

产品规格承认书

SPECIFICATIONS

客户:

CUSTOMER: _____

产品名称:

DESCRIPTION: Internal Antenna

客户型号:

CUSTOMER PART No: CSA

产品型号:

OUR MODEL NO: **3216MA01**

日期:

DATE: 2019/07/23

确认签字, 盖章后请返回承认书一份

PLEASE RETURN TO US ONE COPY OF "SPECIFICATION FOR APPROVAL"

WITH YOUR APPROVED SIGNATURES

核准	高洋	审核	江表强	制作	柯佳烽

客户承认签印	
日期	

UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=			
ANGLES = ± HOLES DIA = ±			
SCALE: N/A	UNIT: mm	Shenzhen Famulia Technology Co.,Ltd B 3 floor, Baihua cave Industrial Park, Guangming New District, Shenzhen, China	
DRAWN BY: Sera	CHECKED BY: XD		
DESIGNED BY: Sera	APPROVED BY: XD		
TITLE: CHIP2450-21 Specification	DOCUMENT NO.	3216	SPEC REV. P1

3216MA01 Specification

Operating Temp. : -40°C~+85°C

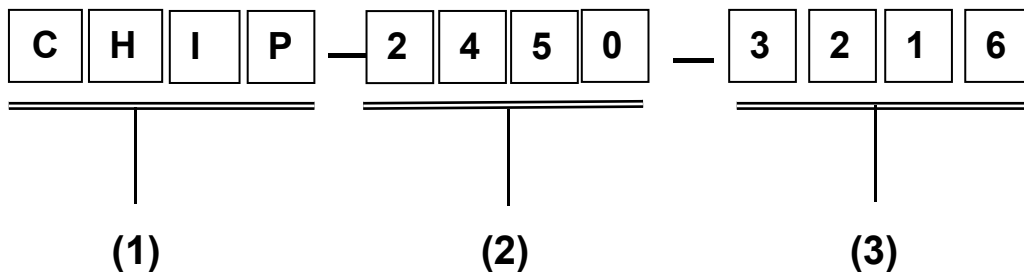
1. FEATURES:

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

2. APPLICATIONS:

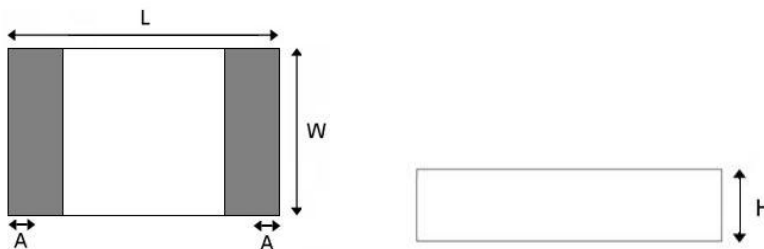
- Bluetooth, Wireless LAN, Mobile TV
- Home RF system, etc

3. PRODUCT IDENTIFICATION



- (1) Product type: Multilayer chip Antenna
 (2) Center Frequency: 2450MHz
 (3) External Dimensions (L×W) (mm): 3.2*1.6

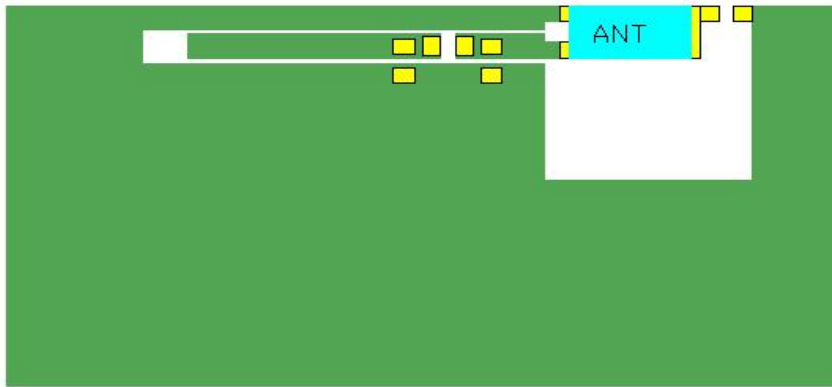
4. SHAPE AND DIMENSIONS:



