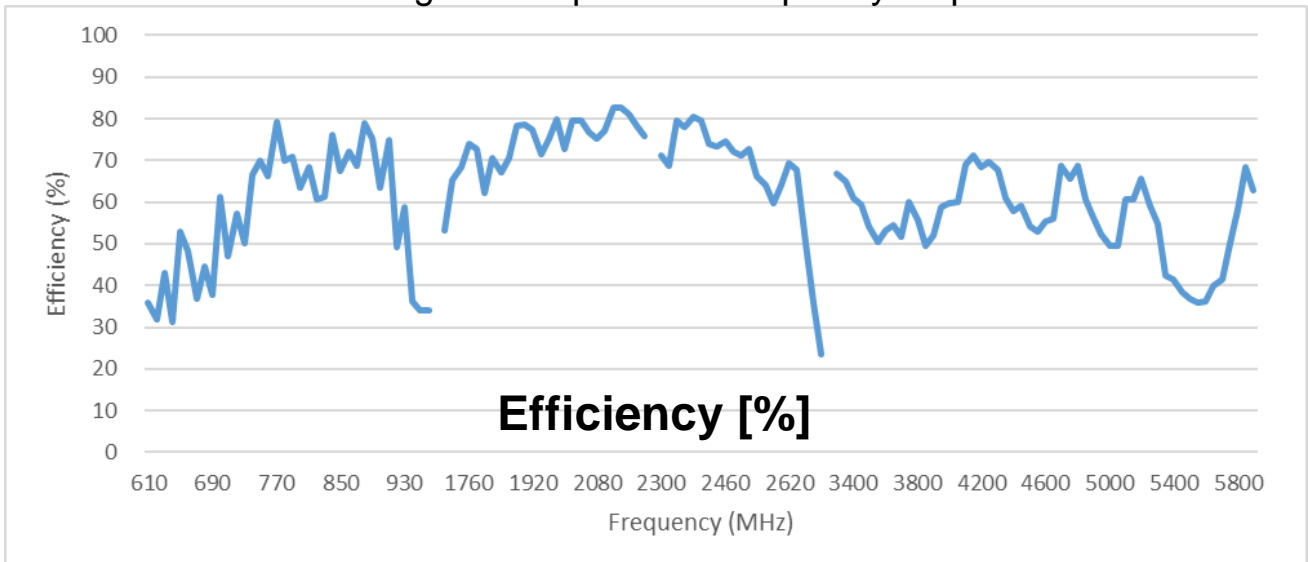


ST0443-10-N01-B

Test setup, measurement performed in 3D anechoic chamber.

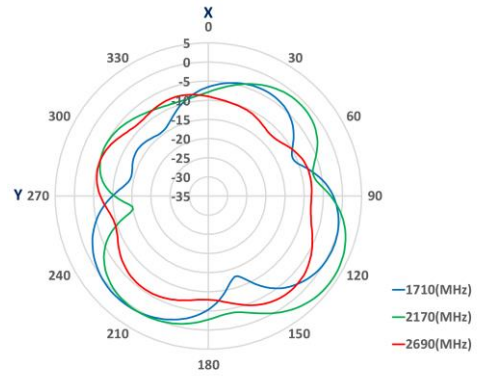
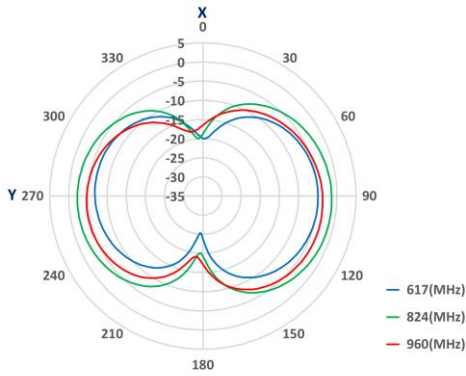


Blue background represents frequency response.

