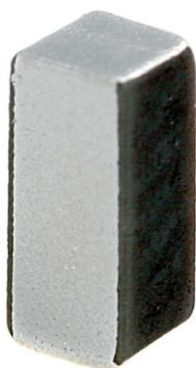


**Description:** Monopole GPS, BT, WiFi

**Series :** Chip Antenna

**PART NUMBER:** W3043



### Features:

- Multipurpose for various frequency applications
  - Option 1: GPS 1.575GHz
  - Option 2: WiFi 2.4-2.485GHz
- Compact size W x L x H:  
(3.2 x 1.6 x 1.1 mm)
- Low weight (33 mg)
- Fully SMD compatible
- Tape and reel packing

### Applications:

- GPS
- Bluetooth, WLAN, WiFi, BLE
- IEEE 802.11a/b/g/n
- ZigBee IEEE 802.15.4
- 2.4 GHz ISM Band Systems

All dimensions are in mm / inches

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Pulse (Suzhou) Wireless Products Co, Inc.  
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Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



**Description:** Monopole GPS, BT, WiFi**Series :** Chip Antenna**PART NUMBER:** W3043**ELECTRICAL SPECIFICATIONS**

|                          |               |
|--------------------------|---------------|
| Antenna Type             | Monopole      |
| Frequency option1 @ GPS  | 1565-1585MHz  |
| Frequency option2 @ Wifi | 2400-2485MHz  |
| Nominal Impedance        | 50 $\Omega$   |
| Radiation Pattern        | Omni          |
| Return Loss              | -15 / -12 dB  |
| Gain                     | 2.1 / 4.5 dBi |
| Efficiency               | 38 / 45 %     |
| Polarization             | Vertical      |

**MECHANICAL SPECIFICATIONS**

|                                  |                    |
|----------------------------------|--------------------|
| Size                             | 3.2 x 1.6 x 1.1 mm |
| Weight                           | 0.03 g             |
| MSL (Moisture Sensitivity Level) | 1                  |

**ENVIRONMENTAL SPECIFICATIONS**

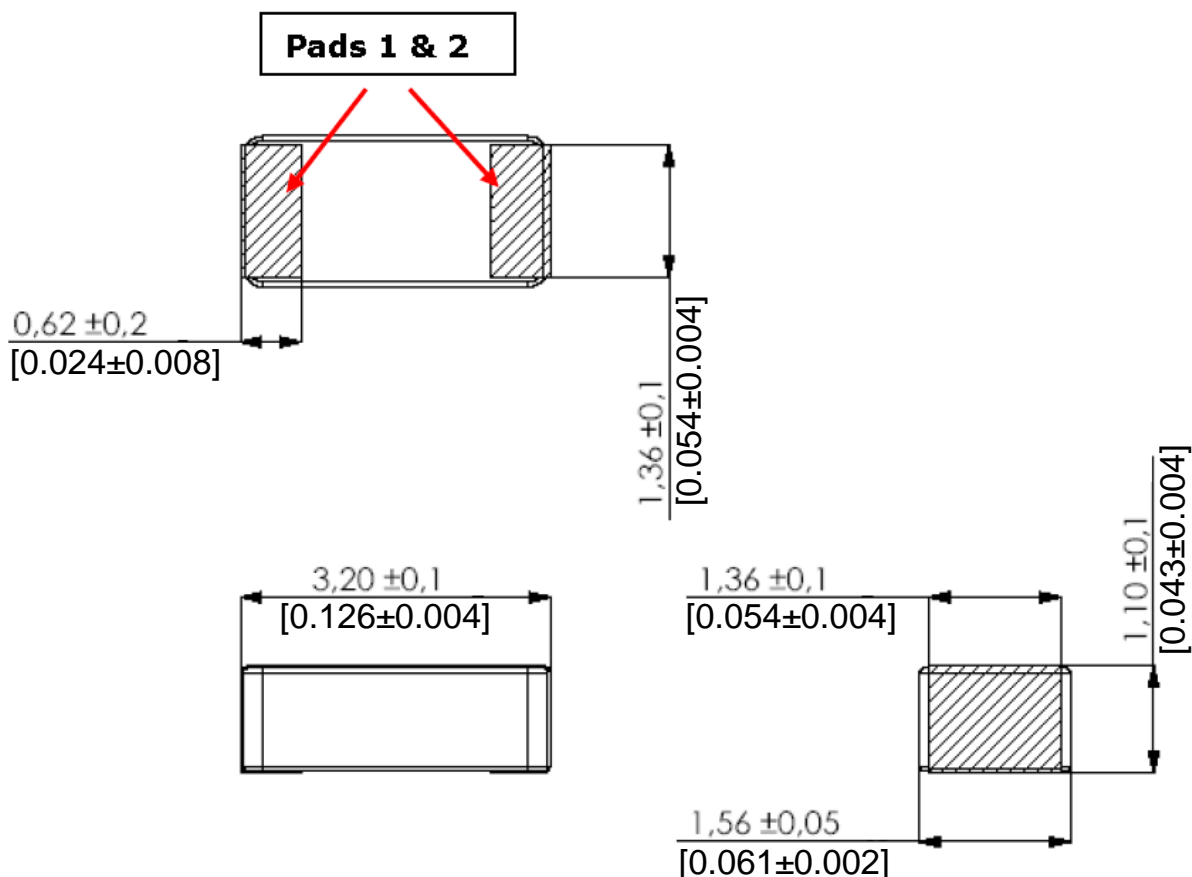
|                       |           |
|-----------------------|-----------|
| Operating Temperature | -40~85 °C |
| Storage Temperature   | -40~85 °C |
| RoHS Compliant        | Yes       |

**Description:** Monopole GPS, BT, WiFi

**Series :** Chip Antenna

**PART NUMBER:** W3043

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION



| Antenna features  |                |                     |
|---|----------------|---------------------|
| No.   | Terminal Name  | Terminal Dimensions |
| 1   | Feed / Support | 0.62 x 1.36 mm      |
| 2   | Feed / Support | 0.62 x 1.36 mm      |
| Antenna is symmetrical.<br>Either of terminals 1 or 2 can be Feed / Support |                |                     |

