

2.4GHz 3216 ChipAntenna:RANT3216F245C0X



Application:

WLAN, 802.11b/g,Bluetooth,WLAN, etc...

Features

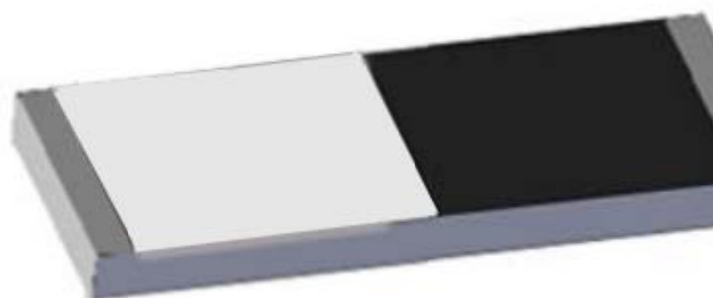
SMD, highreliability,ultraImpact, Omni-directional...

Part numberInformation

RANT3216F245C0X

(A)(B)(C) (D)(E) (F)

(A)Product Type	Chip Antenna
(B) SizeCode	3.2x1.6mm(±0.2mm)
(C)Material	HighKmaterial
(D)Frequency	2.4 ~2.5GHz
(E)Feedingmode	PIFA &SingleFeeding
(F) Antenna type	Type=01

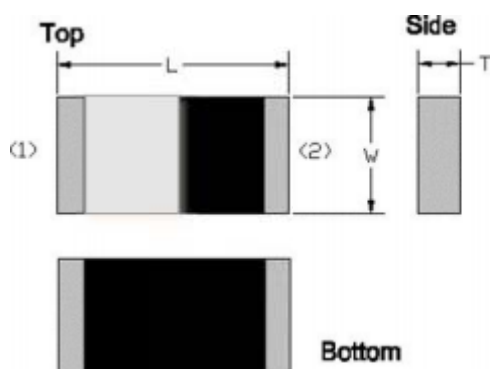


Electrical Specification

WorkingFrequencyRange	2400 ~2500MHz
Bandwidth	120MHz(Min.)
PeakGain	1.24dBi(Typ.)
Impedance	50Ohm
Returnloss	10dB(Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(°C)	-40~85°C
Resistance to SolderingHeats	10sec. (@280°C)
Termination	Ni / Au(Leadless)

The specification is definedonEVB.

Dimension and Terminal Configuration



Dimension (mm)	
L	3.20± 0.20
W	1.60±0.20
T	0.45± 0.20

No.	Terminal Name
1	Feeding/GNG
2	GND/Feeding

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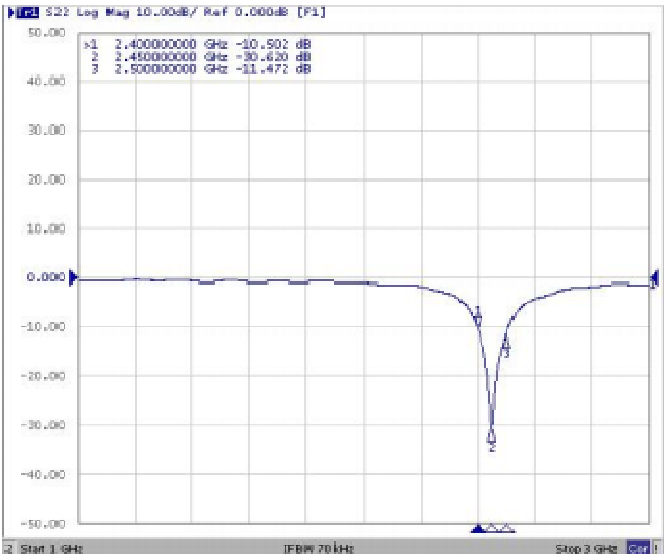


PCBDimension	AntennaLayoutReference
Diagram showing the overall dimensions of the PCB. The width is 100.00mm and the height is 40.00mm. A grid of 10x10 squares is shown, with a central cutout. The cutout is a U-shape with a width of 10.00mm and a height of 10.00mm. The cutout is centered horizontally and vertically.	Diagram showing the antenna layout reference. The overall dimensions are 100.00mm by 40.00mm. The layout includes a central U-shaped cutout with a width of 10.00mm and a height of 10.00mm. The cutout is centered horizontally and vertically. The layout also includes a grid of 10x10 squares. The cutout is a U-shape with a width of 10.00mm and a height of 10.00mm. The cutout is centered horizontally and vertically.

ReturnLoss & Radiation

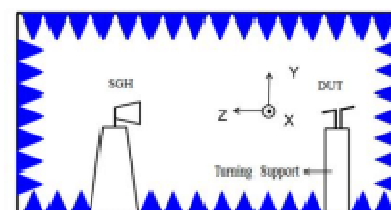
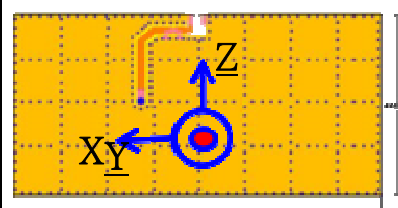
ReturnLoss

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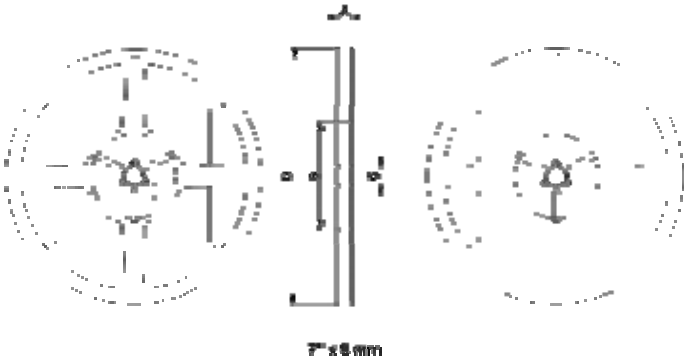