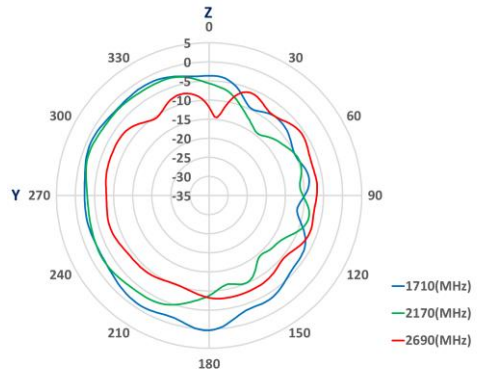
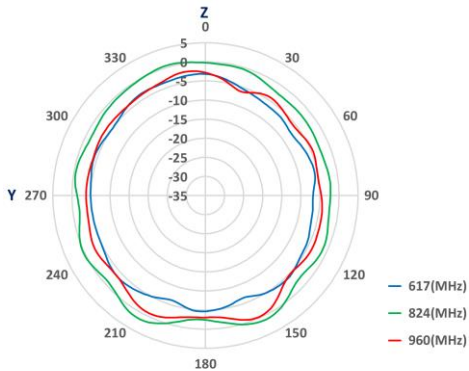


## Radiation Pattern - Free Space

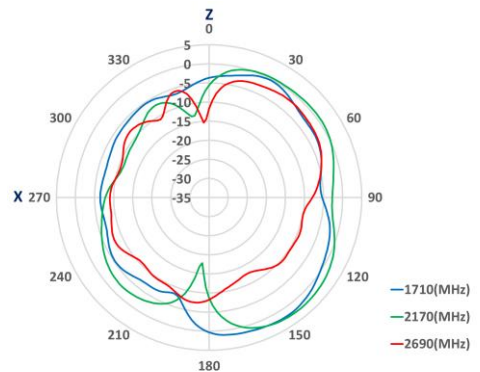
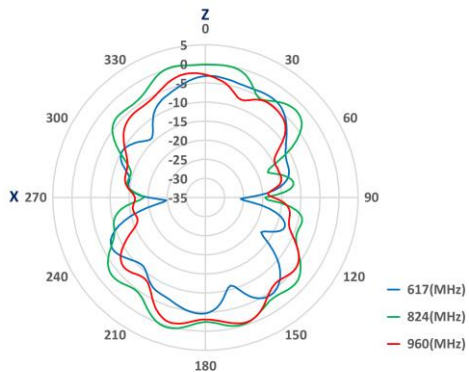
### XY - Plane



### YZ - Plane

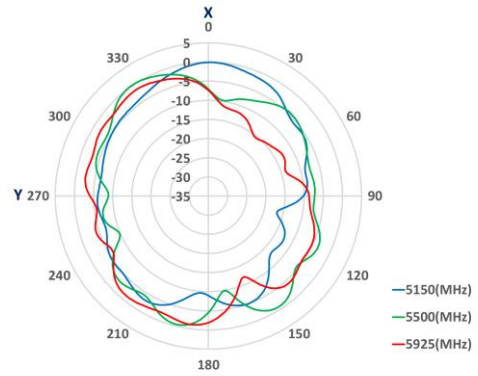
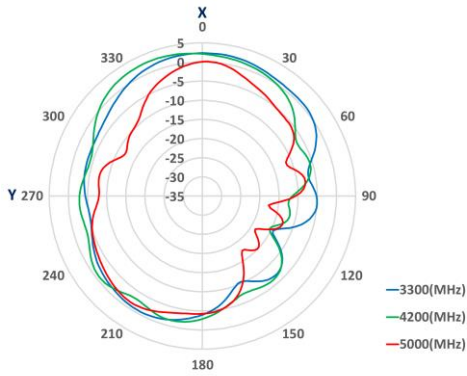


### XZ - Plane

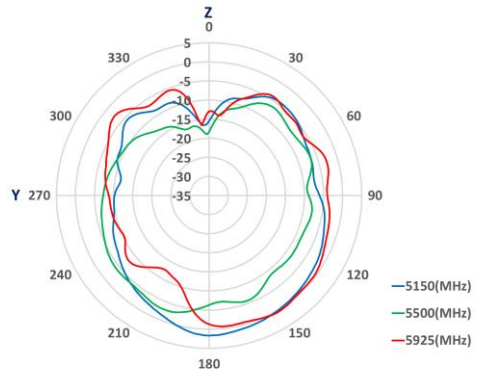
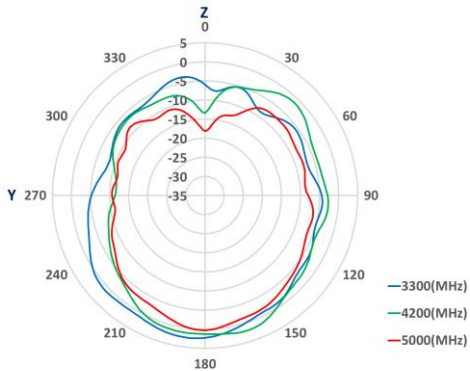