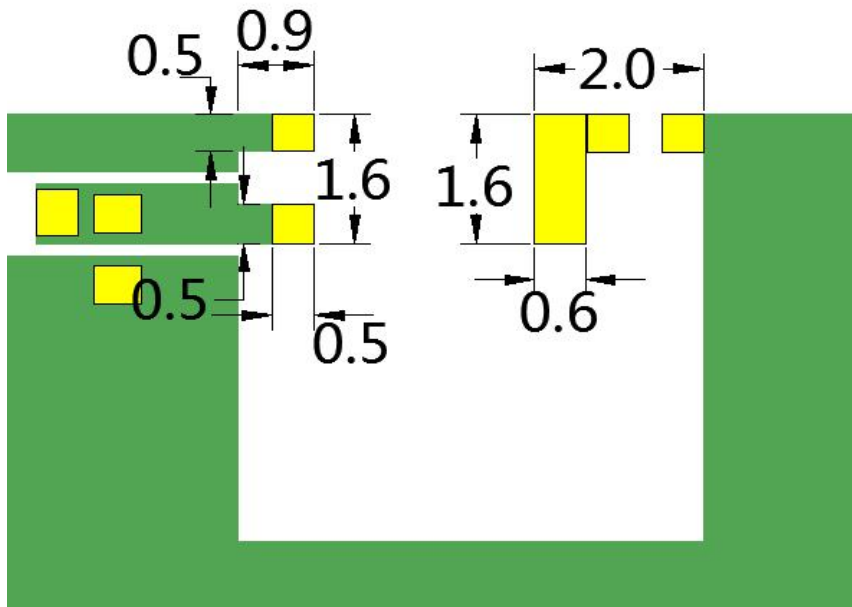
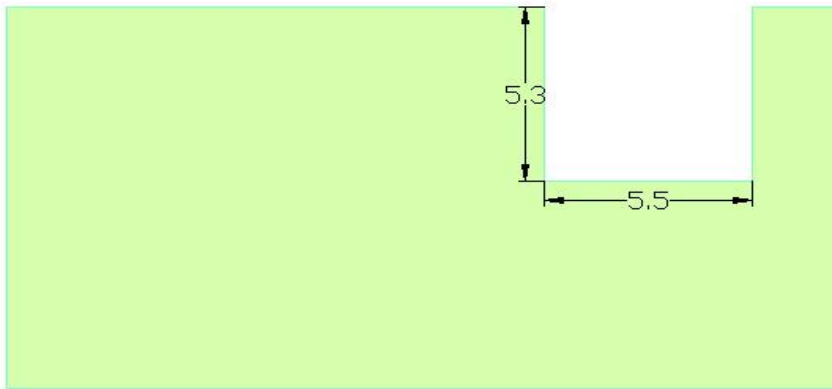
L	W	H	A
3.2±0.3	1.6±0.3	0.52±0.2	0.4±0.25

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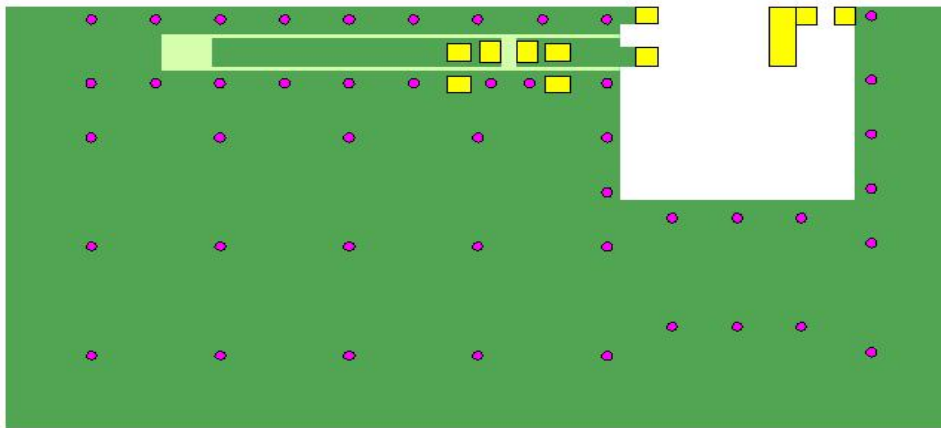
mm



