

# SPECIFICATIONS

CUSTOMER: \_\_\_\_\_

DESCRIPTION: Single-stage Bluetooth antenna

CUSTOMER PART No: \_\_\_\_\_

OUR MODEL NO: **PBX3216DA01**


DATE: 2020/10/10

PLEASE RETURN TO US ONE COPY OF “SPECIFICATION FOR APPROVAL”

WITH YOUR APPROVED SIGNATURES

|         |  |         |  |             |  |
|---------|--|---------|--|-------------|--|
|         |  |         |  |             |  |
| approve |  | examine |  | manufacture |  |

|           |  |
|-----------|--|
| signature |  |
| date      |  |

|   |                 |  |                 |
|---|-----------------|--|-----------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON :<br>X=±      X.X=±      X.XX=±<br>ANGLES = ±      HOLEDIA = ± |                 |   |                 |
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| DESIGNED BY: Sera   | APPROVED BY: XD |  |                 |
| TITLE : CHIP2450-21 Specification   |                 | DOCUMENT NO.   | 3216            |
|   |                 |  | SPEC REV.<br>P1 |

## PBX3216DA01 Specification

Operating Temp. : -40℃~+85℃

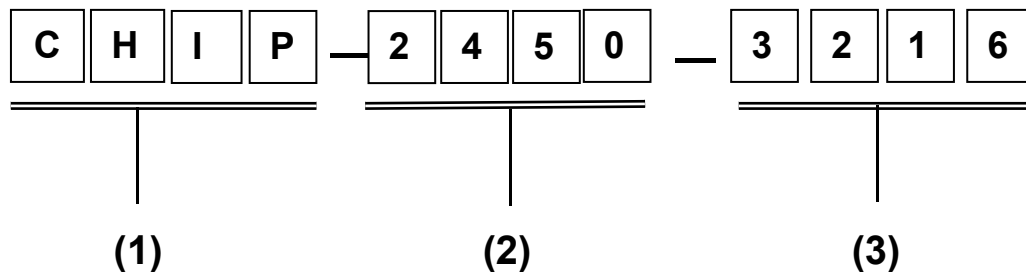
### 1. FEATURES:

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

### 2. APPLICATIONS:

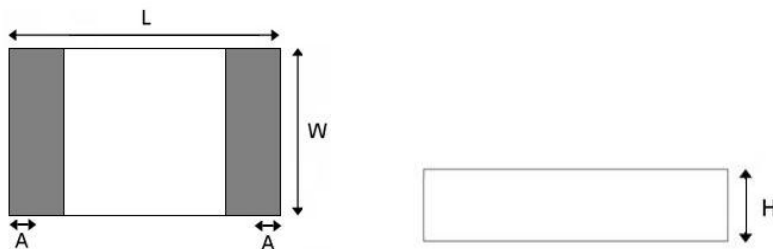
- Bluetooth, Wireless LAN, Mobile TV
- Home RF system, etc

### 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:

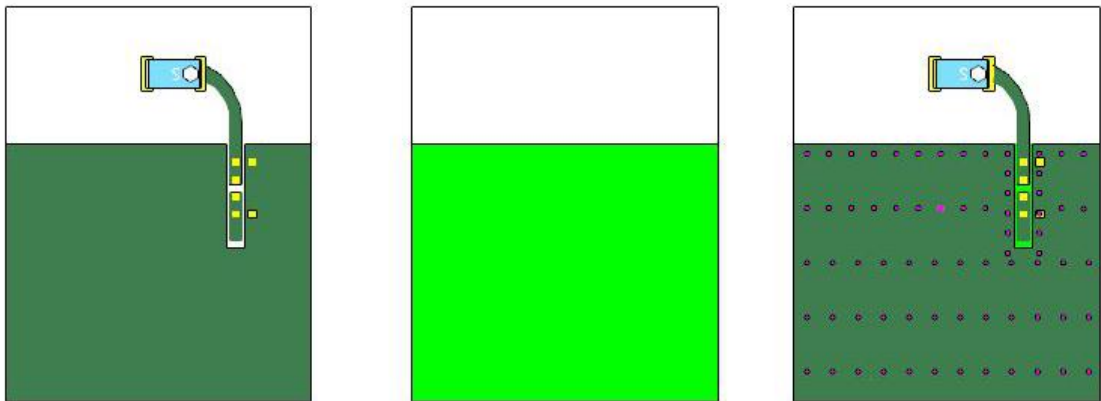






| L       | W       | H        | A        |
|---------|---------|----------|----------|
| 3.2±0.3 | 1.6±0.3 | 0.52±0.2 | 0.4±0.25 |