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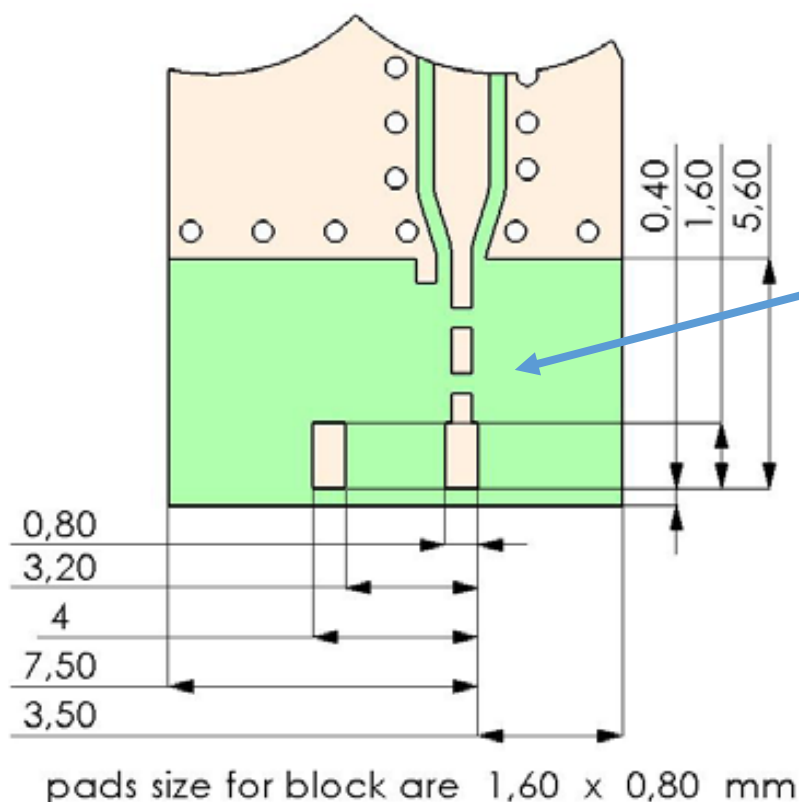
**Series :** Chip Antenna

**PART NUMBER:** W3043

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### 1. GROUND CLEARANCE AREA

Pad dimensions in top copper



All metallization should be removed from all PWB layers.

Clearance area dimensions can be adjusted to available board space.

PWB manufacturing requirements according to IPC-A-600 revision G or similar.

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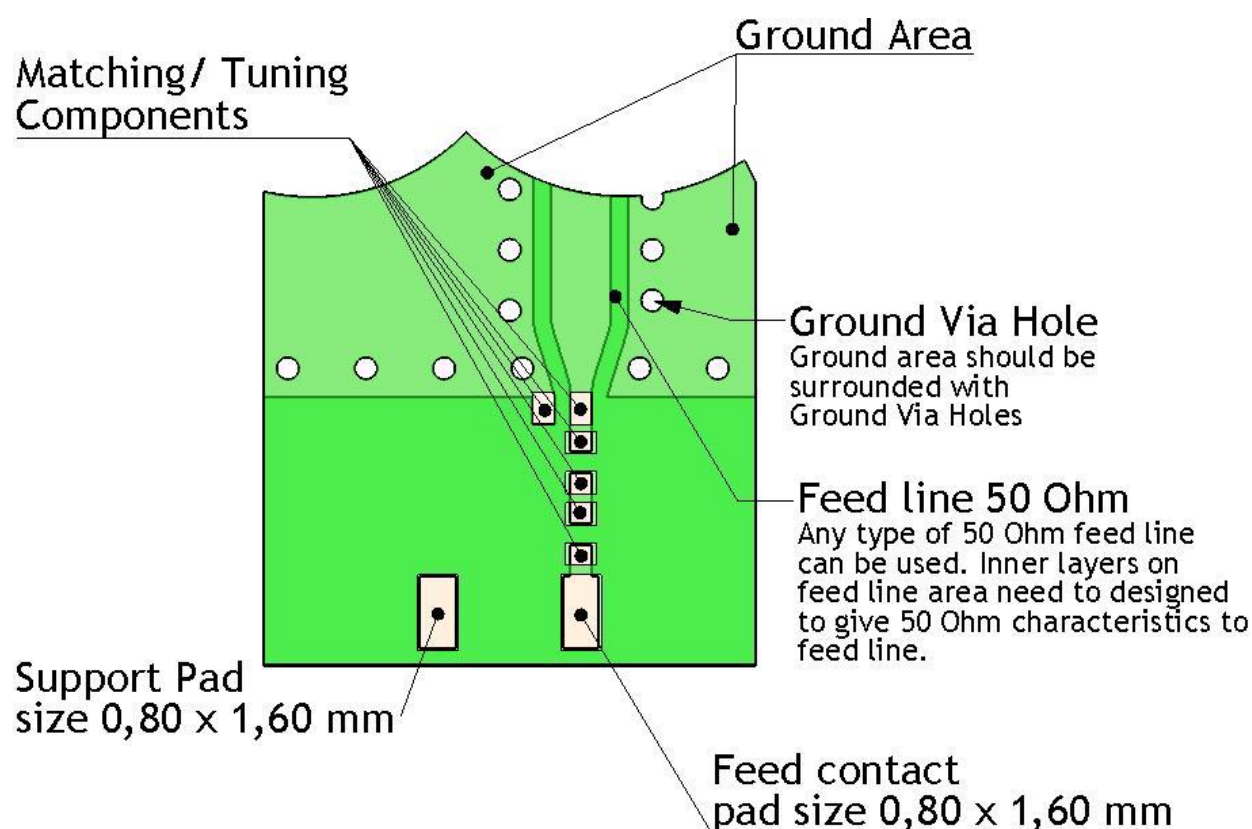
**PART NUMBER:** W3043

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### 2. MATCHING/TUNING COMPONENTS

Component values depend on used ground clearance area and other device mechanics.

