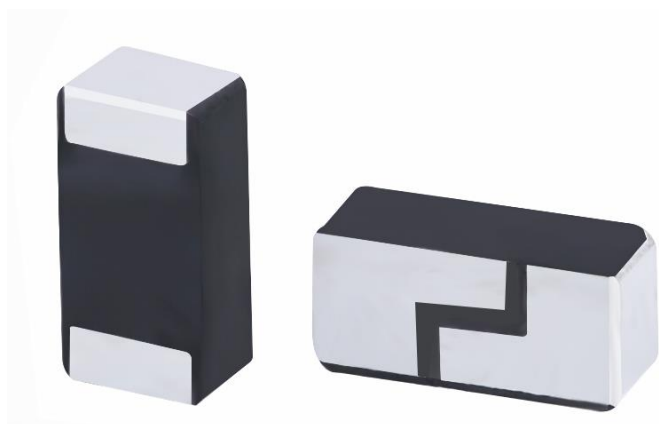


**Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area**

**Series: Chip Antenna**

**PART NUMBER: W3008C**



### Features:

- 2400-2483.5MHz
- Size: 3.2 x 1.6 x 1.1mm
- Efficiency: 68 %
- Gain: 1.3 dBi
- Polarization: Linear
- Power Handling: 5W
- RoHS Compliant
- Moisture Sensitivity Level MSL1

### Applications:

- Bluetooth, BLE, Zigbee, WiFi
- 2.4GHz ISM band radios

All dimensions are in mm / inches

Issue: 1946

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Pulse GmbH & Co, KG  
Zeppelinstrasse 15  
Herrenberg, Germany  
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.  
99 Huo Ju Road(#29 Bldg, 4<sup>th</sup> Phase  
Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



**Series: Chip Antenna****Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area****PART NUMBER: W3008C****ELECTRICAL SPECIFICATIONS**

Frequency	2400-2483.5MHz
Nominal Impedance	50 $\Omega$
Return Loss	-8dB
Radiation Pattern	Omni
Gain	1.3dBi
Efficiency	68%
Polarization	Linear
Power Withstanding	5W

**MECHANICAL SPECIFICATIONS**

Weight	0.03 g
Overall Length	3.2 [0.126] MM [INCHES]
Over all width	1.6 [0.063] MM [INCHES]
Over all thickness	1.1 [0.043] MM [INCHES]
MSL (Moisture Sensitivity Level)	1

**ENVIRONMENTAL SPECIFICATIONS**

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

(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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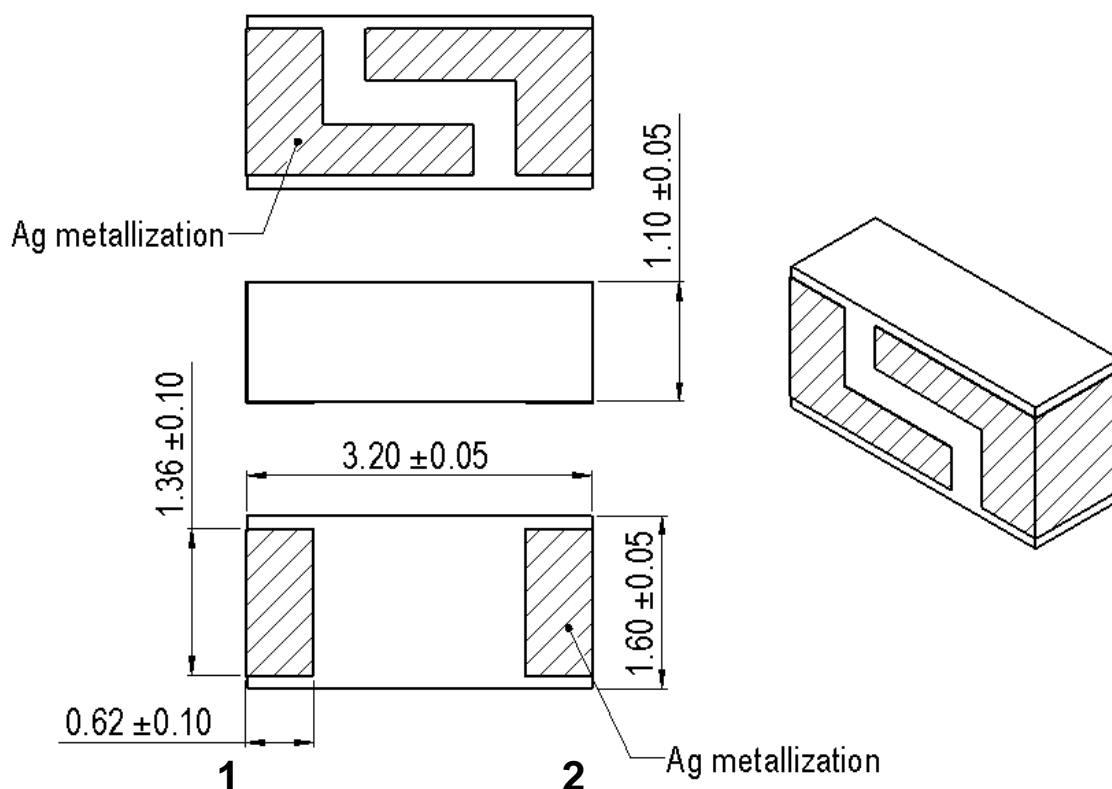
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Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## MECHANICAL DRAWING



No.	Terminal Name	Terminal Dimensions
1	Feed /GND	0.62 x 1.36 mm
2	Feed /GND	0.62 x 1.36 mm

Antenna is symmetrical, either one of pads 1 or 2 can be used as feed terminal

Note: This type of antenna is called loaded PIFA. One pad (on the bottom of the ceramic chip antenna) that feedline and GND are connected is a basic PIFA antenna structure. And, another pad on the other side that only GND is connected is for capacitive loading. Loaded capacitive value is optimized by the gap distance between two pads on the top surface. In PIFA, there is short mechanism usually in proximity to feed. This RF shorting affects impedance and current distribution mechanism of antenna. The actual antenna top face can seem to be mirrored, however it can be used same as the non-mirrored version. Please follow the design recommendation specified in this data sheet for either case.

