

Datasheet

0.69-0.96GHz & 1.7-2.7GHz

Chip antenna

Features:

High performing full 4G LTE band antenna with SMT mounting on PCB.

Applications:

- Telematics Control Unit (TCU)
- HD Video over 4G LTE
- First Responder and Emergency Services
- Intelligent Transport Systems
- Internet of Things (IoT)
- High Definition Video Broadcast Systems
- Wireless 4G LTE M2M Devices
- Medical Devices
- MSL 3



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)	0.698~0.96	1.71~2.17	2.3~2.69
Return Loss (dB)	< -6	< -6	< -6
Peak Gain (dBi)	3.5	2.8	5.6
Average Gain (dB)	-2.2	-2.9	-1.2
Efficiency (%)	60	51	76

Mechanical Specifications

Mechanical

Dimension (mm)	35.0 × 5.0 × 4.0
Material	Ceramic
Weight (g)	2.3

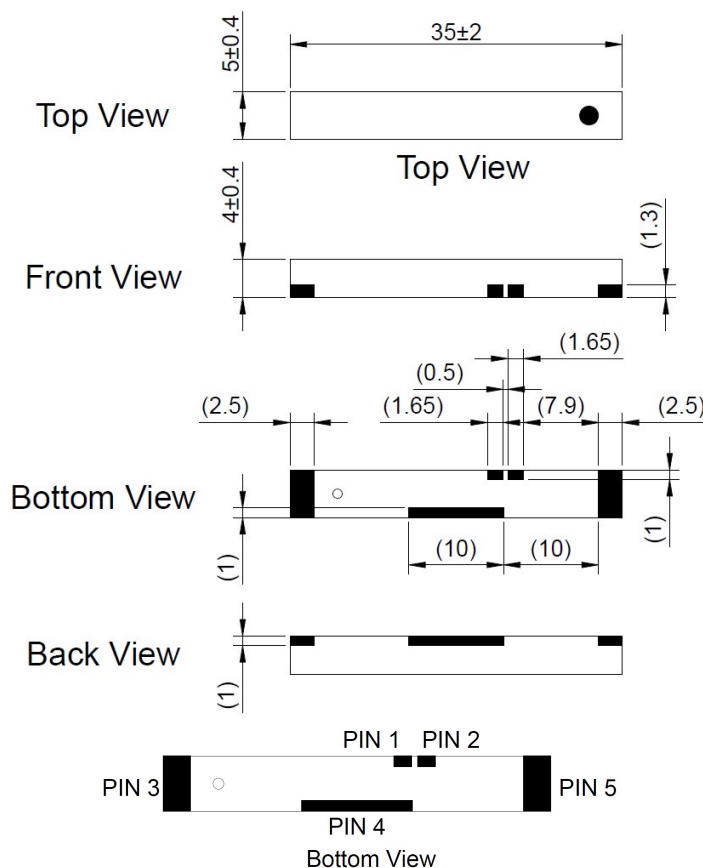
Environmental

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

RoHS Compliant

Mechanical Drawing

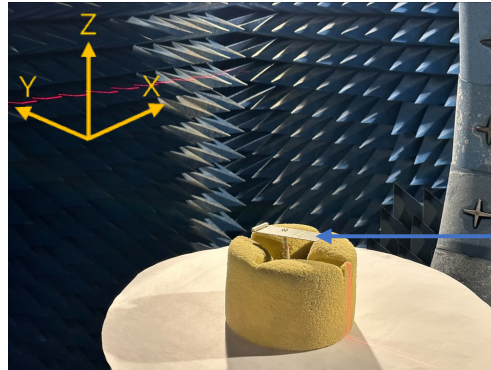
Unit : mm



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

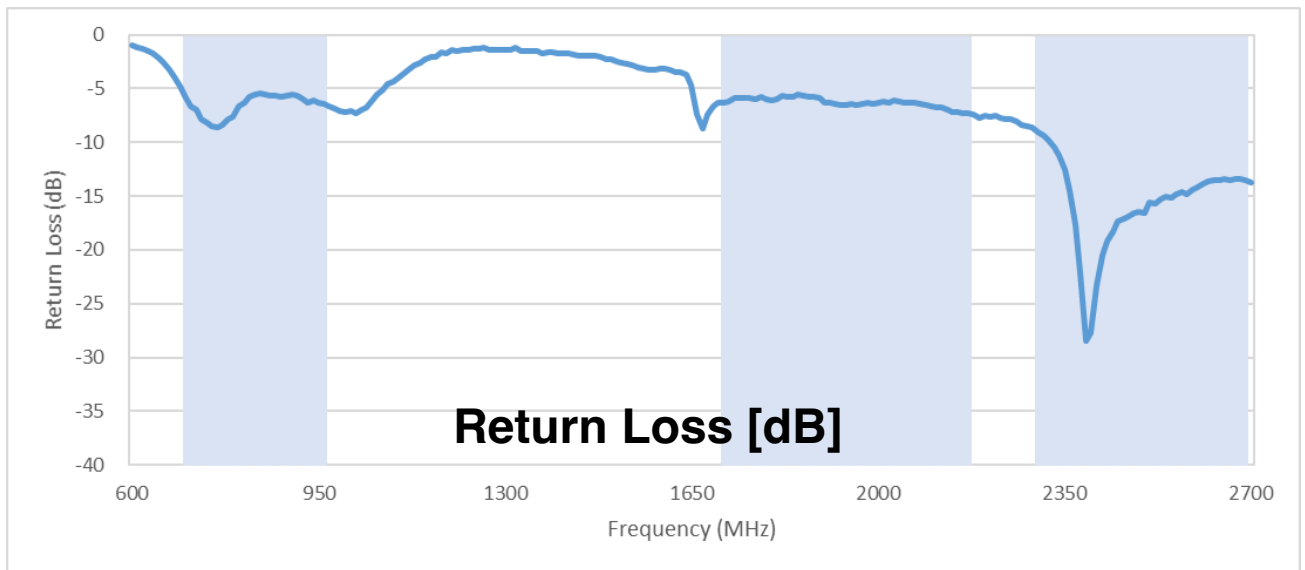
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Antenna Testing Includes Evaluation Board

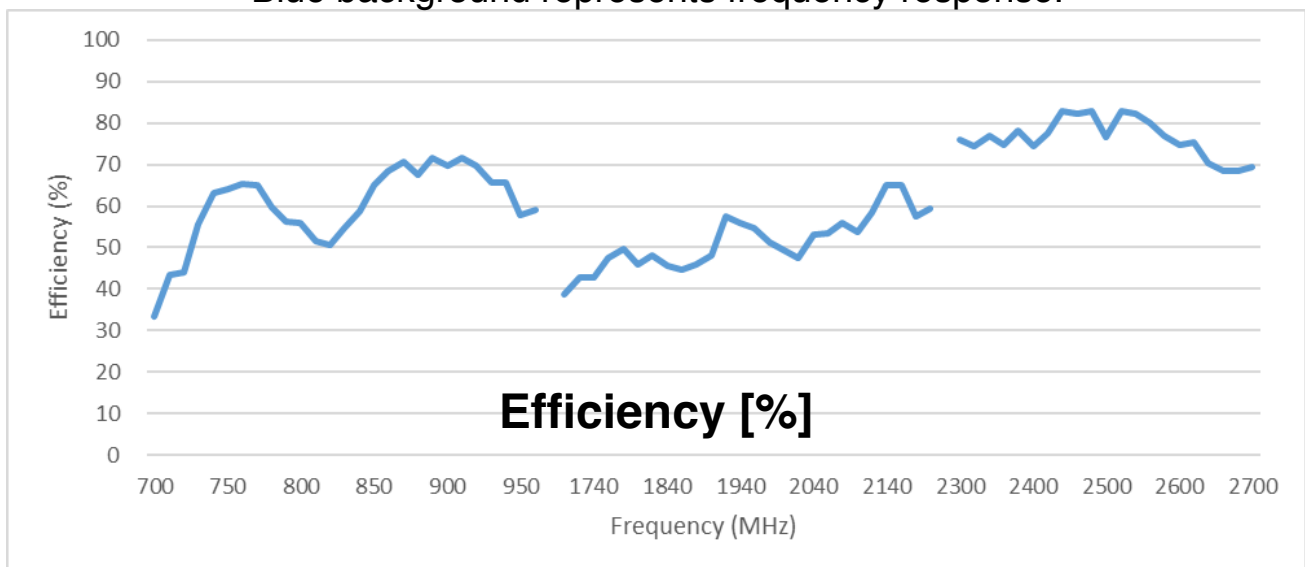


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Test setup, measurement performed in 3D anechoic chamber.

