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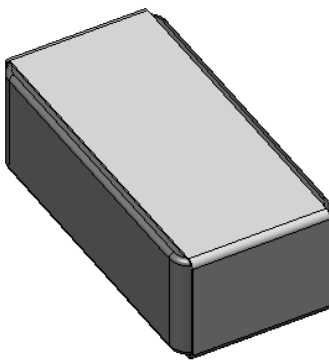




# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna)

Pulse Part Number: **W3078**



## Features

- Omnidirectional radiation
- Low profile
- 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

## Applications

- IEEE 802.11a/b/g
- 5 GHz WLAN
- 2.4 GHz WLAN
- 2.4 GHz ISM Band Systems
- ZigBee IEEE 802.15.4

## Electrical specifications @ +25 °C

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

## 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 [°C]
2400 – 2483.5	1,7 (peak) 1,0 (band edges)	65 / -1,9 (peak) 55 / -2,5 (band edges)	-10	50	-40 to +85
4950 – 5850	4,3 (peak) 3,7 (band edges)	80 / -0,95 (peak) 55 / -2,5 (band edges)	-6	50	-40 to +85

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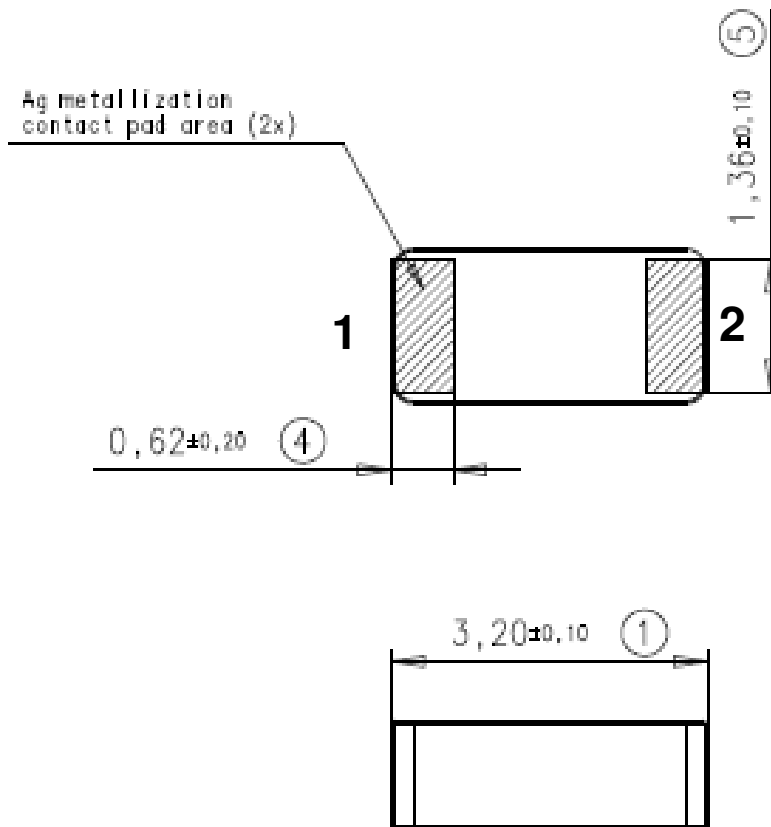


# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

Pulse Part Number: **W3078**

## 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		

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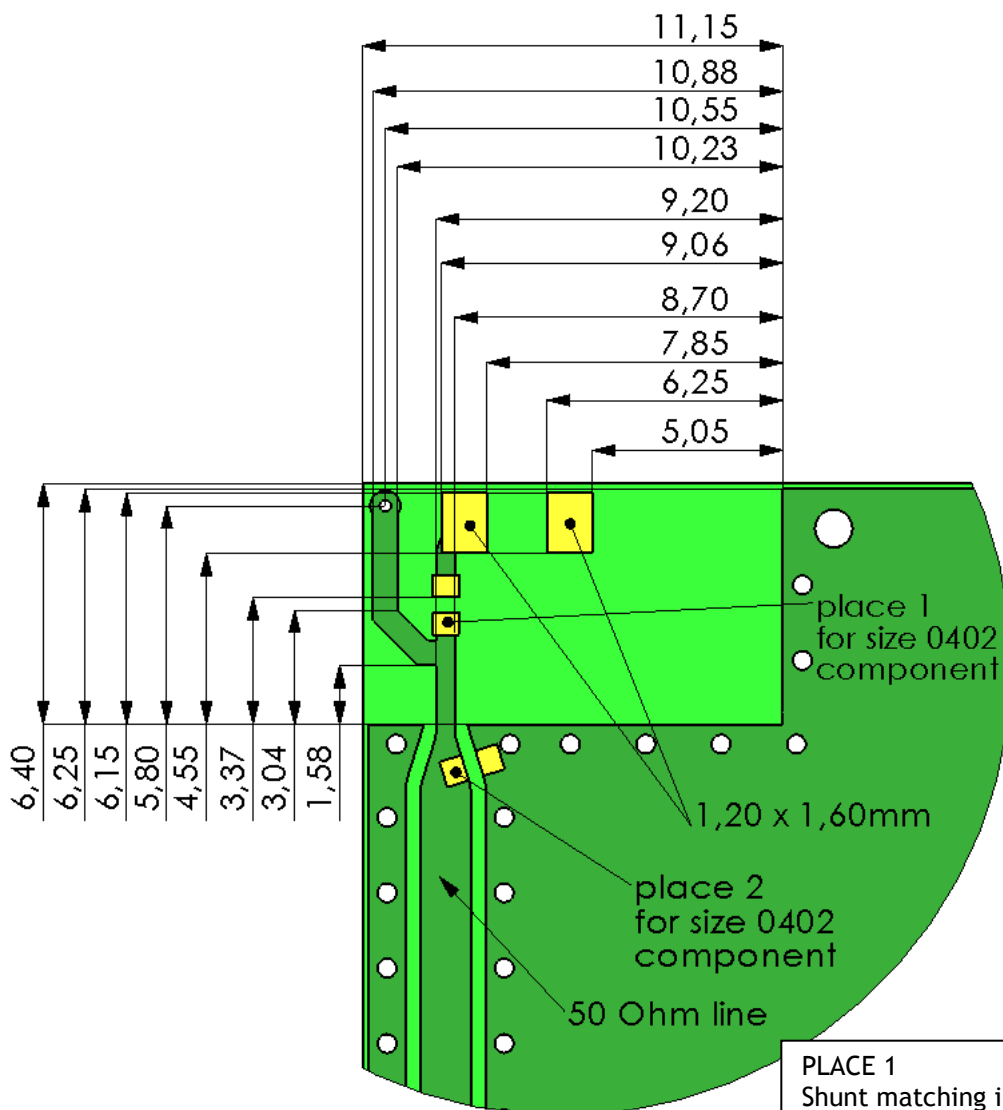
# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