## Radiation Pattern - Free Space

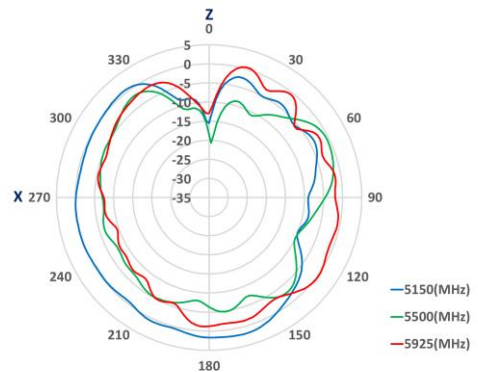
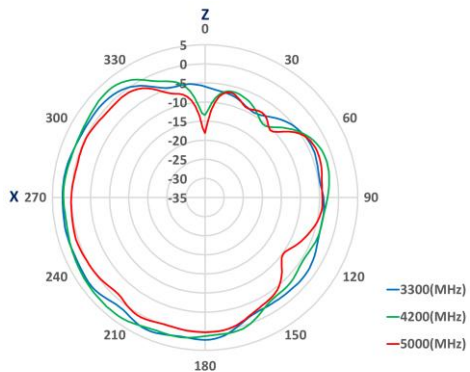
### XY - Plane



