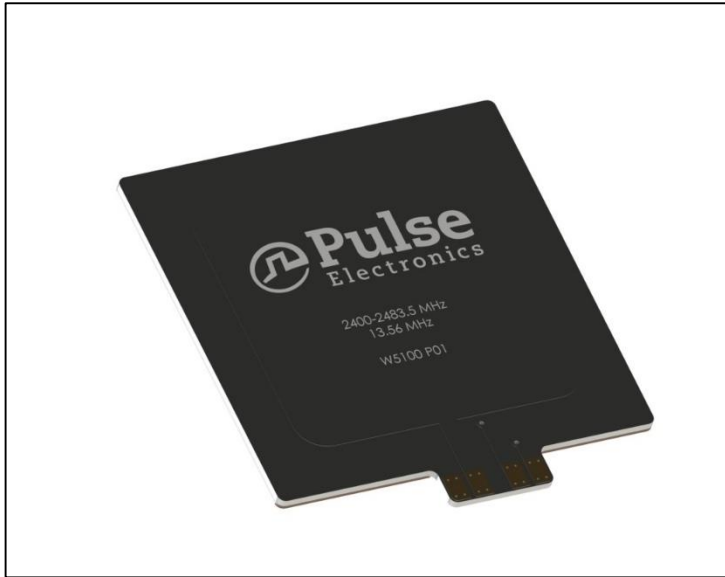


**Description:** On-ground BLE/NFC combo

**Series:** Embedded Antenna

**PART NUMBER:** W5100

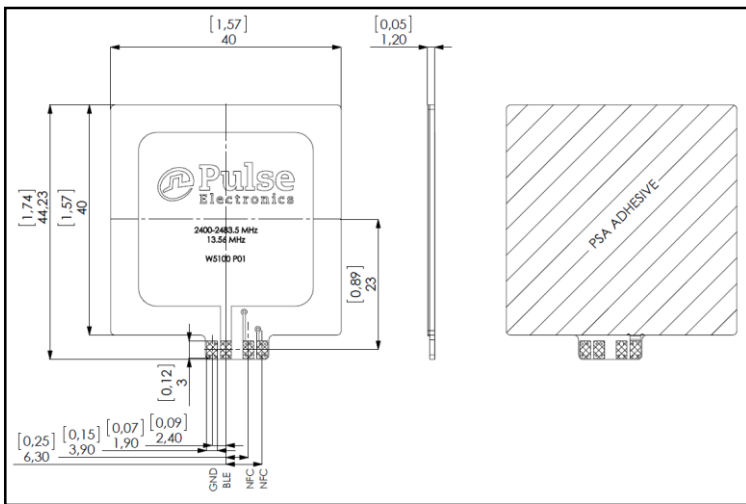


**Features:**

- 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

**DETAIL A SCALE TO: 1**

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:  
 Process capability studies 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

Receiving plastic allowed to use

Pulse Product Co.  
 21411111111111111111  
 12440, Oakridge, Toronto, ON M3J 1S7, Canada  
 Tel: +1 416 297 5555 Fax: +1 416 297 5555  
 www.pulseelectronics.com/antennas

Scale: 2:1 (A2)  
 Sheet number: W5100  
 Sheet tolerance: 0.10  
 Customer number: 00140014  
 Date: 20140314  
 Drawn: JDF  
 Checked: JDF  
 Approved: JDF  
 Part name: W5100  
 Document name: W5100

