

Series : Chip Antenna

## Description: Monopole GPS, BT, WiFi

### 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

#### Issue: 1920

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Description: Monopole GPS, BT, WiFi

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### **ELECTRICAL SPECIFICATIONS**

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

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	

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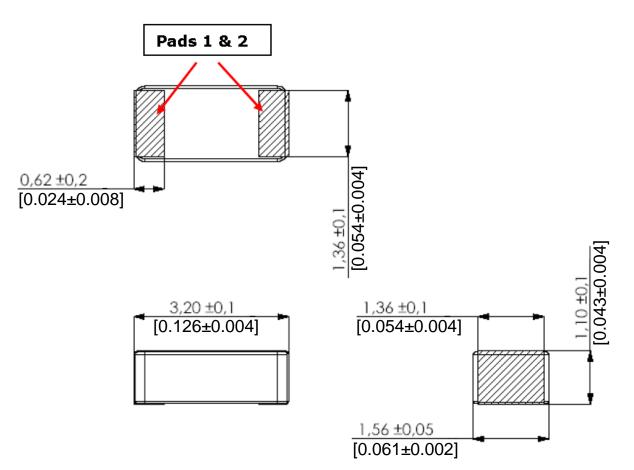


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**MECHANICAL DRAWING AND TERMINAL CONFIGURATION** 



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. Either of terminals 1 or 2 can be Feed / Support		

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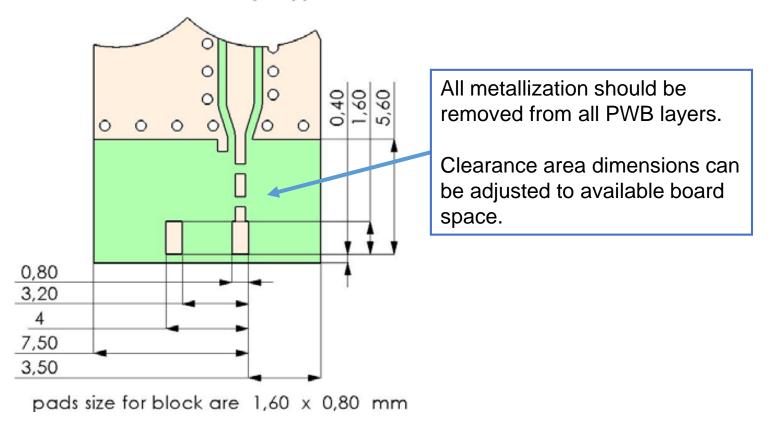
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### **MECHANICAL DRAWING AND TERMINAL CONFIGURATION**

## **1. GROUND CLEARANCE AREA**

Pad dimensions in top copper



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

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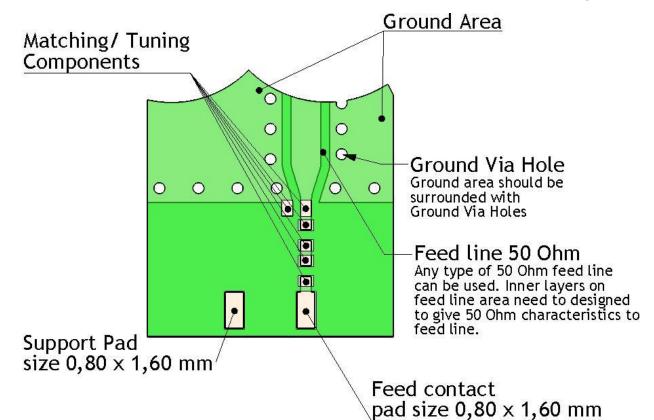
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**MECHANICAL DRAWING AND TERMINAL CONFIGURATION** 

## 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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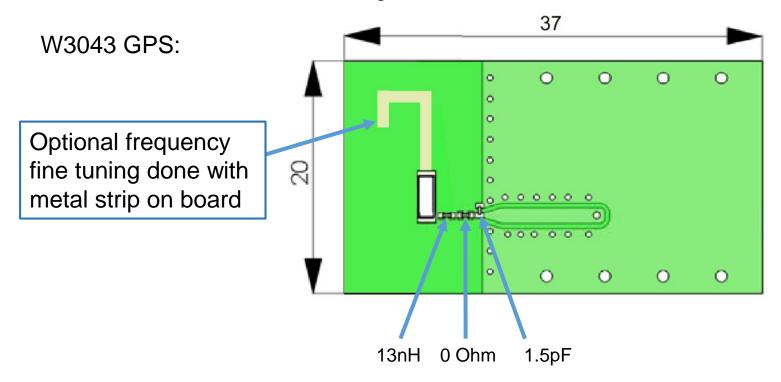
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### **MECHANICAL DRAWING AND TERMINAL CONFIGURATION**

