

## Features:

- Omnidirectional radiation
- Compact size WxLxH (3,2 x 1,6 x 1.1 mm)
- Low weight (33 mg)
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS Compliant Product
- Single feed point
- MSL 1

## Applications:

- IEEE 802.11a/b/g/n/x
- WiFi 6E
- 2.4/5/6 GHz WLAN
- 2.4 GHz ISM Band Systems
- ZigBee IEEE 802.15.4

### Dualband WLAN

Typical performance (testboard size 80x37 mm, PWB ground clearance area 11.15 x 6.40 mm)  
One shunt and one serial inductors are used for impedance matching.

Frequency Range [MHz]	Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [ $\Omega$ ]	Operating Temperature [ $^{\circ}$ C]
2400 – 2500	0.1 (peak) -0.3 (band edges)	45 / -3.5 (peak) 42 / -3.6 (band edges)	-8	50	-40 to +85
4900 – 7125	3.5 (peak) 2.4 (band edges)	85 / -0,8 (peak) 75 / -1 (band edges)	-9	50	-40 to +85

## Electrical specifications @ +25 $^{\circ}$ C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

All dimensions are in mm / inches

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For more information:

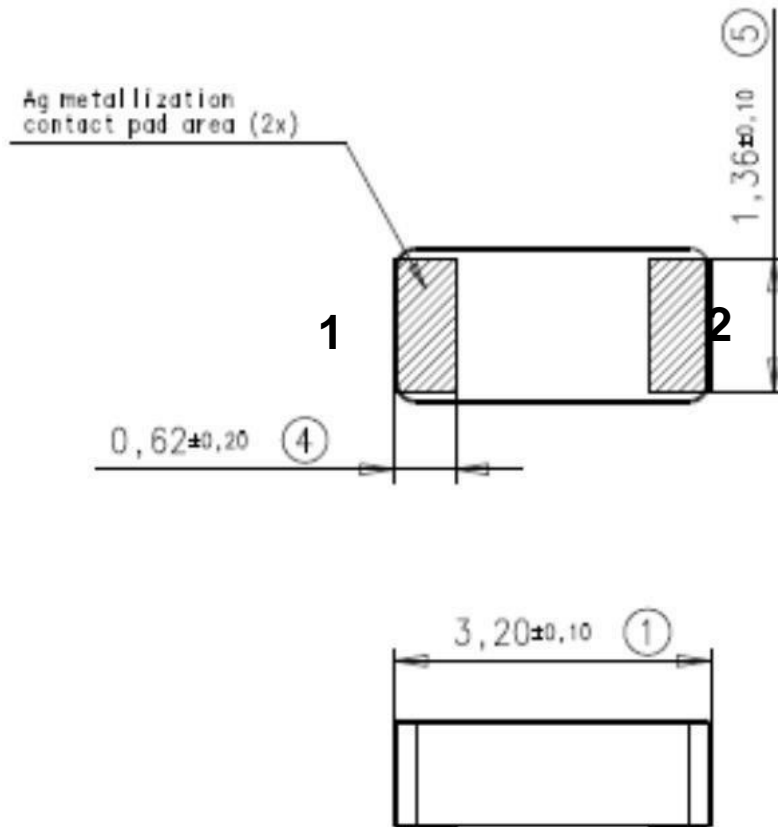
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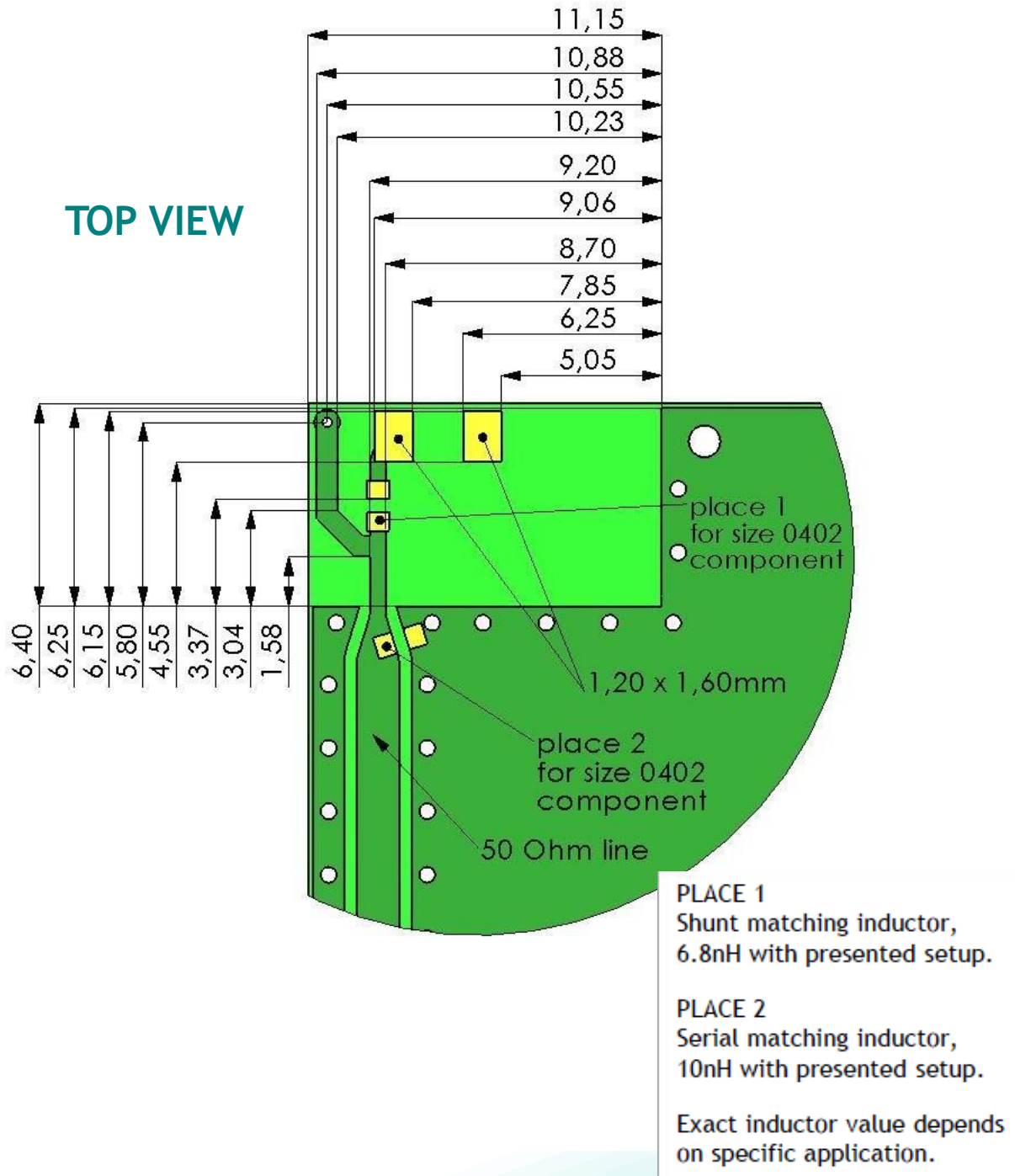
Pulse (Suzhou) Wireless Products Co, Inc.  
99 Huo Ju Road(#29 Bldg,4<sup>th</sup> Phase  
Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998

