



# ACM3-3216-A1-CC-S Specification

## 1. Features and Application :

This product is for 2.4/5 GHz Dual Band WiFi,802.11 a/b/g/n,Zigbee,Bluetooth,...

## 2. Explanation of Part Number :

AC M3 - 3216 - A1 - CC - S     
 (1) (2) (3) (4) (5) (6) (7)

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : 2.4/5 GHz Dual-Band
- (3) Product Code : 3.2\*1.6 mm (Length \* Width)
- (4) Design Revision Code : Rev. 1
- (5) Antenna Type : Coupling Ceramics
- (6) Special Code : RoHS Compliant
- (7) Suffix For Special Requirements

## 3. Electrical Specification :

Item	Specification	
Frequency Band	2400 ~ 2500 MHz	5150 ~ 5850 MHz
Polarization	Linear	
Impedance	50 ohm Typ.	
VSWR	Less than 3	Less than 3.5
*Peak Gain	2.7 dBi Typ.	3.4 dBi Typ.
*Peak Efficiency	62.4% Typ.	69.3% Typ.

\* Test condition: Test board size 80\*40 mm  
 Matching circuit may be required

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±            X.X=±            X.XX=  
 ANGLES=±            HOLEDIA=±

SCALE : -----            UNIT : mm

DRAWN BY: 林豪建 Stan            CHECKED BY: 吳明怡 Nancy

DESIGNED BY: 林豪建 Stan            APPROVED BY: 黃月碧 Yuehbi



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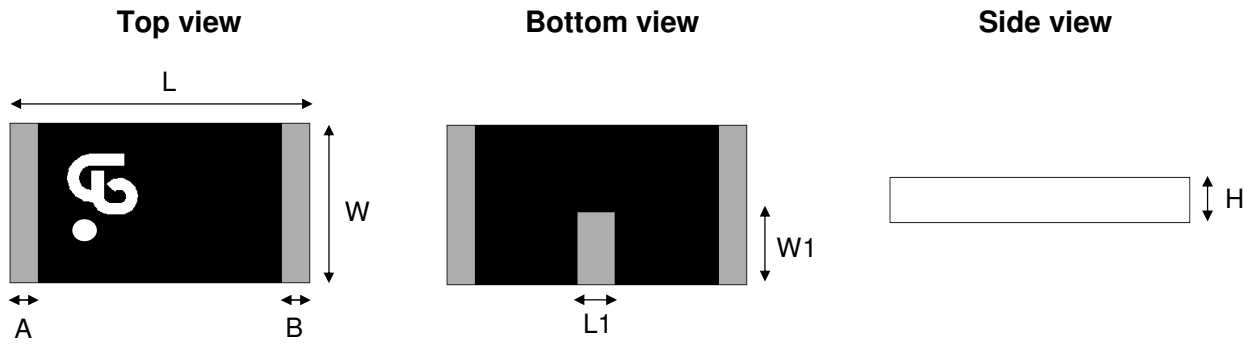
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#### 4. Physical Dimension :



<b>L</b>	3.20 ± 0.30
<b>W</b>	1.70 ± 0.20
<b>H</b>	0.50 ± 0.10
<b>A</b>	0.30 ± 0.15
<b>B</b>	0.30 ± 0.15
<b>L1</b>	0.47 ± 0.20
<b>W1</b>	0.70 ± 0.20

(Unit : mm)

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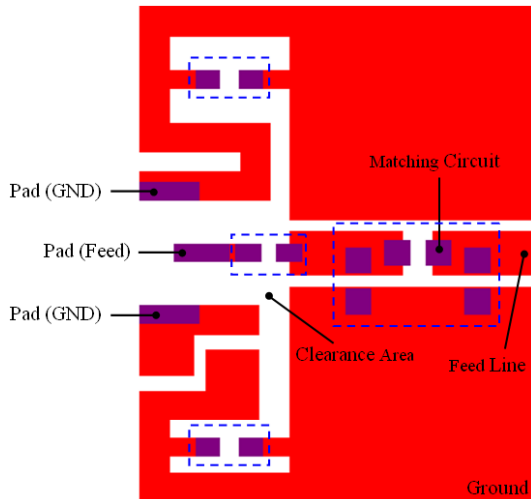
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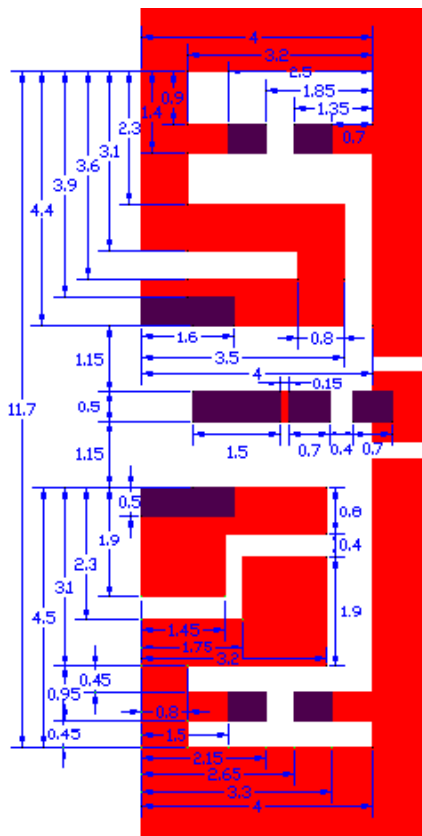
## 5. Recommend PCB Layout :

