

Manufacturer: Guangdong Branch of China Zhenhua Group Yunke Electronics Co., LTD  
Address: China Electronics Dongguan Industrial Base (Sanda Industrial Park), Chigang Community,  
Humen Town, Dongguan City

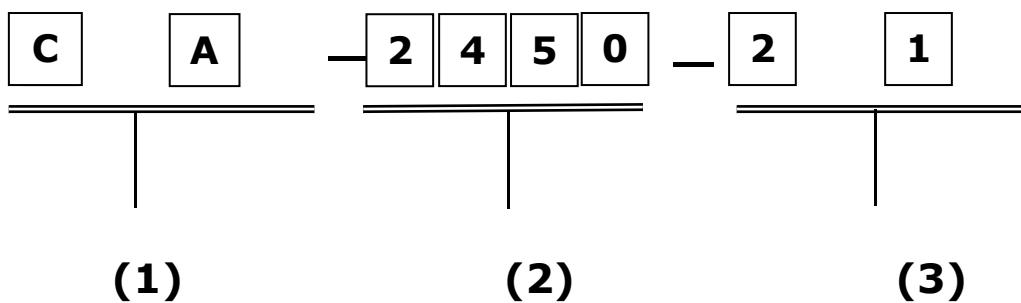
## 1. FEATURES:

- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

## 2. APPLICATIONS:

- Bluetooth, Wireless LAN, Mobile TV
- Home RF system, etc

## 3. PRODUCT IDENTIFICATION



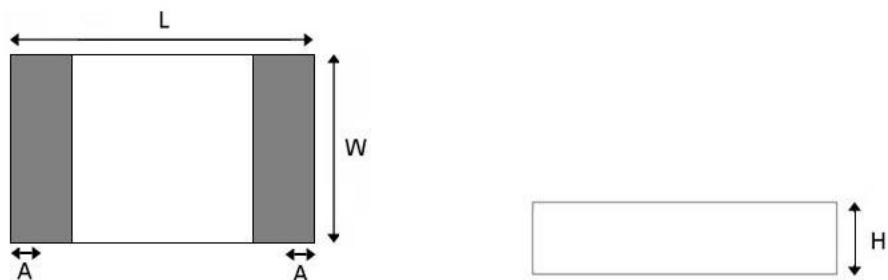
(1) Product type: Chip Antenna

(2) Center Frequency: 2450MHz

(3) 21 : External Dimensions (L×W) (mm):2.0\*1.2

31 : External Dimensions (L×W) (mm):3.1\*1.6

## 4. SHAPE AND DIMENSIONS:



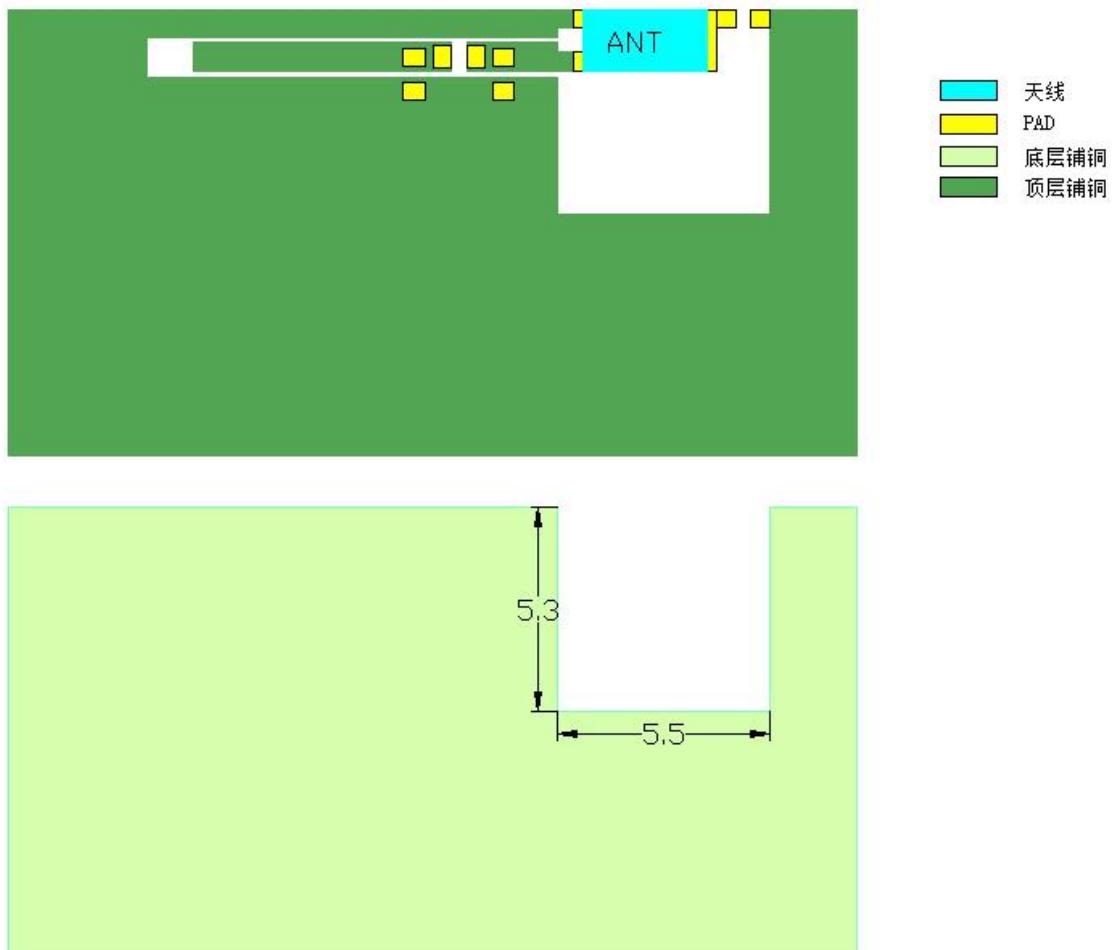
### SHAPE AND DIMENSIONS

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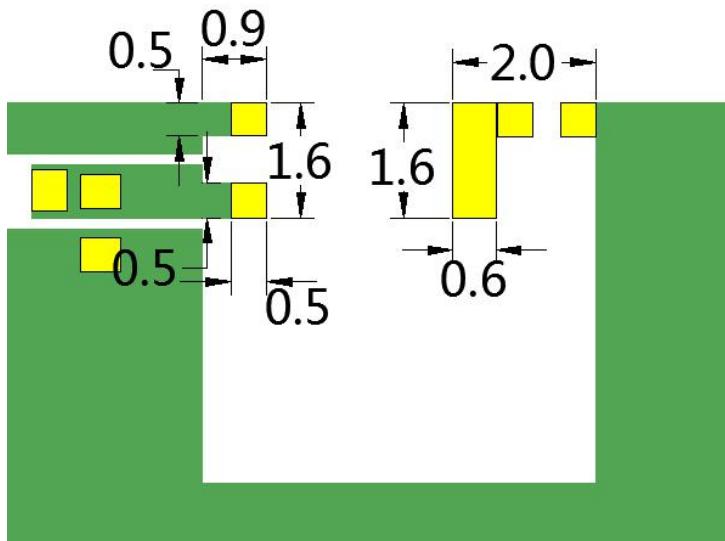
Style	L	W	C	d	t
2012	$2.00\pm0.10$	$1.2\pm0.10$	$0.40\pm0.20$	$0.40\pm0.20$	$0.50\pm0.10$
3216	$3.10\pm0.10$	$1.55\pm0.10$	$0.50\pm0.30$	$0.40\pm0.20$	$0.50\pm0.10$

