

Product Specification Acceptance Certificate

CUSTOMER: _____

DESCRIPTION: _____ Monopole antenna

CUSTOMER PART _____

OUR MODEL NO: _____ **HT-3216-M02**

DATE: _____

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

WITH YOUR APPROVED SIGNATURES

| | | | | | |
|----------|-----|--------|-----|------|-----|
| Approval | WXS | audit; | HZL | Make | ZXM |
|----------|-----|--------|-----|------|-----|

| | |
|----------------------------------|--|
| Customer acknowledges signature; | |
| Date | |

| | | | |
|---|-----------------|---|-----------|
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| DESIGNED BY: Sera | APPROVED BY: XD | | |
| TITLE: CHIP2450-3216 Specification | | DOCUMENT NO. | SPEC REV. |
| | | 3216 | P1 |

HT-3216-M02 Specification

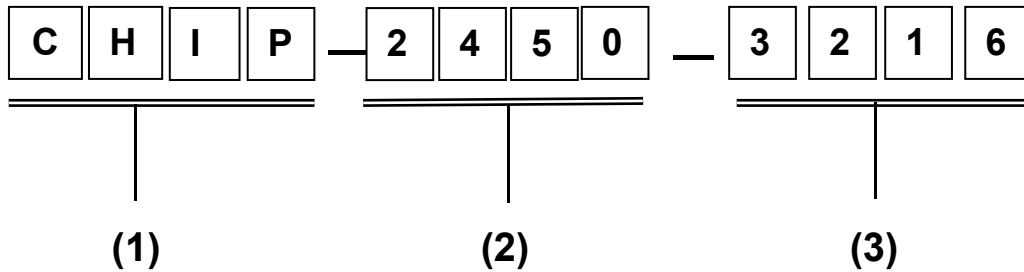
Operating Temp. : -40℃~+85℃

1. FEATURES:

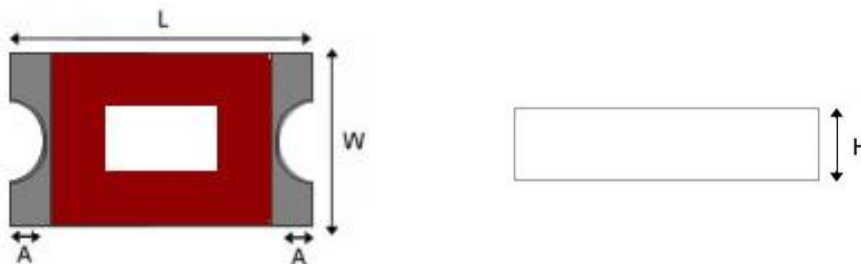
- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

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±0.2 | 1.6±0.2 | 0.75±0.1 | 0.4±0.1 |

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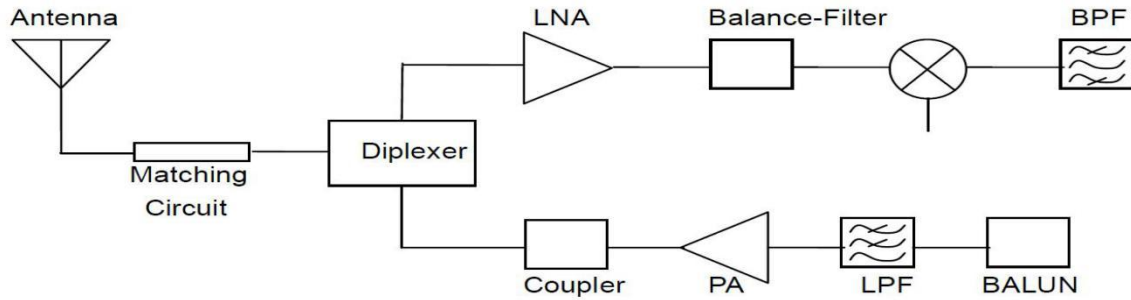
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APPLICATION GUIDE**5. SPECIFICATIONS:**

| No. | Product number | PBX3216DA01 | |
|-----|------------------------------|-------------------------------|--------------------|
| 1 | Central Frequency | 2440 | MHz |
| 2 | Bandwidth | 100 (Min.) | MHz |
| 3 | Return Loss | -11.96 (Max.) | dB |
| 4 | Peak Gain | 2.73 | dBi |
| 5 | Impedance | 50 | Ω |
| 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) | |