Pulse Part Number: **W3078**

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

## TOP VIEW



**PLACE 1**  
Shunt matching inductor, 2,2nH with presented setup.

**PLACE 2**  
Serial matching inductor, 6,8nH with presented setup.

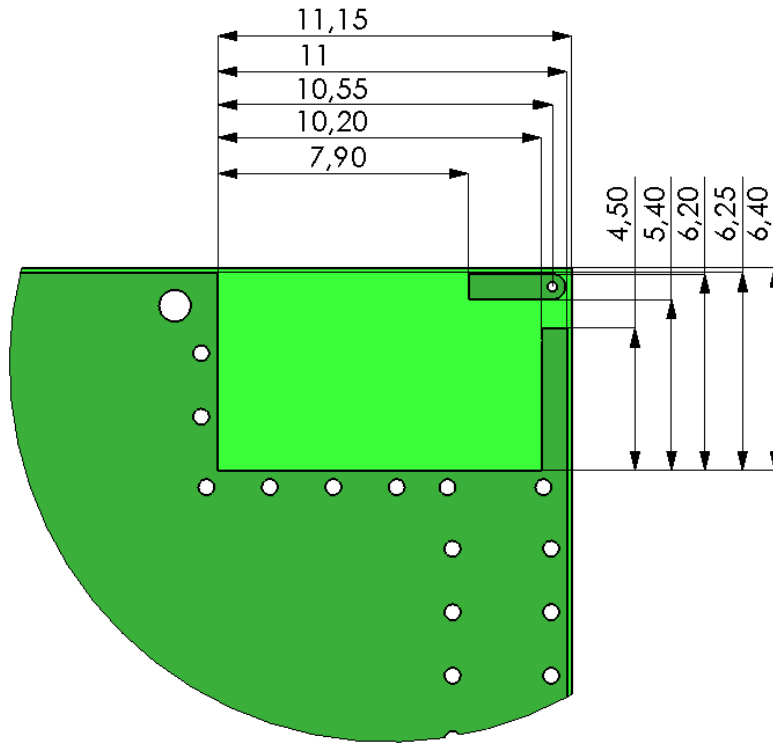
Exact inductor value depends on specific application.

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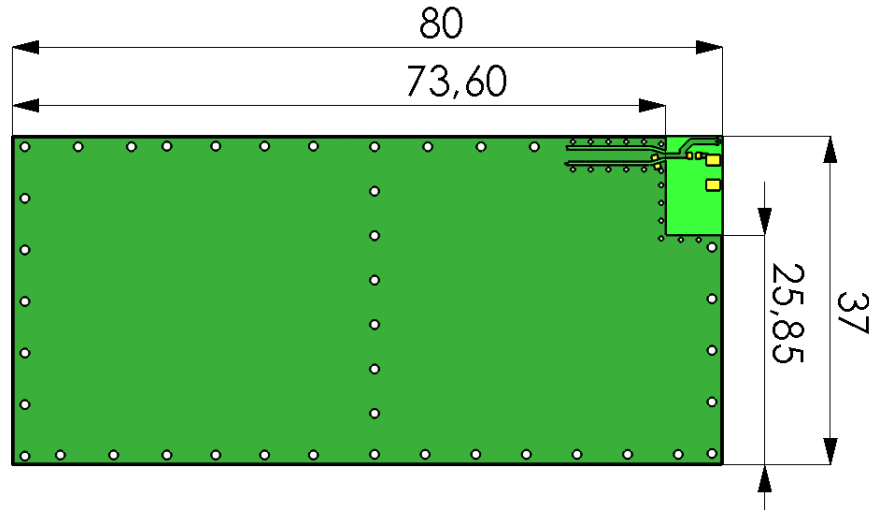
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LAYOT PLACEMENT ON



PCB

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

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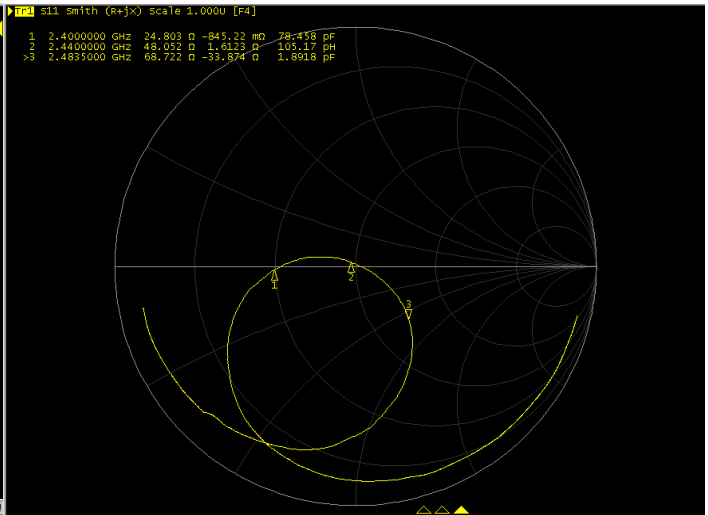
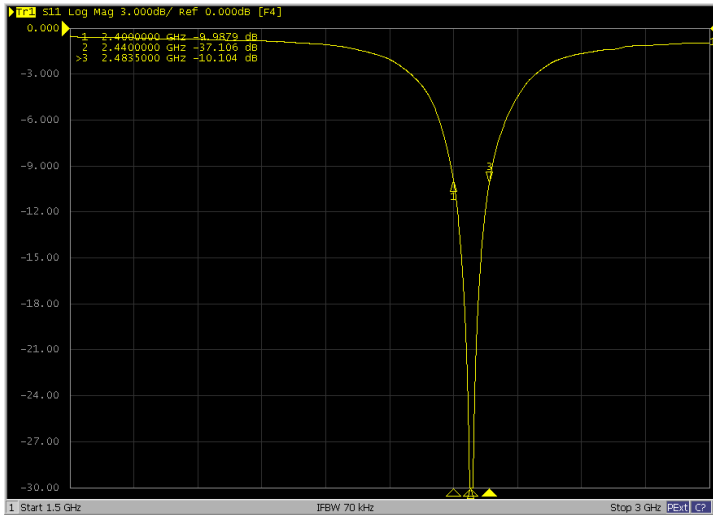
# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