- 天线
- PAD
- 底层铺铜
- 顶层铺铜

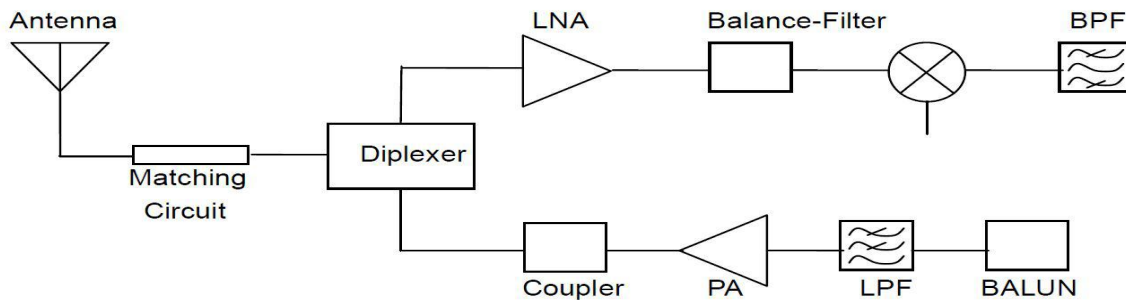


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- 天线
- PAD
- 底层铺铜
- 顶层铺铜
- 打孔

APPLICATION GUIDE



5. SPECIFICATIONS:

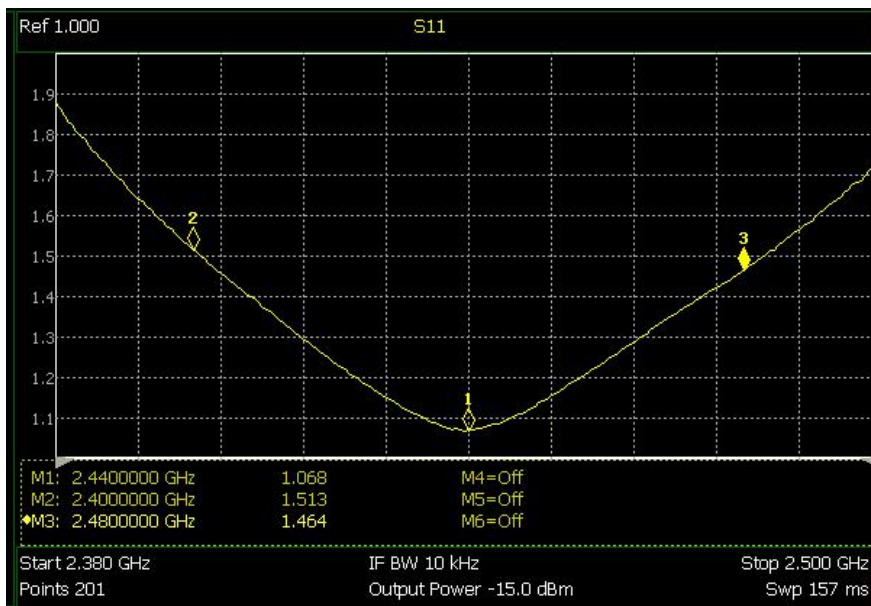
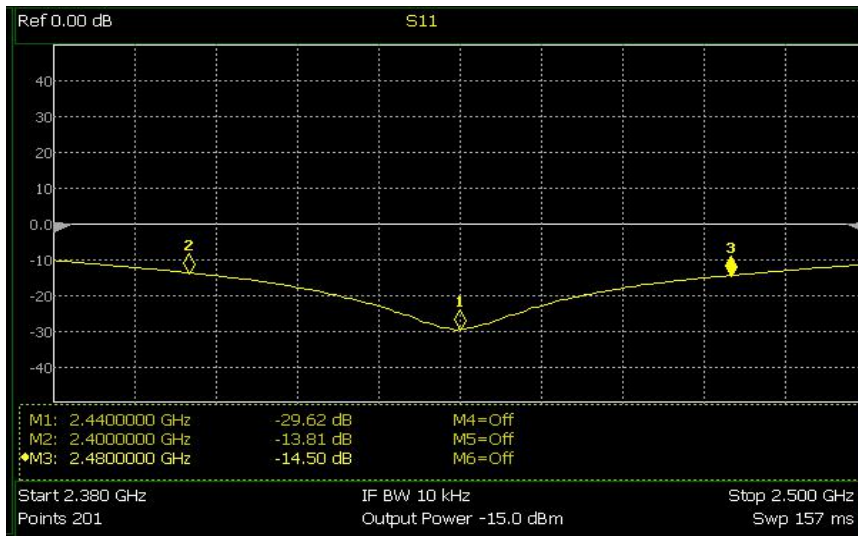
Frequency [↵]	2.4 – 2.5 GHz [↵]
Impedance [↵]	50ohm nominal [↵]
V.S.W.R [↵]	≤1.92 [↵]
Return loss [↵]	≤ -10dB [↵]
Radiation [↵]	Omni-directional [↵]
Gain (Peak) [↵]	2G: 2.67dBi [↵]