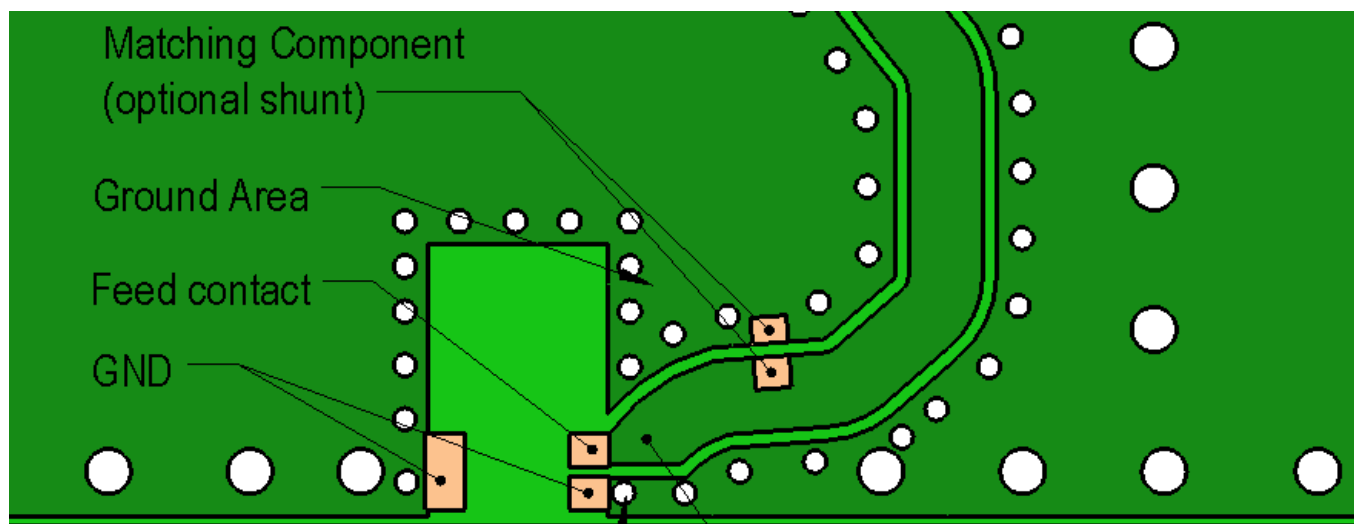
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

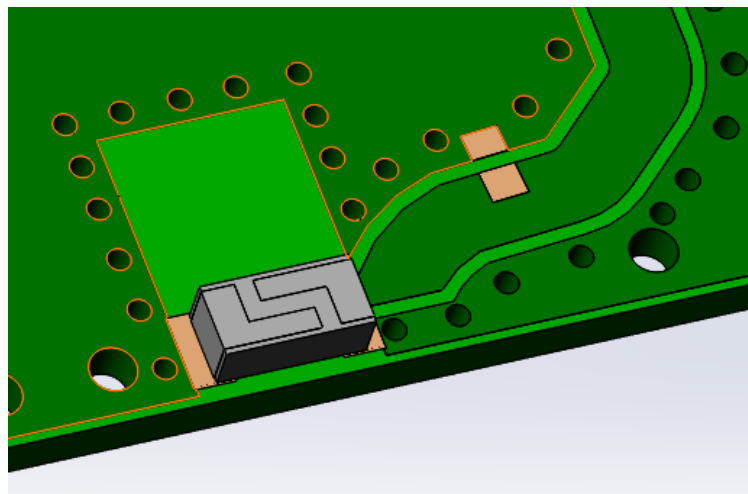
## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

*Ground cleared under antenna, clearance area 4 mm x 6.25mm*



Ground Via Hole  
Ground area should be  
surround with ground via holes

Feed line 50 Ohm  
Any type of 50 Ohm feed line  
can be used. inner layers on  
feed line area need to designed  
to give 50 Ohm characteristics  
to feed line.



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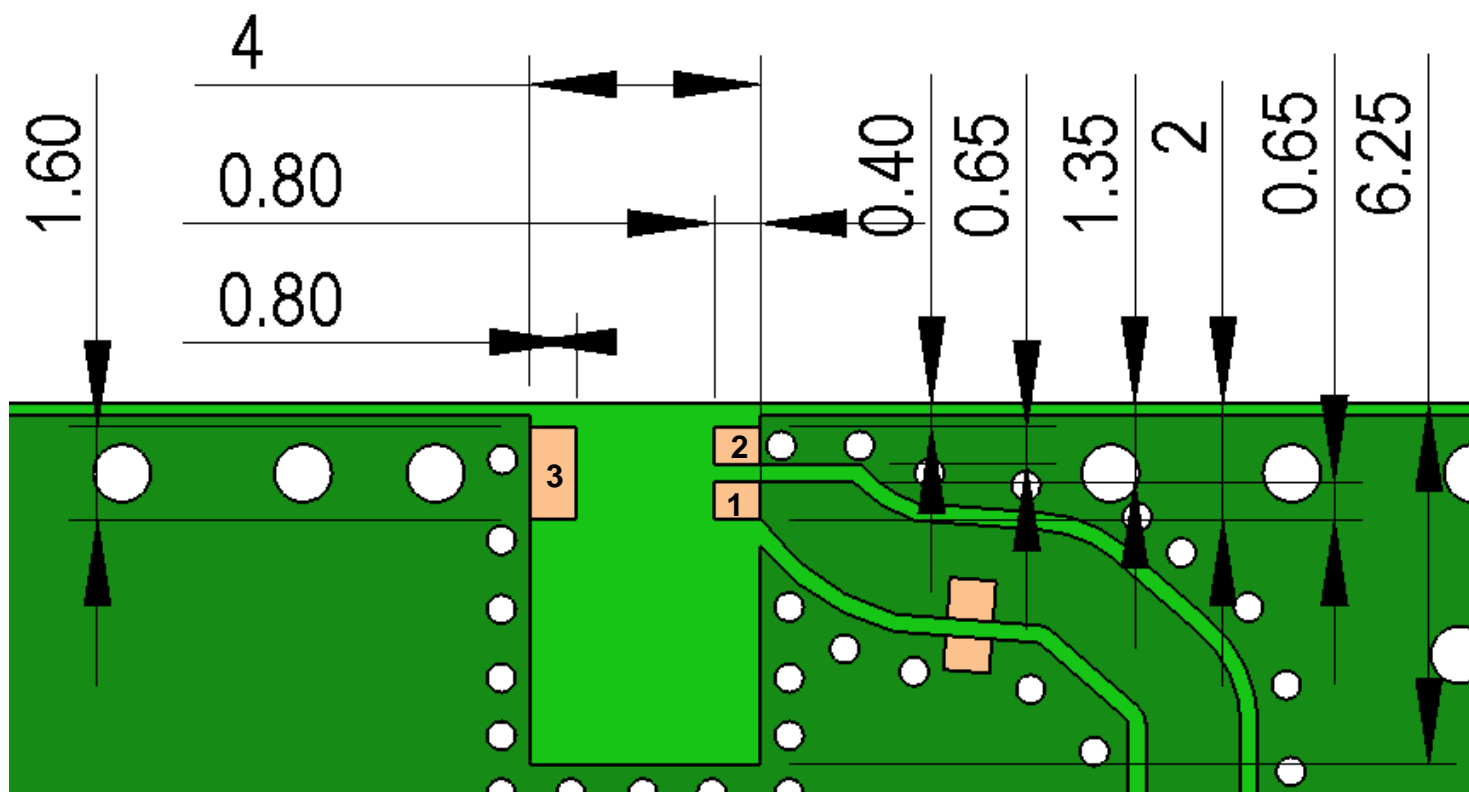
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

**Recommended Antenna Pad Dimensions on PCB Layout (top surface)**  
**Ground cleared under antenna, clearance area 4 mm x 6.25 mm**



PCB contact pads		
No.	Terminal Name	Terminal Dimensions
1	Feed	0,80 x 0,65 mm
2	GND	0,80 x 0,65 mm
3	GND	0,80 x 1,60 mm