### Reference dimensions of the test board:

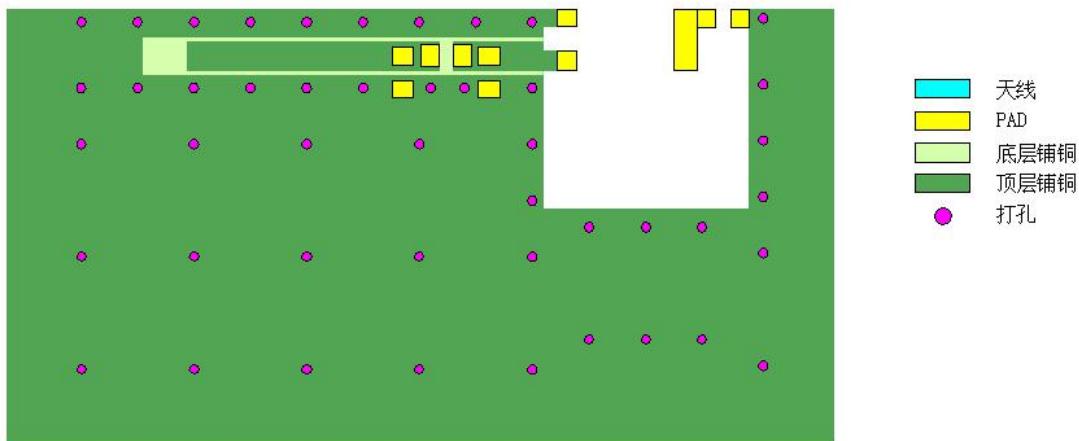
Unit: **mm**



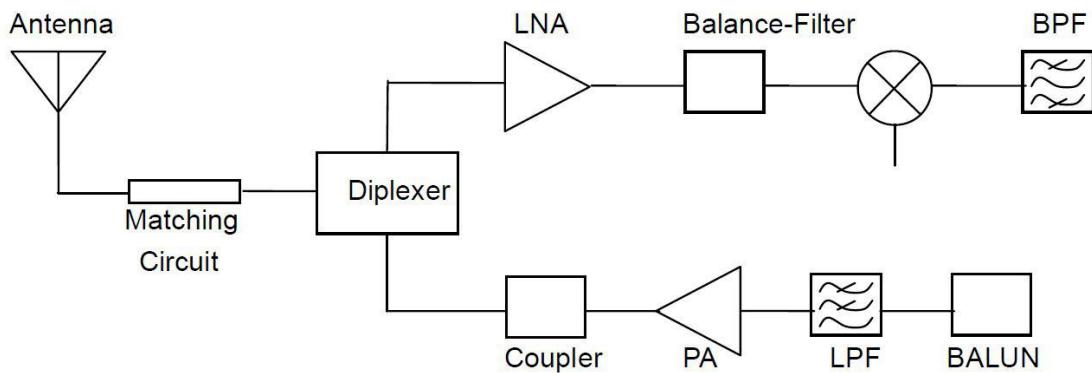
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Reference schematic diagram for drilling



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## 5. SPECIFICATIONS:

Test items	Specification
Bandwidth	2400~2483MHz
Polarization mode	Linear polarization
Maximum gain	2.67dBi
Efficiency	72.30%
Input impedance	50 Ω

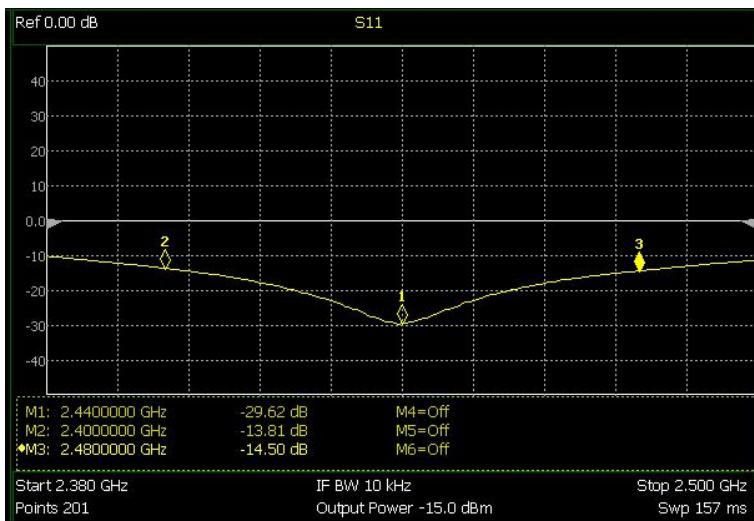
\* Test condition: Test board size 90\*40 mm