Copper extension on board can be used for frequency fine tuning.



| PWB features |                  |                     |
|--------------|------------------|---------------------|
| No.          | Terminal Name    | Terminal Dimensions |
| 1            | Feed             | 0.8 x 1.60 mm       |
| 2            | Mech support pad | 0.8 x 1.60 mm       |

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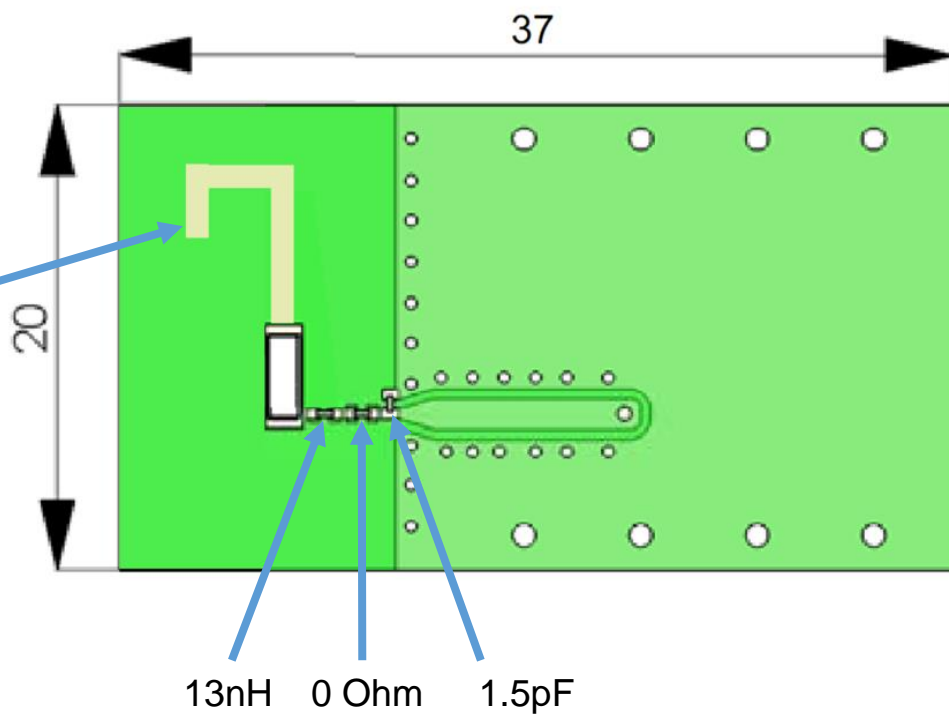
## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### 3.TYPICAL ELECTRICAL CHARACTERISTICS(T=25 °C)

*Measured on 37x20mm test board, ground clearance area 12x20mm*

W3043 GPS:

Optional frequency  
fine tuning done with  
metal strip on board



**Description:** Monopole GPS, BT, WiFi

**Series :** Chip Antenna

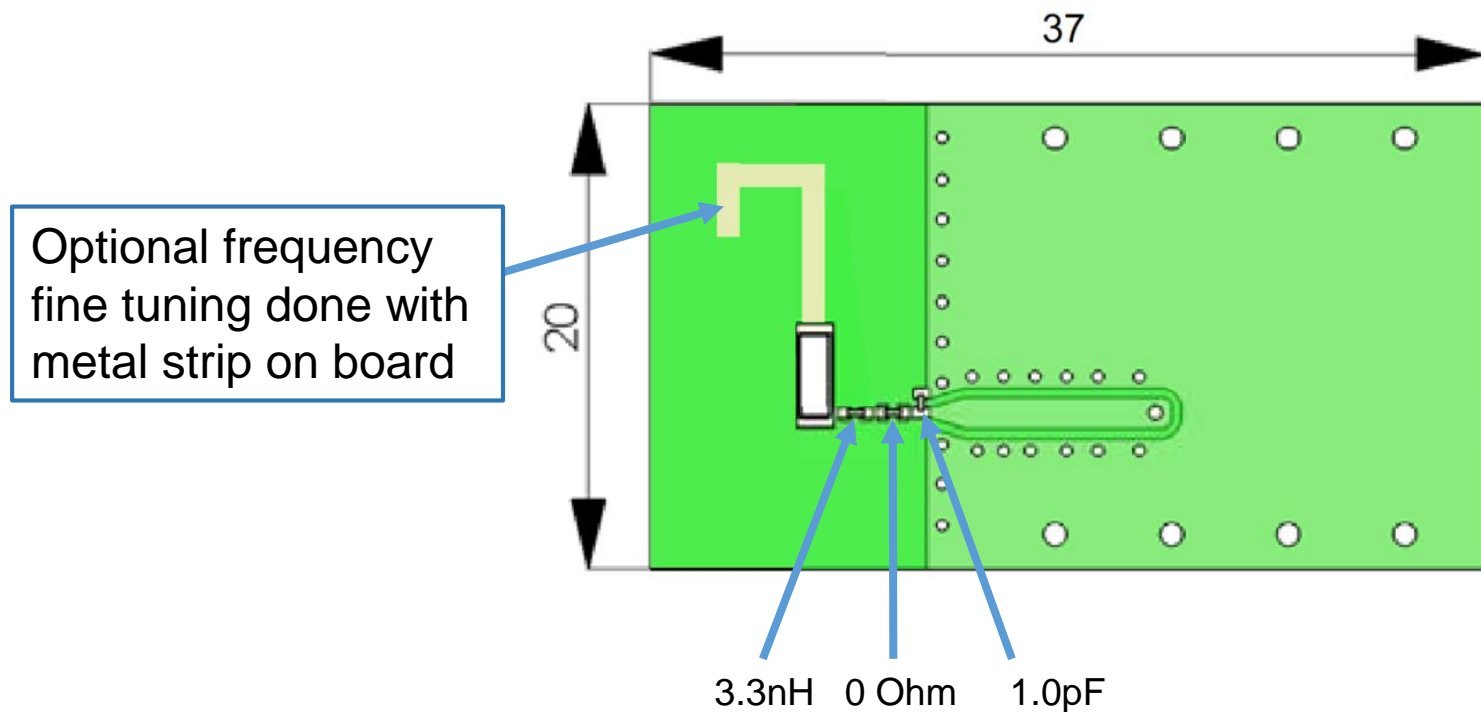
**PART NUMBER:** W3043

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### 3.TYPICAL ELECTRICAL CHARACTERISTICS(T=25 °C)