## Antenna Terminal Configuration and Dimensions



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 of terminals 1 or 2 can be Feed / GND		

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



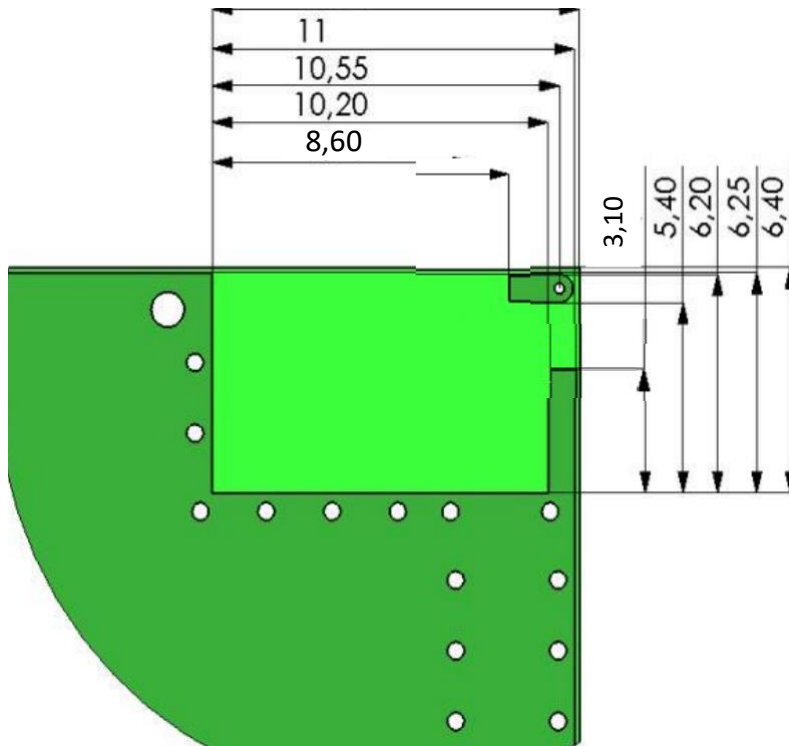
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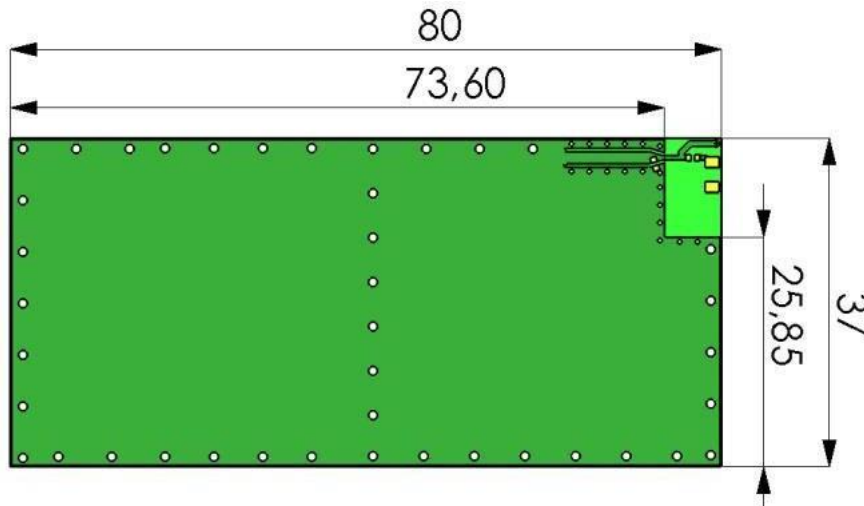
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**BOTTOM VIEW**



**LAYOUT PLACEMENT ON GROUND PCB CORNER**



**PCB**

Feed line should be designed to match 50  $\Omega$  characteristic impedance, depending on PWB material and thickness.