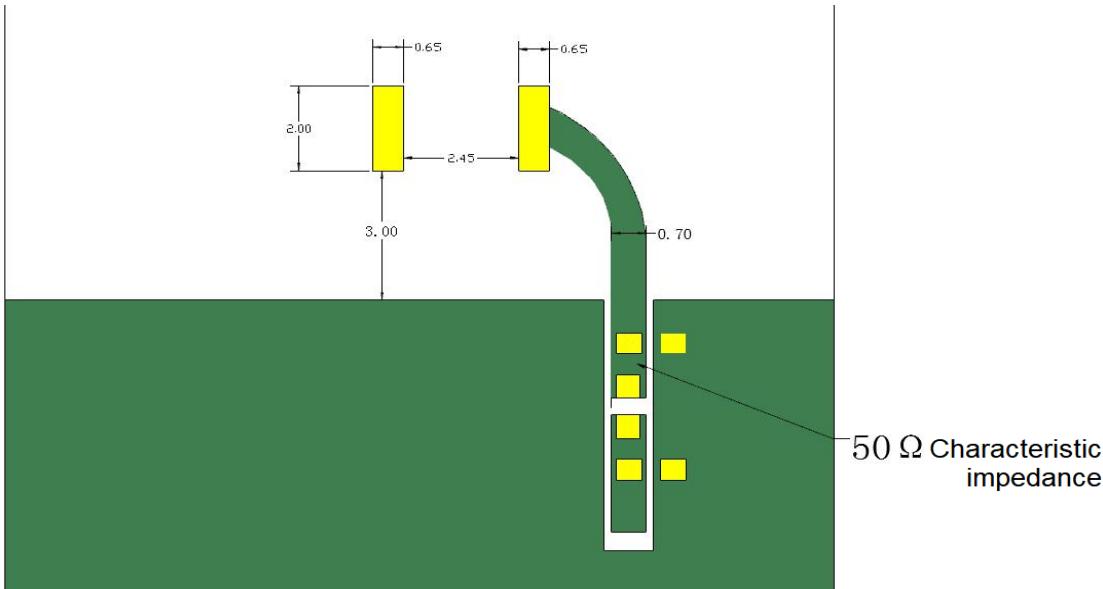
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|   |                 | 3216   | P1        |


Test board reference size:

Unit: mm

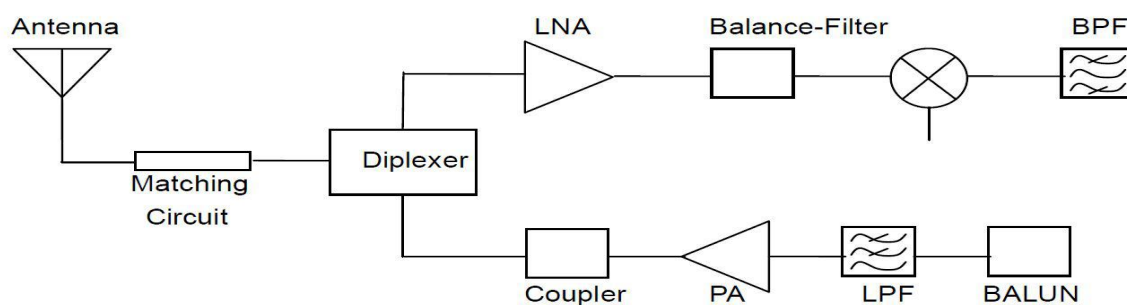


-  CHIP2450-3216-SRF07
-  Top copper
-  Bonding pad
-  Bottom copper
-  Punching



|  |                 |  |      |                 |
|--|-----------------|--|------|-----------------|
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## APPLICATION GUIDE



## 5. SPECIFICATIONS:

| No. | Product number               | PBX3216DA01                   |                    |
|-----|------------------------------|-------------------------------|--------------------|
| 1   | Central Frequency            | 2440                          | MHz                |
| 2   | Bandwidth                    | 100 (Min.)                    | MHz                |
| 3   | Return Loss                  | -11.96 (Max.)                 | dB                 |
| 4   | Peak Gain                    | 2.70                          | dBi                |
| 5   | Impedance                    | 50                            | $\Omega$           |
| 6   | Operating Temperature        | -40~+85                       | $^{\circ}\text{C}$ |
| 7   | Maximum Power                | 5                             | W                  |
| 8   | Resistance to soldering heat | 10 (@260 $^{\circ}\text{C}$ ) | Sec.               |
| 9   | Polarization                 | Linear                        |                    |
| 10  | Azimuth Beam width           | Omni-directional              |                    |
| 11  | Termination                  | Sn (leadless)                 |                    |