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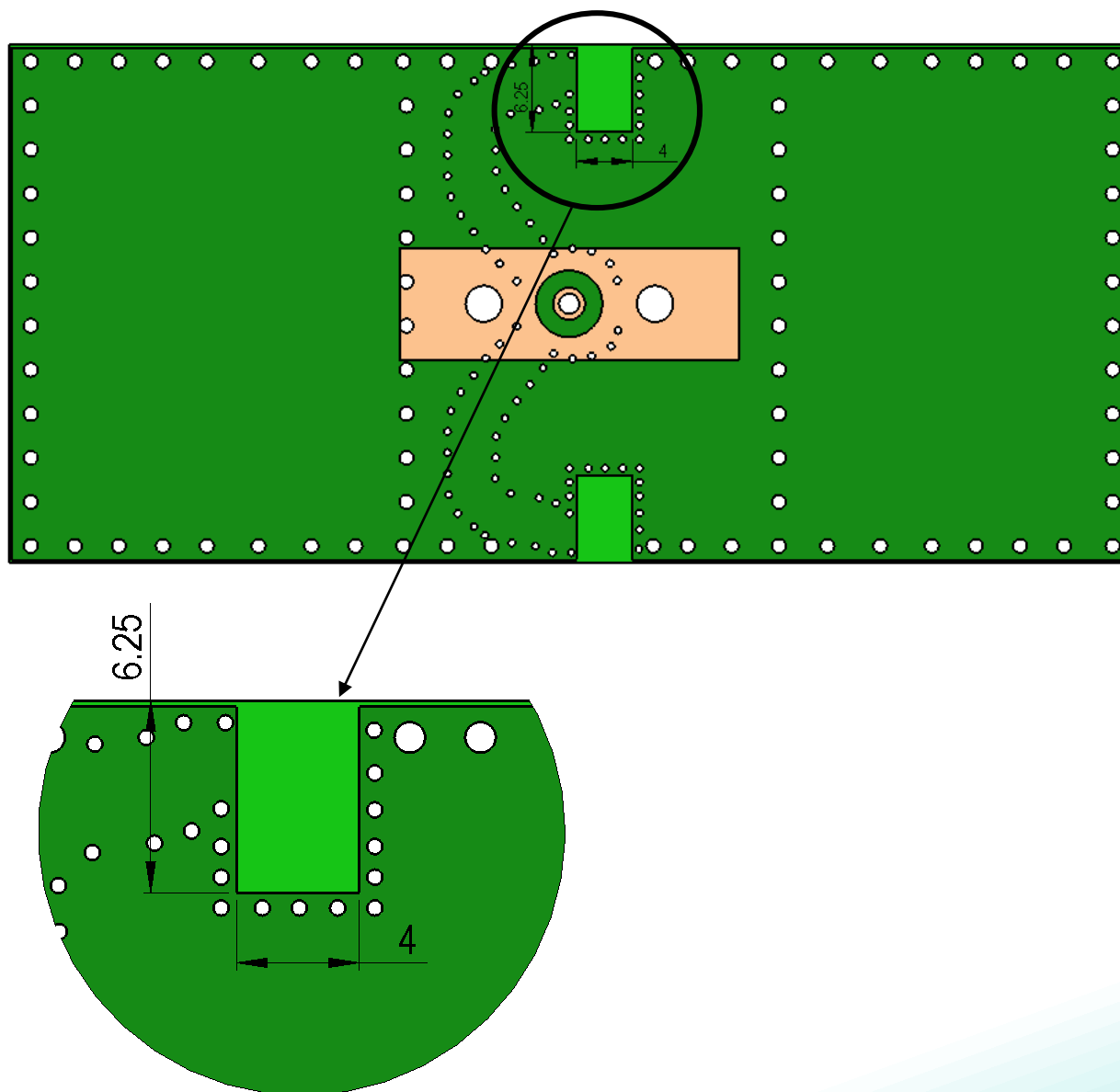
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

**Recommended Antenna Pad Dimensions on PCB Layout (bottom surface)**  
**Ground cleared under antenna, clearance area 4 mm x 6.25 mm**



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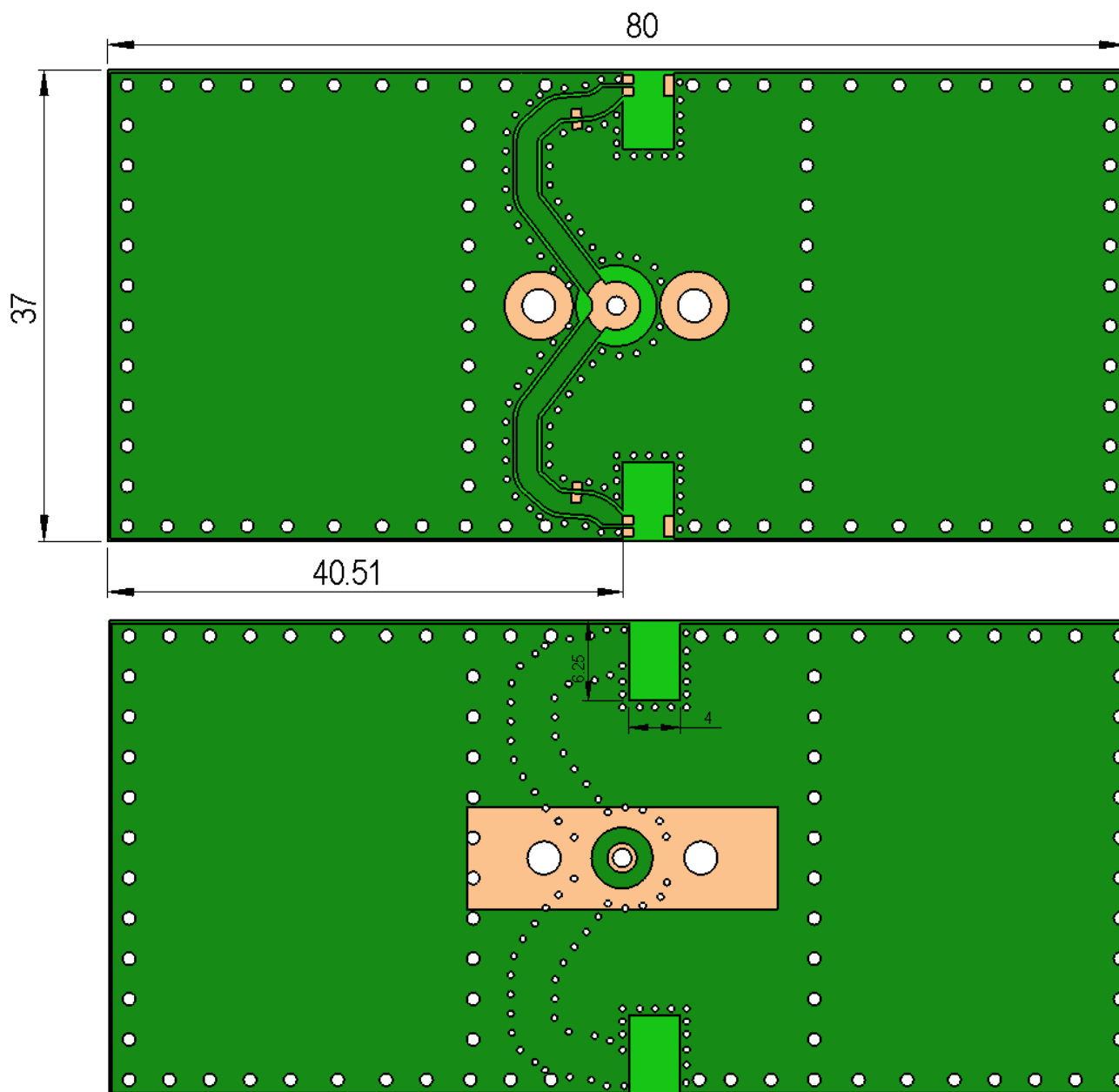
Series: Chip Antenna

Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

PART NUMBER: W3008C

## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

*Recommended test board layout for electrical characteristic measurement, test board outline size 80 x 37mm*



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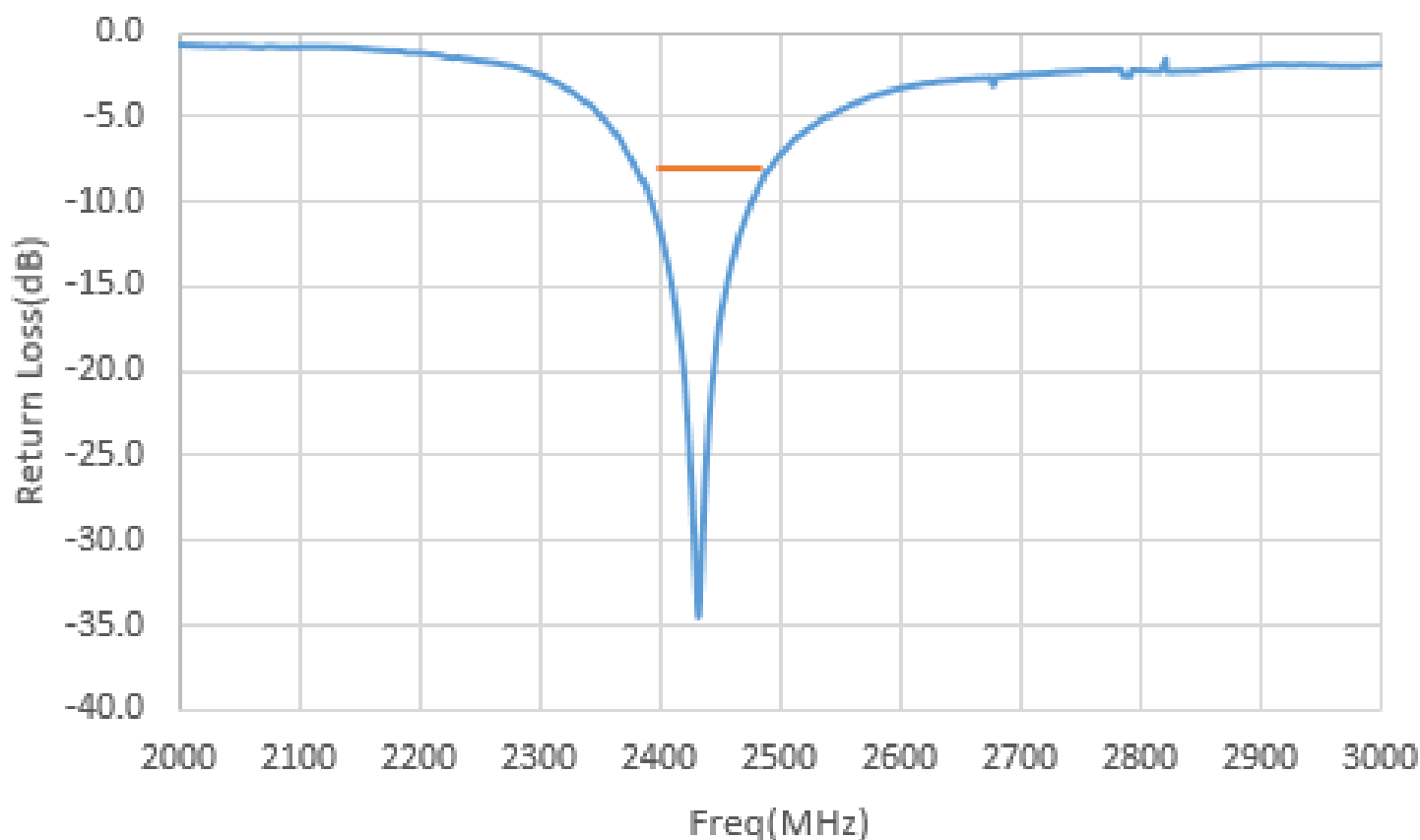
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## CHARTS

### Return loss



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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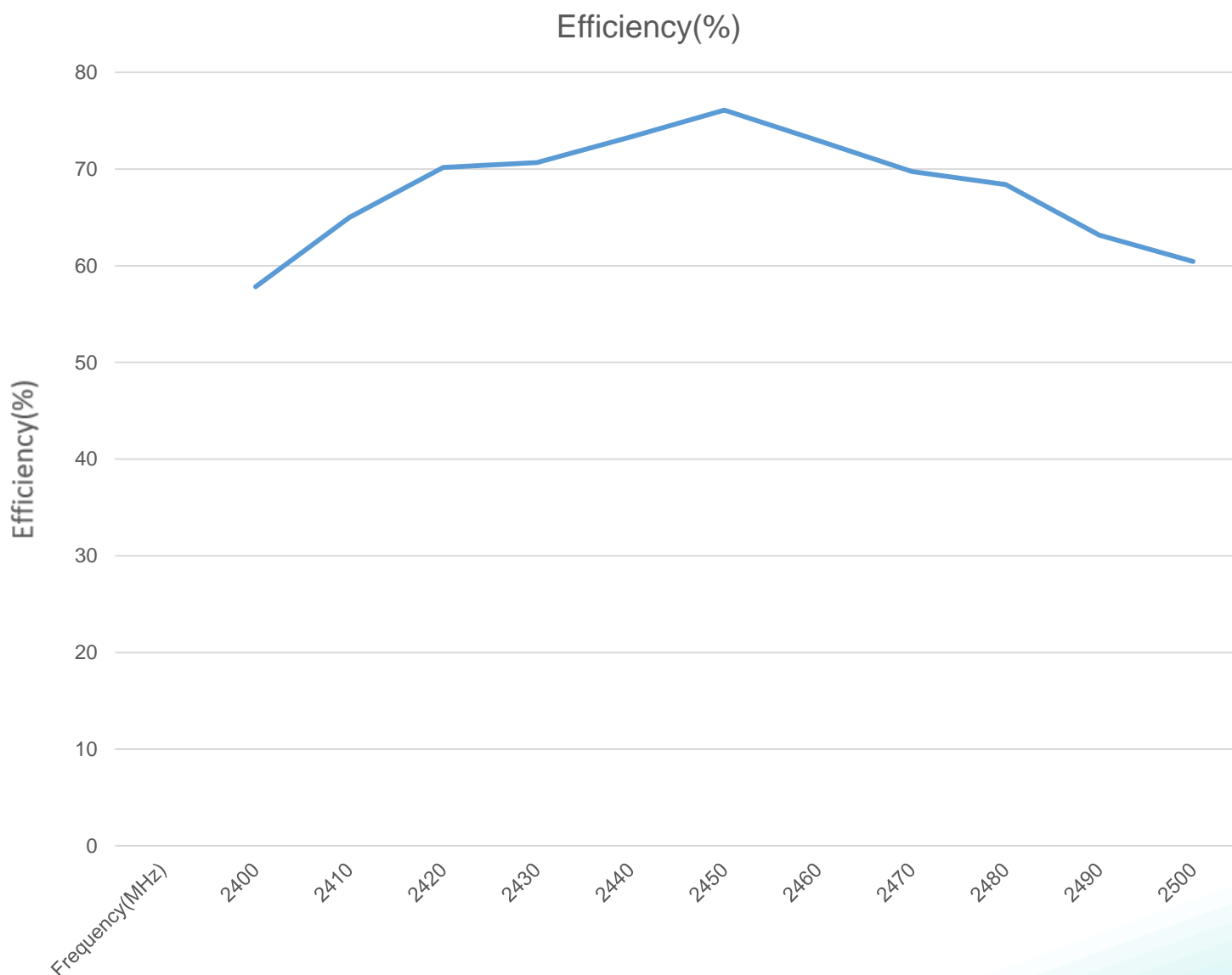


Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## CHARTS



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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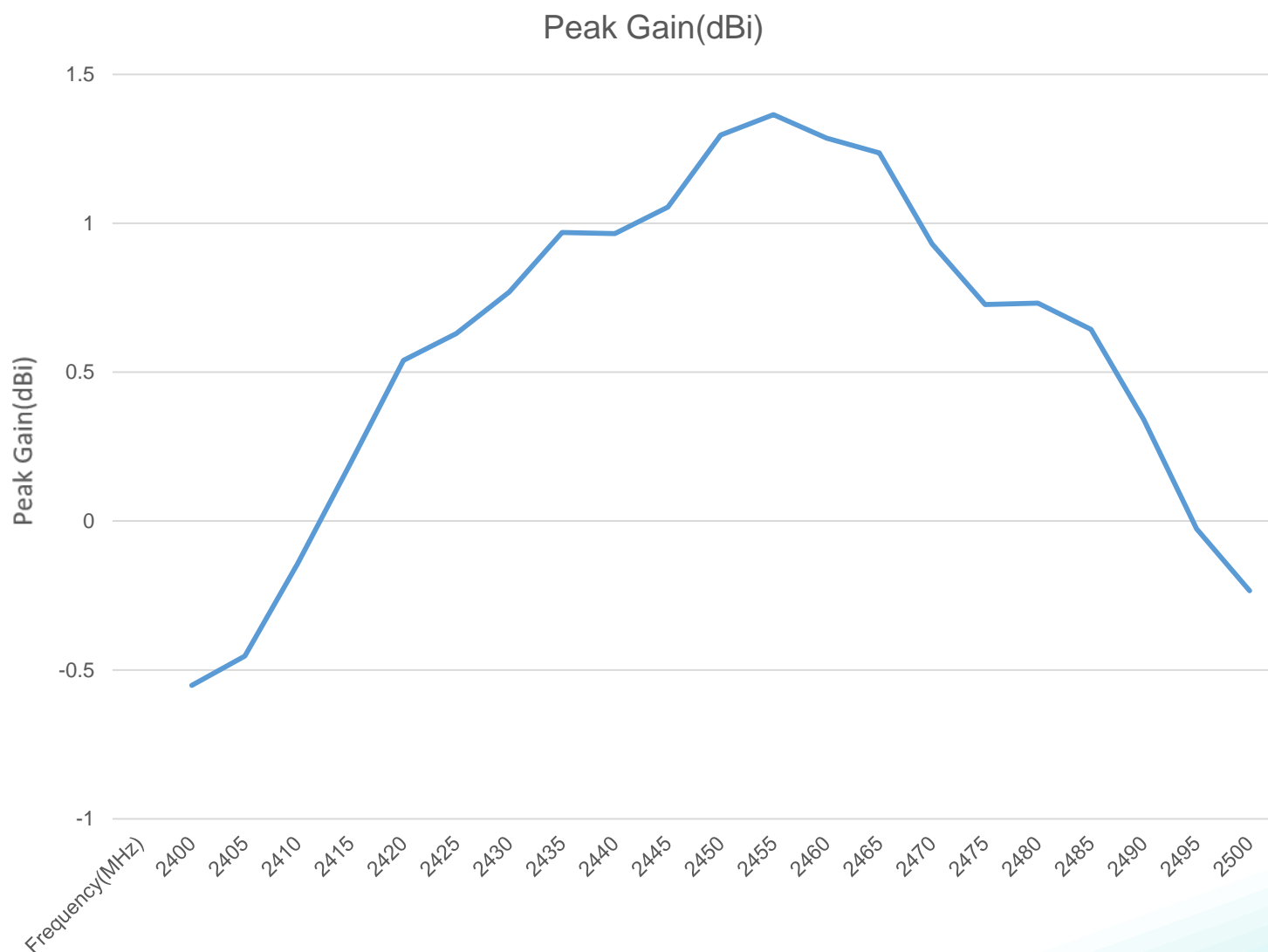
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## CHARTS