### Layout

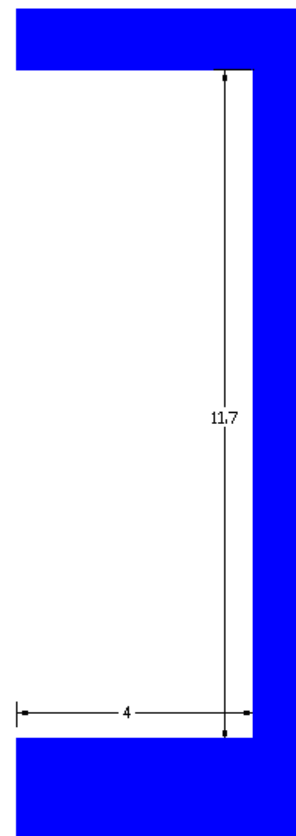


### Pad Dimensions on PCB Layout

#### Top View



#### Perspective View



(Unit : mm)

\* Tolerance :  $\pm 0.05$  mm

UNLESS OTHER SPECIFIED TOLERANCES ON :

X =  $\pm$       X.X =  $\pm$       X.XX =

ANGLES =  $\pm$       HOLEDIA =  $\pm$

SCALE : -----

UNIT : mm

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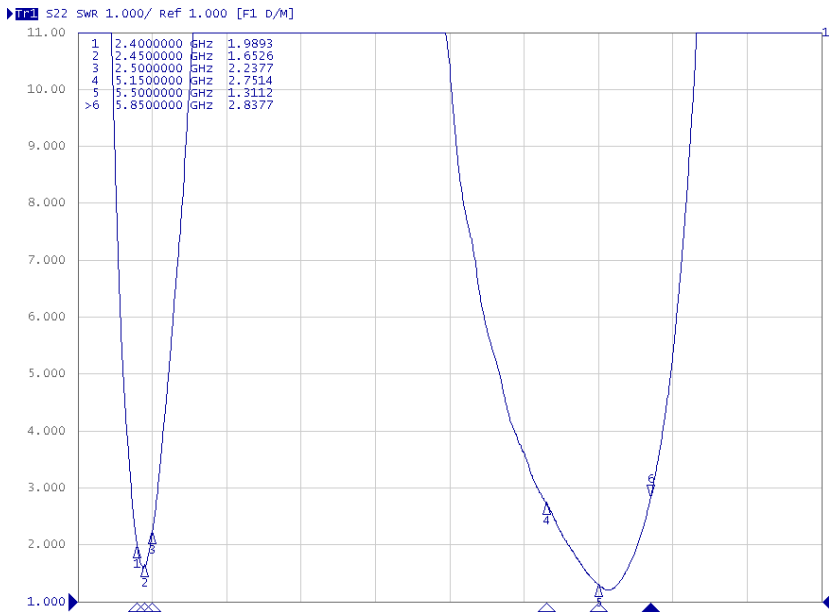
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## 6. Electrical Characteristics :