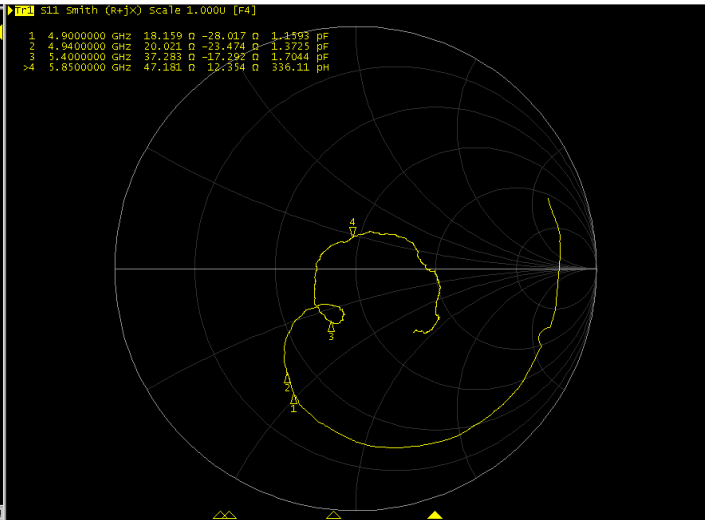
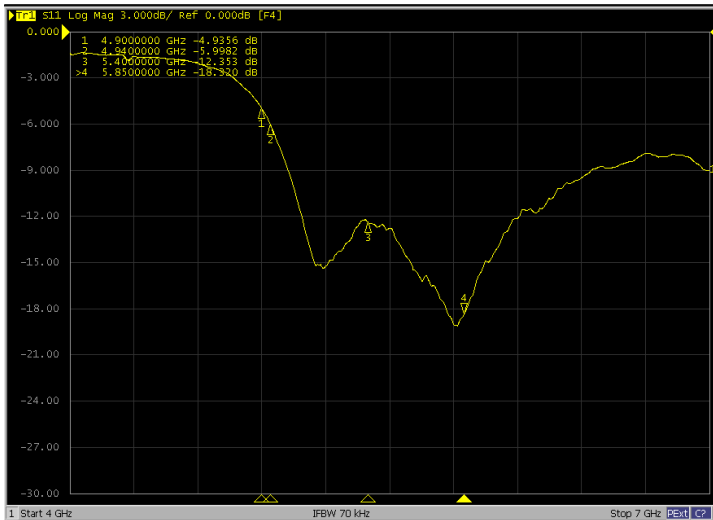
Pulse Part Number: **W3078**

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

2,4 GHz Typical Return Loss S11/ impedance, measured on the test board



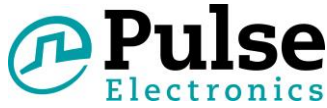
5GHz Typical Return Loss S11/ impedance, measured on the test board



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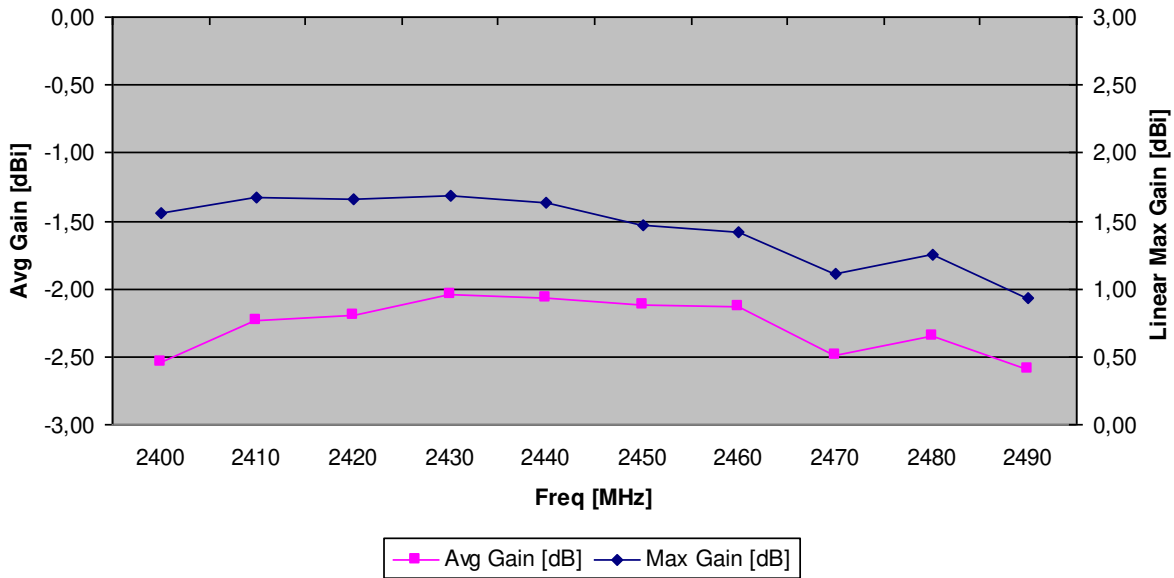
# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