UNLESS OTHER SPECIFIED TOLERANCES ON :

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

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

|                   |                 |
|-------------------|-----------------|
| SCALE : N/A       | UNIT : mm       |
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## 6. Electrical Characteristics :



| Frequency (MHz) | 2400  | 2450  | 2500  |
|-----------------|-------|-------|-------|
| Avg. Gain (dBi) | -1.83 | -1.86 | -2.97 |
| Peck Gain (dBi) | 2.7   | 2.58  | 1.34  |
| Efficiency (%)  | 65.5  | 65.22 | 50.45 |

UNLESS OTHER SPECIFIED TOLERANCES ON :

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

SCALE : N/A

UNIT : mm

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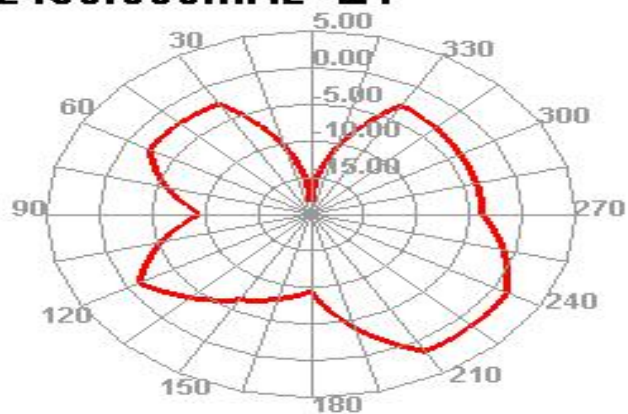
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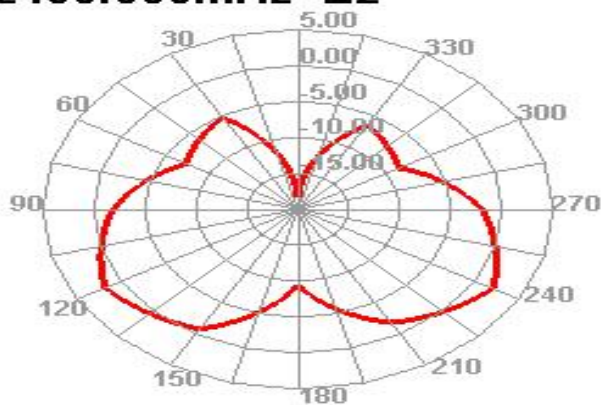
## X-Y Plane

**2450.000MHz E1**



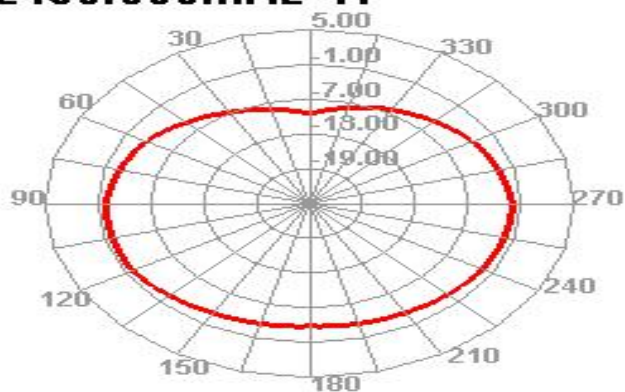
## X-Y Plane

**2450.000MHz E2**



## X-Y Plane

**2450.000MHz H**



UNLESS OTHER SPECIFIED TOLERANCES ON :

$X = \pm$        $X.X = \pm$        $X.XX =$   
**ANGLES** =  $\pm$       **HOLEDIA** =  $\pm$

SCALE : N/A

UNIT : mm

DRAWN BY : Sera

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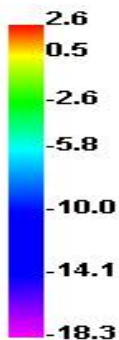
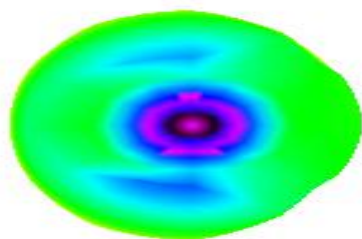
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### 3D Radiation Pattern

**2450.000MHz**



UNLESS OTHER SPECIFIED TOLERANCES ON :