Matching circuit: Pi matching circuit will be required

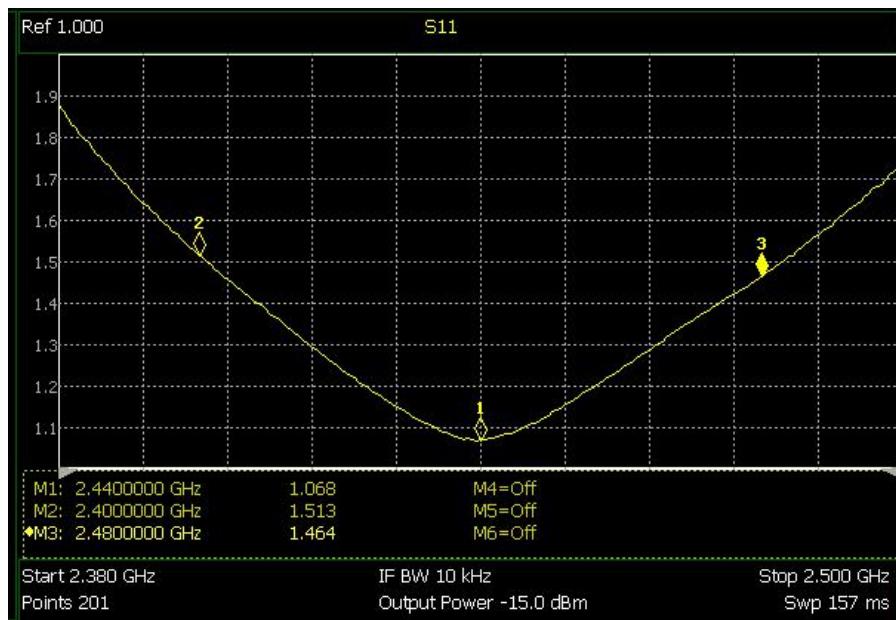
## 6. Electrical Characteristics :