### Peak Gain(dBi)



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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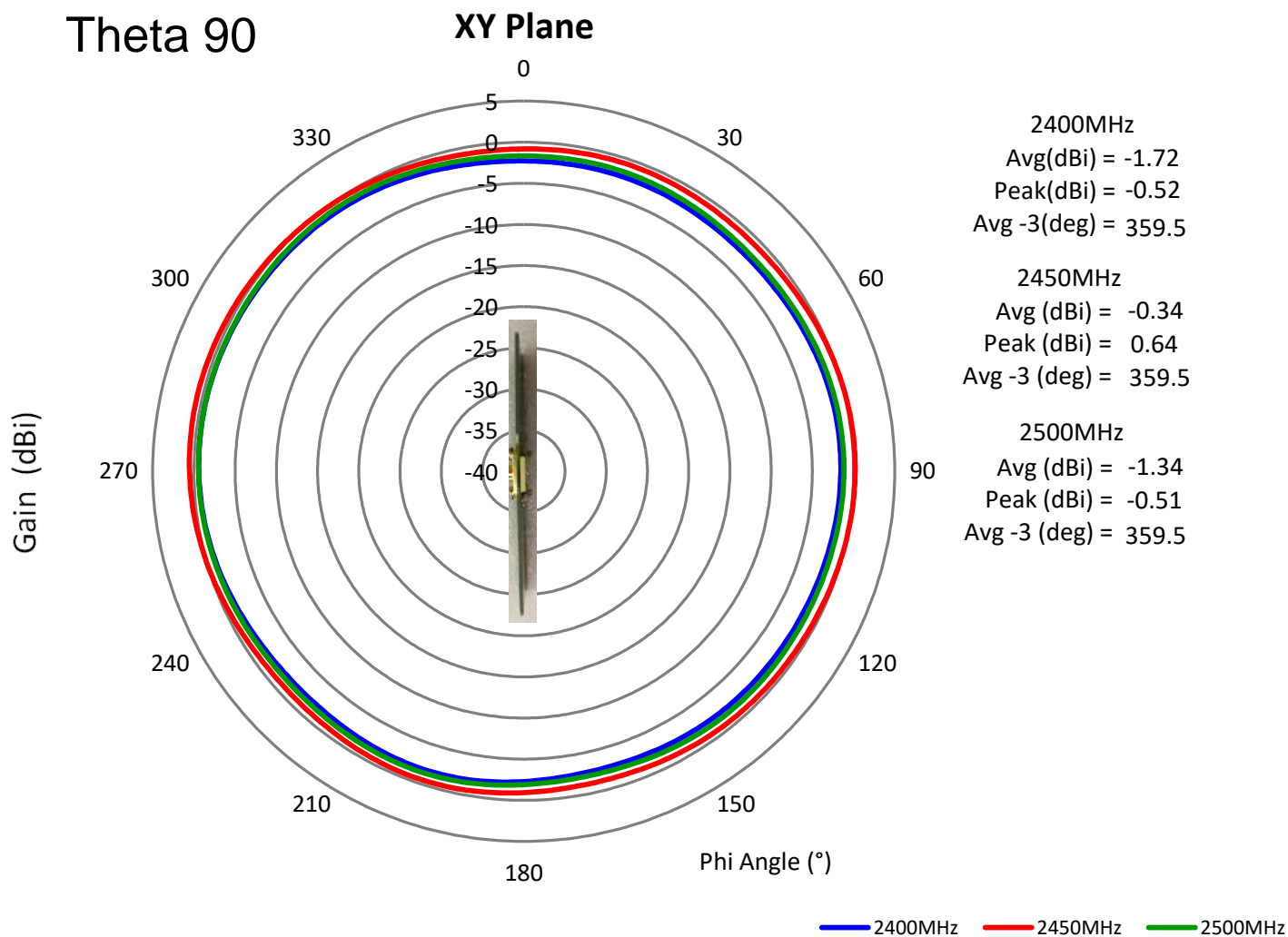
Series: Chip Antenna

Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

PART NUMBER: W3008C

## CHARTS

### Free Space Radiation Pattern



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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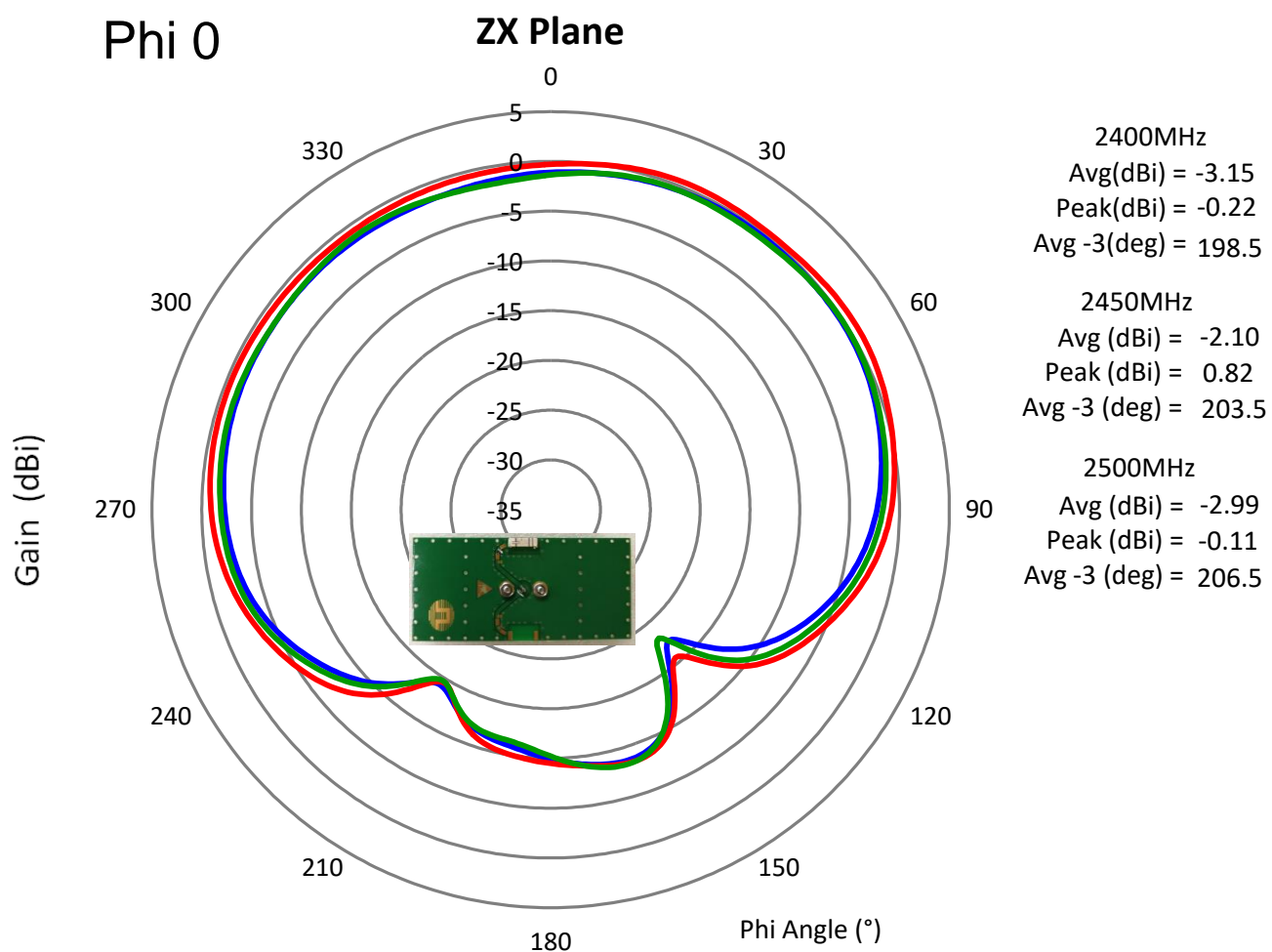
Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