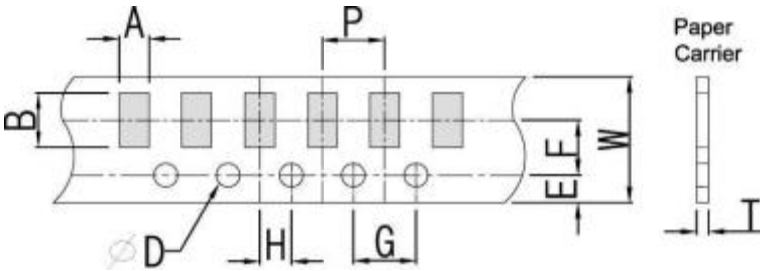
Frequency(MHz)	S11(dB)
2400	-10.50
2450	-30.62
2500	-11.47

	2400MHz	2450MHz	2500MHz
Efficiency	82.52%	85.26%	83.01%
PeakGain	1.15dBi	1.24dBi	1.19dBi
Directivity	1.89dBi	1.97dBi	1.91dBi



Taping Specifications

Reel and Taping Specification											
Reel Specification											
											
7"±0.5mm											
TYPE		SIZE		A	B	C	D				
3216		7"		5K/Reel	9.0±0.5	60±2	13.5±0.5	178±2			

Tapping Specification											
											
Packaging	Type	A	B	W	E	F	G	H	T	ψD	P
Paper Type	3216	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50±0.10	4.0±0.1

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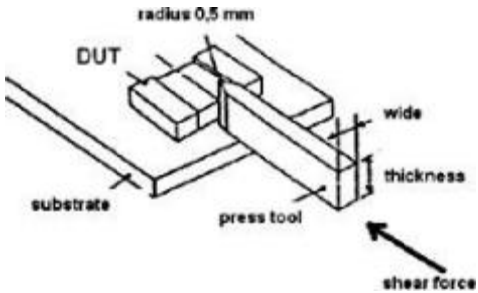


Reliability Table

TestItem	Procedure	Requirements Ceramic Type	Remark (Reference)
Electrical Characterization		Fulfill the electricalspecificati on	User Spec.
Thermal Shock	1. Preconditioning: 50 ±10℃/1 hr, thenkeep for 24±1hrsatroomtemp. 2.Initial measure:Spec: referInitialspec. 3. Rapidchangeoftemperaturetest: -30℃to +85℃;100 cycles; 15 minutes atLower category temperature; 15 minutes atUpper category temperature.	No Visible Damage.Fulfill the electricalspecificatio n.	MIL-STD- 202107
Temperature Cycling	1.Initial measure:Spec: referInitialspec. 2.100Cycles (-30℃to +85℃), Soak Mode=1(2Cycle/hours). 3. Measurementat 24 ± 2Hoursaftertestcondition.	No Visible Damage.Fulfill the electricalspecificatio n.	JESD22 JA104
High TemperatureExpo sure	1.Initial measure:Spec: referInitialspec. 2. Unpowered;500hours@T=+85℃. 3. Measurementat 24 ±2hoursaftertest.	No Visible Damage.Fulfill the electricalspecificatio n.	MIL-STD- 202108
Low TemperatureStor age	1.Initial measure:Spec: referInitialspec. 2. Unpowered:500hours@ T=-30℃. 3. Measurementat 24 ±2hoursaftertest.	No Visible Damage.Fulfill the electricalspecificatio n.	MIL-STD- 202108
Solderability (SMD BottomSide)	Dipping method: a. Temperature: 235±5℃ b. Dippingtime:3±0.5s	The solder should coverover 95% of the criticalarea of bottomside.	IEC 60384- 21/224.10
SolderingHeat Resistance (RSH)	Preheating temperature:150 ±10℃. Preheating time:1~2min. Solder temperature: 260 ± 5℃. Dipping time: 5±0.5s	No Visible Damage.	IEC 60384- 21/224.10
Vibration	5g's for 20 min.,12 cycles eachof 3orientations Note:Use 8"X5"PCB.031" thick 7 secure pointson,onealong side and 2 secure points atcornersof oppositesides.Parts mounted within 2" from any securepoint. Test from10-2000Hz.	No Visible Damage.	MIL-STD-202 Method 204
Mechanical Shock	Three shocks in each direction shall beappliedalongthe three mutually perpendicular axes of the test specimen (18 shocks)Peak value:1,500g's Duration: 0.5ms Velocity change:15.4 ft/s Waveform: Half-sine	No Visible Damage.	MIL-STD-202 Method 213
Humidity Bias	1. Humidity: 85%R.H., Temperature:85 ±2℃. 2. Time:500± 24hours. 3. Measurementat 24 ± 2hrsraftertestcondition.	No Visible Damage.Fulfill the electricalspecificatio n.	MIL-STD-202 Method106

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Board Flex (SMD)	1. Mountingmethod: IR-Reflow.PCB Size (L:100× W:40× T:1.6mm) 2. Apply the load in direction of the arrow until bending reaches 2mm.	No Visible Damage.	AEC-Q200005
Adhesion	Force of 1.8Kg for 60 seconds. 	No Visible Damage Magnification of 20X or greater may be employed for inspection of the mechanical integrity of the device body, terminals, and body/terminal junction.	AEC-Q200006
Physical Dimension	Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions.	In accordance with specification.	JESD22 JB100

Revision History

Revision	Date	Content
1	2019/03/01	New Datasheet
2	2020/02/22	Add 2D radiation characteristic

客戶承認
CUSTOMER APPROVED

張波
2020.8.17