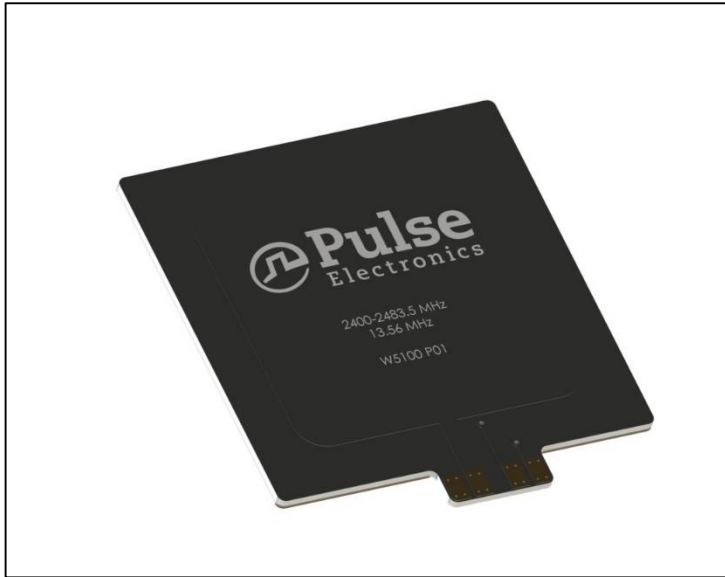


**Description:** On-ground BLE/NFC combo

**Series:** Embedded Antenna

**PART NUMBER:** W5100

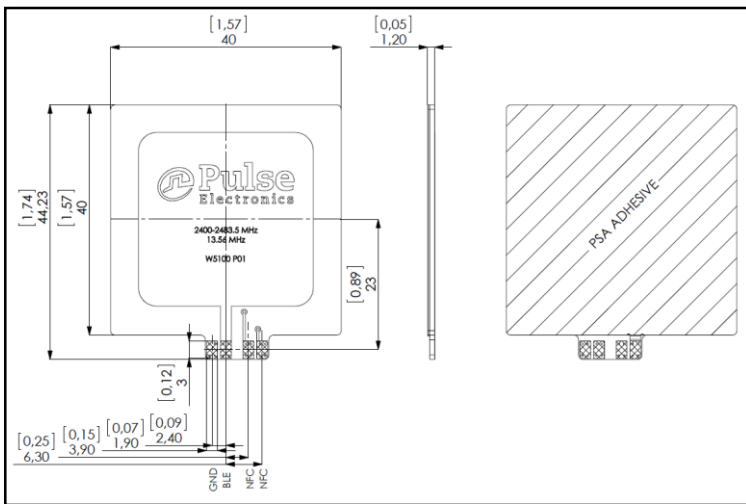


**Features:**

- Own feed ports for 2.4GHz and NFC 13.56MHz
- Ultra thin 1.2mm
- Surface area 40x40mm
- Operates on top of metal ground plane
- Mounting with adhesive tape

**Applications:**

- Devices using 2.4GHz radios and 13.56MHz NFC connectivity
- BLE, Bluetooth, Zigbee, ISM 2.4GHz
- Pairing, sharing



All dimensions are in mm / inches

Issue: 1613

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

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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:** On-ground BLE/NFC combo**Series:** Embedded Antenna**PART NUMBER:** W5100**ELECTRICAL SPECIFICATIONS**

Frequency P1	2400-2483.5 MHz
Frequency P2	13.56 MHz
P1 nominal Impedance	50Ω
P1 VSWR	<3:1
P1 Gain in free space	-1dBi
P1 Gain over metal plate	1dBi
P2 Inductance in free space	0.95μH
P2 Q-value in free space	44
P2 Self Resonant Frequency in free space	65.9MHz
P2 Inductance over metal plate	0.92μH
P2 Q-value over metal plate	33
P2 Self Resonant Frequency over metal plate	63.9MHz
Connector type	Contact pads

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**Description:** On-ground BLE/NFC combo

**Series:** Embedded Antenna

**PART NUMBER:** W5100

### MECHANICAL SPECIFICATIONS

Color	Black
Weight	4.6 g
Fixing system	Pressure sensitive adhesive

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40 to 85°C
Storage temperature	MIL STD 810G: 24h at 85°C and 24h at -40°C
Temperature shock	MIL STD 810G: Method 503.5, -40 for 1 hr to +85 C for 1 hr @ 15 deg.C/min rate of change; 3 cycles
Humidity	MIL STD 810G: 24h at 60°C and 95%RH
Drop test	Top, bottom, side. 3 times/orientation, 40"

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Description: On-ground BLE/NFC combo