Issue: 1613

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

**Series:** Embedded Antenna

**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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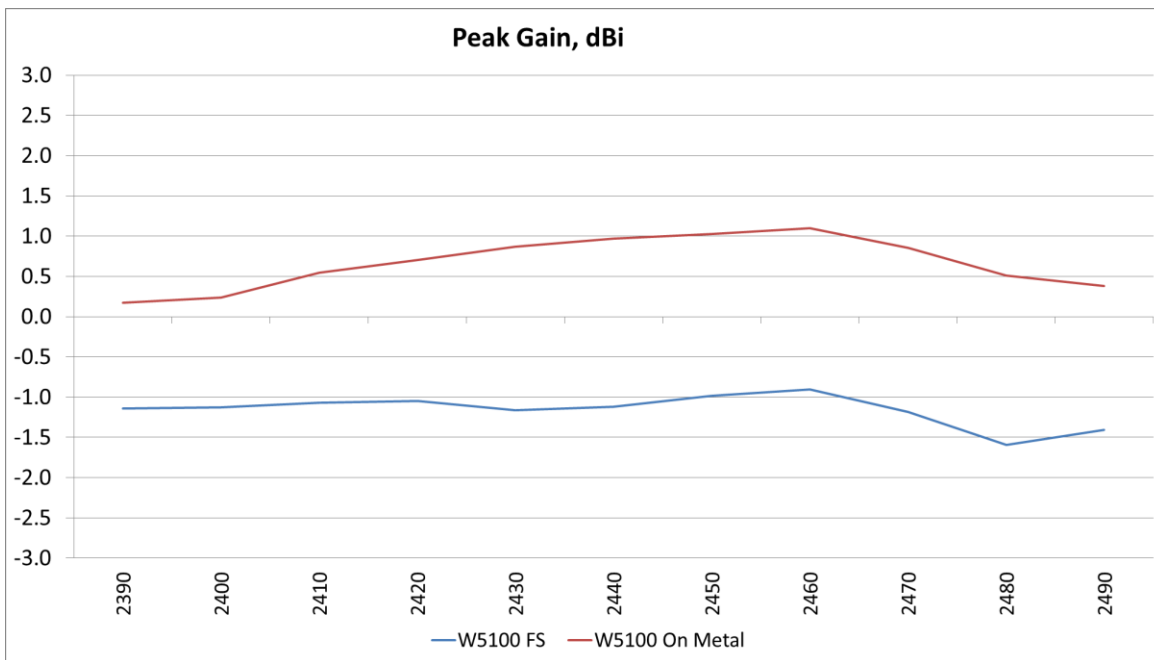
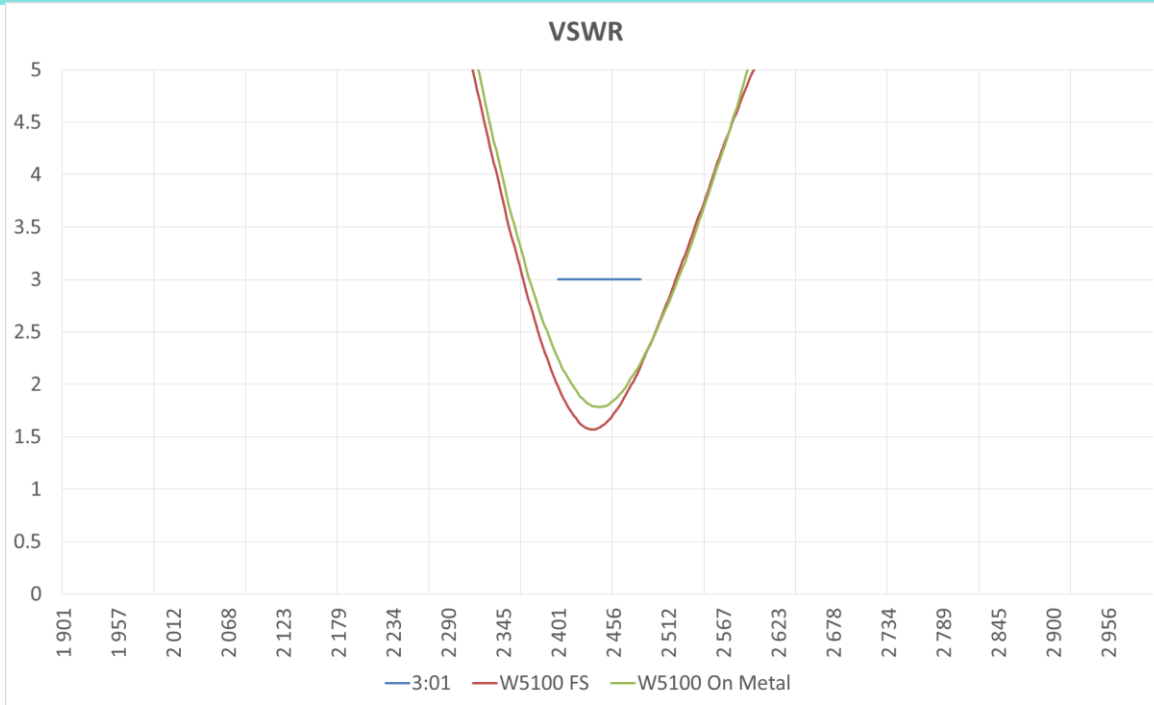
Description: On-ground BLE/NFC combo

Series: Embedded Antenna

PART NUMBER: W5100

CHARTS

P1



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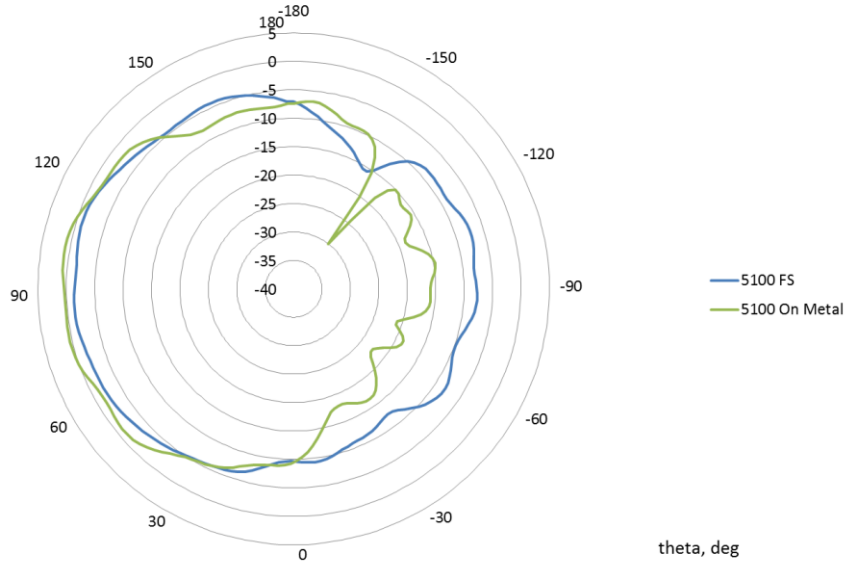
Series: Embedded Antenna