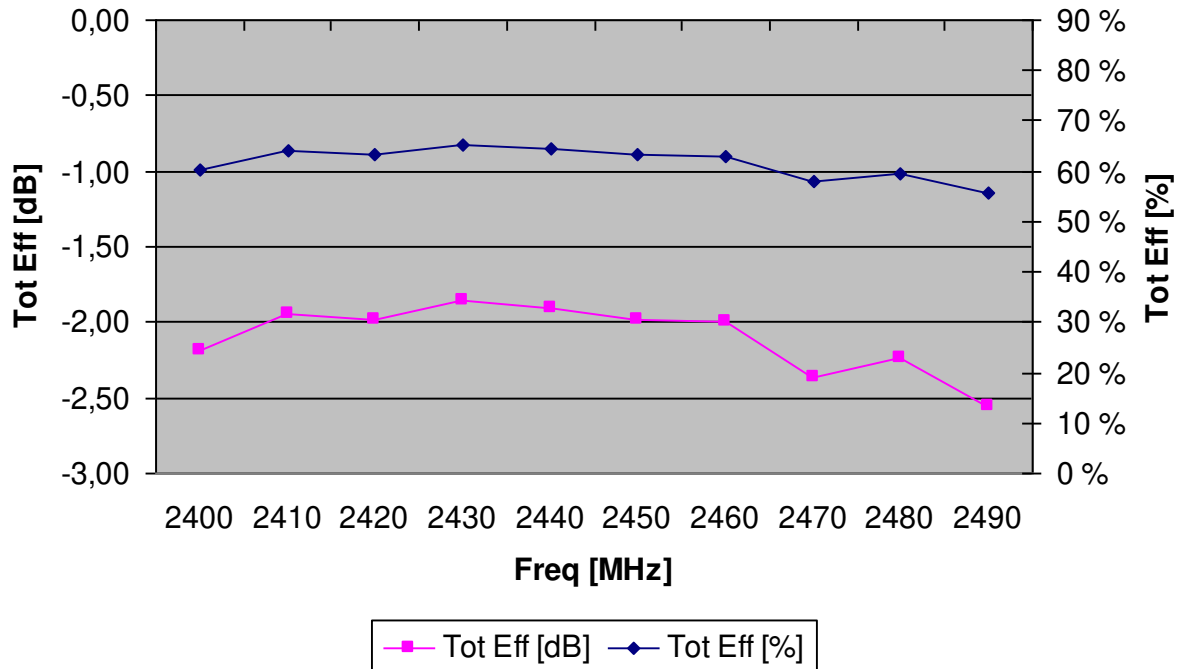
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## 2,4 GHz free space efficiency and maximum gain

DualBand WiFi 2,4G 3,2x1,6x1,1mm



DualBand WiFi 2,4G 3,2x1,6x1,1mm



**Pulse Finland Oy**

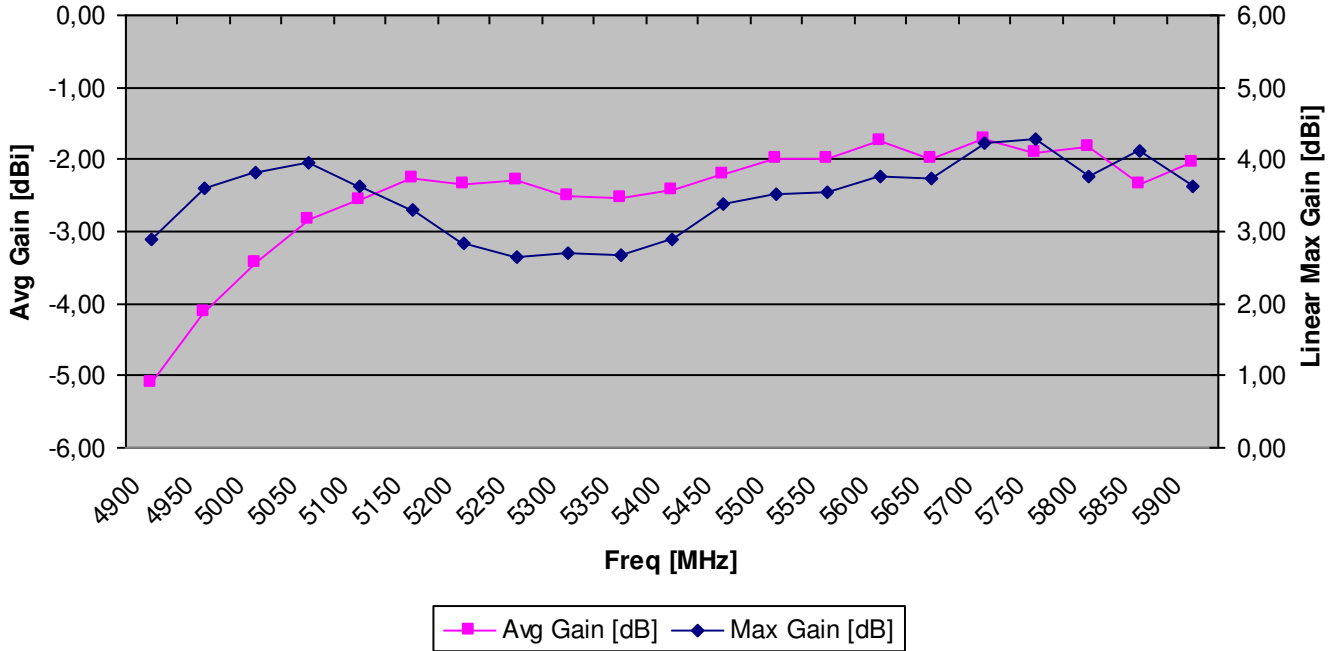
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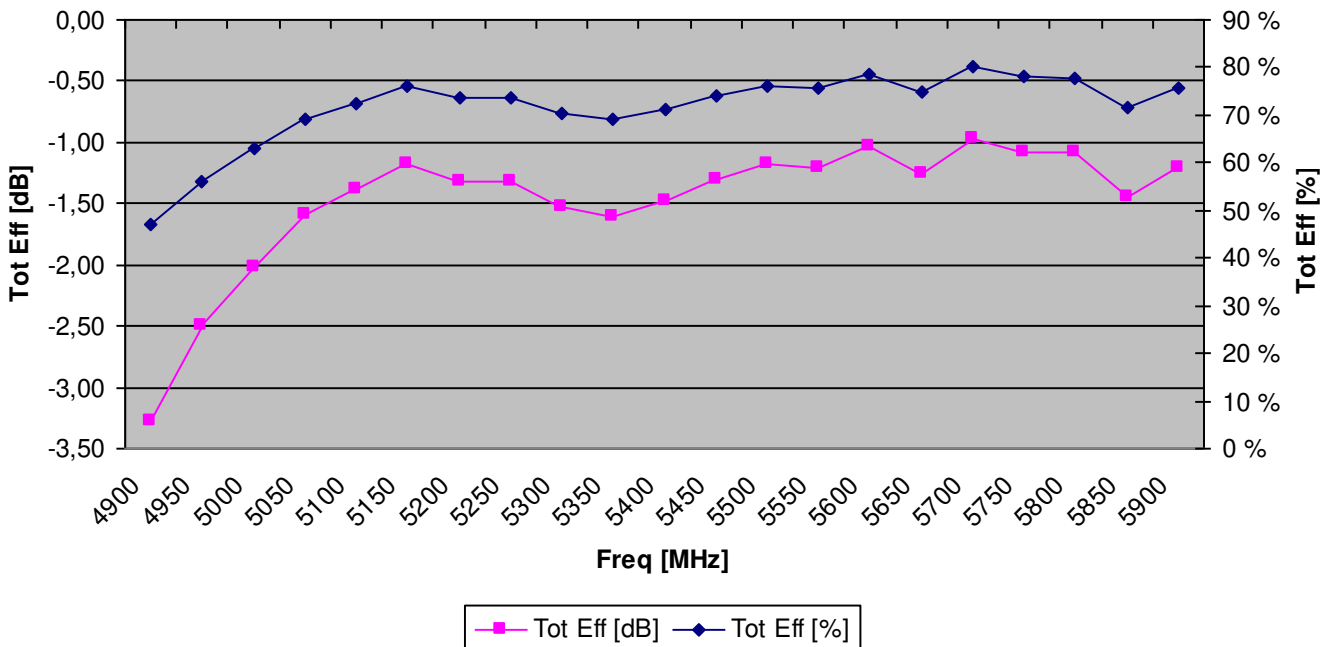