*Measured on 37x20mm test board, ground clearance area 12x20mm*

W3043 BT, WLAN, WiFi 2.4GHz:



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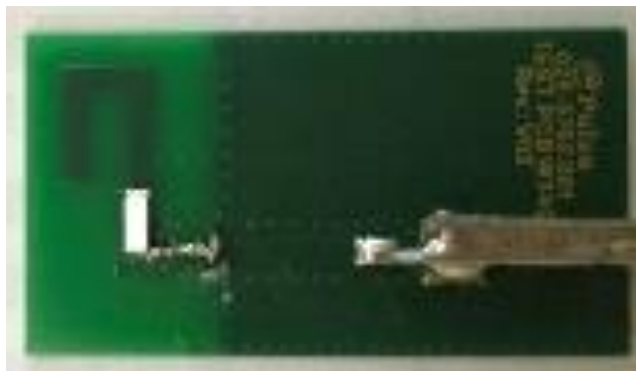
**Description:** Monopole GPS, BT, WiFi

**Series :** Chip Antenna

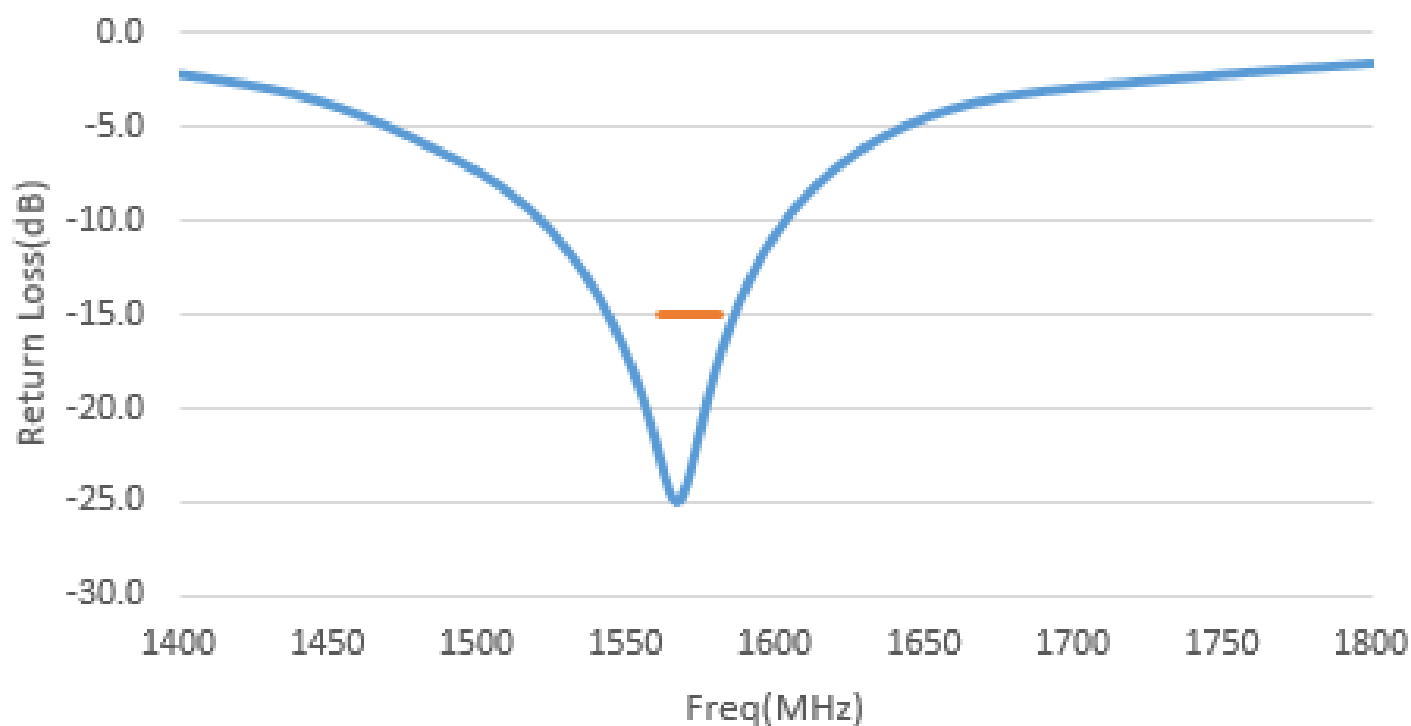
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## CHARTS

Test set up



Return Loss @ GPS



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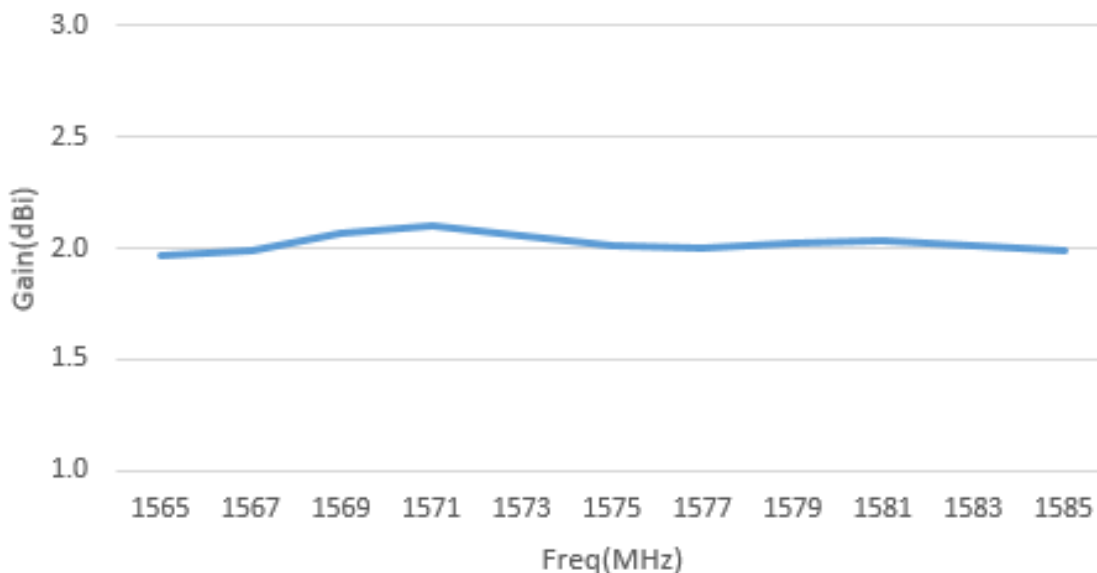
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**Series :** Chip Antenna

