

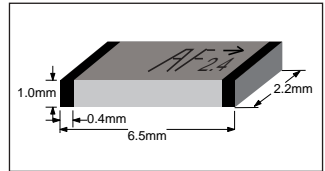


## 2.45GHz ULTRA COMPACT CHIP ANTENNA DATA GUIDE

### DESCRIPTION

The exciting ANT-2.45-CHP is one of the world's smallest, high-performance 2.4 GHz Chip Antennas. It is ideal for all 2.4GHz applications including Bluetooth, 802.11, home RF, ZigBee and other popular and emerging standards. The antenna uses an advanced multilayer LTCC Technology and a proprietary hybrid spiral element to achieve size and performance characteristics superior to other designs. The incredibly compact SMD package measures a mere 6.5mm (L) x 2.2mm (W) x 1.0mm (H) and is fully compatible with hand- and reflow-attachment processes. The antenna's favorable electrical specifications, stability and cost-effectiveness make it the logical choice for a wide variety of applications.

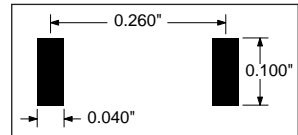
### PHYSICAL DIMENSIONS



#### Actual Size



#### Pad Layout



### FEATURES

- Incredibly Compact SMD Package
- Superior LTCC Technology
- 50Ω Characteristic Impedance
- Low Loss
- Wide Bandwidth
- Favorable Linear Polarization
- > Unity Gain
- No External Matching Required
- Highly Stable Over Temp. and Humidity
- Fully Hand- and Reflow-Assembly Compatible
- Cost-Effective

### APPLICATIONS

Any 2.4GHz Wireless Product Including:

- Bluetooth
- 802.11
- ZigBee
- Wireless PCMCIA Cards
- Telemetry
- Data Collection
- Industrial Process Monitoring
- Compact Wireless Products
- External Antenna Elimination

### ORDERING INFORMATION

| PART #         | DESCRIPTION                        |
|----------------|------------------------------------|
| ANT-2.45-CHP-x | 2.45GHz Ultra-Compact Chip Antenna |

x= "T" for Tape/Reel, "B" for Bulk  
Standard Reel is 3,000 pcs. Quantities less than 3,000 pcs. supplied in Bulk.

# SPECIFICATIONS

## PHYSICAL SPECIFICATIONS

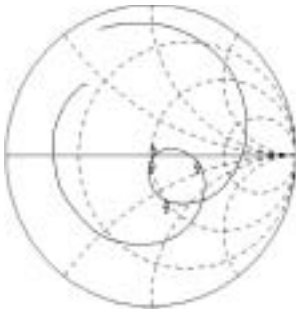
|                       |                 |
|-----------------------|-----------------|
| Dimensions            | 6.5 x 2.2 x 1.0 |
| Operating Temperature | -25~85°C        |
| Construction          | LTCC            |

## ELECTRICAL PERFORMANCE

|                     |             |
|---------------------|-------------|
| Polarization        | Linear      |
| Operating Frequency | 2,400~2,488 |
| Center Frequency    | 2,450 MHz   |
| Bandwidth           | 180.0 MHz   |
| Maximum Gain        | 0.8dBi      |
| Impedance           | 50Ω         |