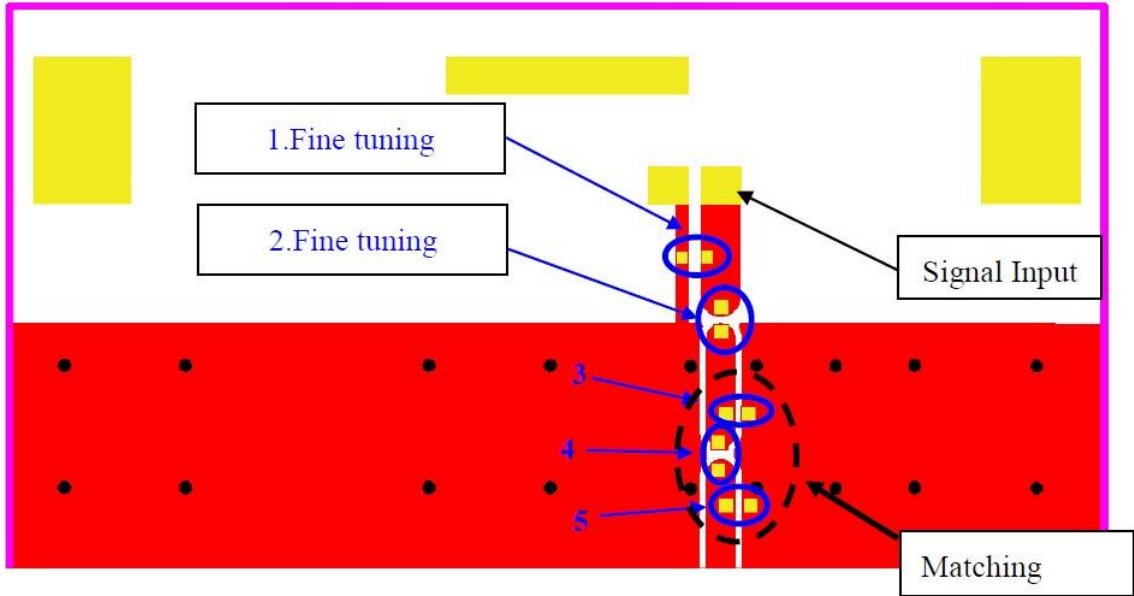
### YZ - Plane



### XZ - Plane



## Matching Circuit Design

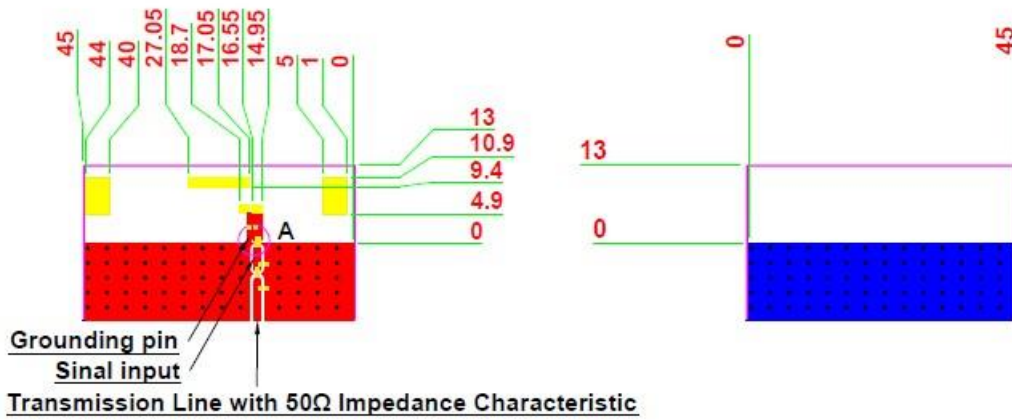


- \* To make the antenna have this resonance must be matched with the matching circuit.
- \* The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

### Circuit Matching Components

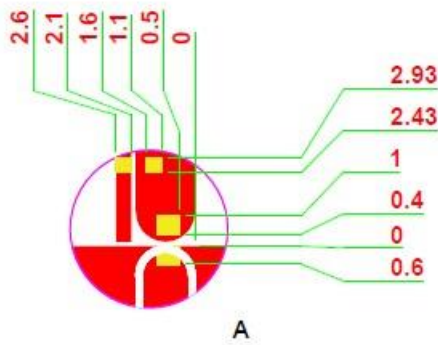
Circuit Symbol	Size	Description
1. Fine tuning element	0402	6.8 nH Inductance
2. Fine tuning element	0402	6.8 pF Capacitor
3	0402	None
4	0402	0 Ohm Resistance
5	0402	None