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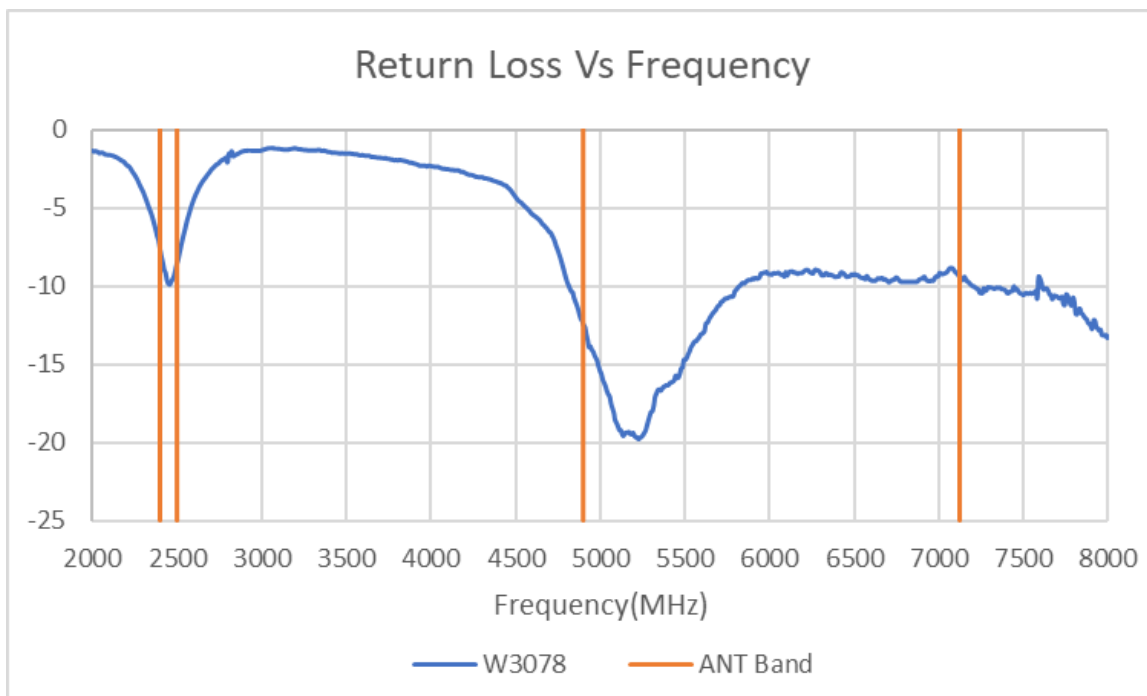
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## CHARTS