5 GHz free space efficiency and maximum gain

DualBand WiFi 5G 3,2x1,6x1,1mm



DualBand WiFi 5G 3,2x1,6x1,1mm



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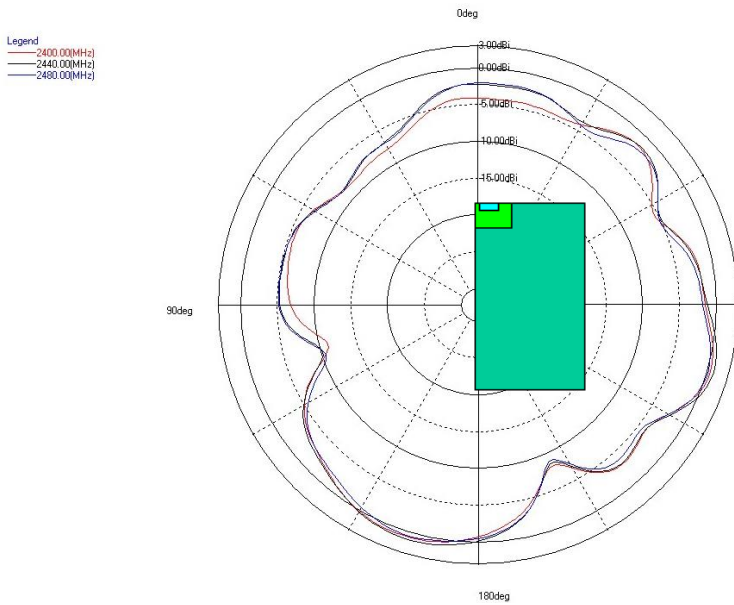
# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