Series: Embedded Antenna

PART NUMBER: W5100

MECHANICAL DRAWING

**NOTES: UNLESS OTHERWISE SPECIFIED**  
 1. INTERPRET THIS SPECIFICATION PER PULSE PQ: 7.004.000 AND STANDARDS REFERENCED THEREIN.  
 2. VISUAL QUALITY PER PULSE PQ: 6.030.000 CLASS III  
 3. PRODUCT IS FREE FROM FINGERPRINTS, DUST, GREASE OR SIMILAR EXTERNAL AGENTS  
 4. DIMENSIONS WITH \* ARE FOR INSPECTION, ONLY DIMENSIONS WITH DIMENSION NUMBER NEED TO BE MEASURED

Top view dimensions:  $<1.2> 40 \pm 0.5^*$  (width),  $<1.2> 40 \pm 0.5^*$  (height).  
 Side view dimension:  $<1.2> 1.20$  (thickness).  
 Exploded view callouts: 1, 2, 3, 4, 5.  
 Detail A: SCALE TO: 1. Note: "Send copper to PCB pad and solder".

Item	Drawing number	Name of Part	Part Number	Standard Catalogue	Material	Dimensions	Pcs
5	075-0465-001	Copper tape					1
4	075-0465-001	ISBITE					1
3	075-0465-001	ISBITE					1
2	025-4146-001	Film					1
1	025-4146-001	BLE/NFC PCB					1

Functional Characteristics list:  
 Please specify number required, total: 0 pcs.  
 Process capability studies required and ongoing statistical process control required, total: 0 pcs.

Material Application:  
 Please follow Pulse limits of hazardous substances (RoHS, Halogen) in the document Pulse hazardous substances (HS) sheet.

REVISION: W5100  
 Part Name: W5100  
 Part Number: W5100

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**Description:** On-ground BLE/NFC combo

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**PART NUMBER:** W5100

### OTHER SPECIFICATIONS

Test setup over metal (80x80mm<sup>2</sup>). Material Ni plated steel  
Antenna contact points shown for BLE(P1) and NFC (P2)



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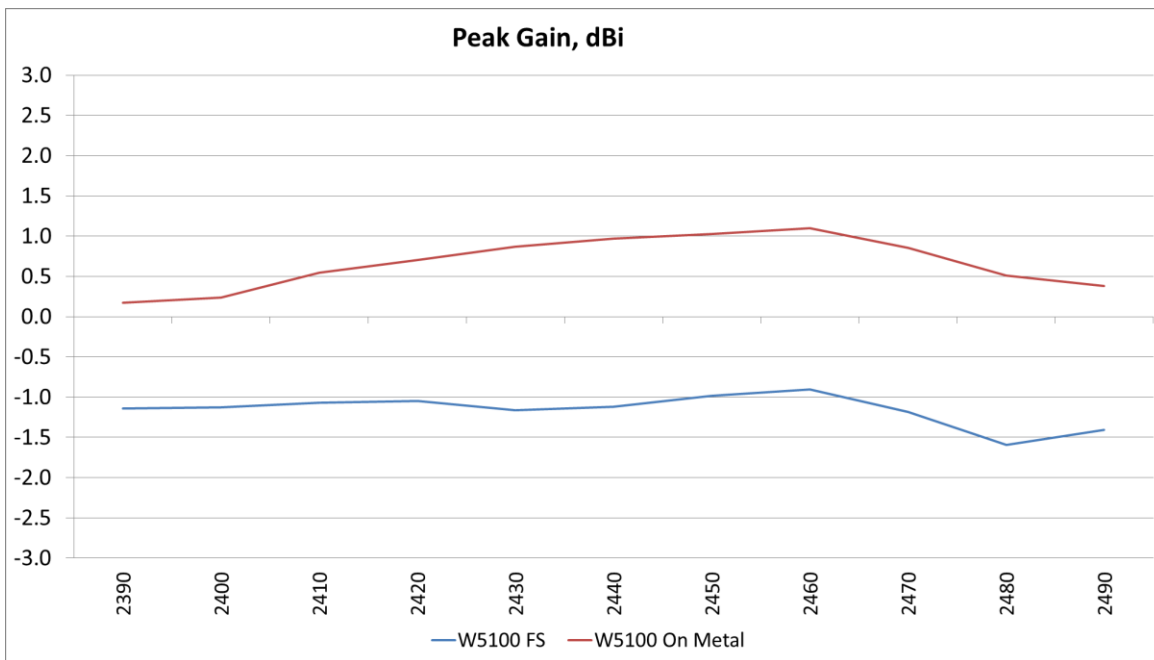
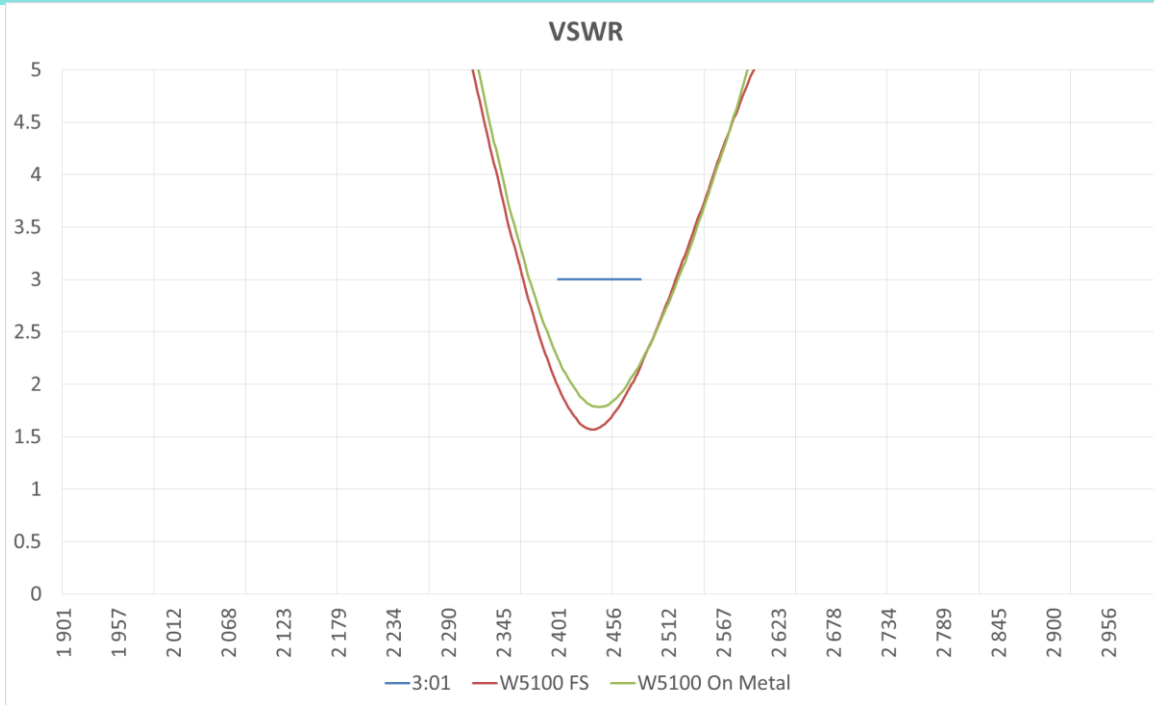
Description: On-ground BLE/NFC combo