* Test condition: Test board size 90*40 mm

Matching circuit: Pi matching circuit will be required

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6. Electrical Characteristics :

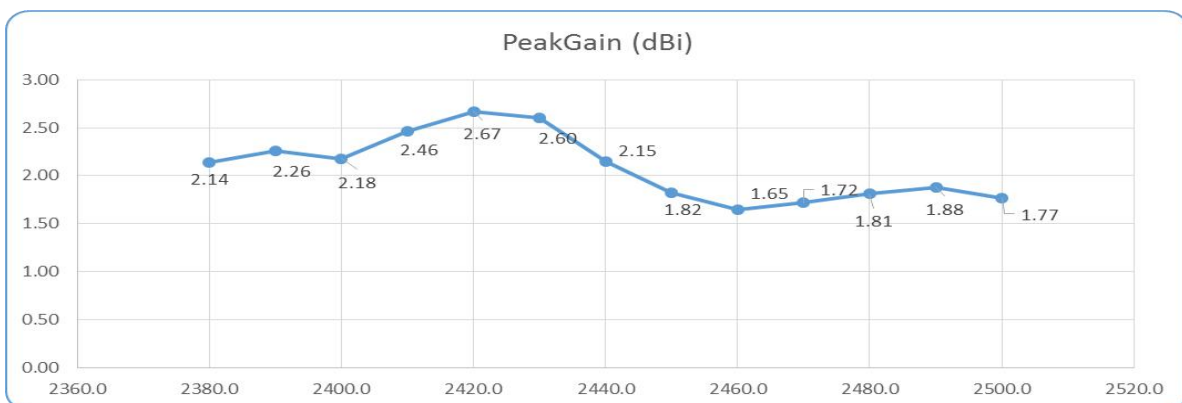
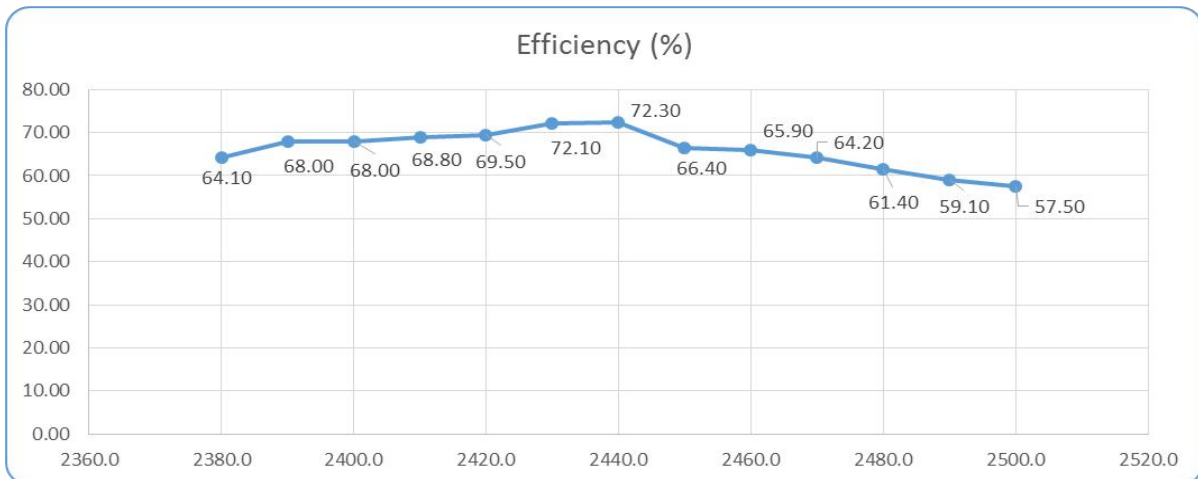
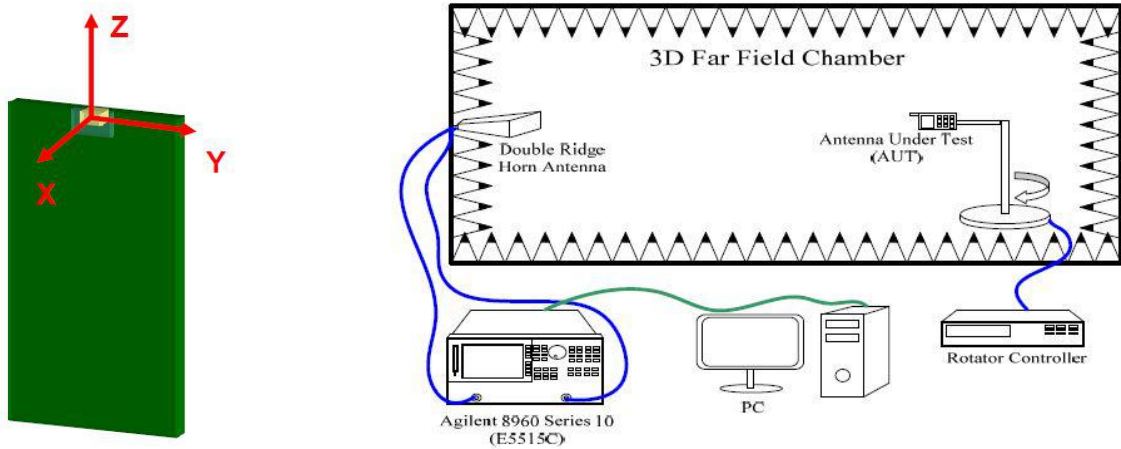