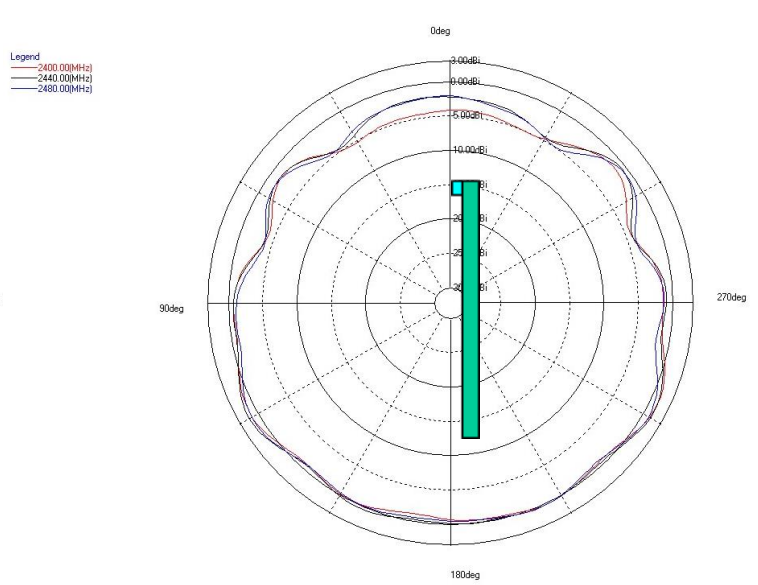
Pulse Part Number: **W3078**

## 2,4 GHz Typical Free space Radiation Patterns

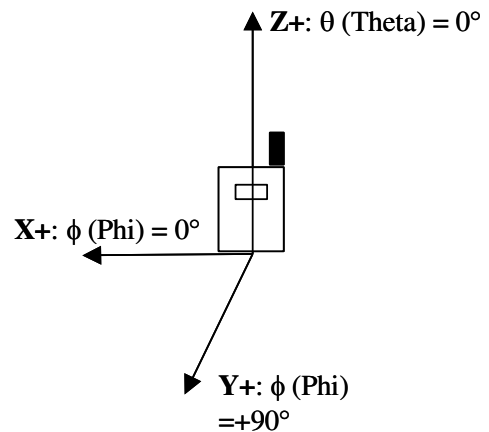
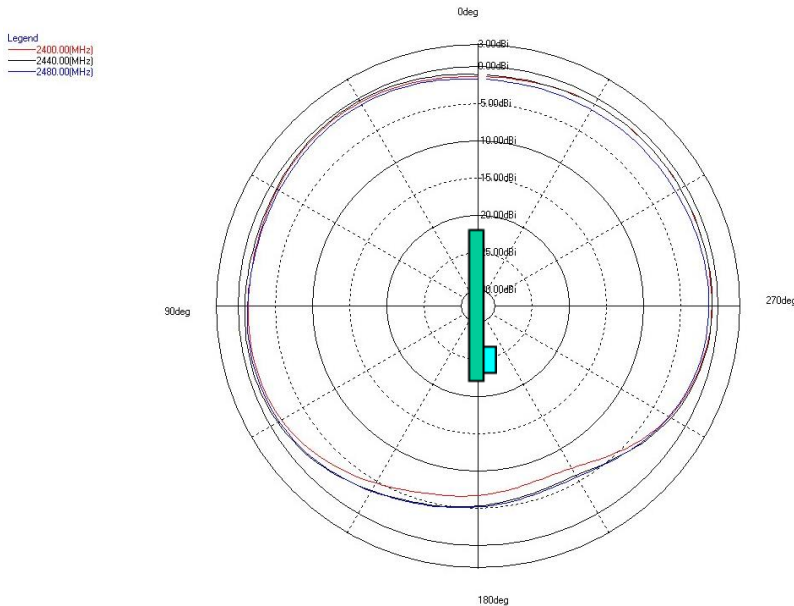
XZ-PLANE



ZY-PLANE



XY-PLANE



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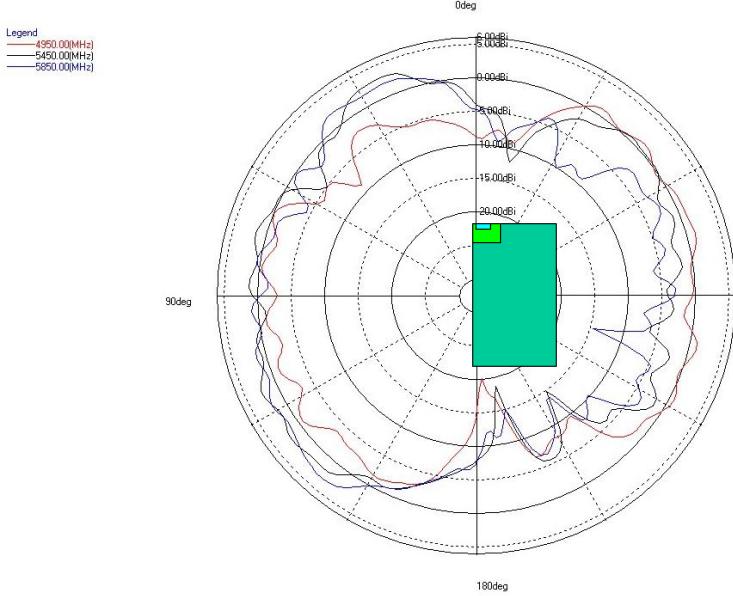
# Dualband WLAN Antenna

Ceramic Chip Antenna (ground cleared under antenna **11.15 x 6.40 mm**)

