

SMD CHIP ANTENNA
Data Sheet

KH-3216-ISM-31-A

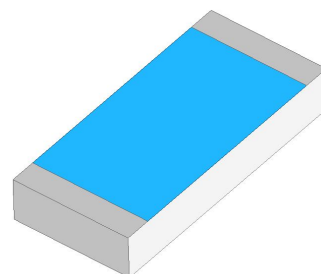
For 433/866/915MHz 3.2x1.6mm[EIA1206]

Features

- SMD, high reliability, ultra Impact, Omni-directional ...
- Operating Temp. : -40°C~+85°C

Application

- ISM band, Telemetry, keyless entry system ...

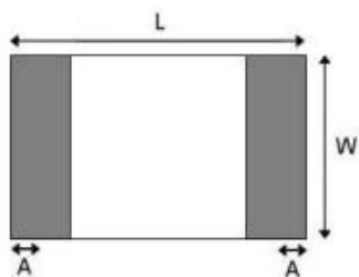


Electrical Characteristics per line(TA=25°C)

Parameter	Specification	Units
Frequency Band	433/866/915	MHz
Polarization	Linear	
*Peak Gain	-1.35/2.74/2.89	dBi
*Peak Efficiency	20.6/47.32/46.29	%
Impedance	50	Ω

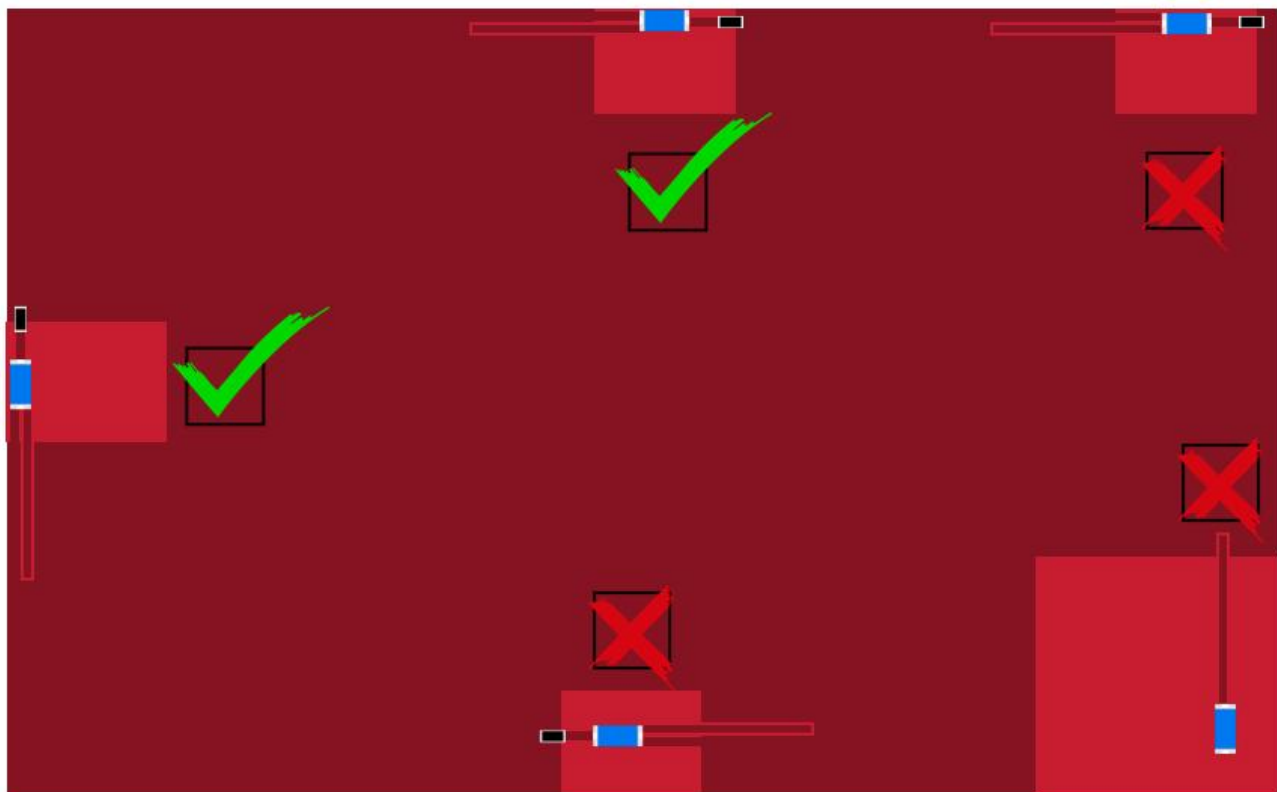
Test condition: Test board size 80*40 mm;
Matching circuit: Pi matching circuit will be required.