Series: Embedded Antenna

PART NUMBER: W5100

CHARTS

P1



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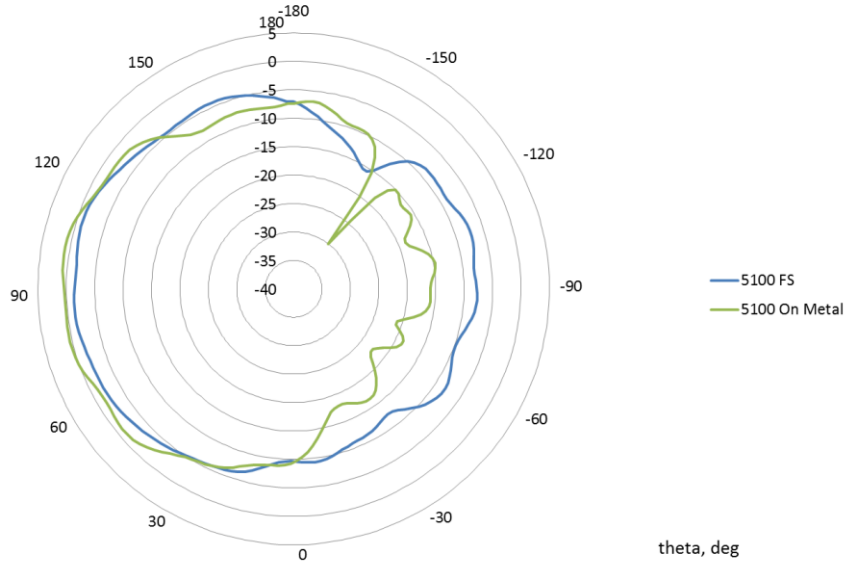
Series: Embedded Antenna