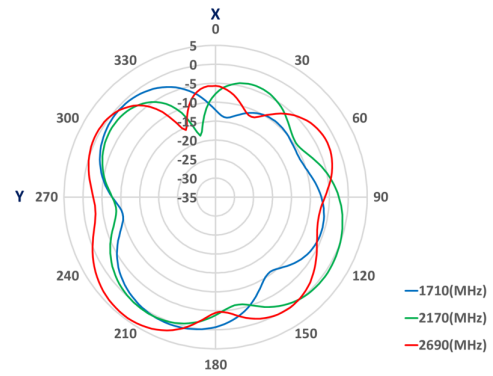
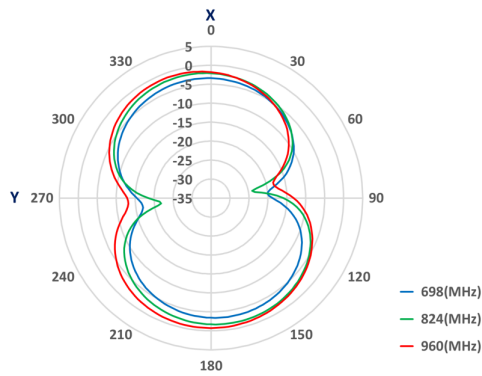


Blue background represents frequency response.

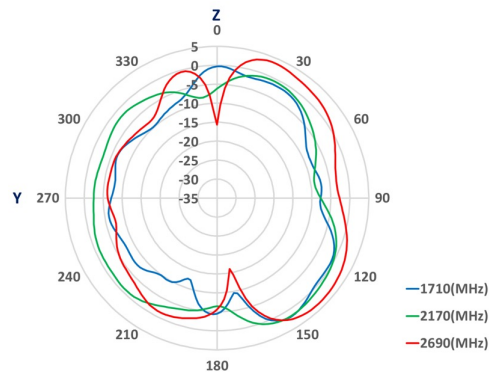
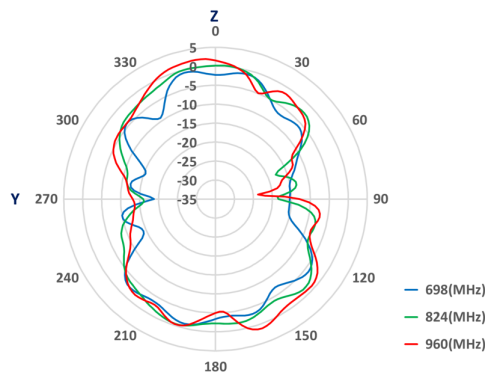


Radiation Pattern - Free Space

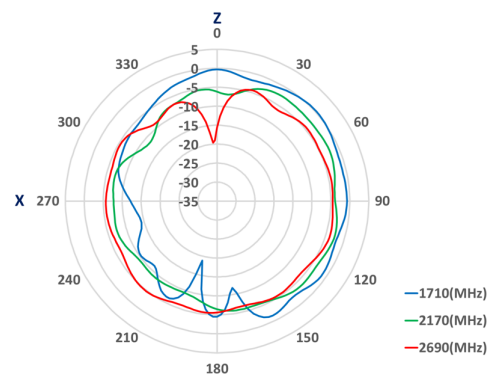
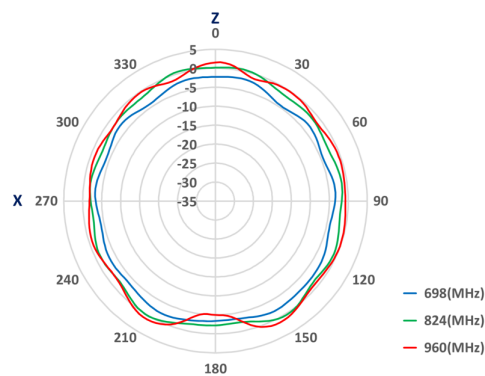
XY - Plane