3.TYPICAL ELECTRICAL CHARACTERISTICS(T=25 °C) Measured on 37x20mm test board, ground clearance area 12x20mm



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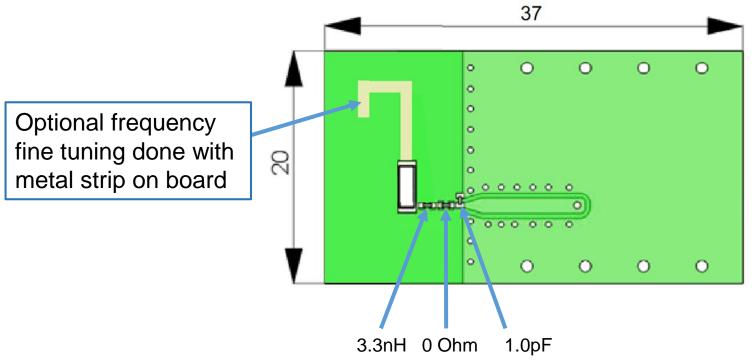
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**MECHANICAL DRAWING AND TERMINAL CONFIGURATION** 

3.TYPICAL ELECTRICAL CHARACTERISTICS(T=25 °C) Measured on 37x20mm test board, ground clearance area 12x20mm

W3043 BT, WLAN, WiFi 2.4GHz:



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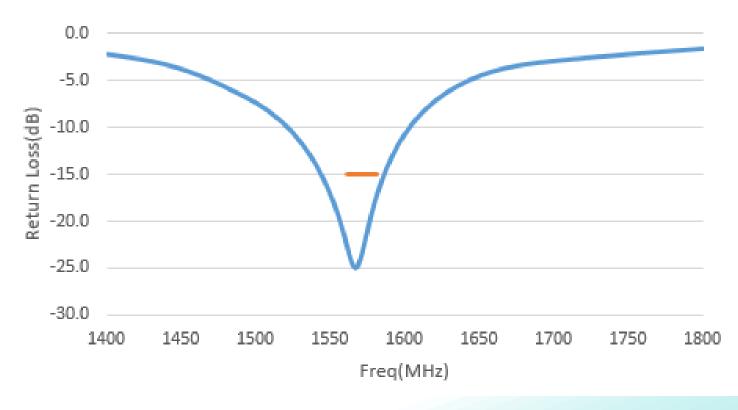
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### **CHARTS**

Test set up



## Return Loss @ GPS



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RóHS

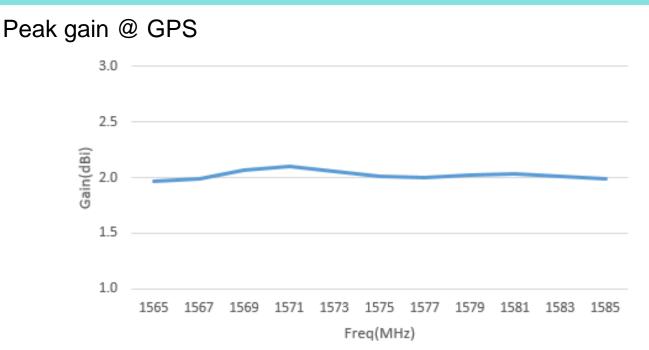


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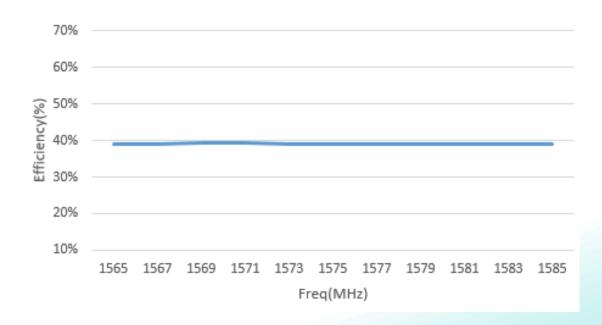
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### **CHARTS**



## Efficiency @ GPS



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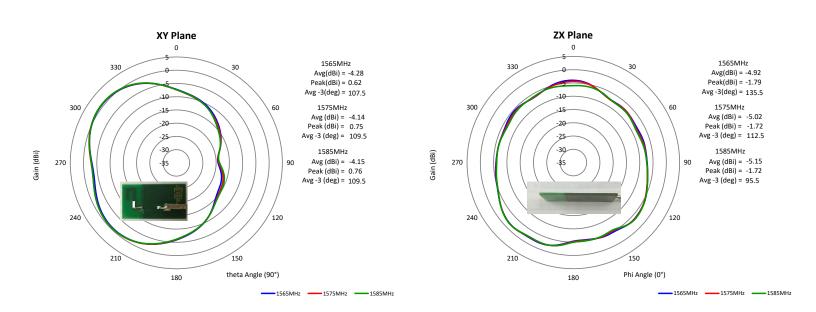
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### **CHARTS**