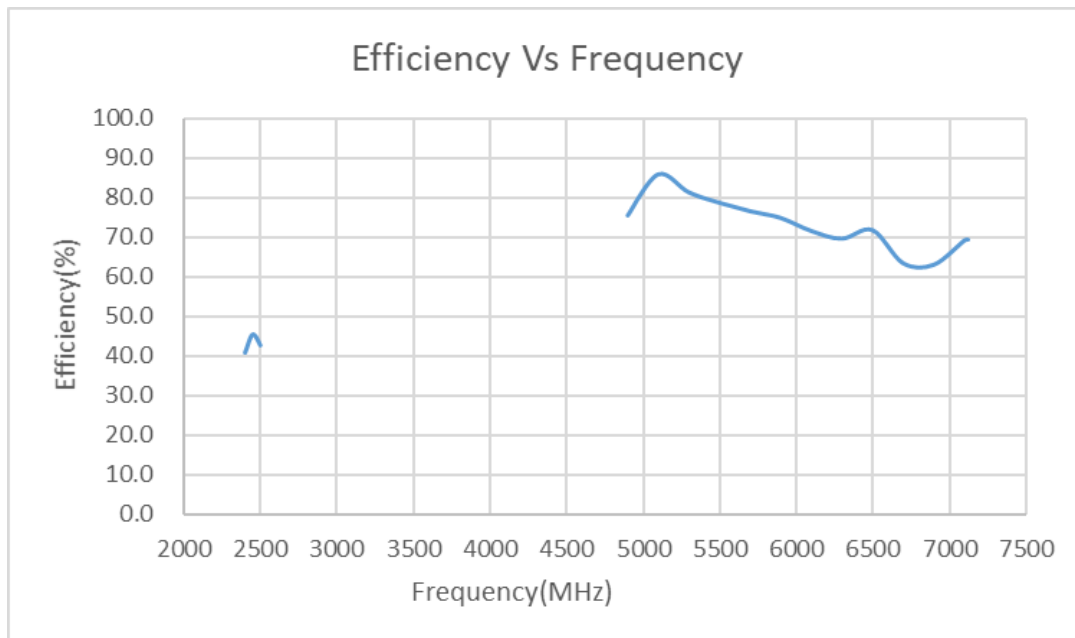
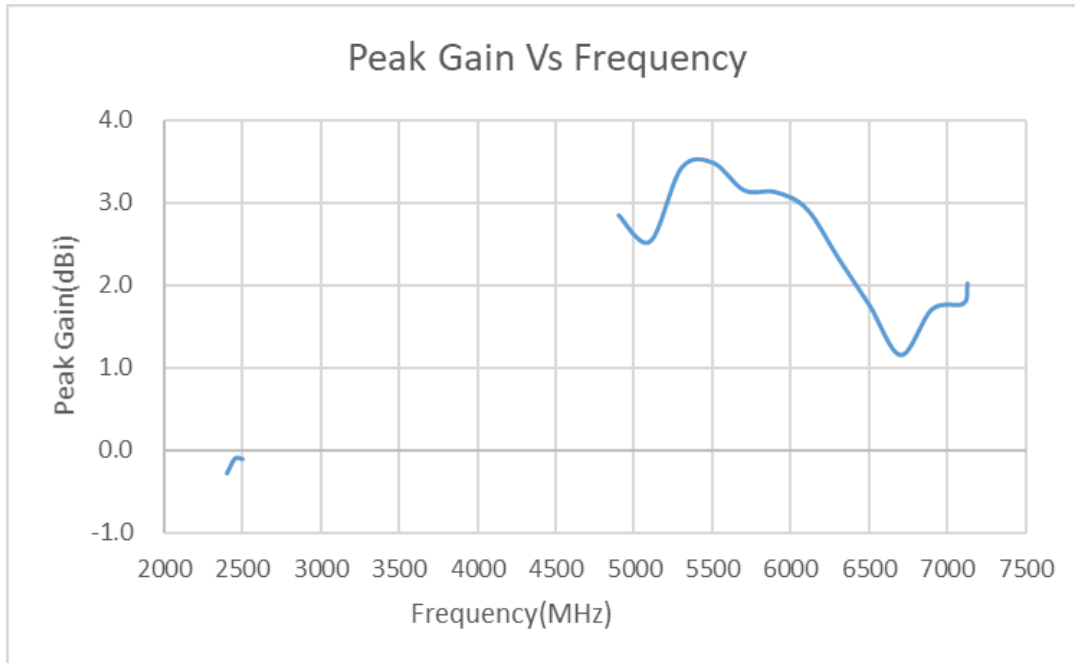
### Typical Electrical Characteristics (T=25 °C)

#### Typical Return Loss S11, measured on the test board



## CHARTS

### Free space efficiency and maximum gain



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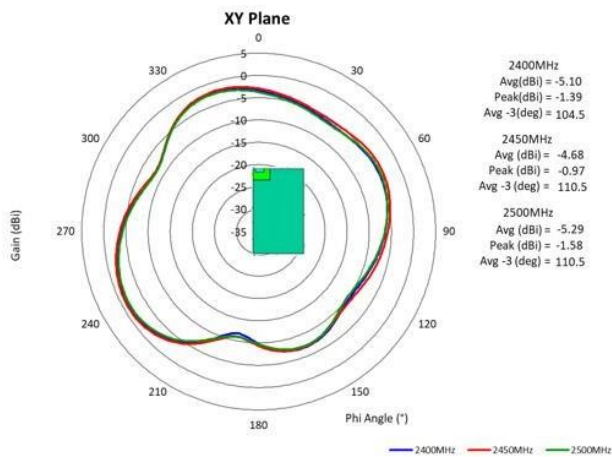
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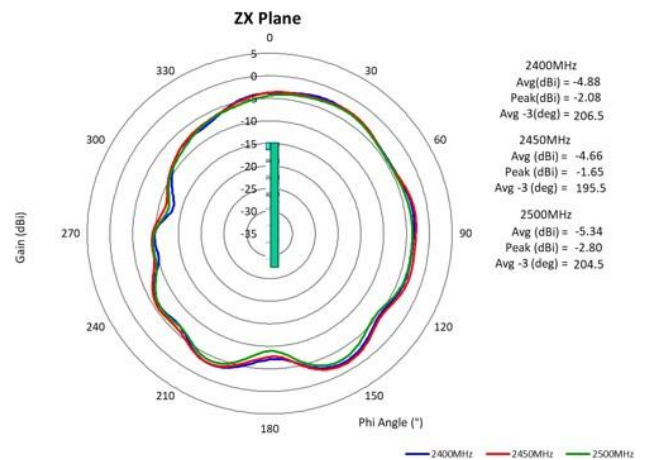
## CHARTS