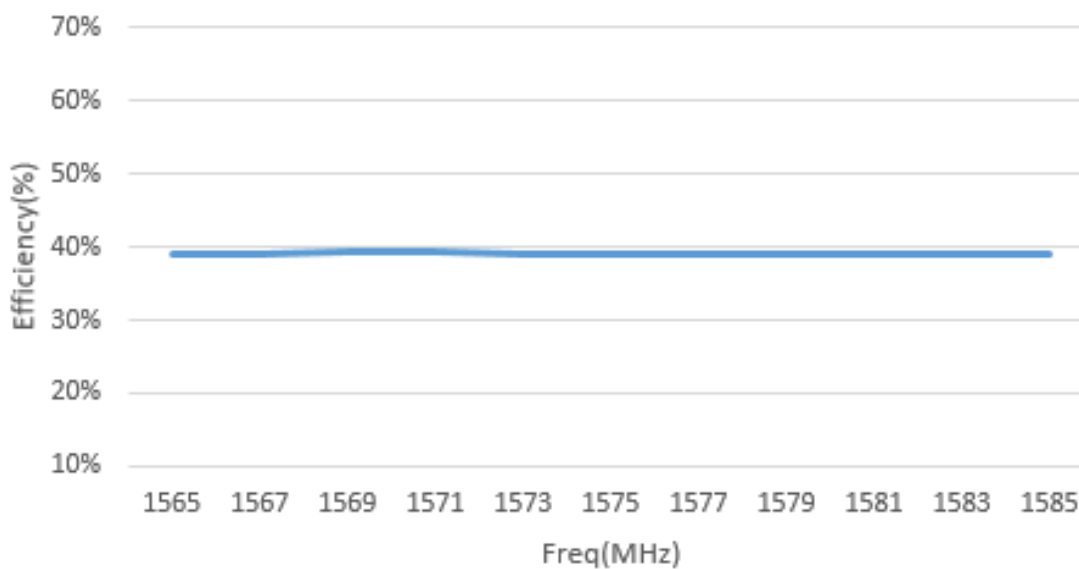
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## CHARTS

### Peak gain @ GPS



### Efficiency @ GPS



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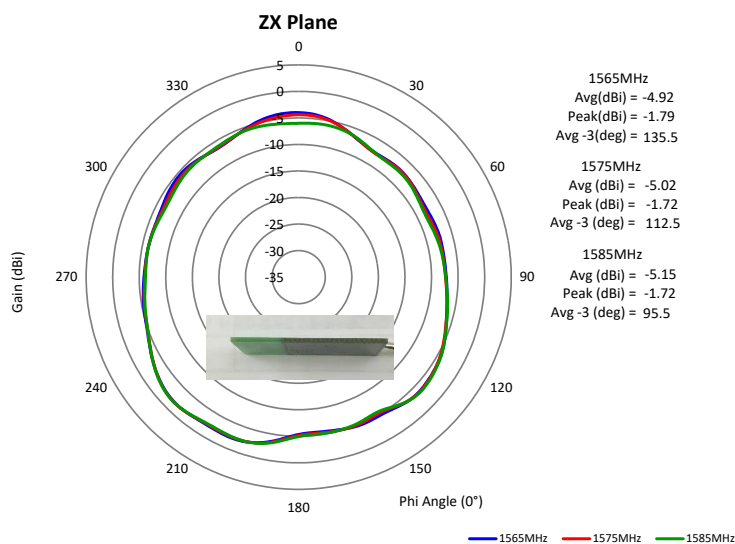
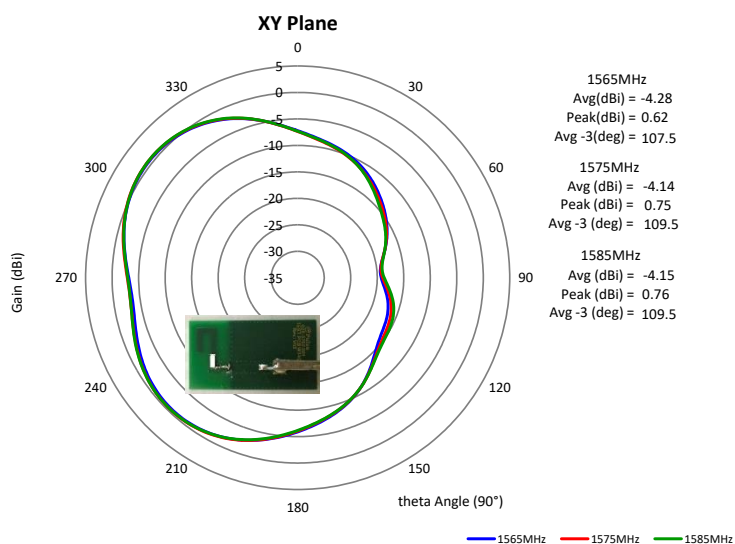
## Description: Monopole GPS, BT, WiFi