Clearance Area Design



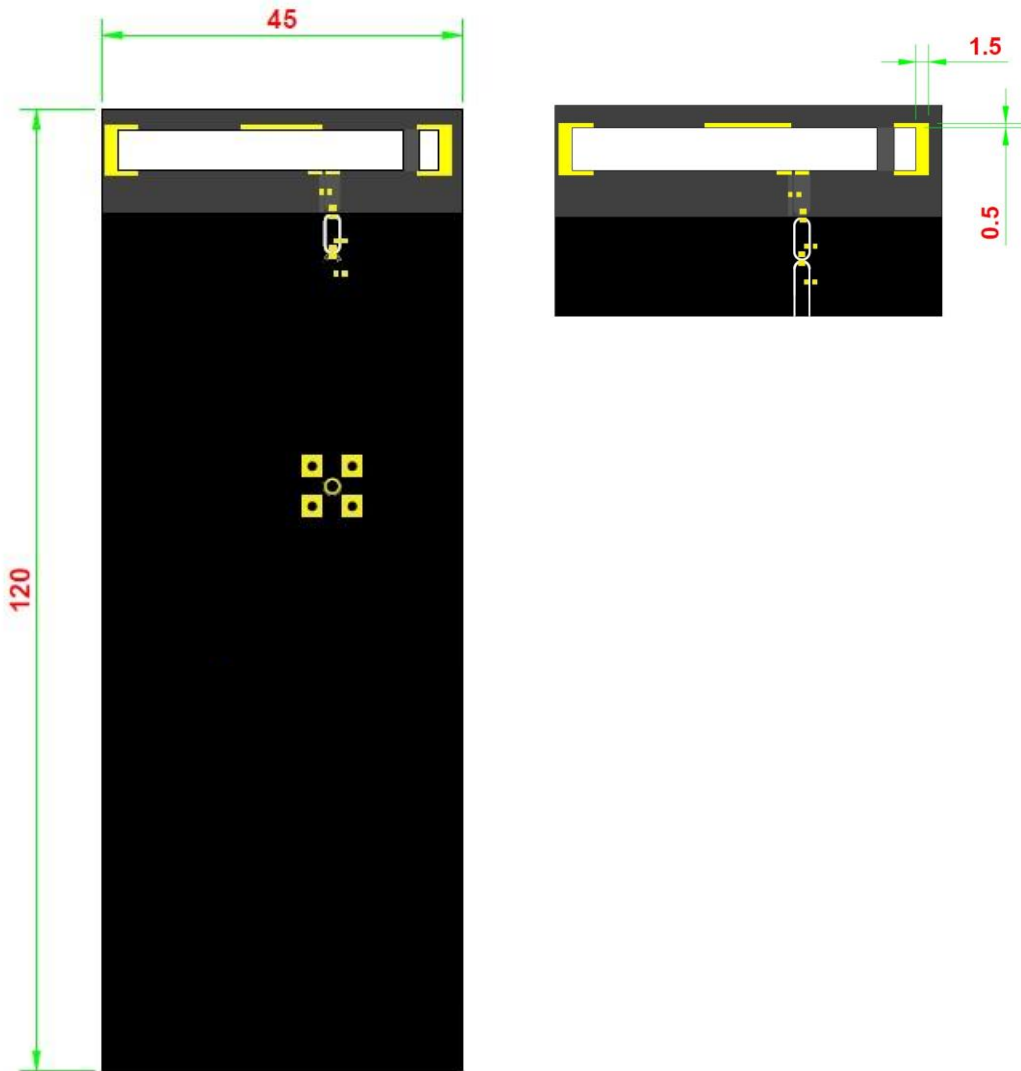
Top View

Bottom View



Evaluation Board

Unit : mm



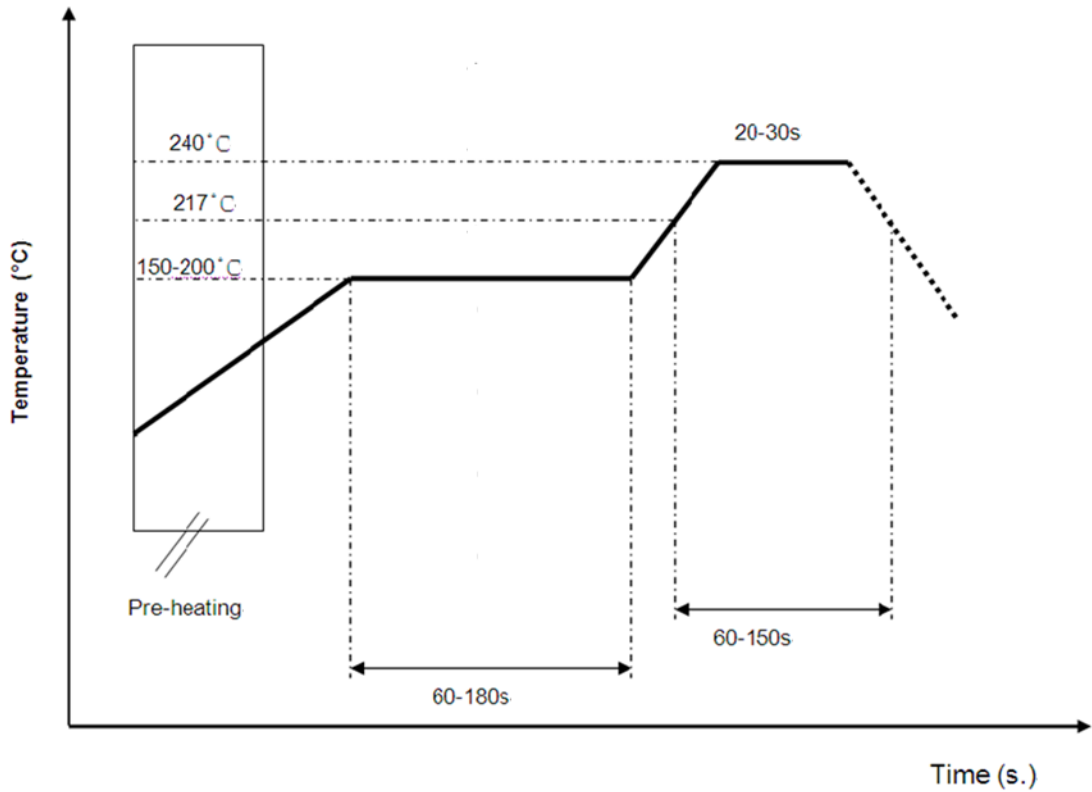
Base Material : FR-4, T=1.0



## 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	2023-02-16	ST0443-10-N01-B-RA00	ATC

NOTICE - These drawings, specifications, or other data ( 1) are, and remain the property of Amphenol corp. (2) must be returned upon request; and (3) are confidential and not to be disclosed to any person other than those to whom they are given by Amphenol Corp. the furnishing of these drawings, specifications, or other data by Amphenol Corp., or to any other person to anyone for any purpose is not to be regarded by implication or otherwise in any manner licensing, granting rights to permitting such holder or any other person to manufacture, use or sell any product, process or design, patented or otherwise, that may in any way be related to or disclosed by said drawings, specifications, or other data.