### 2.4-2.5 GHz Typical Free space Radiation Patterns

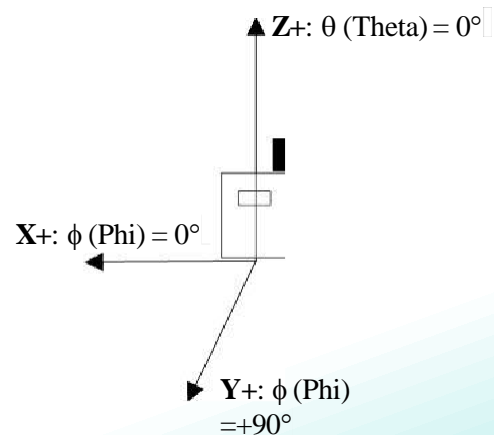
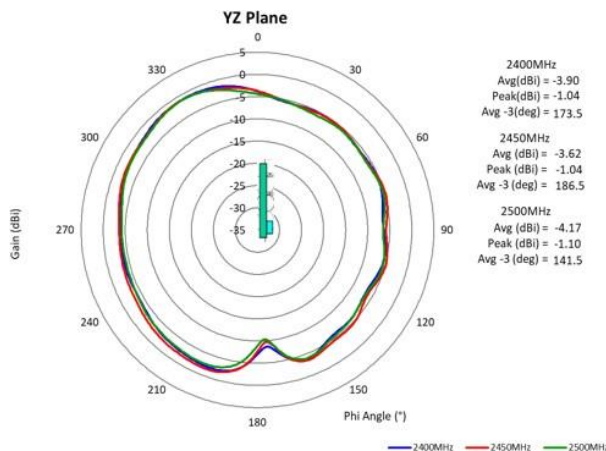
XY-PLANE



ZY-PLANE



ZX-PLANE



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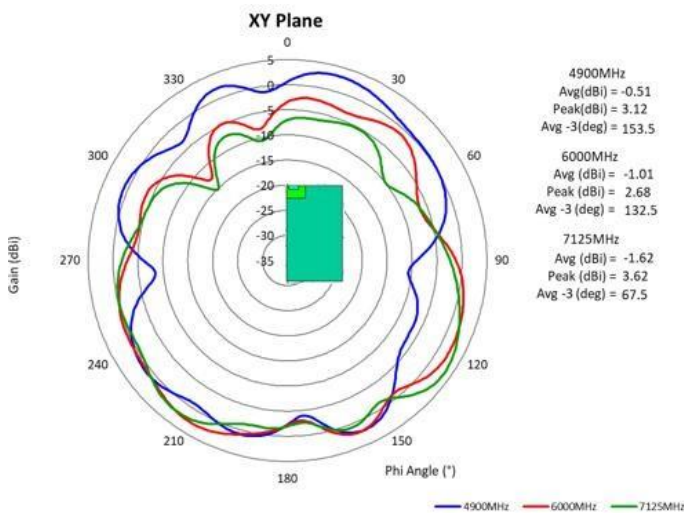
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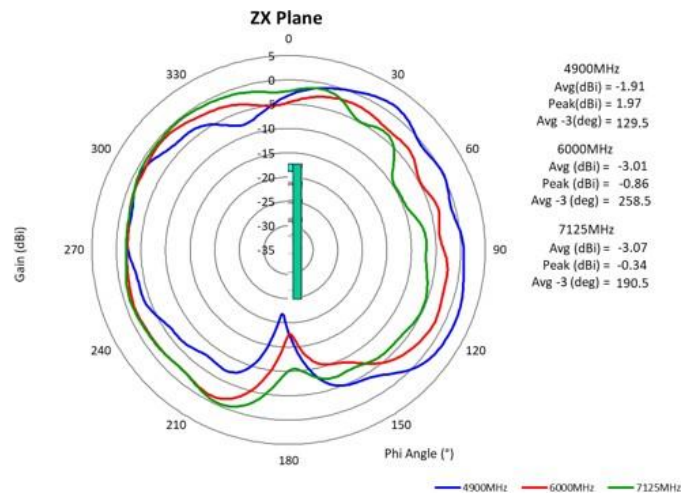
## CHARTS

### 4.9-7.125 GHz Typical Free space Radiation Patterns

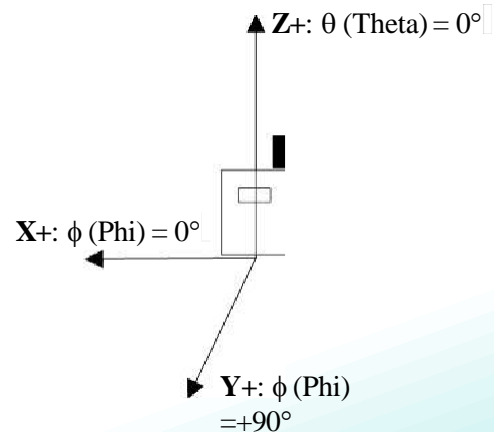
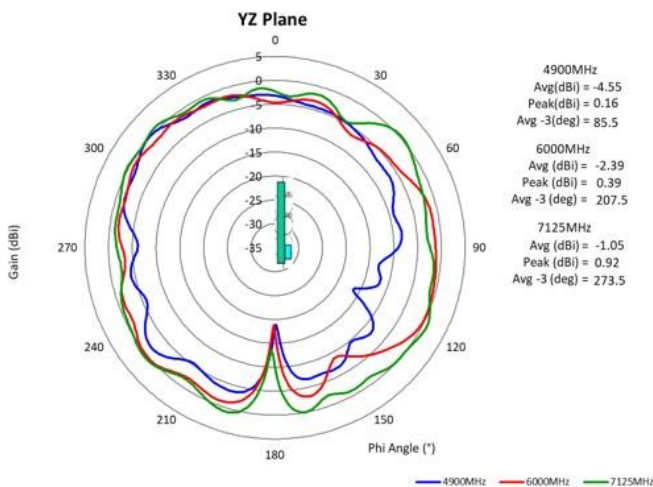
XY-PLANE



ZY-PLANE



ZX-PLANE



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## ASSEMBLY

### Recommendations For Soldering

#### 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

Not to scale. For reference only.