Series : Chip Antenna

PART NUMBER: W3043

### CHARTS

#### Radiation pattern @ GPS



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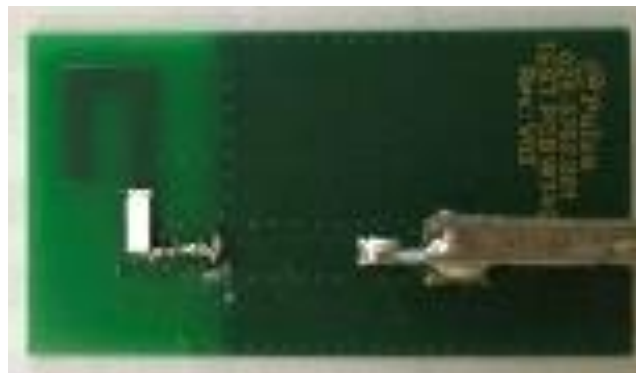
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**Series :** Chip Antenna

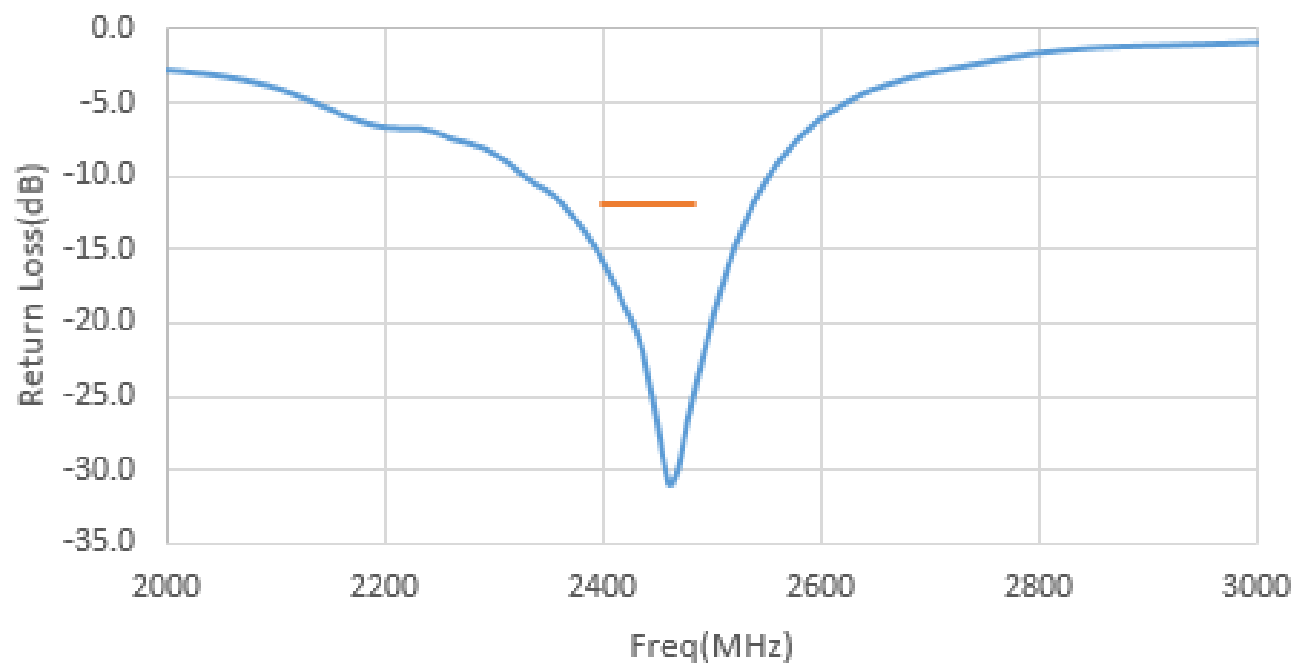
**PART NUMBER:** W3043

## CHARTS

Test set up



Return Loss @ Wifi



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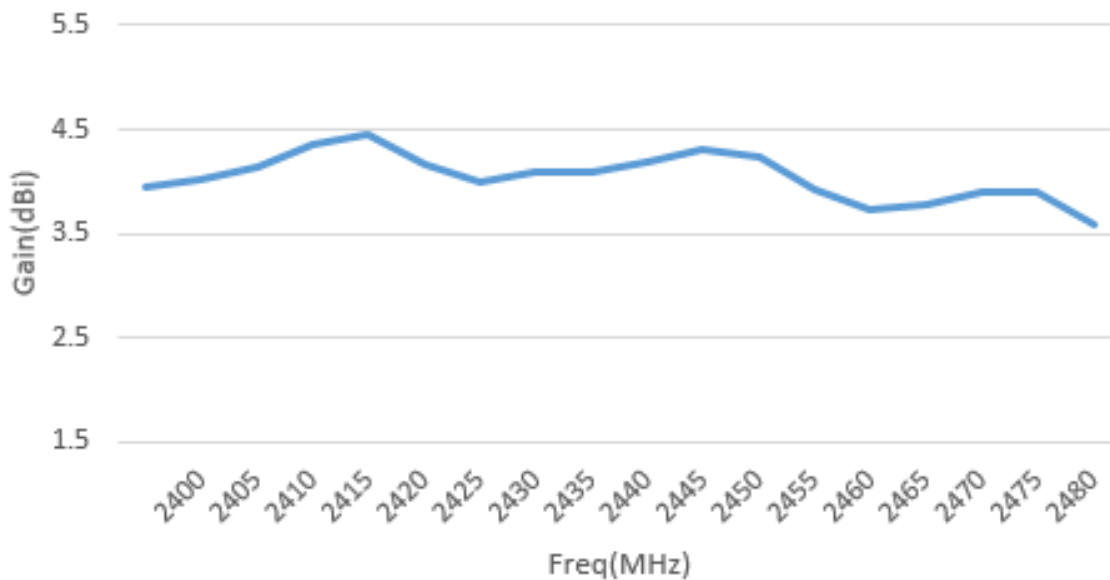
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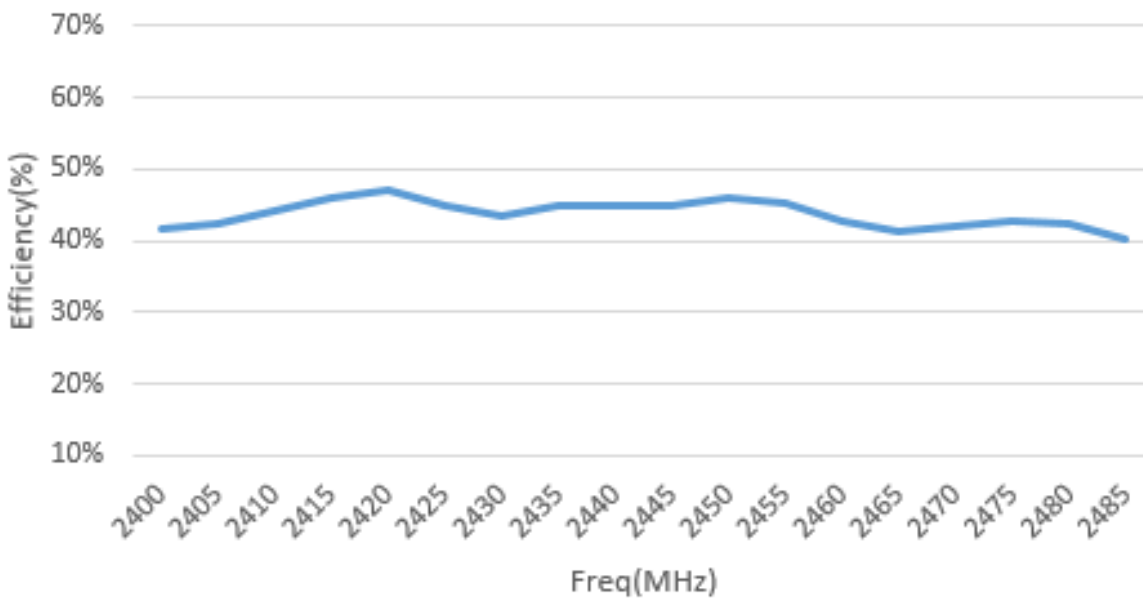
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## CHARTS