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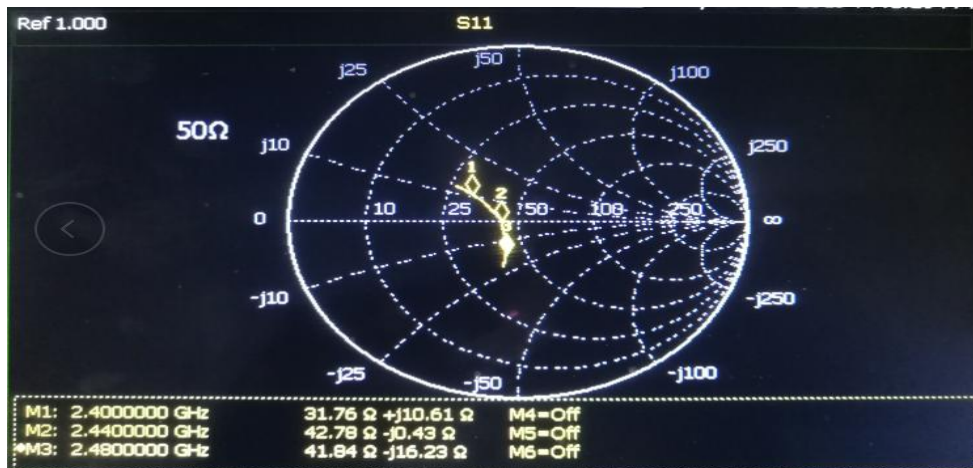
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6. Electrical Characteristics :



| | | | |
|-----------------|-------|-------|-------|
| 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 |

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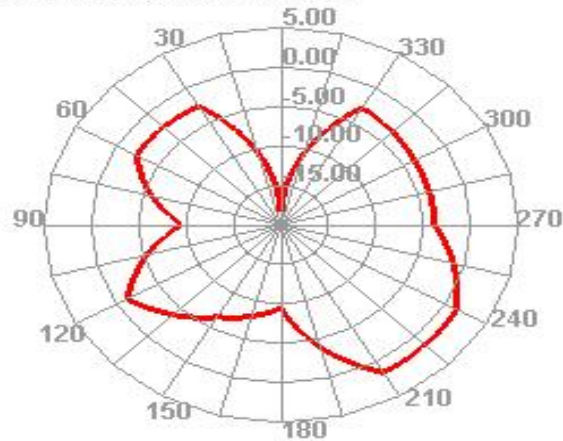
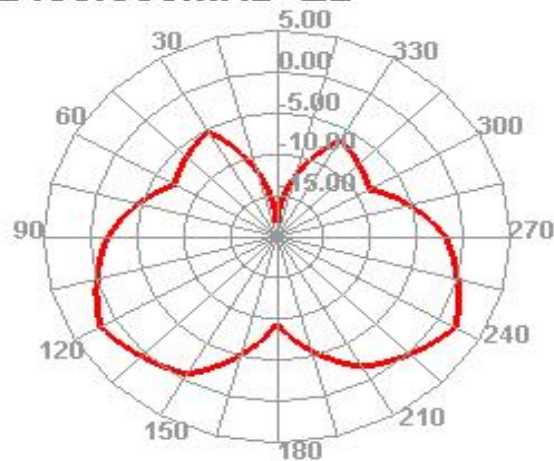
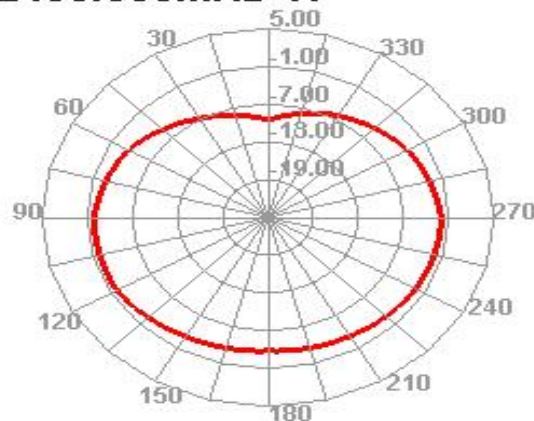
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X-Y Plane**2450.000MHz E1****X-Y Plane****2450.000MHz E2****X-Y Plane****2450.000MHz H**