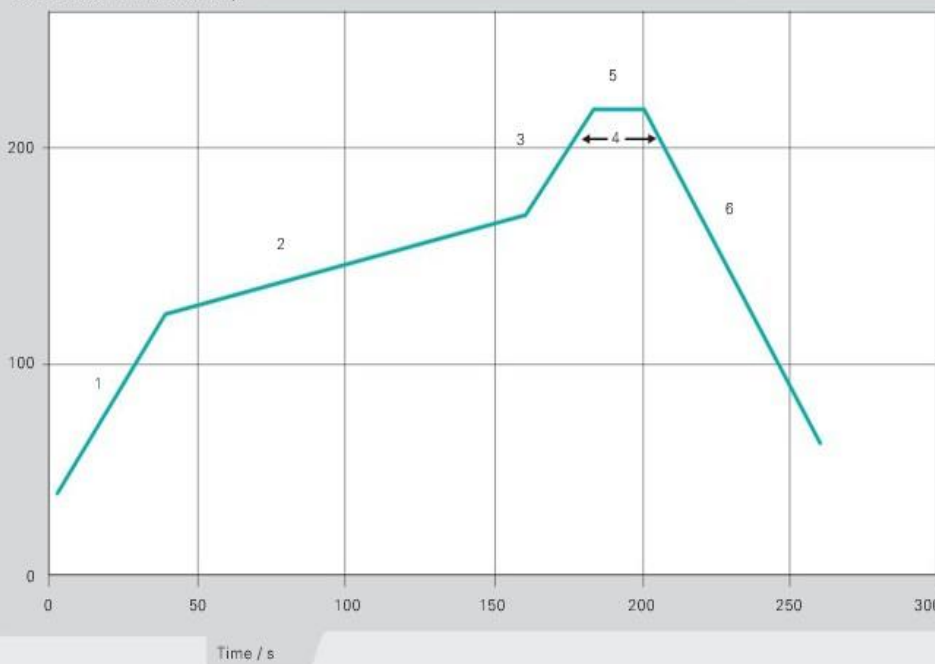


Figure 1. Minimum temperature profile recommendation for reflow soldering process

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## ASSEMBLY

	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

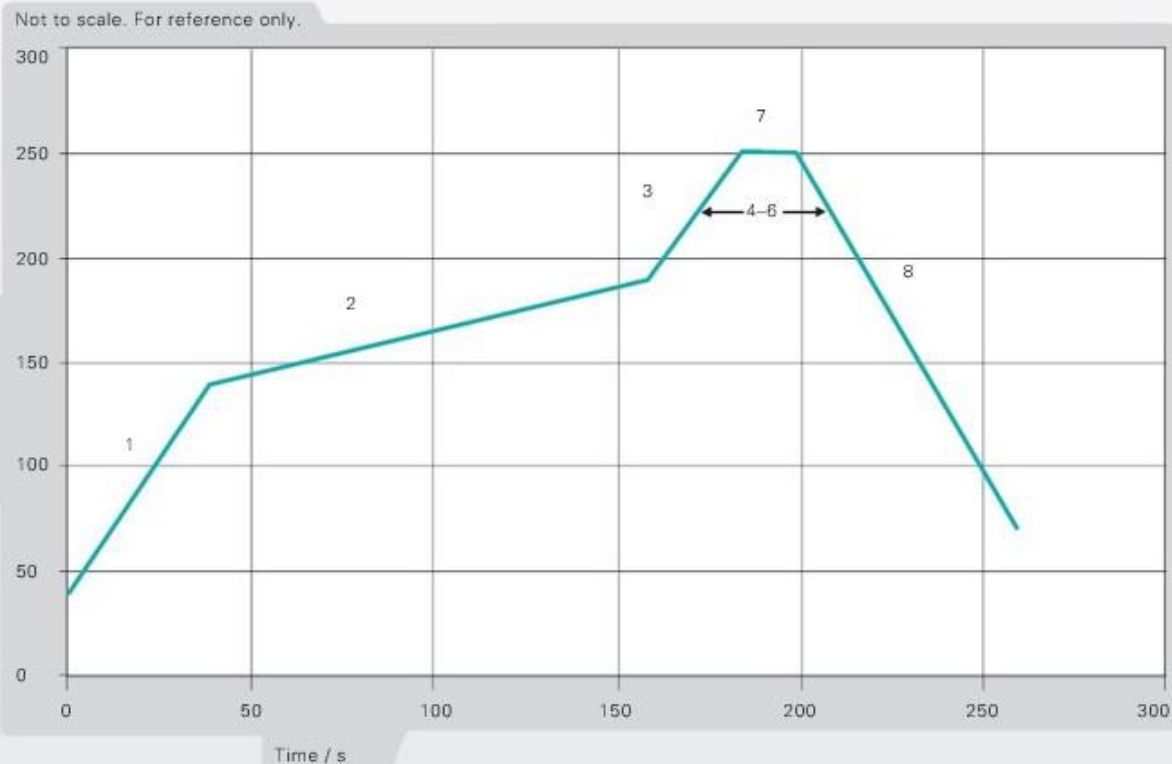


Figure 2. Maximum temperature profile recommendation for reflow soldering process