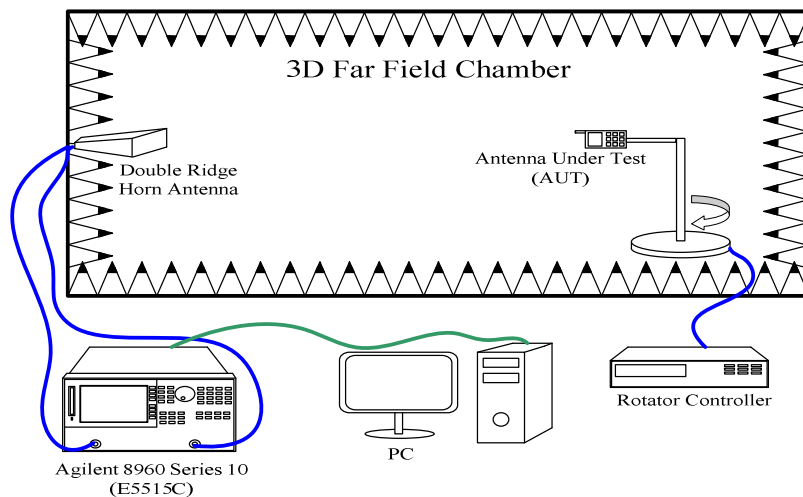
### VSWR




Frequency (MHz)	VSWR
2400	2.0
2450	1.7
2500	2.2
5150	2.8
5500	1.3
5850	2.8

### Radiation Pattern

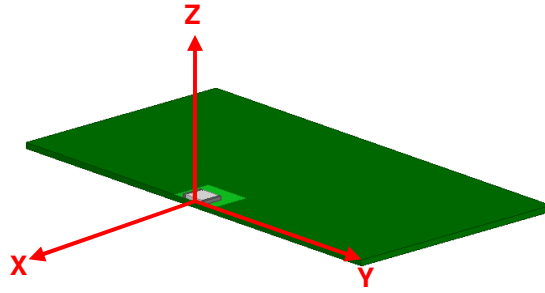
The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



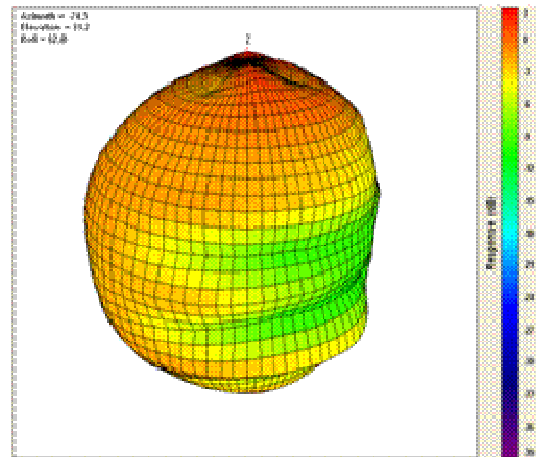
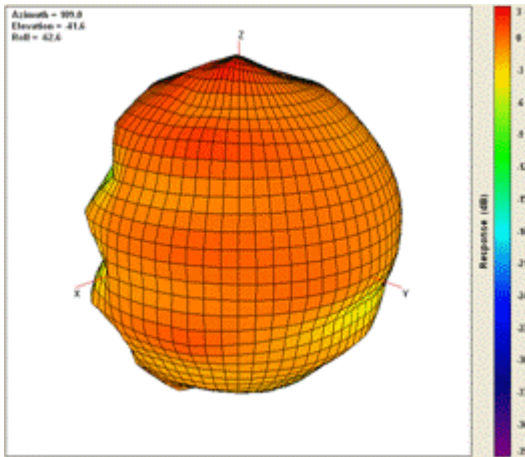
3D Chamber Definition

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ANGLES=±		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
HOLEDIA=±		
SCALE : -----	UNIT : mm	DOCUMENT NO. <b>ENS000081290</b>
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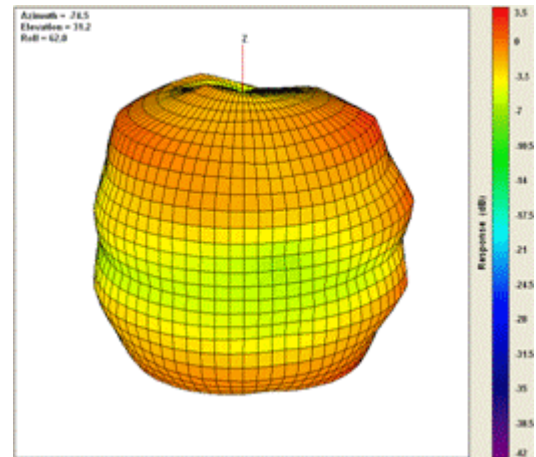
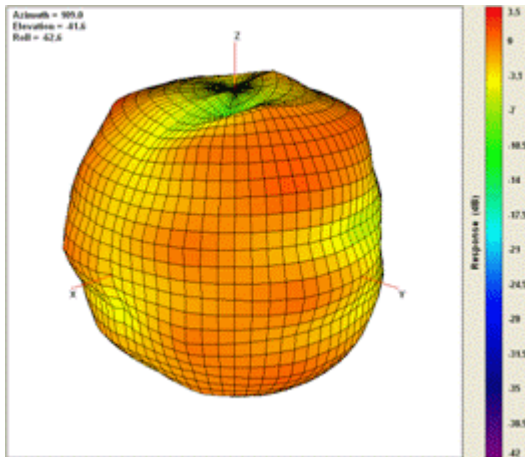
# 3D Gain Pattern