PART NUMBER: W5100

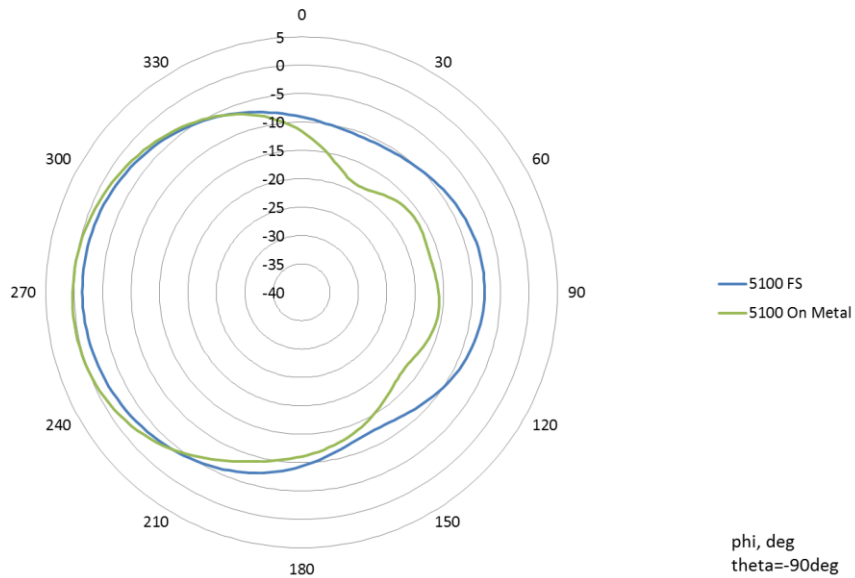
CHARTS

P1

Vertical plane



Horizontal plane



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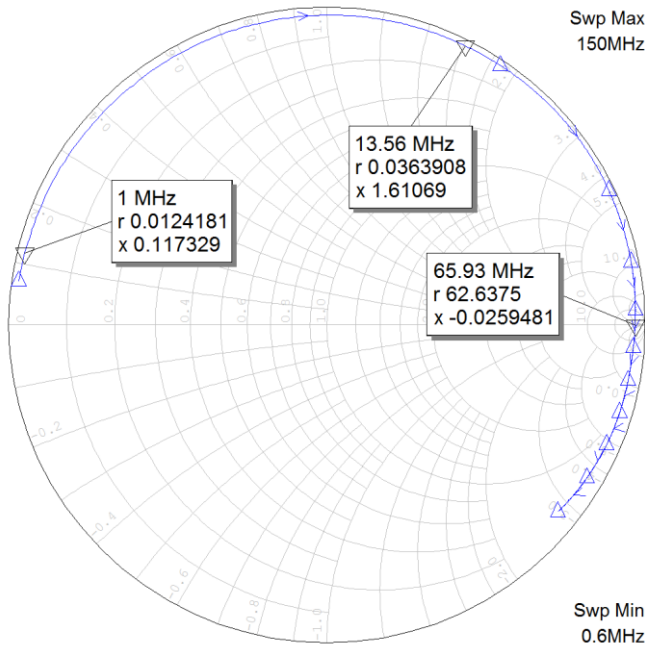
Series: Embedded Antenna

PART NUMBER: W5100

CHARTS

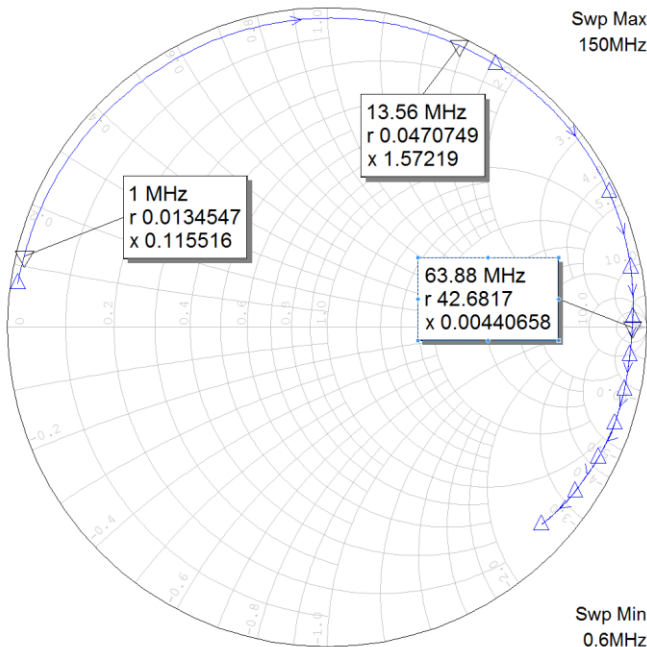
P2

Free Space



L @ 13.56MHz, $\mu\text{H}$	0.95
Q @ 13.56MHz	44
SRF, MHz	65.9

On Metal



L @ 13.56MHz, $\mu\text{H}$	0.92
Q @ 13.56MHz	33
SRF, MHz	63.9

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## PACKAGING

Sealed plastic bag 60x90mm

## ASSEMBLY

Pull off adhesive cover from backside and attach. Apply pressure 10N/cm<sup>2</sup> for 4 seconds to activate pressure sensitive adhesive.

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