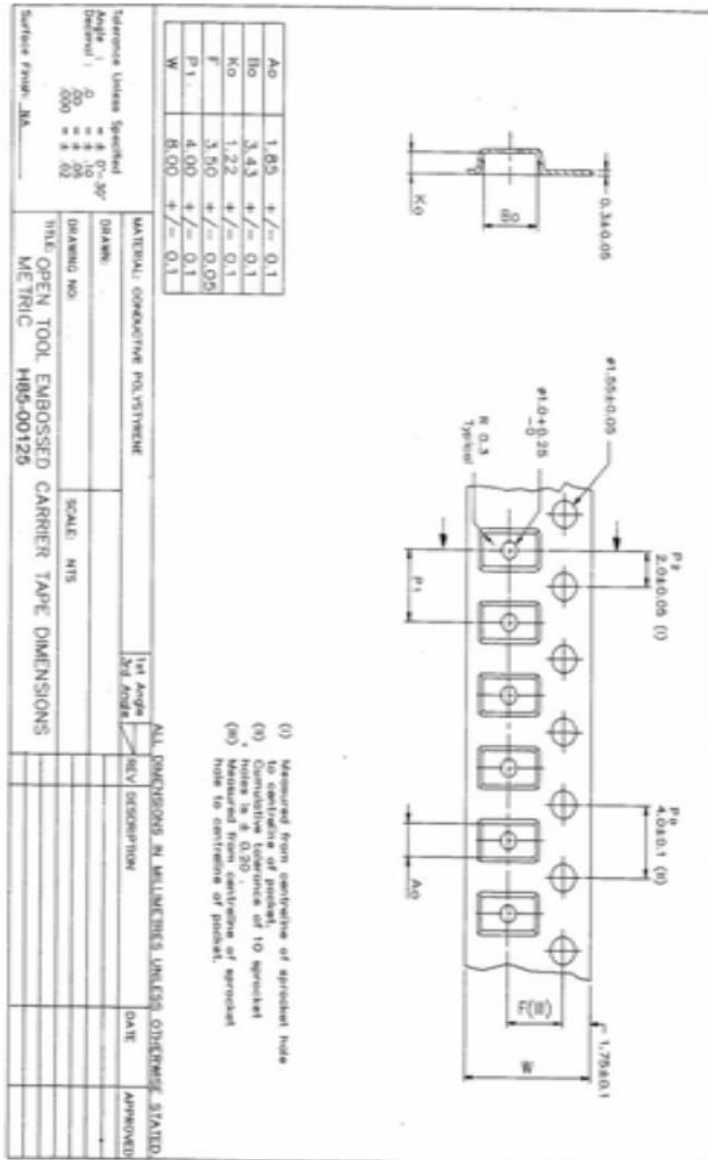
## PACKAGING

### W3078 Antenna Packing

#### General

Tape and reel packing is used. Carrier tape, reel and box dimensions are presented in following pictures.

#### Carrier tape



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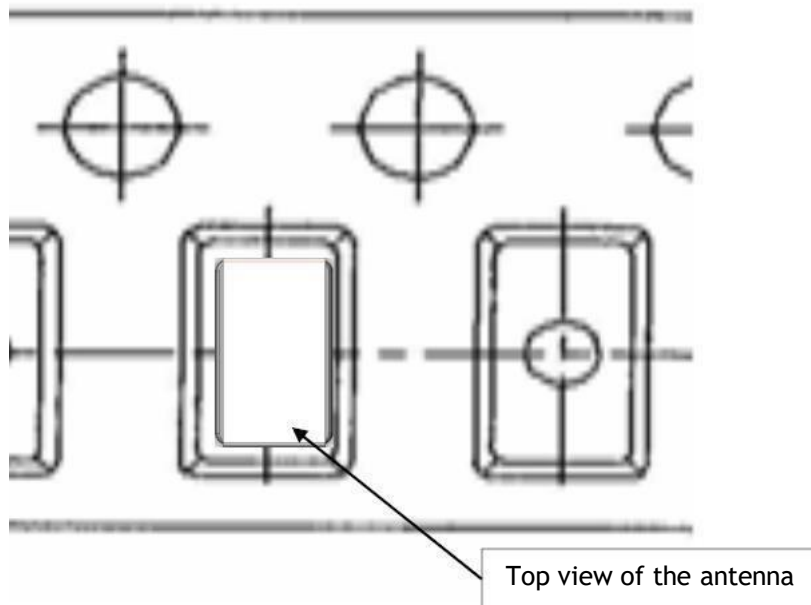
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## PACKAGING