## 2450 MHz



## 5500 MHz



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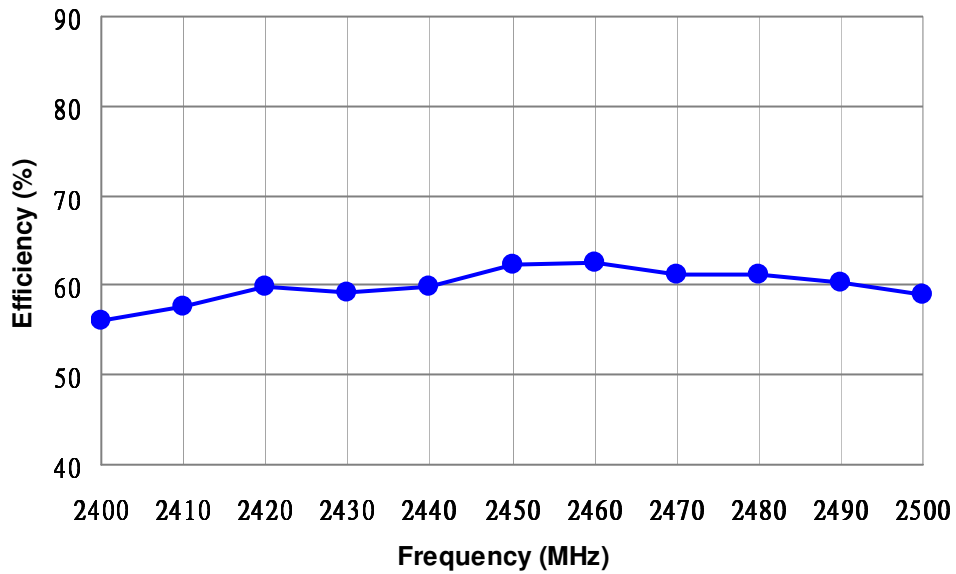
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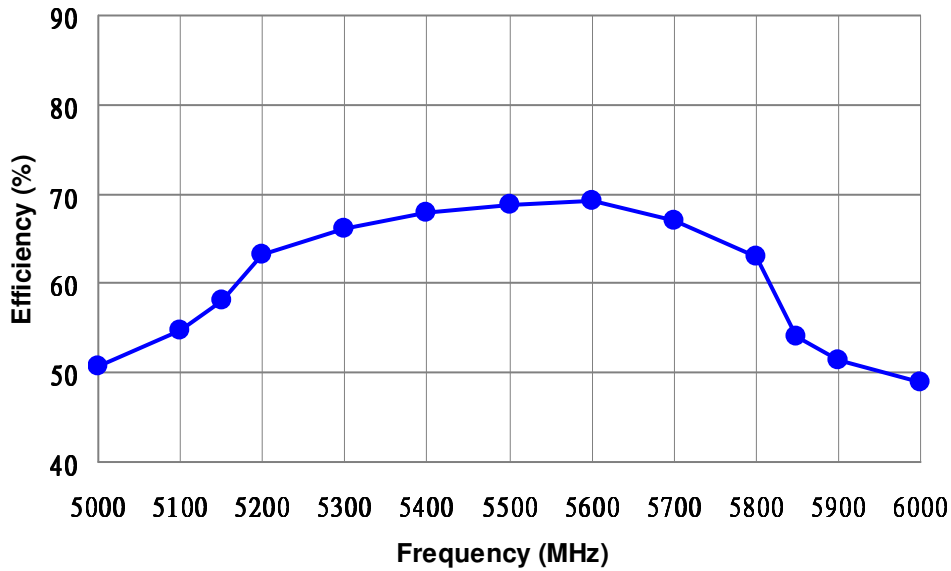
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# Efficiency