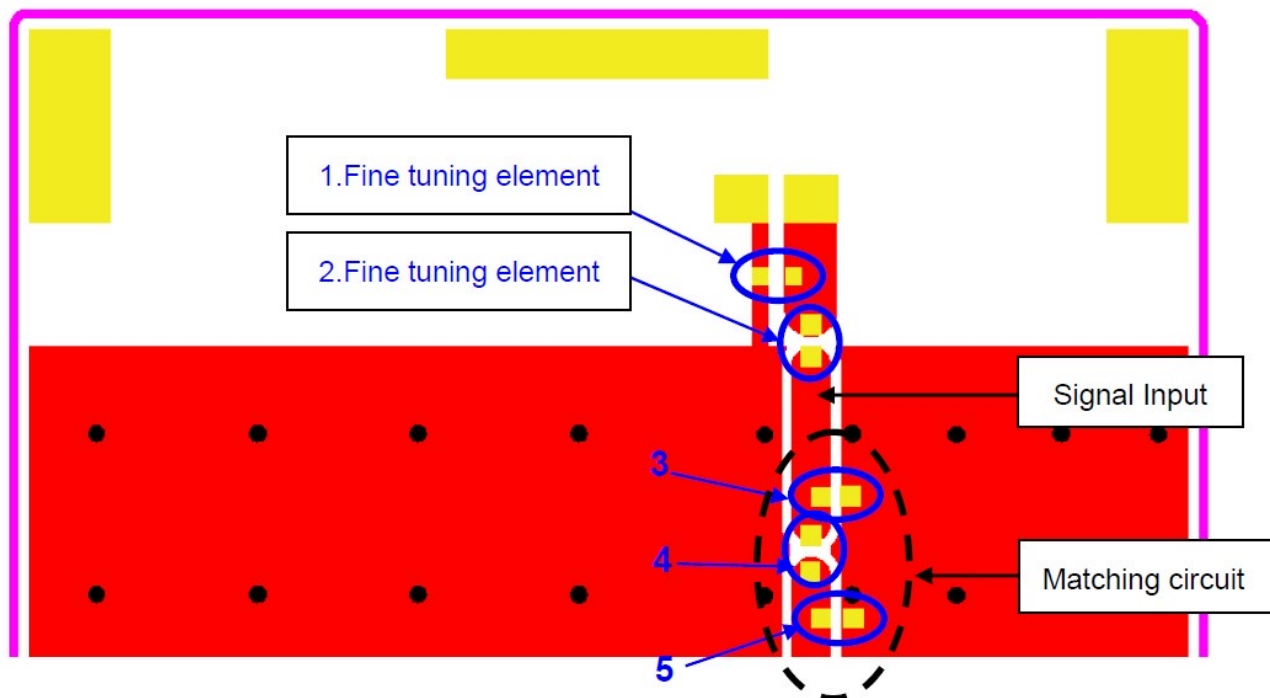
YZ - Plane



XZ - Plane



Matching Circuit Design

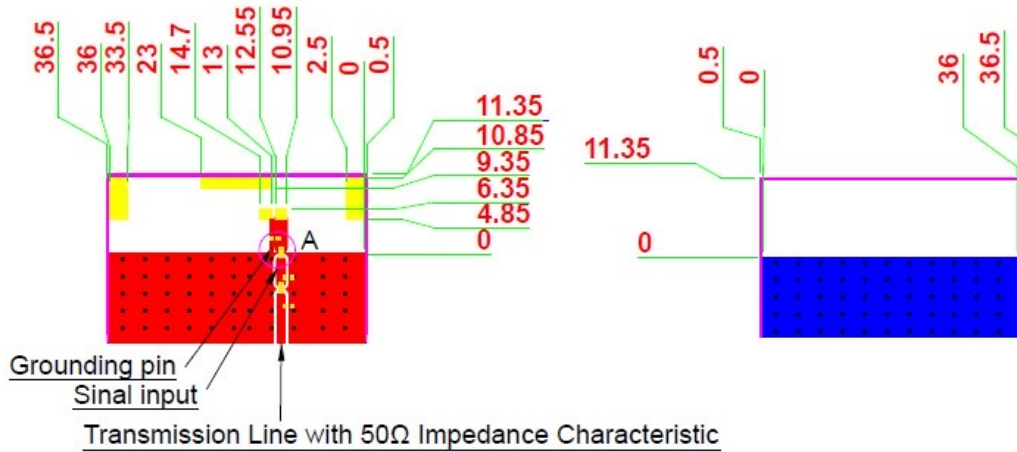


- * To make the antenna have this resonance must be matched with the matching circuit.
- * The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

Circuit Matching Components

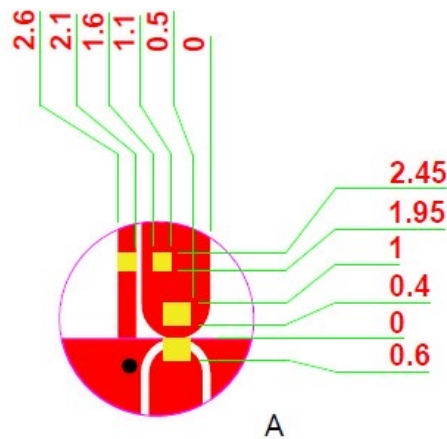
Circuit Symbol	Size	Description
1. Fine tuning element	0402	6.8 nH Inductance
2. Fine tuning element	0402	3.9 pF Capacitor
3	0402	None
4	0402	0 Ohm Resistance
5	0402	None