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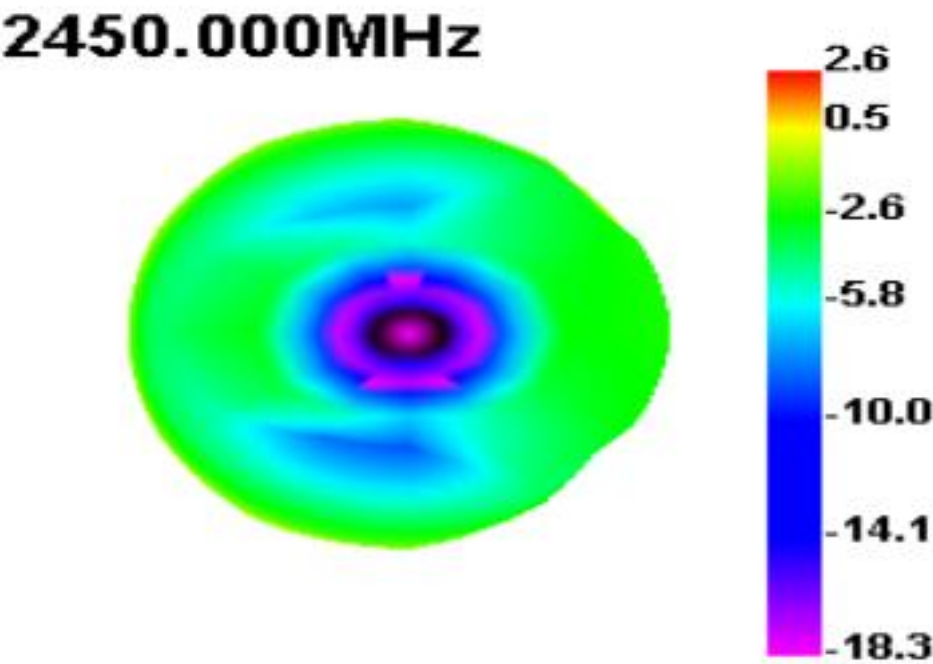
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3D Radiation Pattern



| | | | | |
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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 $+105^{\circ}\text{C}$.

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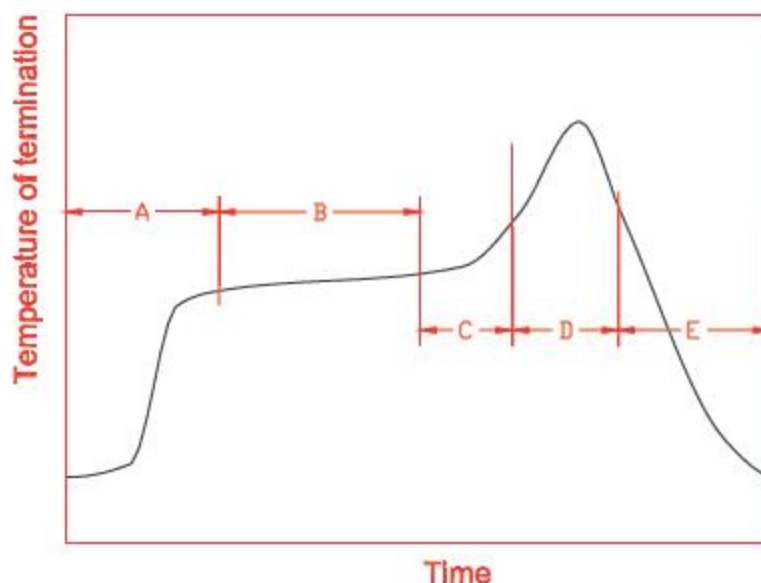
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8. Recommended Reflow Soldering



| | | | |
|---|------------------------------------|--------------------------------------|---------------|
| 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