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



**SCALE : N/A**

**UNIT : mm**

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## 7. Environmental Characteristics

### (1) Reliability Test

| Item                        | Condition  | Specification  |
|-----------------------------|--|--|
| Thermal shock               | 1. $30 \pm 3$ minutes at $-40^{\circ} \text{C} \pm 5^{\circ} \text{C}$ ,<br>2. Convert to $+105^{\circ} \text{C}$ (5 minutes)<br>3. $30 \pm 3$ minutes at $+105^{\circ} \text{C} \pm 5^{\circ} \text{C}$ ,<br>4. Convert to $-40^{\circ} \text{C}$ (5 minutes)<br>5. Total 100 continuous cycles | No apparent damage<br>Fulfill the electrical spec. after test. |
| Humidity resistance         | 1. Humidity: 85% R.H.<br>2. Temperature: $85 \pm 5^{\circ} \text{C}$<br>3. Time: 1000 hours.   | No apparent damage<br>Fulfill the electrical spec. after test. |
| High temperature resistance | 1. Temperature: $150^{\circ} \text{C} \pm 5^{\circ} \text{C}$<br>2. Time: 1000 hours.  | No apparent damage<br>Fulfill the electrical spec. after test. |
| Low temperature resistance  | 1. Temperature: $-40^{\circ} \text{C} \pm 5^{\circ} \text{C}$<br>2. Time: 1000 hours.  | No apparent damage<br>Fulfill the electrical spec. after test. |
| Soldering heat resistance   | 1. Solder bath temperature : $260 \pm 5^{\circ} \text{C}$<br>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 $245 \pm 5^{\circ} \text{C}$ for $3 \pm 1$ 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 :  $-40^{\circ} \text{C}$  to  $+105^{\circ} \text{C}$ .

UNLESS OTHER SPECIFIED TOLERANCES ON :

$X = \pm$        $X.X = \pm$        $X.XX =$   
**ANGLES** =  $\pm$       **HOLE DIA** =  $\pm$



SCALE : N/A

UNIT : mm

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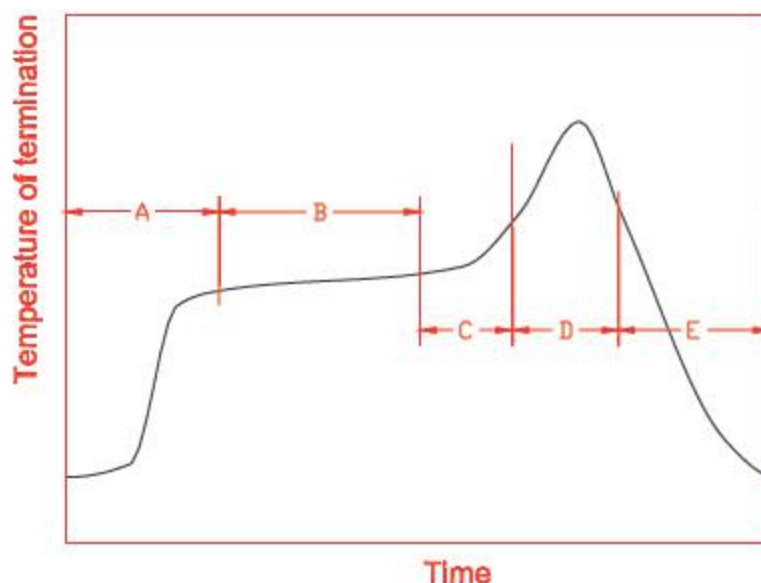
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## 8. Recommended Reflow Soldering