Clearance Area Design



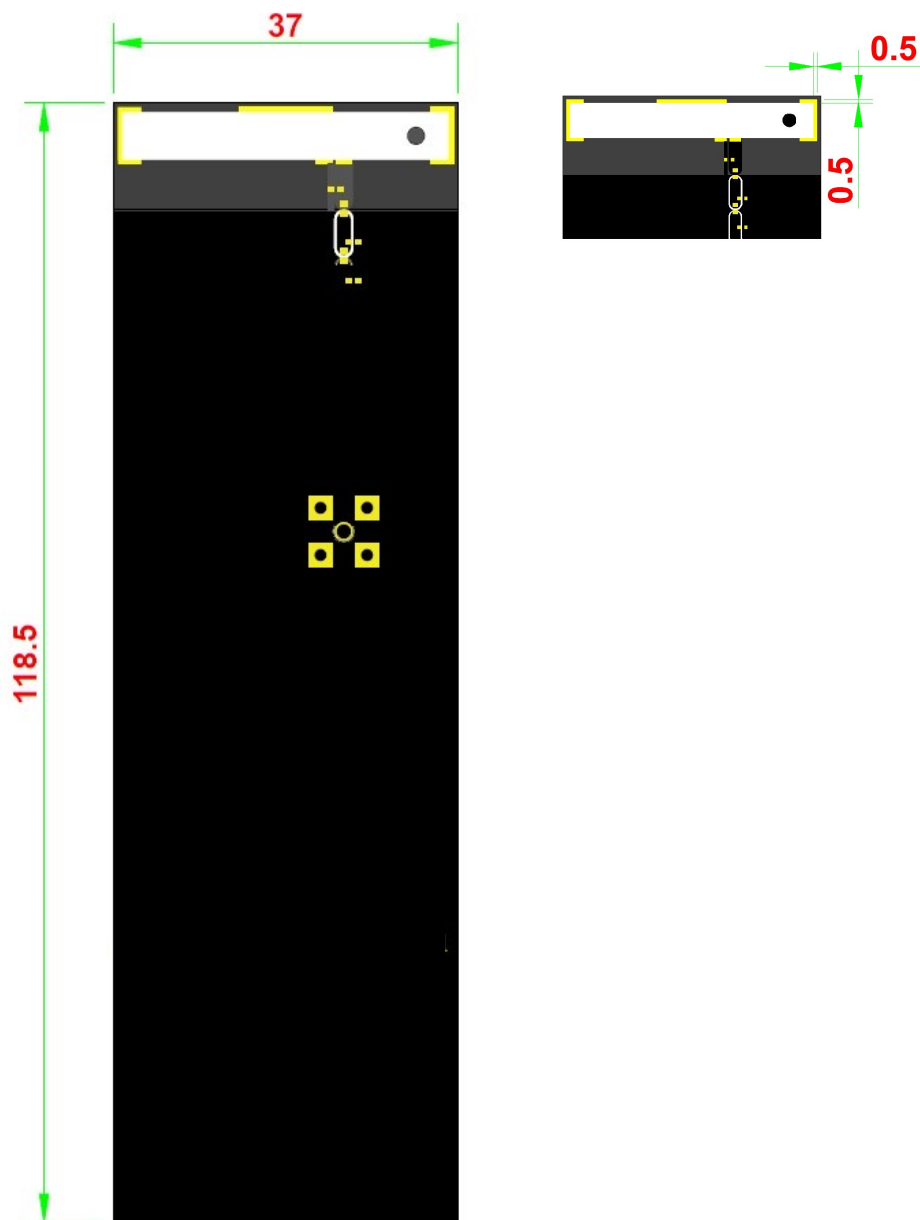
Top View

Bottom View



Evaluation Board

Unit : mm

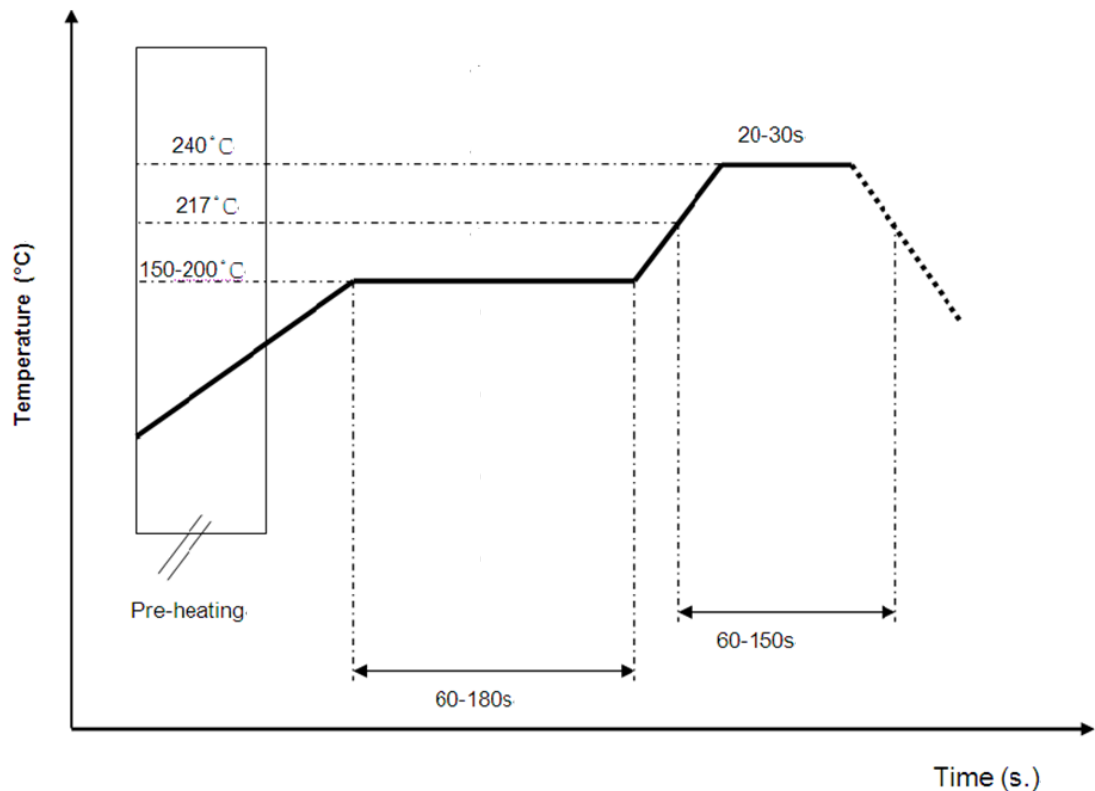


Base Material : FR-4, T=1.0

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	2023-02-17	ST0343-10-N01-B-RA00	ATC

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