

2.4GHz 1608 Chip Antenna: RANT1608F245C04

Application:

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

Features

SMD, high reliability, ultra Impact, Omni-directional...

Part number Information

RANT 1608 F 245 C 04
(A) (B) (C) (D) (E) (F)

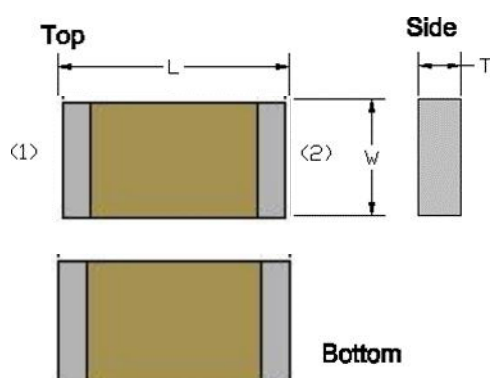
(A)Product Type	Chip Antenna
(B) Size Code	1.6x0.8mm(±0.1mm)
(C) Material	High K material
(D) Frequency	2.4 ~ 2.5GHz
(E) Feeding mode	PIFA & Single Feeding
(F) Antenna type	Type=04



Electrical Specification

Working Frequency Range	2400 ~2500 MHz
Bandwidth	120 MHz (Min.)
Peak Gain	2.7 dBi (Typ.)
Impedance	50 Ohm
Return loss	10 dB (Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(°C)	-40 ~85°C
Resistance to Soldering Heats	10sec. (@ 280°C)
Termination	Ni / Au (Leadless)

Dimension and Terminal Configuration



Dimension (mm)	
L	1.60 ± 0.10
W	0.80 ± 0.10
T	0.80 ± 0.10

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

PCB Dimension

Antenna Layout Reference

Return Loss & Radiation

ELECTRICAL CHARACTERISTICS



5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mix/Analysis 5 Instr State

▶ S11 Log Mag 10.00dB/ Ref 0.000dB [F1 M]

1	2.4000000 GHz	-10.607 dB
2	2.4400000 GHz	-20.891 dB
>3	2.4800000 GHz	-11.059 dB

50.00

40.00

30.00

20.00

10.00

0.000

-10.00

-20.00

-30.00

-40.00

-50.00

1 Start 2 GHz

IFBW 70 kHz

Stop 3 GHz [Next] [C] [I]



Frequen- cy	Efficacy	Percentage	Gain
2400	-1.64	72.27%	2.38
2450	-1.33	75.34%	2.7
2500	-1.59	72.98%	2.59

Taping Specifications

Reel and Taping Specification

Reel Specification

The diagram illustrates the dimensions of a reel. The top view shows a circular reel with a central hub and four spokes. The side view shows the reel's profile with dimensions A (width), B (height), C (radius), and D (diameter). The side view also indicates a 7" x 8 mm profile.

TYPE	SIZE		A	B	C	D
1608	7"	4K/Reel	4.0±0.5	4.0±2	13.5±0.5	178±2

Tapping Specification

The diagram illustrates the dimensions of a chip antenna tapping specification. The top view shows a rectangular chip with dimensions A (width), B (height), P (pitch), W (width), E (height), F (height), G (width), H (width), T (width), and ψD (diameter). The side view shows the chip's profile with dimensions T (width) and I (height). A paper carrier is also shown with dimensions T (width) and I (height).

Packaging	Type	A	B	W	E	F	G	H	T	ψD	P
Paper Type	1608	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

Test Item	Procedure	Requirements Ceramic Type	Remark (Reference)
Electrical Characterization		Fulfill the electrical specification	User Spec.
Thermal Shock	1. Preconditioning: $50 \pm 10^{\circ}\text{C}$ / 1 hr , then keep for 24 ± 1 hrs at room temp. 2. Initial measure: Spec: refer Initialspec. 3. Rapid change of temperature test: -30°C to $+85^{\circ}\text{C}$; 100 cycles; 15 minutes at Lower category temperature; 15 minutes at Upper category temperature.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 107
Temperature Cycling	1. Initial measure: Spec: refer Initialspec. 2. 100 Cycles (-30°C to $+85^{\circ}\text{C}$), Soak Mode=1 (2 Cycle/hours). 3. Measurement at 24 ± 2 Hours after test condition.	No Visible Damage. Fulfill the electrical specification.	JESD22 JA104
High Temperature Exposure	1. Initial measure: Spec: refer Initialspec. 2. Unpowered; 500hours @ $T=+85^{\circ}\text{C}$. 3. Measurement at 24 ± 2 hours aftertest.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Low Temperature Storage	1. Initial measure: Spec: refer Initialspec. 2. Unpowered: 500hours @ $T=-30^{\circ}\text{C}$. 3. Measurement at 24 ± 2 hours aftertest.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Solderability (SMD Bottom Side)	Dipping method: a. Temperature: $235 \pm 5^{\circ}\text{C}$ b. Dipping time: $3 \pm 0.5\text{s}$	The solder should cover over 95% of the critical area of bottom side.	IEC 60384-21/22 4.10
Soldering Heat Resistance (RSH)	Preheating temperature: $150 \pm 10^{\circ}\text{C}$. Preheating time: 1~2 min. Solder temperature: $260 \pm 5^{\circ}\text{C}$. Dipping time: $5 \pm 0.5\text{s}$	No Visible Damage.	IEC 60384-21/22 4.10
Vibration	5g's for 20 min., 12 cycles each of 3 orientations Note: Use 8"X5" PCB .031" thick 7 secure points on, one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	No Visible Damage.	MIL-STD-202 Method 204
Mechanical Shock	Three shocks in each direction shall be applied along the 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: $85 \pm 2^{\circ}\text{C}$. 2. Time: 500 ± 24 hours. 3. Measurement at 24 ± 2 hrs after test condition.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 Method 106