Mark	Frequency	VSWR
1	2400 MHz	1.513
2	2440 MHz	1.068
3	2480 MHz	1.464

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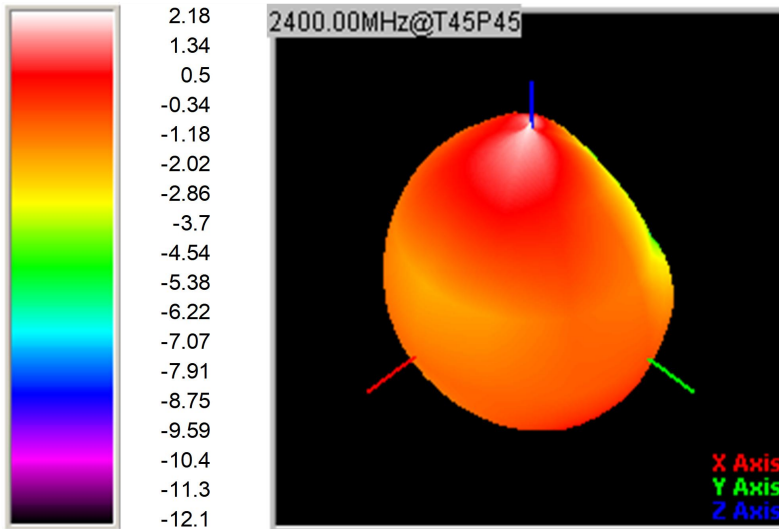
Radiation Pattern

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.