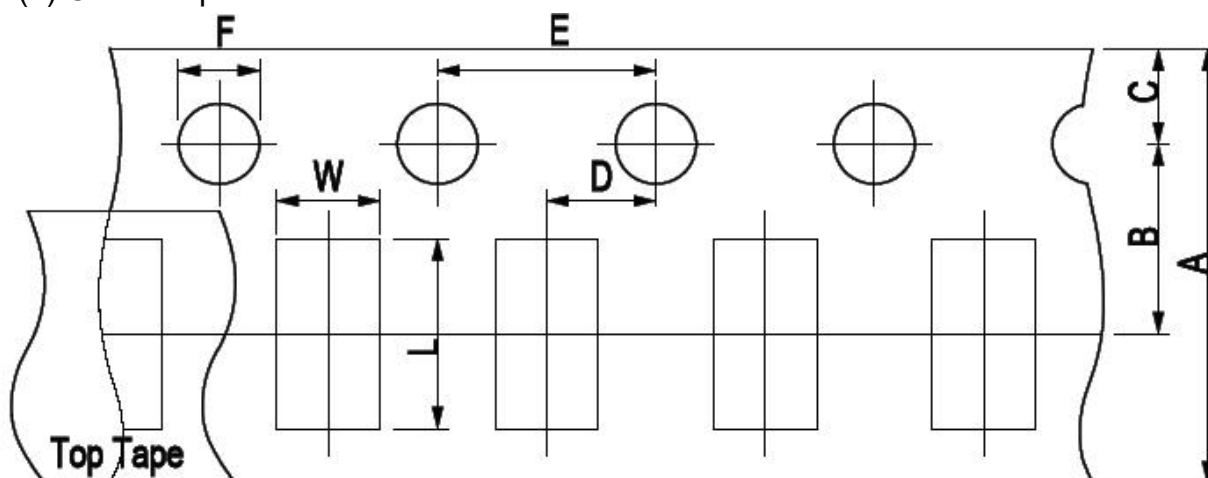
Note that excess of soldering volume will easily get crack the body of this product.

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

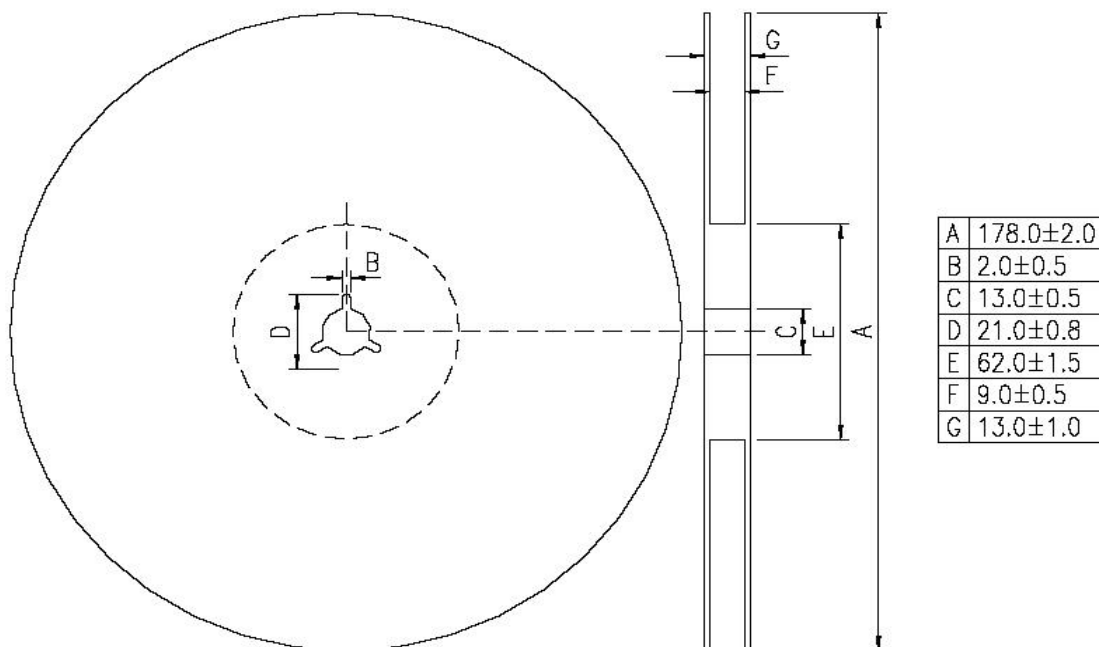
(1) Quantity/Reel: 5000pcs/Reel

(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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