Product Dimension



L	W	A	H
3.10±0.10	1.55±0.10	0.40±0.20	0.55±0.10

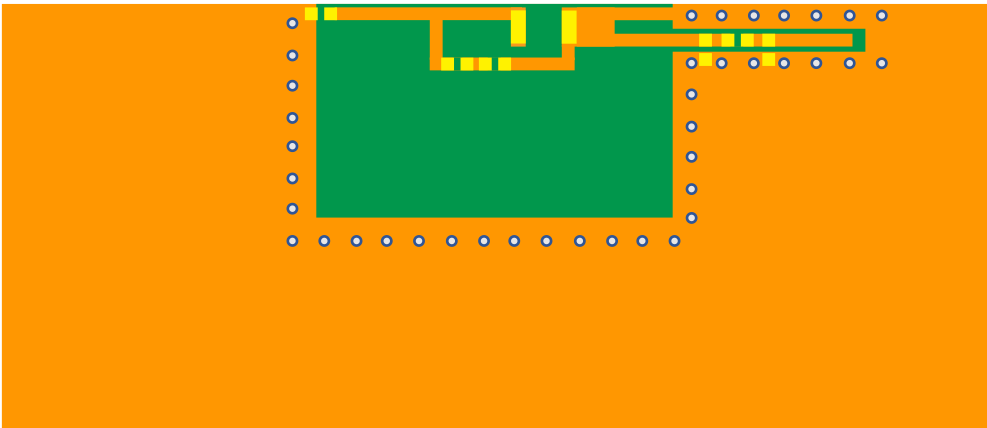
Suggestions for antenna placement location



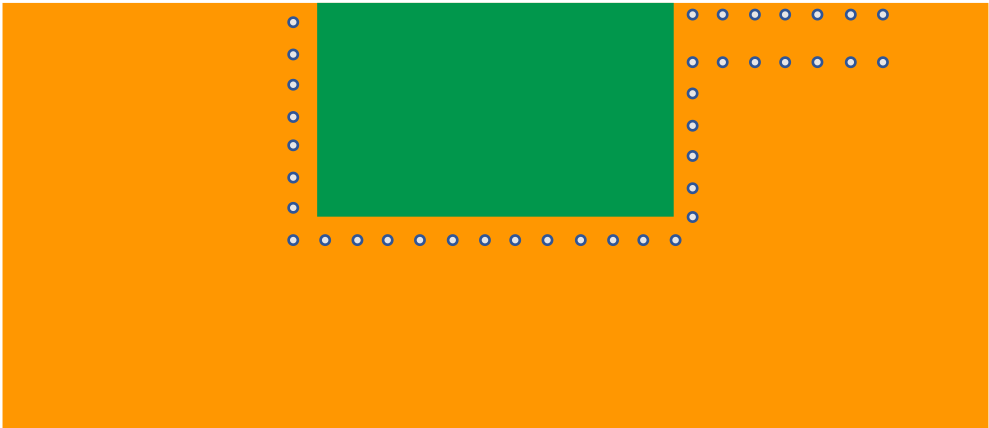
Recommend PCB Layout

Test condition: Test board size 80*40 mm;