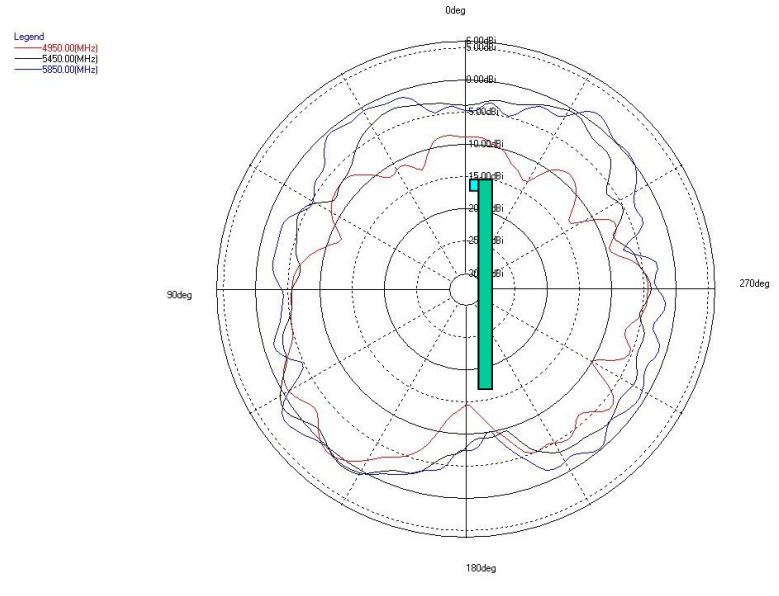
Pulse Part Number: **W3078**

## 5 GHz Typical Free space Radiation Patterns

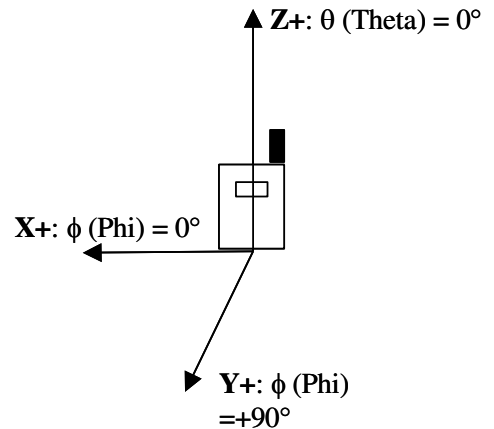
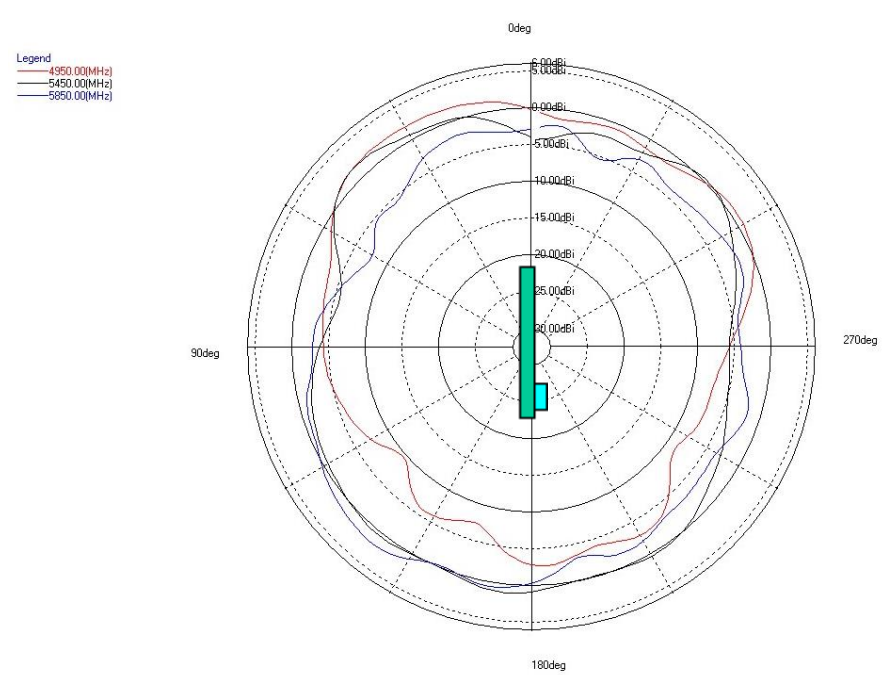
XZ-PLANE



ZY-PLANE

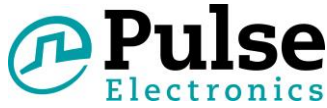


XY-PLANE



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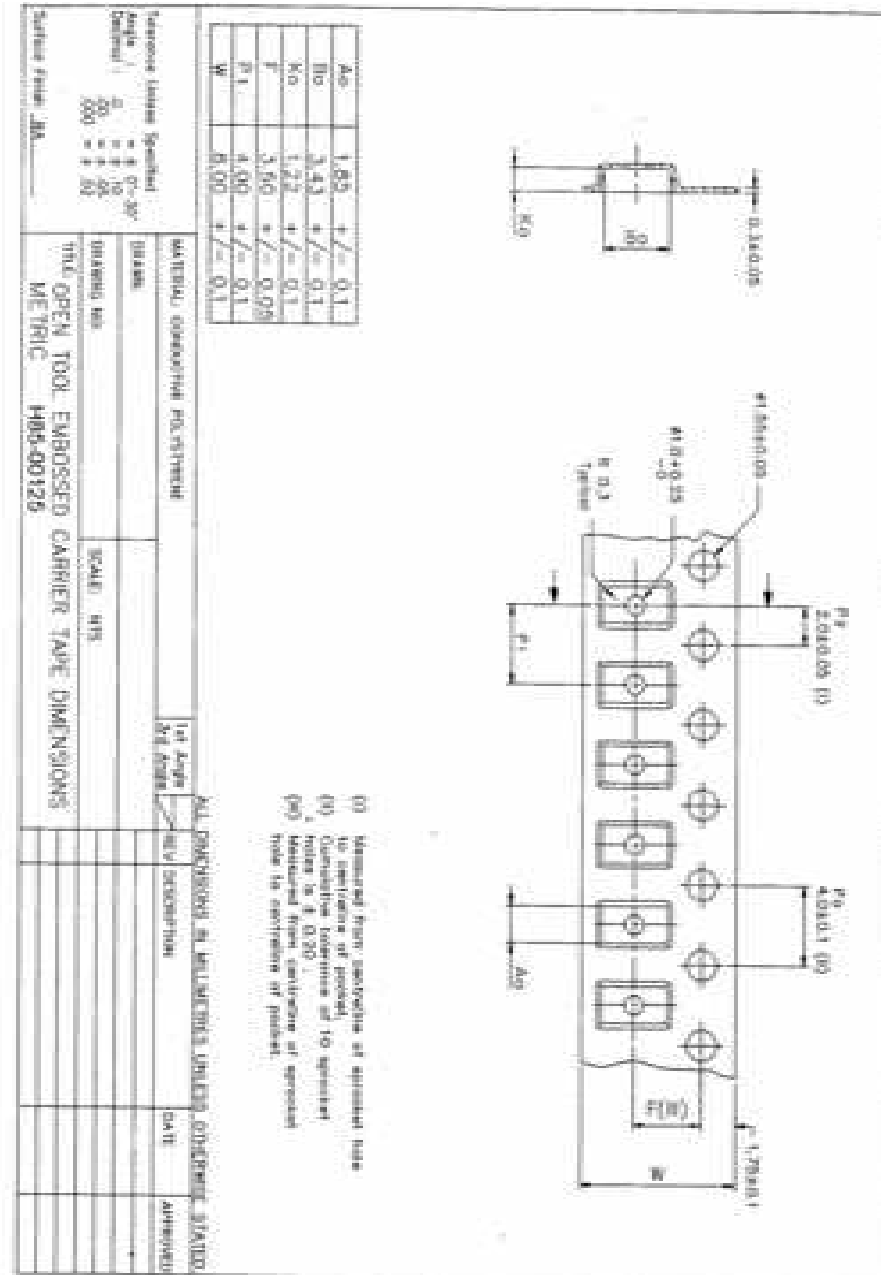