### Peak gain @ Wifi



### Efficiency @ Wifi



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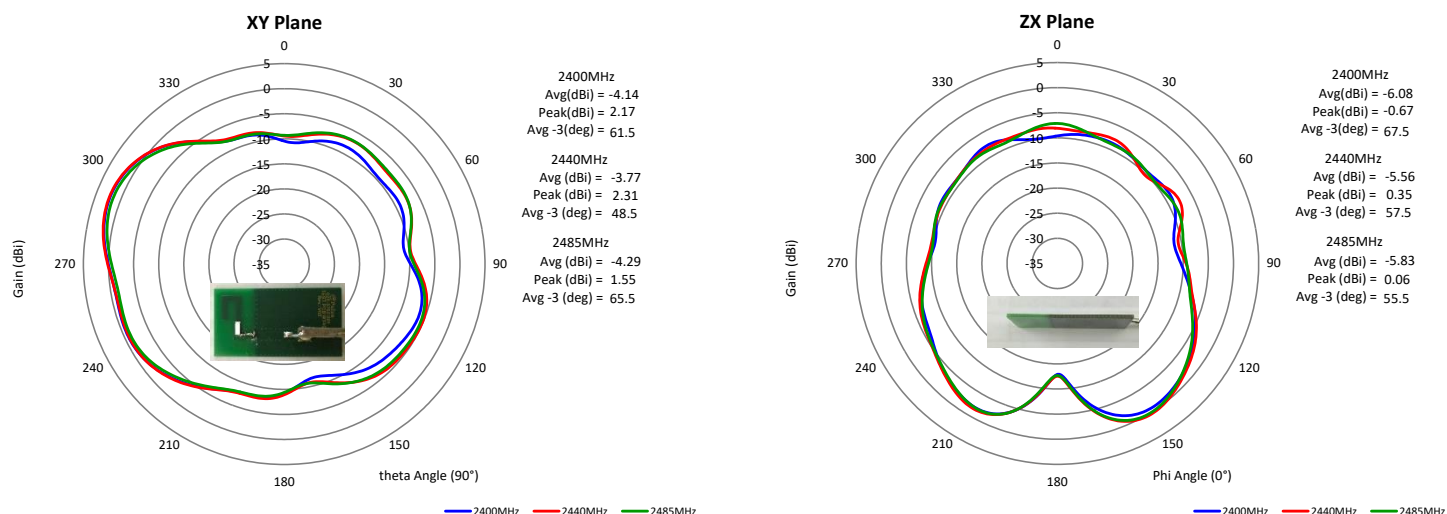
## Description: Monopole GPS, BT, WiFi