Top Layer



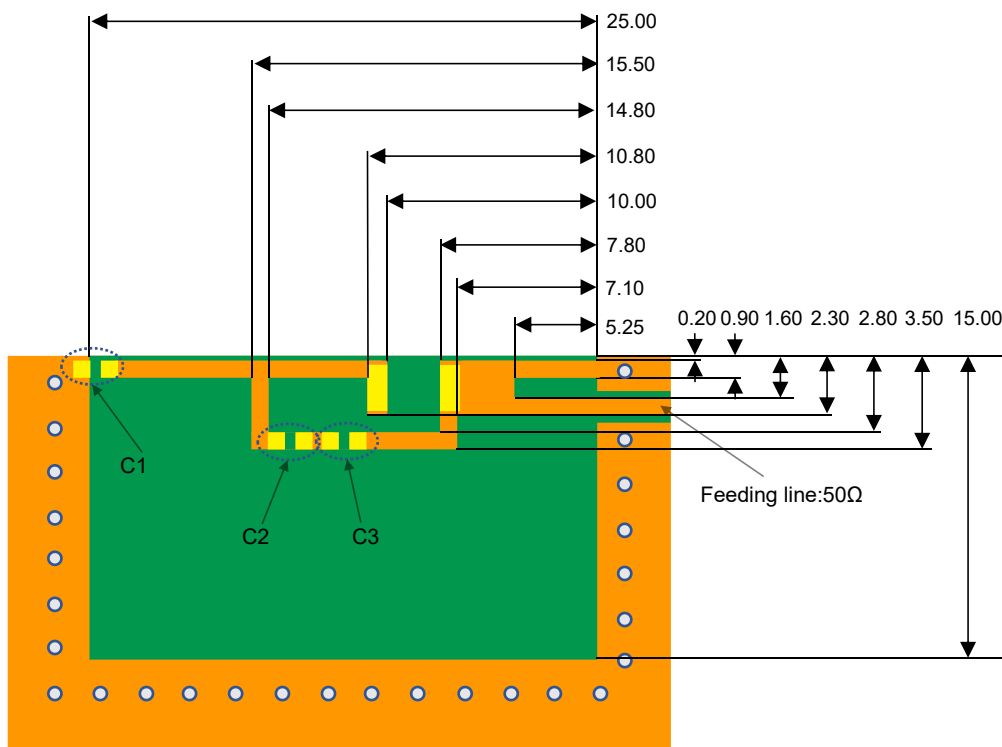
Bottom Layer (unit mm)



Recommend PCB Layout

Test condition: Test board size 80*40 mm;

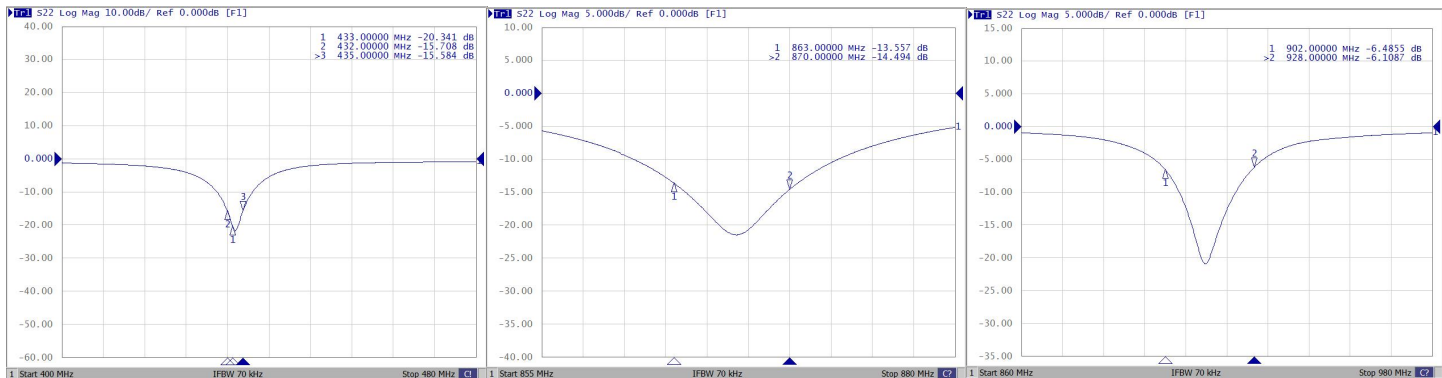
Top Layer (unit mm)



Frequency	433MHz-435MHz	863MHz-870MHz	902MHz-928MHz
C1	0Ω	1.5PF	1PF
C2	0Ω	NC	NC
C3	2PF	NC	NC