Series: Chip Antenna

PART NUMBER: W3008C

## CHARTS

### Free Space Radiation Pattern



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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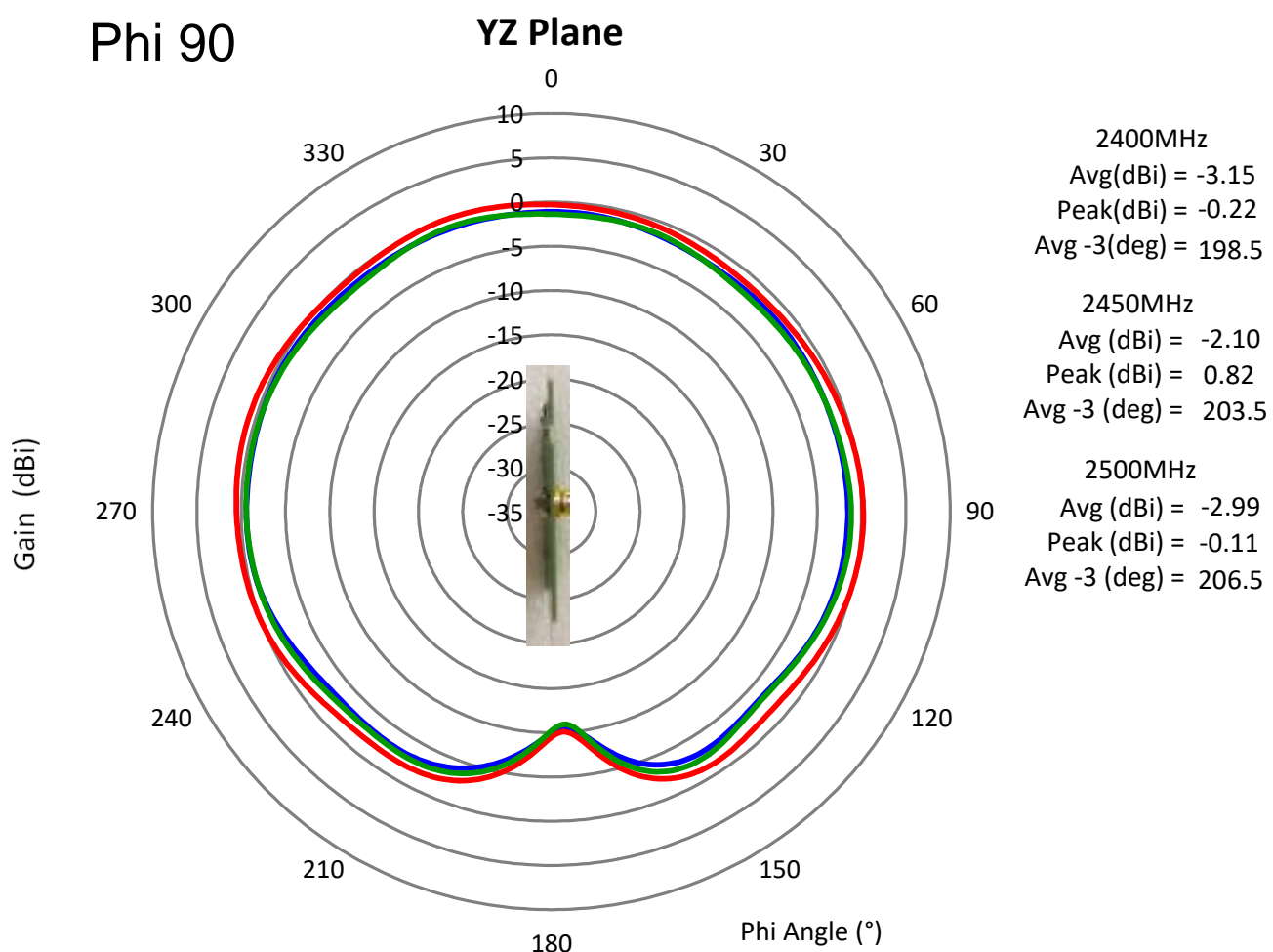
Series: Chip Antenna

Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area

PART NUMBER: W3008C

## CHARTS

### Free Space Radiation Pattern



(\*) All RF parameters measured on 80\*37mm PCB with 4\*6.25mm clearance in free space. No matching component used.

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**Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area**

**Series: Chip Antenna**

**PART NUMBER: W3008C**

### Recommendation for reflow soldering process

Printing stencil thickness 0,15 - 0,25 mm is recommended for the solder paste. The maximum soldering temperature should not exceed 260°C. The temperature profile recommendations for reflow soldering process is presented in the Figures 1 and 2. The reflow profile

presented in figure 1 describes minimum reflow temperatures. The reflow profile presented in figure 2 describes maximum reflow temperatures. located at the center of the coverage area.

	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 30 sec
5	Peak temperature in reflow	230 °C for 10 seconds
6	Temperature gradient in cooling	Max -5 °C/s

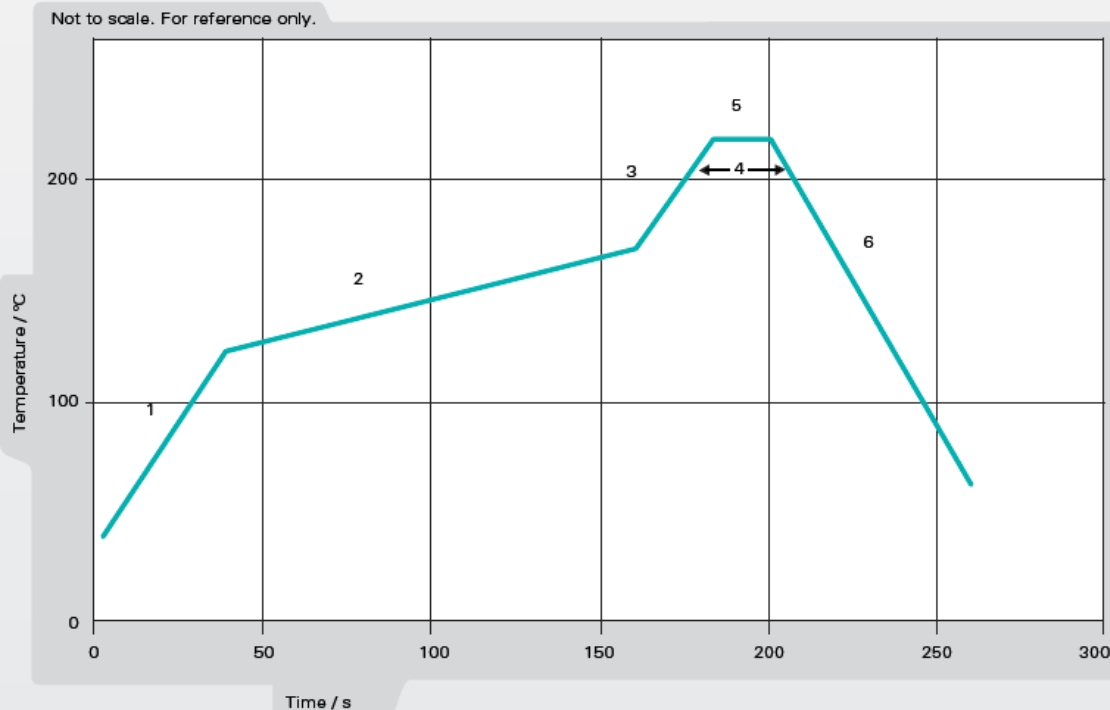


Figure 1. Minimum temperature profile recommendation for reflow soldering process

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**Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area**