Series : Chip Antenna

PART NUMBER: W3043

### CHARTS

#### Radiation pattern @ Wifi



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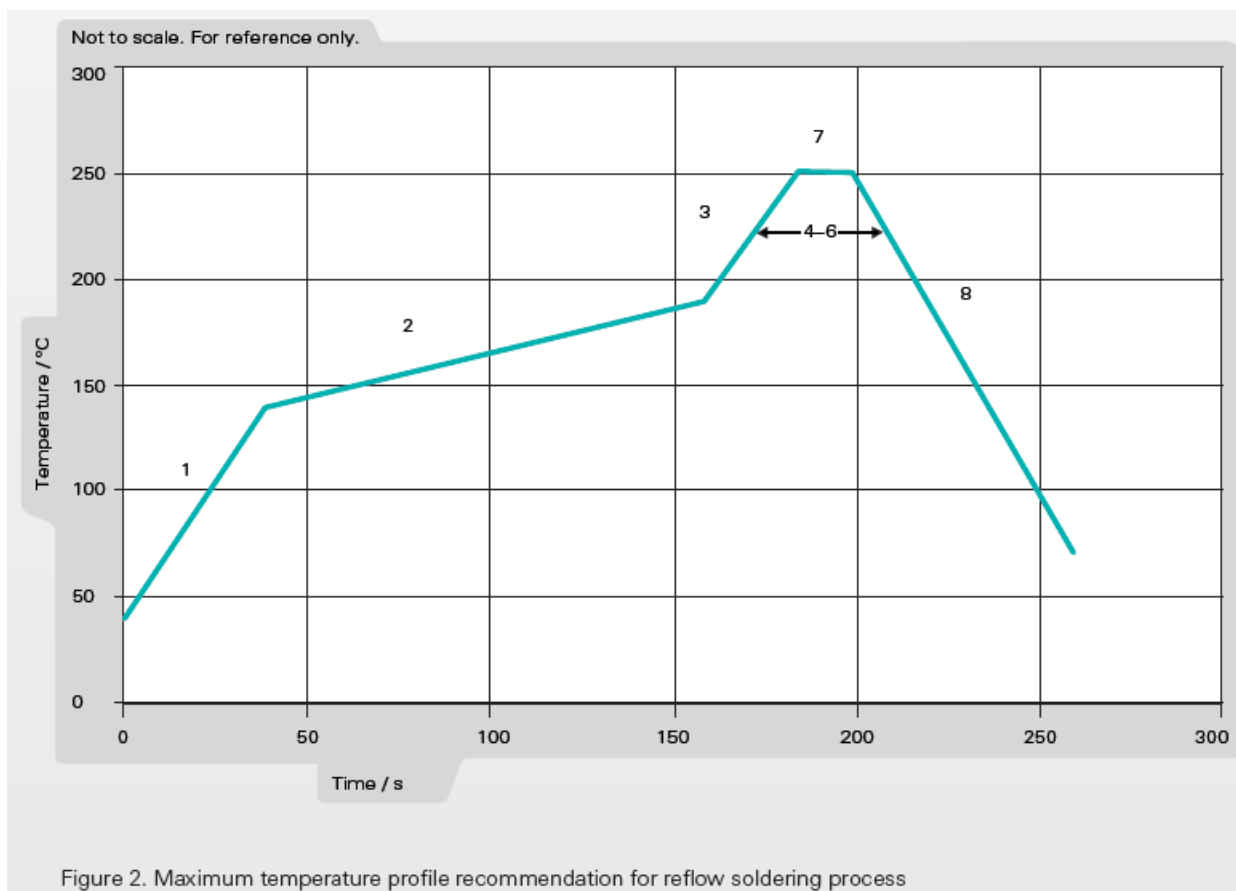
**Description:** Monopole GPS, BT, WiFi

**Series :** Chip Antenna

**PART NUMBER:** W3043

### Recommendation for reflow soldering process

|   | Method of heat transfer                    | Controlled hot air convection |
|---|--|-------------------------------|
| 1 | Average temperature gradient in preheating | 2.5 °C/s                      |
| 2 | Soak time                                  | 2-3 minutes                   |
| 3 | Max temperature gradient in reflow         | 3 °C/s                        |
| 4 | Time above 217 °C                          | Max 60 sec                    |
| 5 | Time above 230 °C                          | Max 50 sec                    |
| 6 | Time above 250 °C                          | Max 10 sec                    |
| 7 | Peak temperature in reflow                 | 260 °C for 5 seconds          |
| 8 | Temperature gradient in cooling            | Max -5 °C/s                   |



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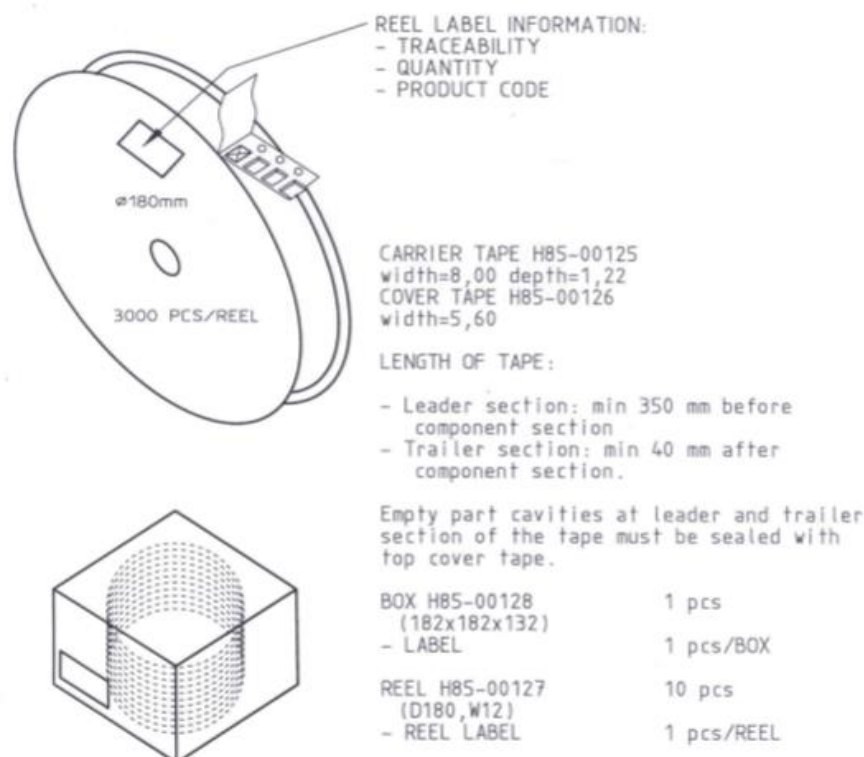
**Series :** Chip Antenna

**PART NUMBER:** W3043

## PACKAGING

Tape and reel packing is used.

3000pcs antenna/reel, 10 reels/inbox, 2 inbox(60000pcs antenna)/outbox.



**LEVEL**

1

**NOT MOISTURE SENSITIVE**

These Devices do not require special storage conditions provided:

1. They are maintained at conditions equal to or less than 30°C and 85% RH.
2. They are solder reflowed at a peak body temperature which does not exceed 260°C.

Note: Level and body temperature defined by IPC/JEDEC J-STD-020

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