# W3078 Antenna Packing

## General

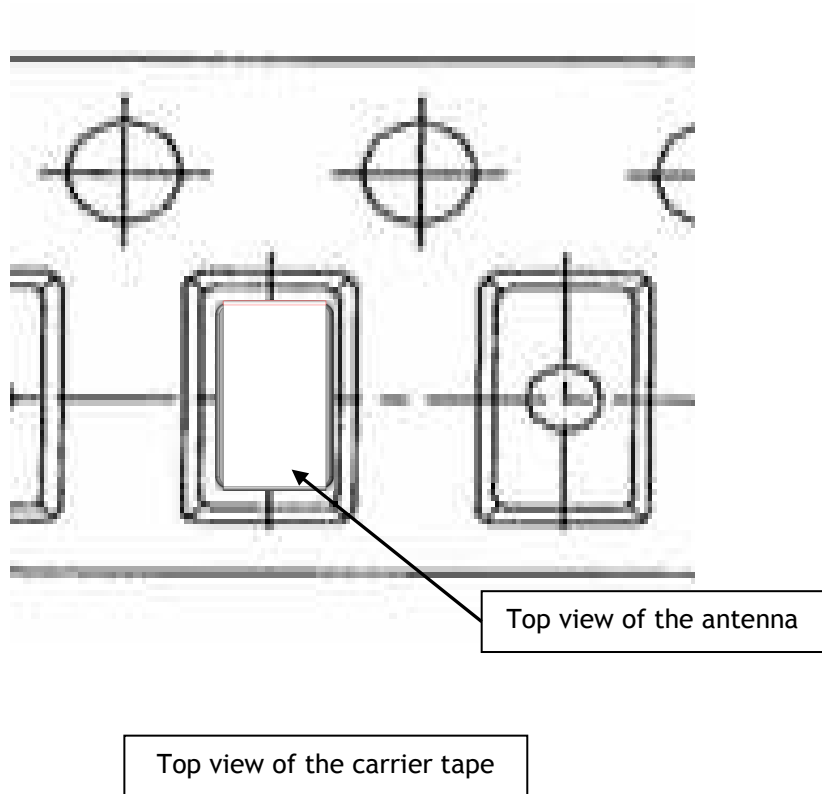
Tape and reel packing is used. Carrier tape, reel and box dimensions are presented in following pictures.

## Carrier tape





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



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# W3078 Antenna Packing

## Reel and packing information:

ø180mm  
3000 PCS/REEL

**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.

<b>BOX H85-00128</b> (182x182x132)	1 pcs
- LABEL	1 pcs/BOX
<b>REEL H85-00127</b> (D180,W12)	10 pcs
- REEL LABEL	1 pcs/REEL

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

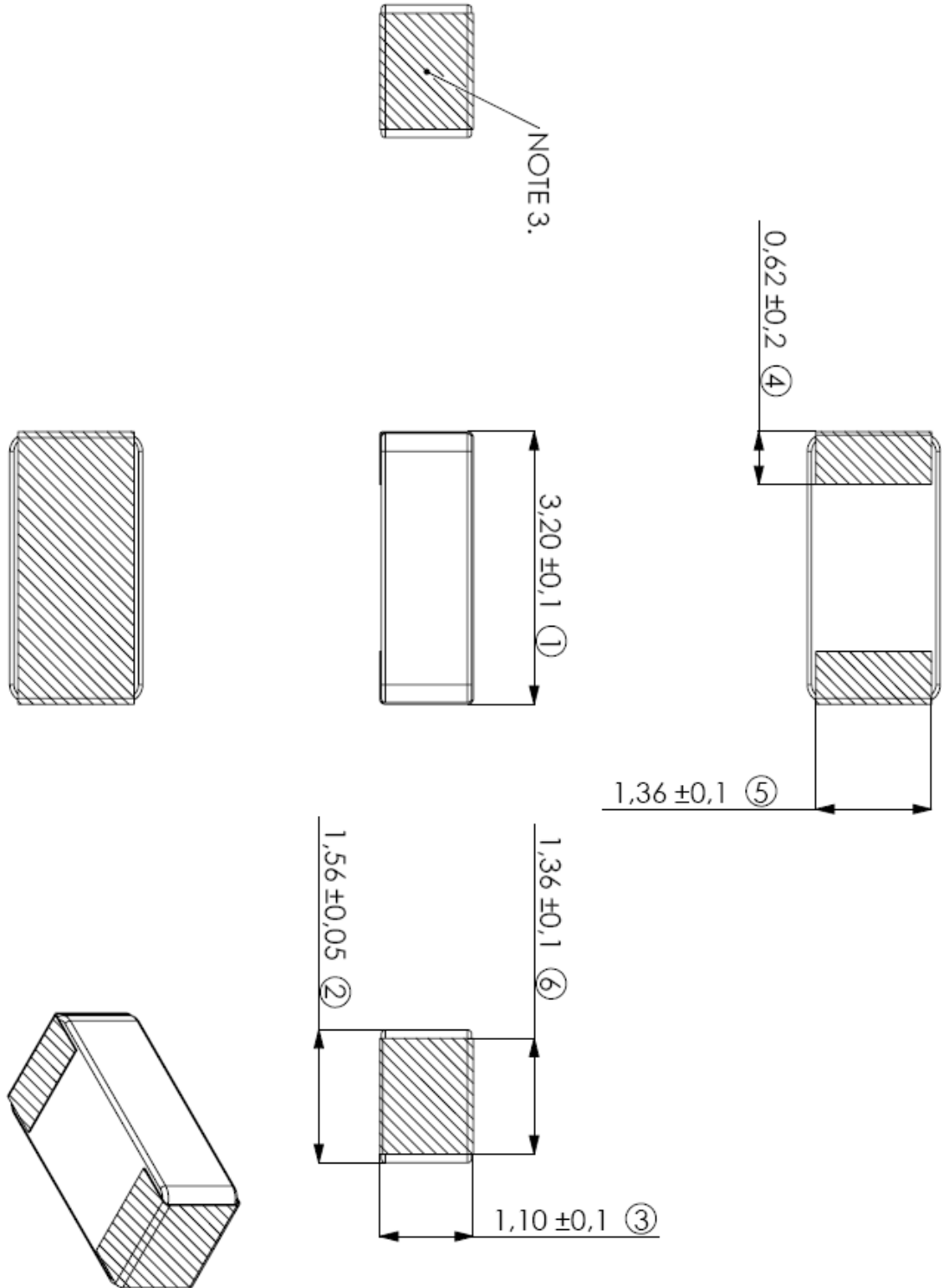
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## W3078 Antenna Mechanical Outline



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