## 2.4 GHz



## 5 GHz



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SCALE : -----

UNIT : mm



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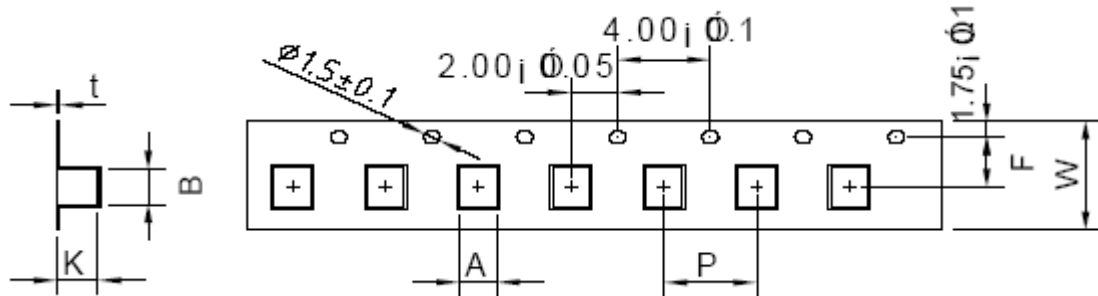
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## 7. Taping Package and Label Marking :

(1) Quantity : 4000pcs/Reel, T(Thickness of chip)  $\leq 1.2$

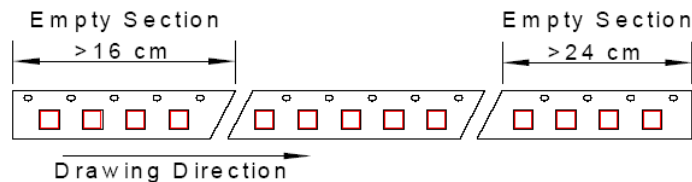
(2) Plastic Tape



Type	W	A	B	K	t	F	P
3216	8±0.1	2.0~2.2	3.50~3.60	Max. 1.40	0.22±0.05	3.50±0.1	4.00±0.1

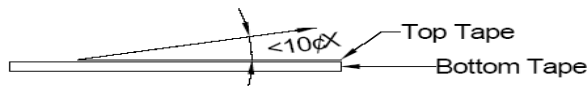
(Unit : mm)

(3) Tape Packing



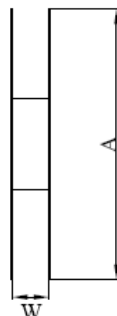
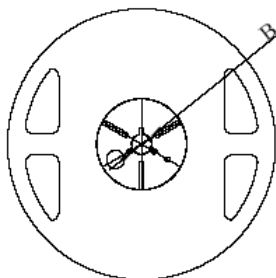
(4) Cover Tape Reel Off Force

$$5g \cdot f \leq \text{Peel-Off Force} \leq 70g \cdot f$$



(5) Reel Dimensions

Reel Material: Polystyrene



W	A	B
8±0.5	178±0.5	13±0.5
12±0.5	178±0.5	13±0.5

(Unit : mm)

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SCALE : -----

UNIT : mm

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## 8. Environmental Characteristics :

### (1) Reliability Test

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	1. Temperature : 150 °C±5 °C 2. Time : 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
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 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 ~ +105 °C.

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ANGLES=±                      HOLEDIA=±

SCALE : -----

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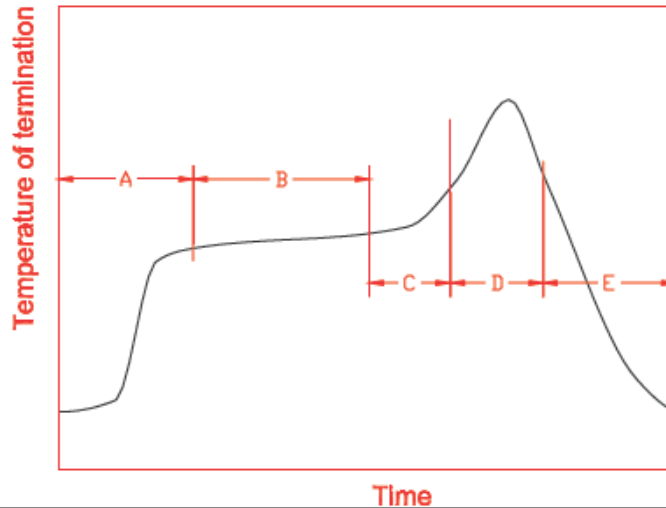
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## 9. Recommended reflow soldering :



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
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

### (1) Soldering gun procedure

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

- The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- 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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