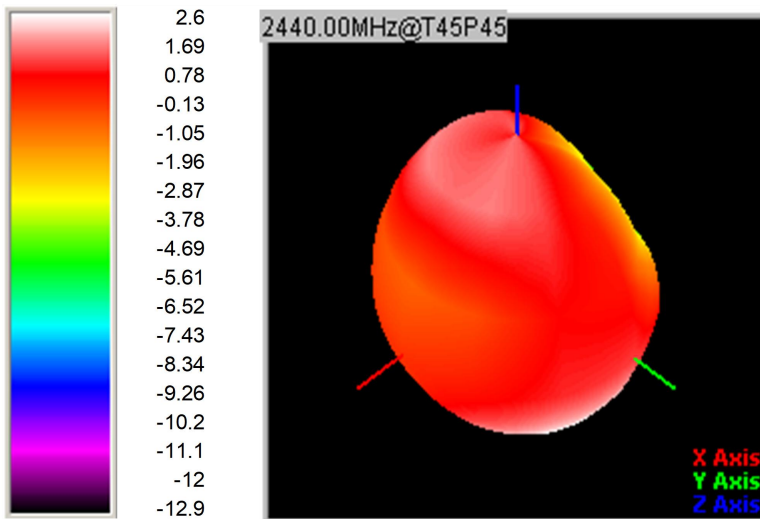


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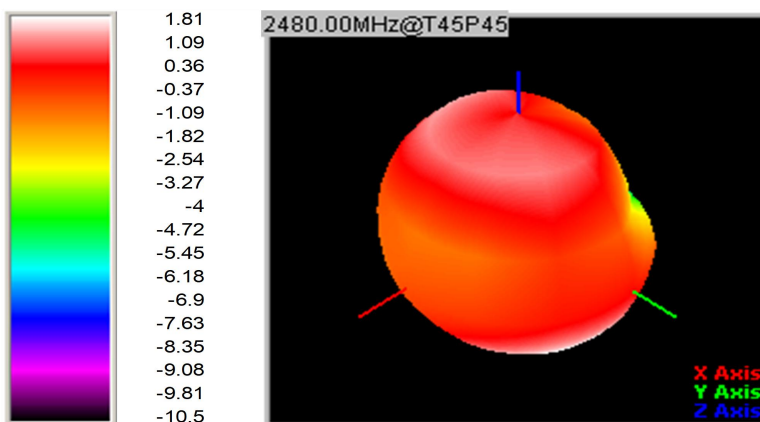
© 3D Gain Pattern (2400 MHz)



© 3D Gain Pattern (2440 MHz)



© 3D Gain Pattern (2480 MHz)



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 ANGLES = ± HOLEDIA = ±

SCALE: N/A

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7. Environmental Characteristics

(1) Reliability Test

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

(2) Storage Condition

(a) At warehouse:

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

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

(b) On board:

The temperature should be within $-40 \sim 85^{\circ} \text{C}$ and humidity should be less than 85% RH.

(3) Operating Temperature Range

Operating temperature range : -40°C to $+105^{\circ} \text{C}$.

UNLESS OTHER SPECIFIED TOLERANCES ON:

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ANGLES = \pm **HOLE DIA** = \pm

SCALE: N/A

UNIT: mm

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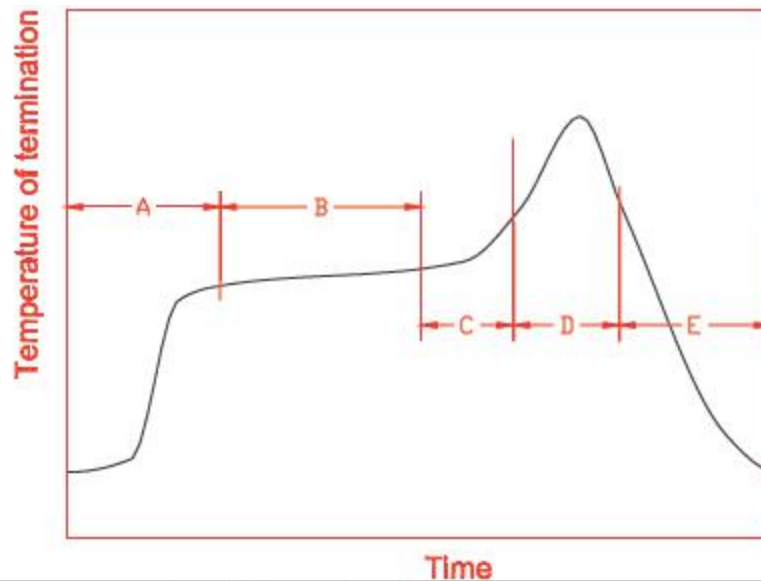
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8. Recommended Reflow Soldering



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
		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 by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