**Block orientation:** soldering pads facing down to the bottom of the carrier tape.

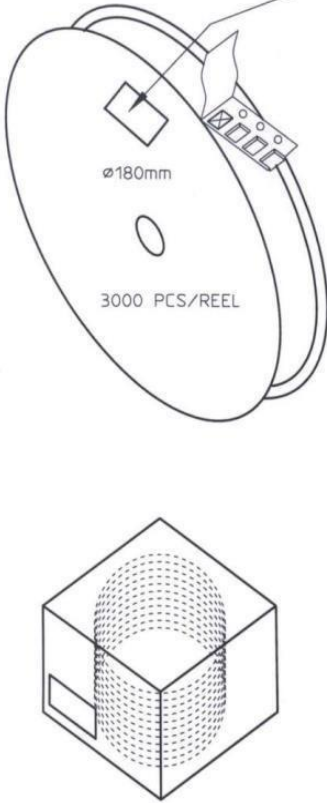


Top view of the carrier tape

## PACKAGING

### W3078 Antenna Packing

*Reel and packing information:*



REEL LABEL INFORMATION:  
 - TRACEABILITY  
 - QUANTITY  
 - PRODUCT CODE


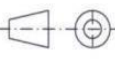
ø180mm  
 3000 PCS/REEL

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)	1 pcs
- LABEL	1 pcs/BOX
REEL H85-00127 (D180, W12)	10 pcs
- REEL LABEL	1 pcs/REEL

MATERIAL	
HANDLINGS	
	
	RATIO
PRODUCT H90-0Y805	DRWN 090507 PeHa H
	DGNER
	CHKD
	APPRD
	APPRD BY
DENOMINATION PACKING FORM	C
	B
	A
	VERSION
MOD/DATE/NAME	

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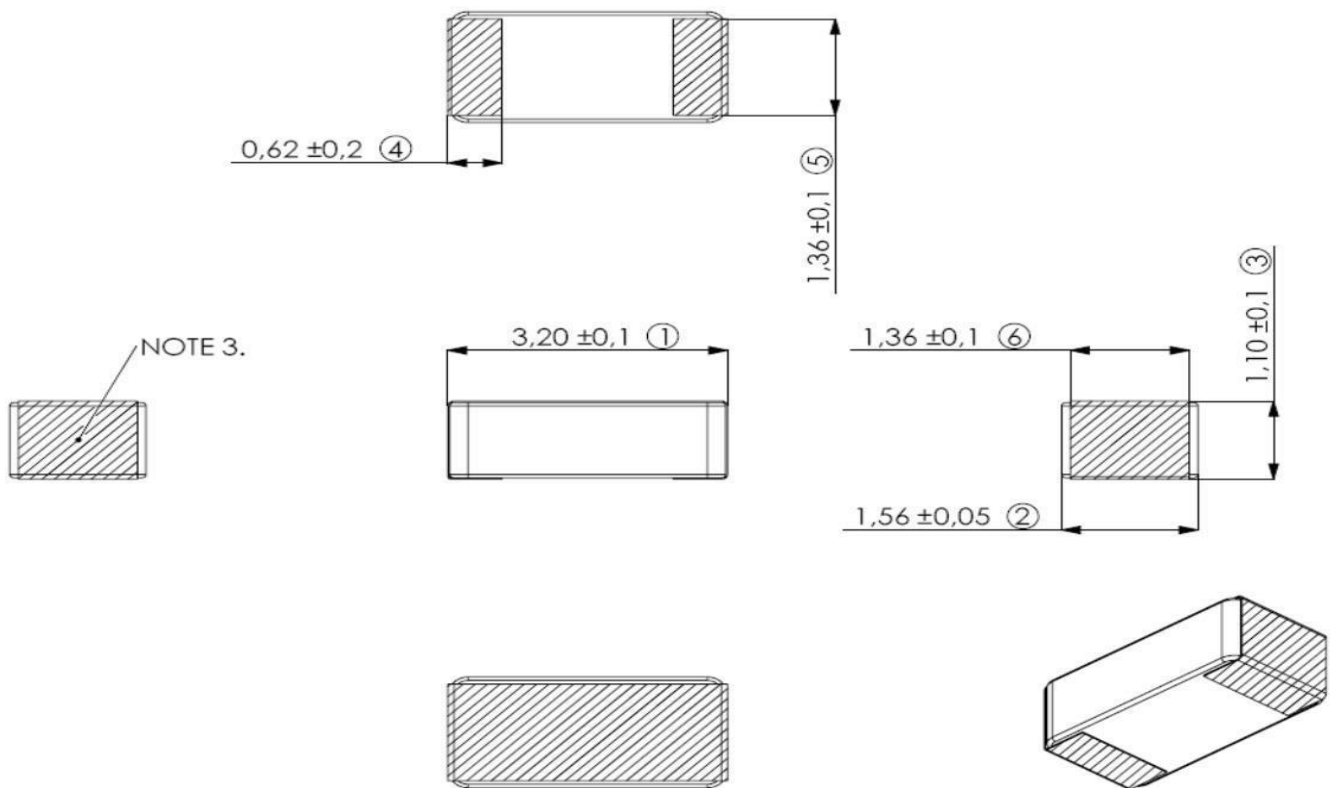
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## ASSEMBLY

### W3078 Antenna Mechanical Outline



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