### Return loss

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### VSWR/SWR

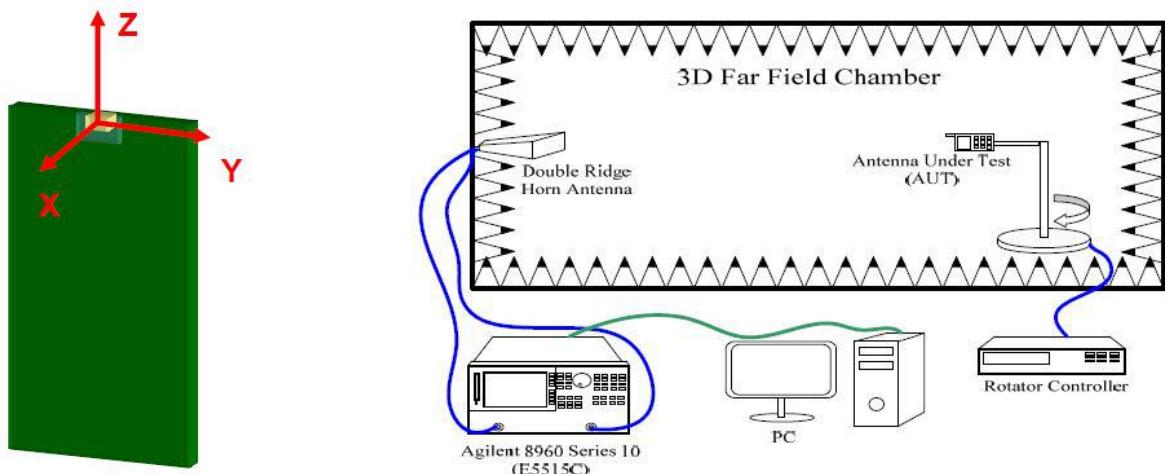


Mark	Frequency	VSWR
1	2400 MHz	1.513
2	2440 MHz	1.068
3	2480 MHz	1.464

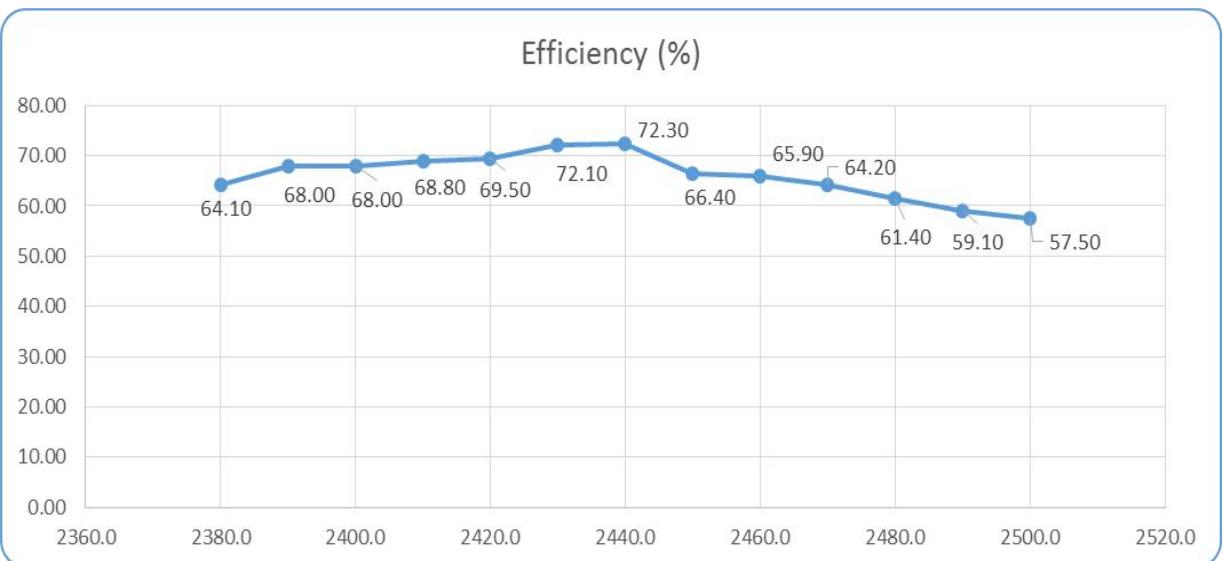
### Radiation Pattern

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.

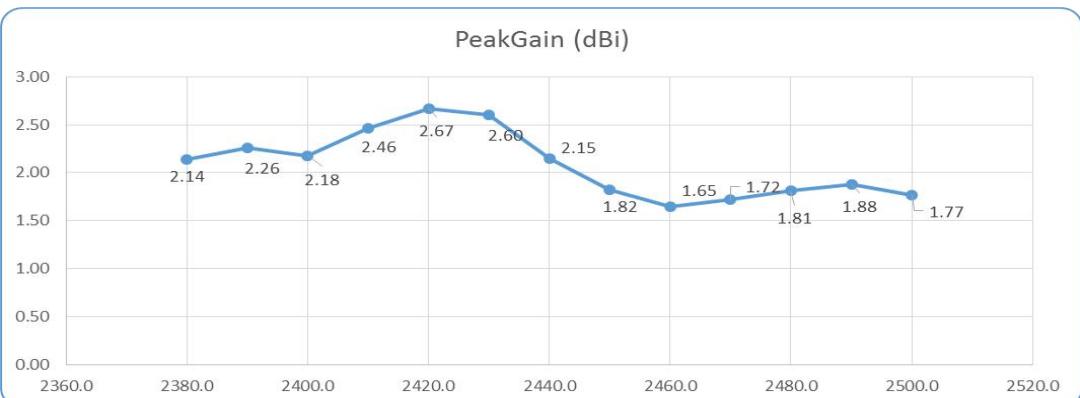
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## ◎ Efficiency