(2) Soldering Volume

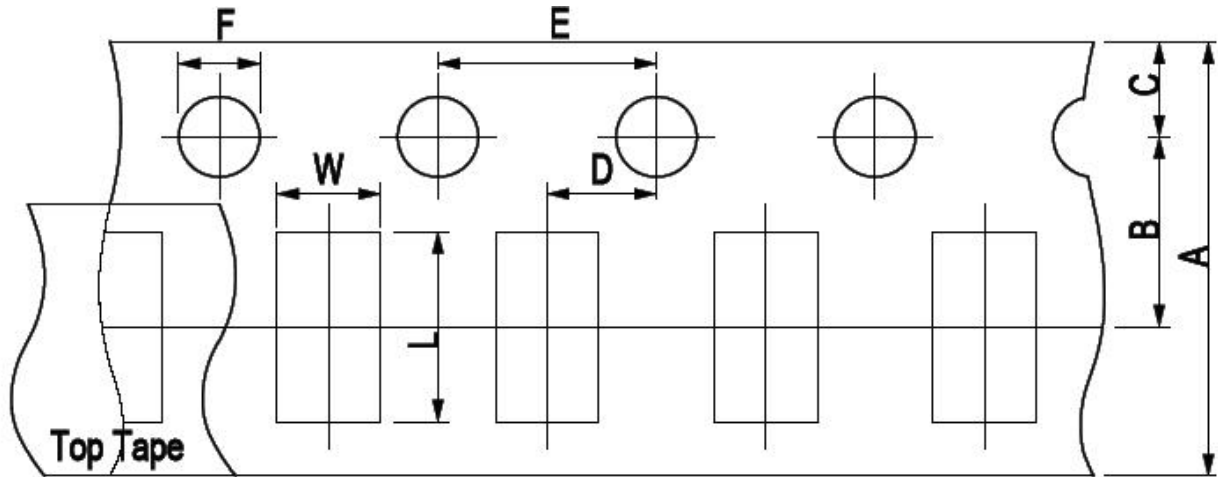
Note that excess of soldering volume will easily get crack the body of this product.

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

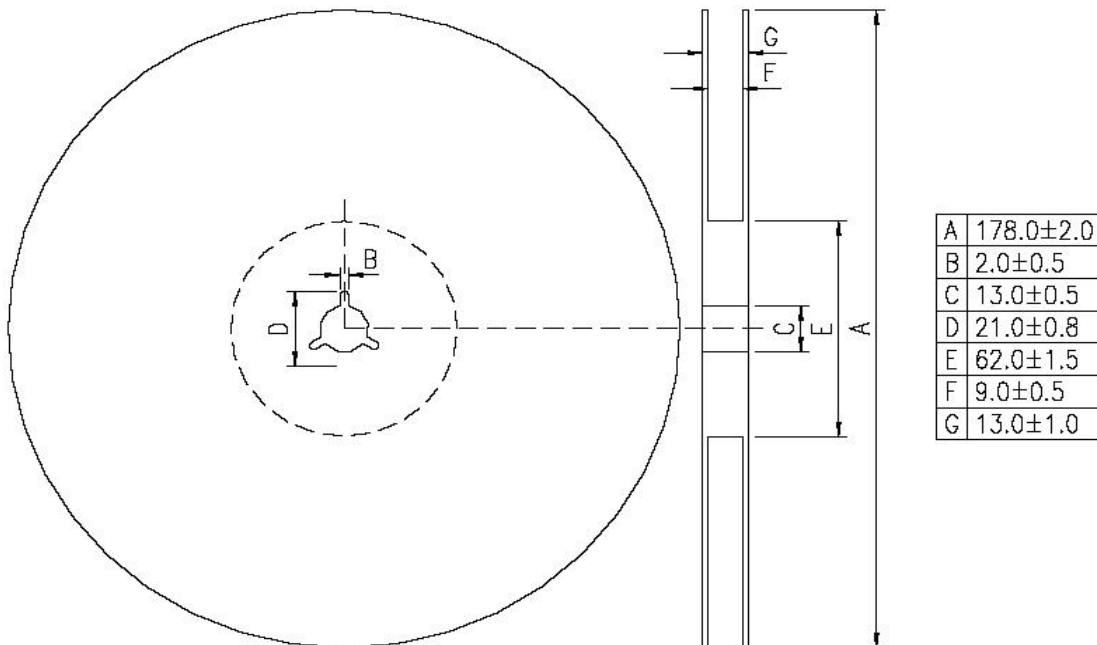
(1) Quantity/Reel: 5000pcs/Reel

(2) Carrier tape dimensions



Type	A	B	C	D	E	F	L	W
2450-21	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

(3) Taping reel dimensions



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