Typical Characteristics

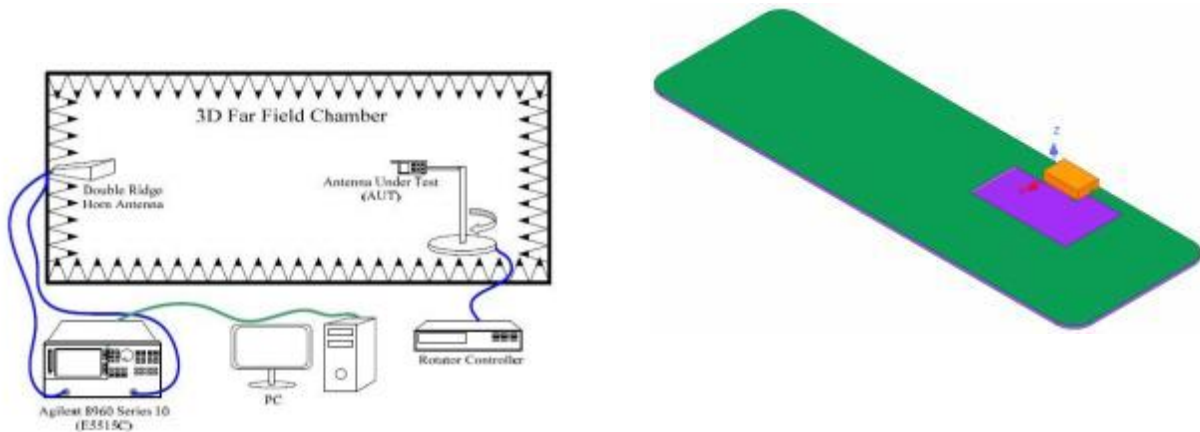
Fig. 1 Return Loss



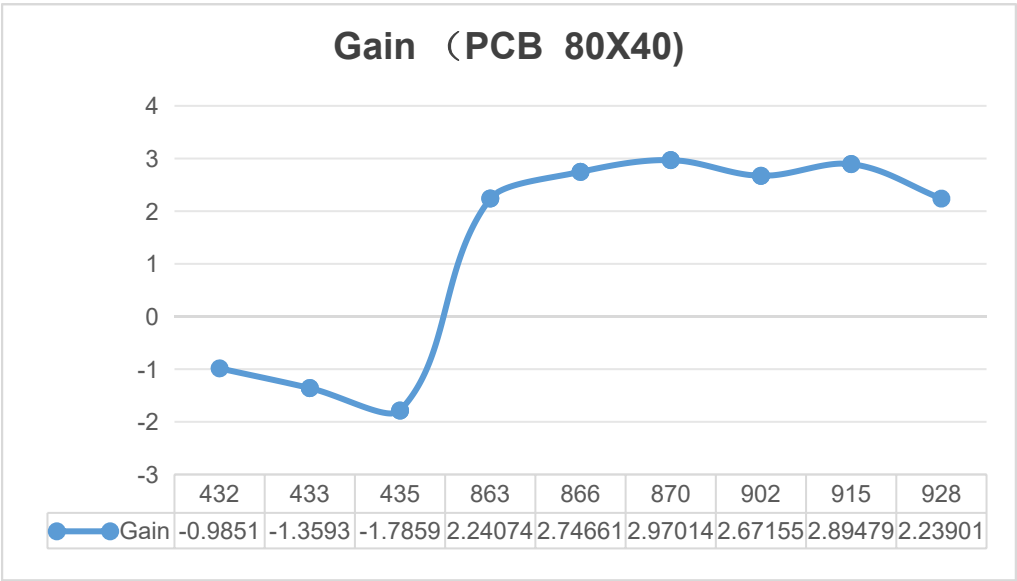
Radiation Pattern

The Gain pattern is measured in FAR -field chamber. DUT is placed on the table of rotator , a standard horn antenna and Vector Network Analyzer is used to collect data.