## Radiation pattern @ GPS



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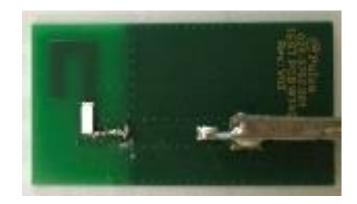
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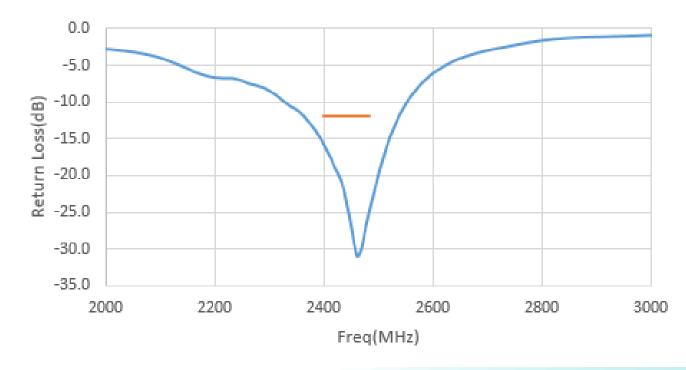
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### CHARTS

## Test set up



## Return Loss @ Wifi



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## 70% 60% 50% 40% 30% 20% 10% 20% 10% 20% Freq(MHz)

## Efficiency @ Wifi

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RoHS



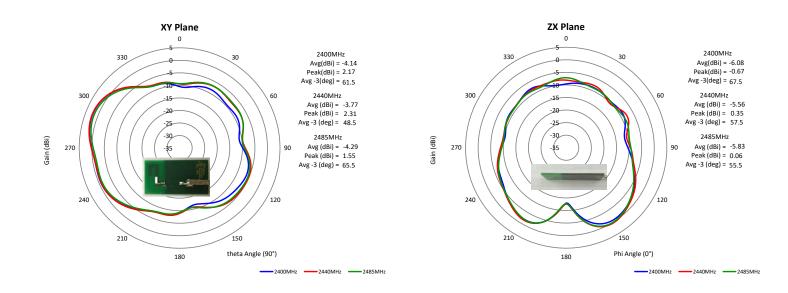
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### **Recommendation for reflow soldering process**

	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

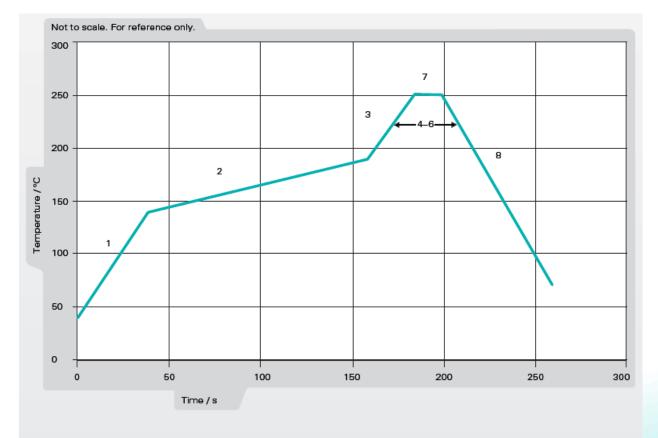


Figure 2. Maximum temperature profile recommendation for reflow soldering process

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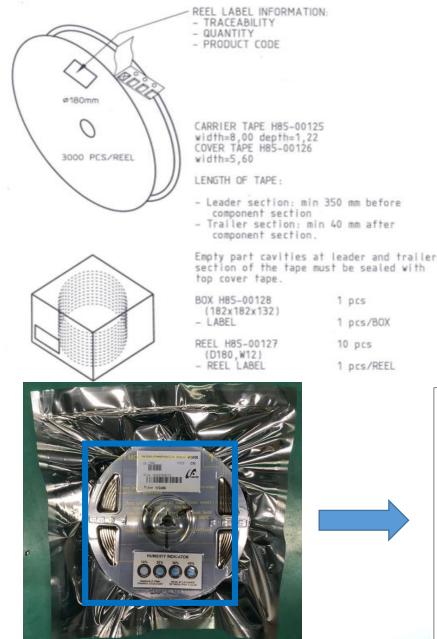
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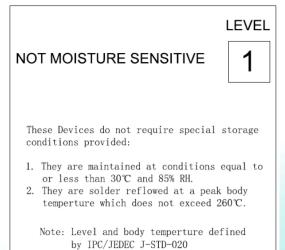
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### PACKAGING

Tape and reel packing is used. 3000pcs antenna/reel, 10 reels/inbox, 2 inbox(60000pcs antenna)/outbox.





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