**Series: Chip Antenna**

**PART NUMBER: W3008C**

### 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

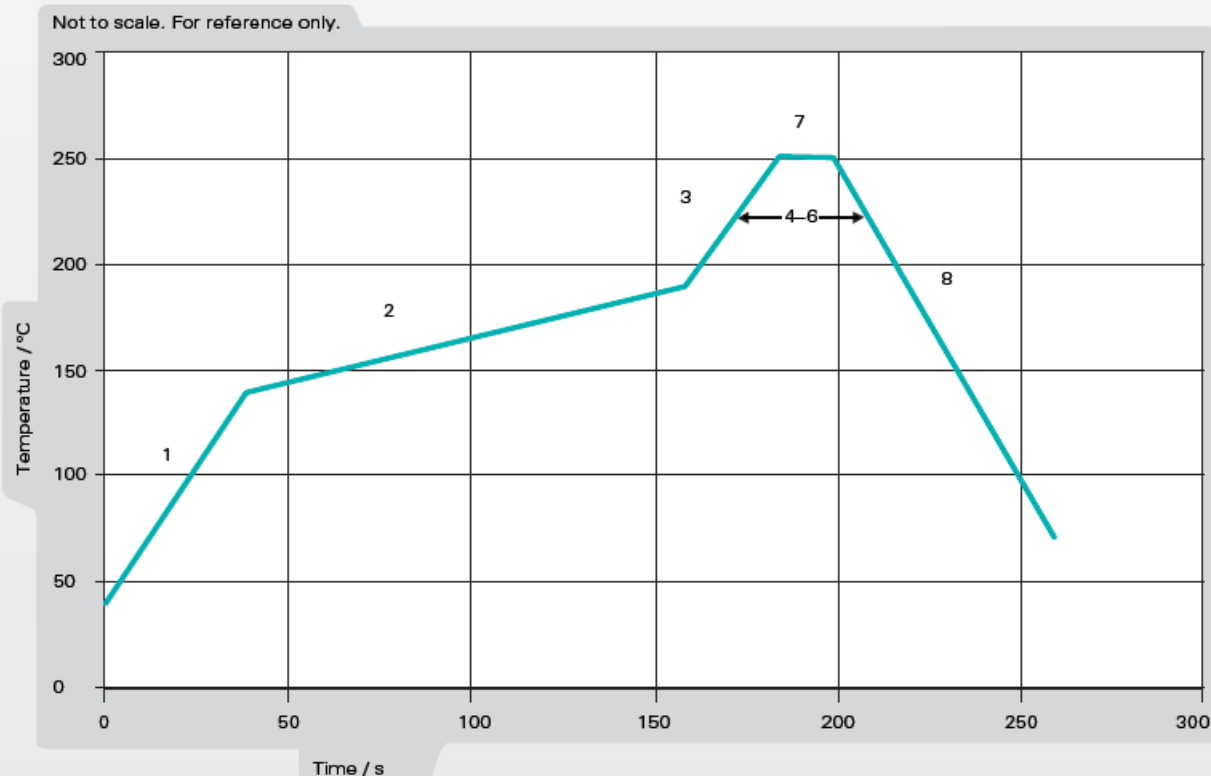


Figure 2. Maximum temperature profile recommendation for reflow soldering process

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**Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area**

**Series: Chip Antenna**

**PART NUMBER: W3008C**

## PACKAGING-1

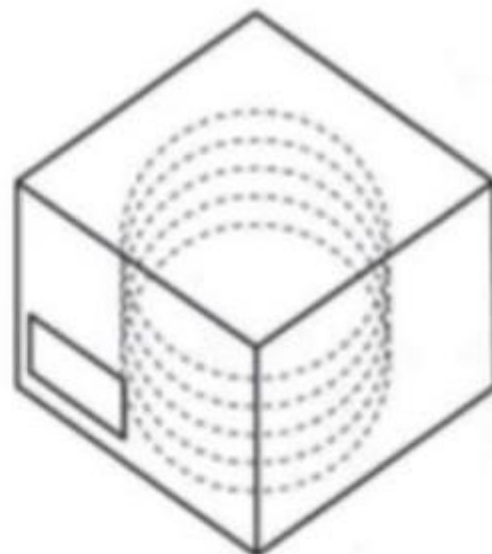
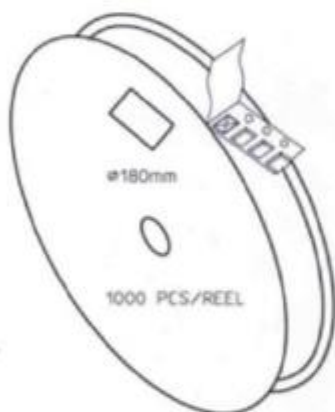
3000pcs antennas per 7" reel

5pcs 7" reel per inner package box

2pcs inner box per out box

Total 30000pcs antenna per out box

Out box size: 390mmx215mmx165mm



**LEVEL**

**NOT MOISTURE SENSITIVE**

**1**

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 1 and body temperature defined by IPC/JEDEC J-STD-020

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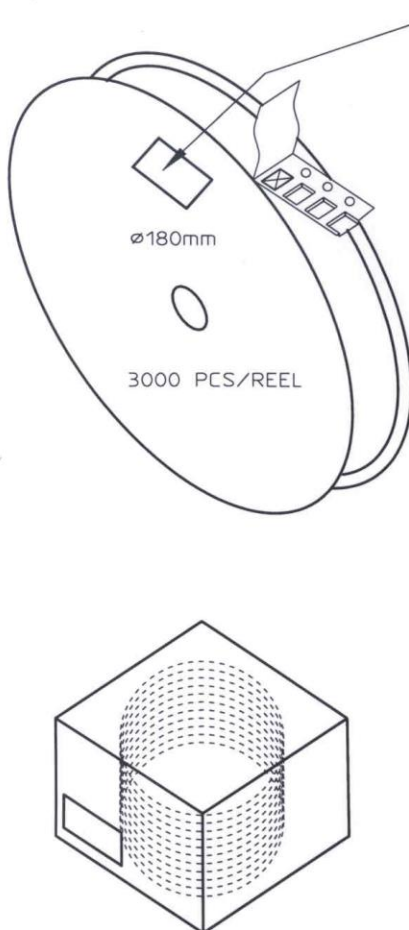


**Description: 2.4-2.4835GHz Ceramic SMT antenna, 4x6.25mm keep out area**

**Series: Chip Antenna**

**PART NUMBER: W3008C**

## PACKAGING-2



REEL LABEL INFORMATION:

- TRACEABILITY
- QUANTITY
- PRODUCT CODE

CARRIER TAPE H85-00125  
width=8,00 depth=1,22  
COVER TAPE H85-00126  
width=5,60

LENGTH OF TAPE:

- Leader section: min 350 mm before component section
- Trailer section: min 40 mm after component section.

Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.

BOX H85-00128 (182x182x132)  
- LABEL

REEL H85-00127 (D180, W12)  
- REEL LABEL

3000 PCS/REEL


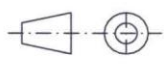
ø180mm

1 pcs

1 pcs/BOX

10 pcs

1 pcs/REEL

MATERIAL							
HANDLINGS							
		RATIO	DRWN	090507	PeHa	H	
			DGNER			G	
			CHKD			F	
			APPRD			E	
			APPRD BY			D	
PRODUCT H90-OY805						C	
						B	
						A	
DENOMINATION PACKING FORM			VERSION		MOD/DATE/NAME		

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