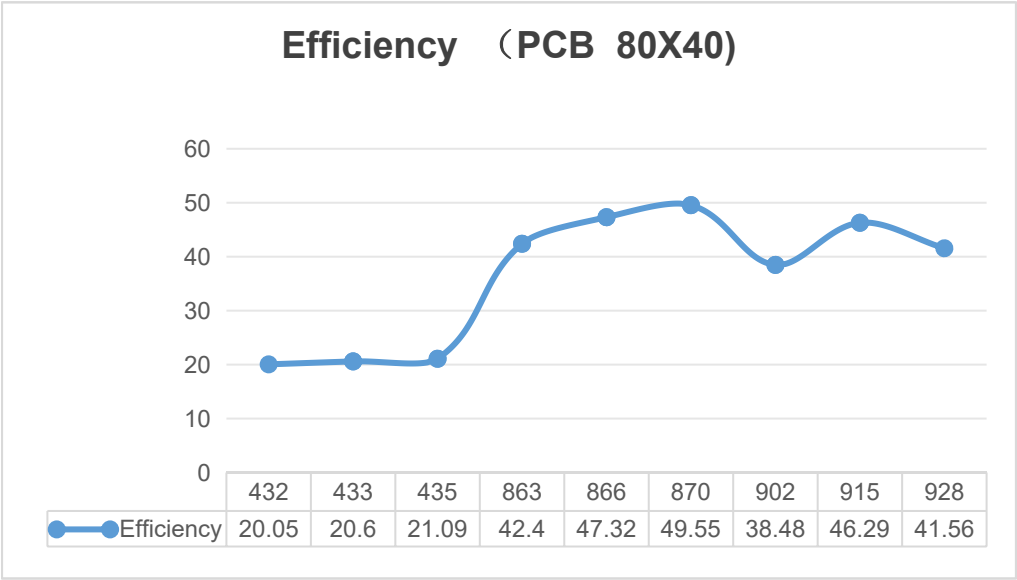
Fig.2 FAR-field Chamber



Gain



Efficiency



Radiation Performance:

Frequency	433MHz	866MHz	915MHz
Peak gain(dBi)	-1.35	2.74	2.89
Efficiency(%)	20.6	47.32	46.29

Item	Condition	Specification
Thermal shock	1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5 minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity: 85% R.H. 2. Temperature: 85±5°C 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	No apparent damage Fulfill the electrical spec. after test.	1. Temperature: 150°C±5°C 2. Time: 1000 hours.
Low temperature resistance	1. Temperature: -40°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : 260±5°C 2. Bathing time: 10±1 seconds	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

(2) Storage Condition

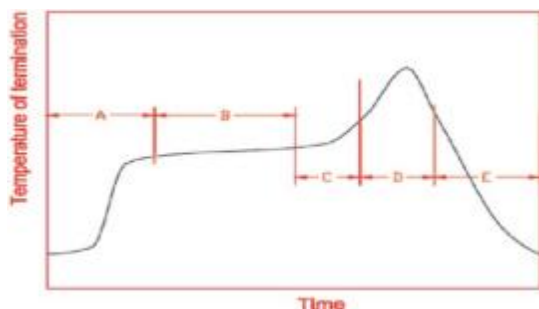
(a)At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH.The product should be used within 1 year from the time of elivery.

(b)On board: The temperature should be within -40 ~ 85°C and humidity should be less than 85% RH.

(3) Operating Temperature Range

Operating temperature range : -40°C to +85°C.

Recommended Reflow Solder curve



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
E	Regular cooling	if 260°C	20s~40s
		200°C to 100°C	1°C/s ~ 4°C/s

*reference: J-STD-020C

(1) Soldering Gun Procedure

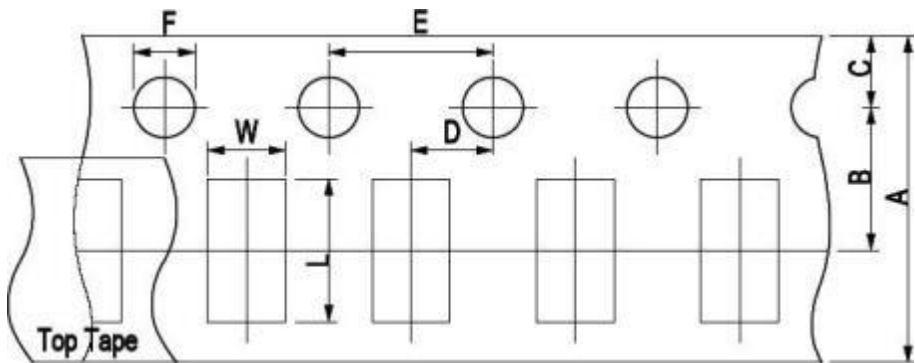
Note the follows, in case of using solder gun for replacement.

- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

(2) Soldering Volume

Note that excess of soldering volume will easily get crack the body of this product.

Package Information



A	B	C	D	E	F	L	W
8.00±0.3	3.50± 0.05	1.75±0.1	2.00±0.05	4.00±0.1	1.50±0.1	2.30± 0.1	1.55± 0.1

订货信息 Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
KH-3216-ISM-31-A	3216	0.0089g	Tape&Reel	5000pcs	RoHScompliant

Revision history

Date	Revision	Description of changes
2025-08-06	1.0	First Version
2025-08-27	1.1	Update version
2025-10-27	1.2	Update layout