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

### (2) Soldering Volume

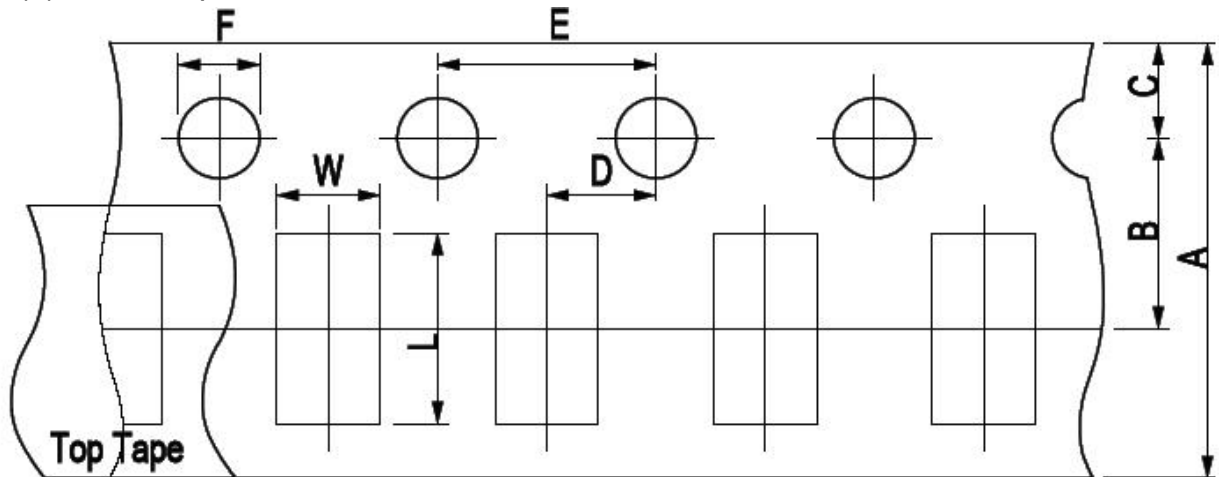
|   |                 |  |      |           |
|---|-----------------|--|------|-----------|
| UNLESS OTHER SPECIFIED TOLERANCES ON :<br>X=±                    X.X=±                    X.XX= |                 | <div><br/>PENGKANKING</div>   |      |           |
| ANGLES = ±                    HOLEDIA = ±   |                 |  |      |           |
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Note that excess of soldering volume will easily get crack the body of this product.

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

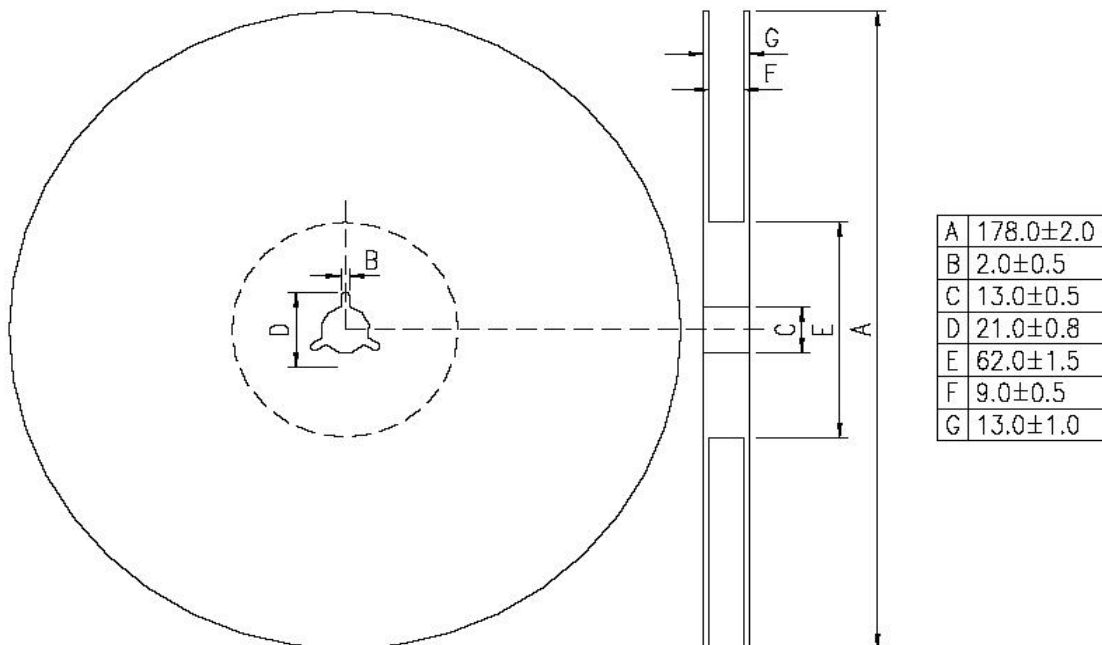
(1) Quantity/Reel: 5000pcs/Reel

(2) Carrier tape dimensions



| Type    | A              | B               | C              | D               | E              | F              | L              | W              |
|---------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|
| 2450-21 | $8.00 \pm 0.3$ | $3.50 \pm 0.05$ | $1.75 \pm 0.1$ | $2.00 \pm 0.05$ | $4.00 \pm 0.1$ | $1.50 \pm 0.1$ | $2.30 \pm 0.1$ | $1.55 \pm 0.1$ |

(3) Taping reel dimensions



UNLESS OTHER SPECIFIED TOLERANCES ON :

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



PENG BANKING

SCALE : N/A

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