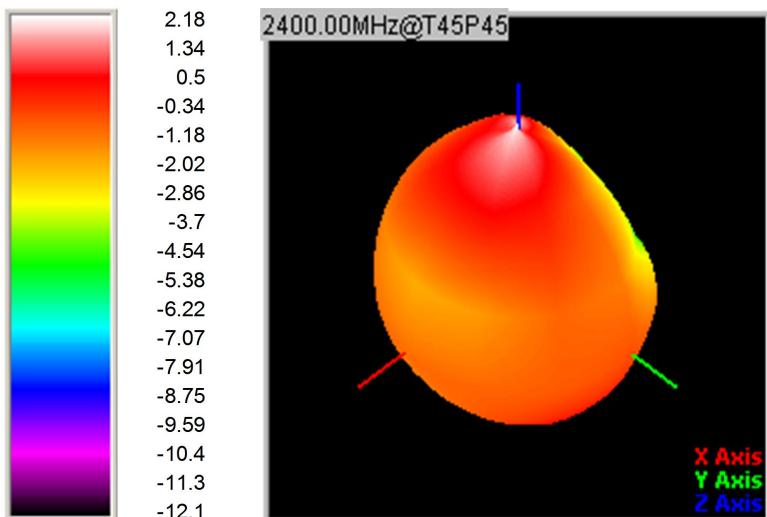


## ◎ Maximum Gain

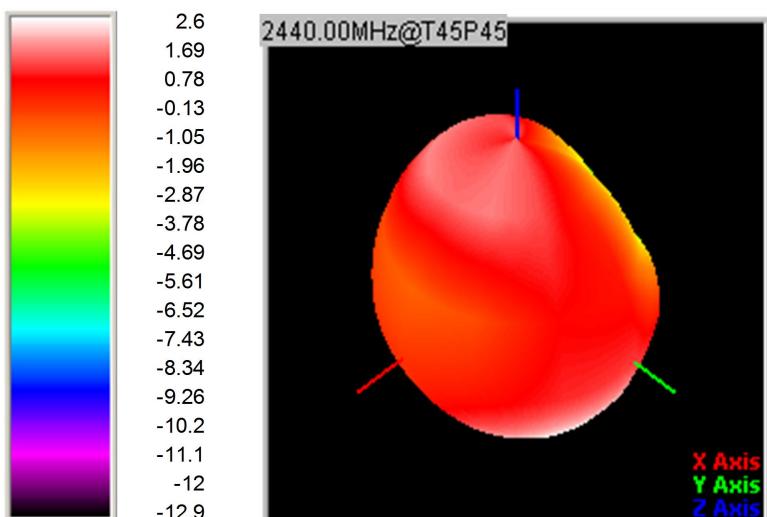


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◎ 3D Gain Pattern (2400 MHz)

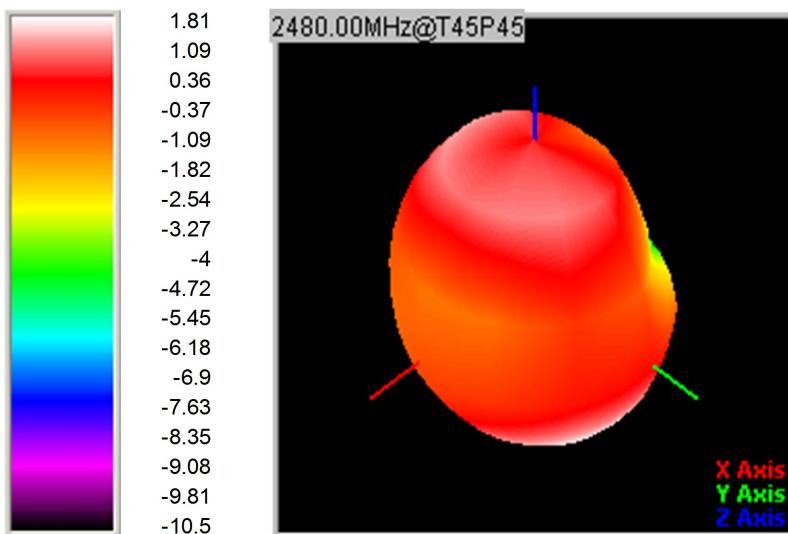


◎ 3D Gain Pattern (2440 MHz)