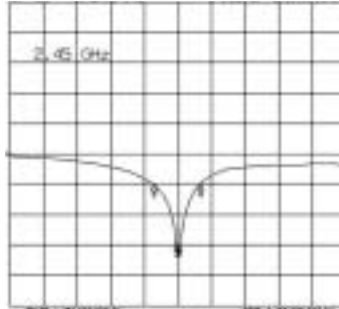
# CHARACTERISTICS

Impedance



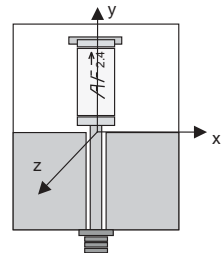
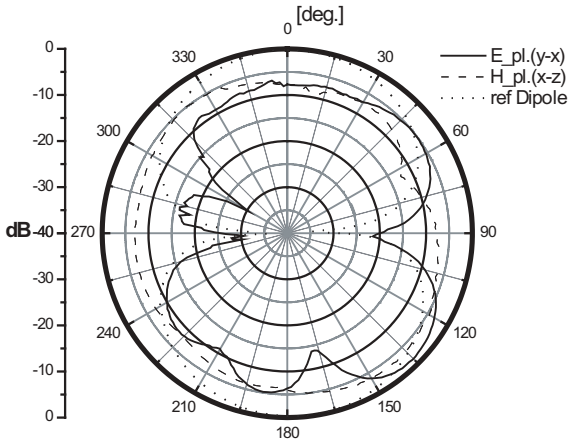
DML Markers  
 ① 45.961 Ω  
 -3.3739 Ω  
 2.44813 GHz  
 ② 55.175 Ω  
 -2.1193 Ω  
 2.36895 GHz  
 ③ 75.389 Ω  
 -1.2594 Ω  
 2.37938 GHz

Return Loss



DML Markers  
 ① -29.445 dB  
 2.44813 GHz  
 ② -18.888 dB  
 2.36895 GHz  
 ③ -18.888 dB  
 2.37938 GHz

Radiation Pattern



# SOLDERING CONSIDERATIONS

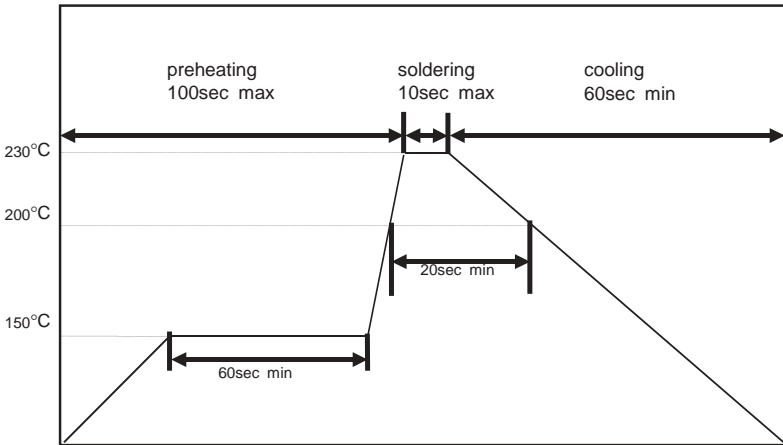
## Hand Soldering

This antenna is designed for high-volume automated assembly, however, it may be successfully attached by hand assembly techniques. A hand-solder temperature of 225° or lower should be used. Do not exceed a 10 sec. heating time.

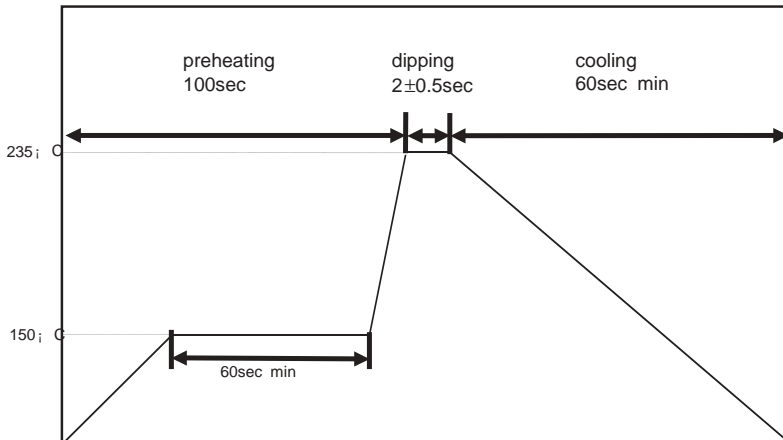
## Reflow Temperature Profile

The single most critical stage in the automated assembly process is the reflow process. The reflow profile below should be closely followed since excessive temperatures or transport times during reflow will irreparably damage the antennas. Assembly personnel will need to pay careful attention to the oven's profile to insure that it meets the requirements necessary to successfully reflow all components while still meeting the limits mandated by the antennas themselves.

### REFLOW SOLDERING PROFILE



### FLOW SOLDERING PROFILE





**WIRELESS MADE SIMPLE**

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## **Disclaimer**

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