◎ 3D Gain Pattern (2480 MHz)

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## 7. Environmental Characteristics

### (1) Reliability Test

Item	Condition	Specification
Thermal shock	1. $30 \pm 3$ minutes at $-40^\circ C \pm 5^\circ C$ , 2. Convert to $+105^\circ C$ (5 minutes) 3. $30 \pm 3$ minutes at $+105^\circ C \pm 5^\circ C$ , 4. Convert to $-40^\circ C$ (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: $85 \pm 5^\circ C$ 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	1. Temperature: $150^\circ C \pm 5^\circ C$ 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Low temperature resistance	1. Temperature: $-40^\circ C \pm 5^\circ C$ 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : $260 \pm 5^\circ C$ 2. Bathing time: $10 \pm 1$ 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 $245 \pm 5^\circ C$ for $3 \pm 1$ seconds.	No apparent damage

### (2) Storage Condition

#### (a) At warehouse:

**The temperature should be within  $0 \sim 30^\circ C$  and humidity should be less than 60% RH.**

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The product should be used within 1 year from the time of delivery.

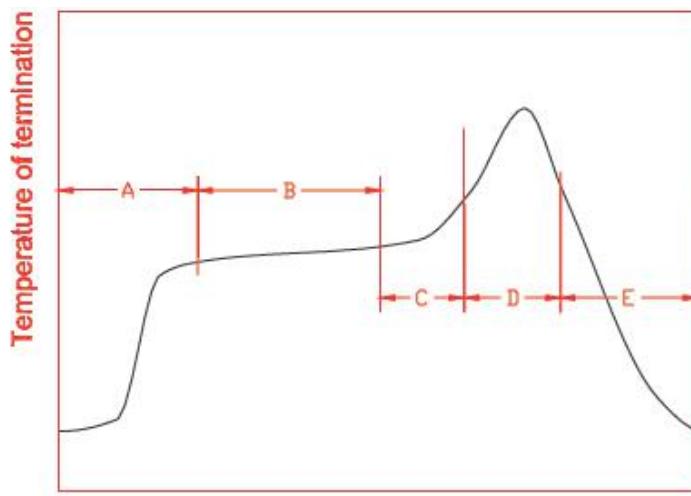
**(b) On board:**

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 +105°C.

**8. Recommended Reflow Soldering**



A	1 <sup>st</sup> rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 <sup>nd</sup> 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
		if 260°C	20s~40s
E	Regular cooling	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

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By using soldering gun under 30 W.

(b) The soldering gun tip shall not touch this product directly.

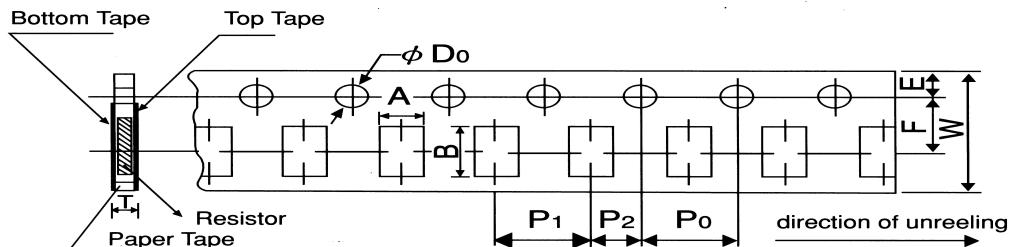
## (2) Soldering Volume

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

## 9. Taping Package and Label Marking: (unit: mm)

(1) Quantity/Reel: 5000pcs/Reel

(2) Carrier tape dimensions



Packing	Style	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T
Paper	2012	1.6±0.15	2.4±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	ϕ 1.5 <sup>+0.1</sup> -0	0.84±0.1
Paper	3216	2.0±0.15	3.6±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	ϕ 1.5 <sup>+0.1</sup> -0	0.84±0.1

(3) Taping reel dimensions

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