PART NUMBER: W5100

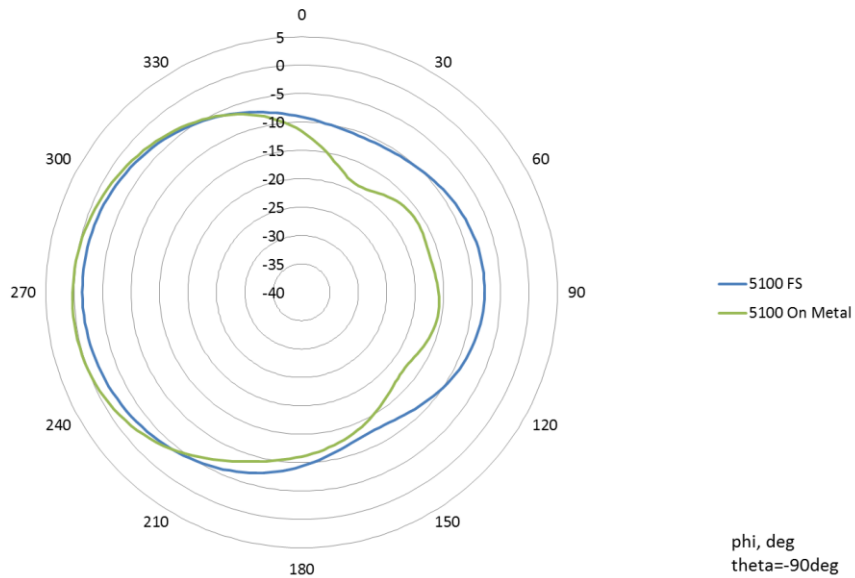
CHARTS

P1

Vertical plane



Horizontal plane



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Description: On-ground BLE/NFC combo

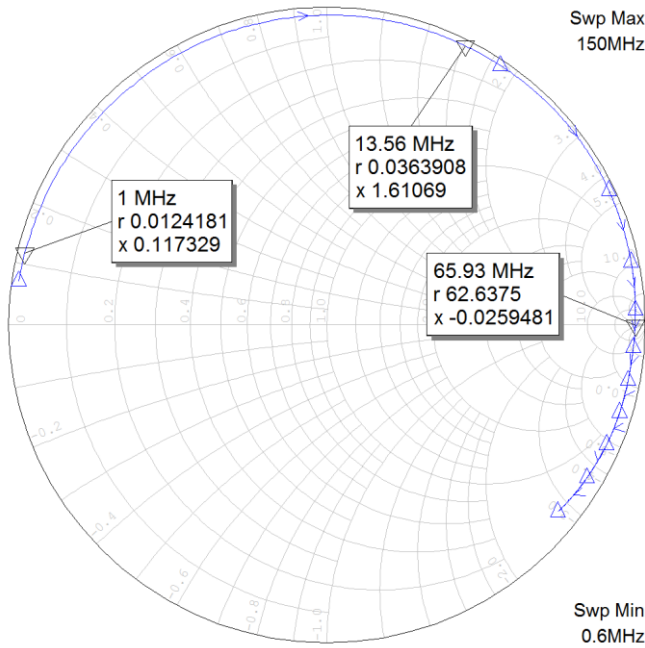
Series: Embedded Antenna

PART NUMBER: W5100

CHARTS

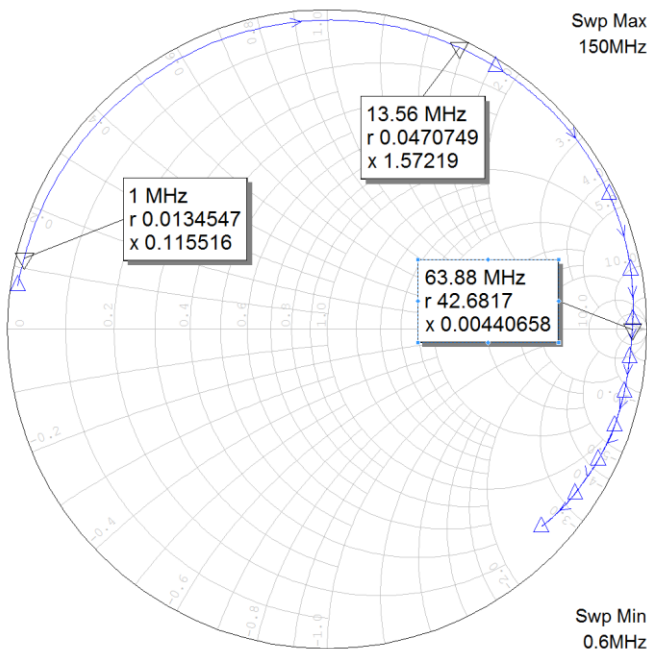
P2

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

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**PART NUMBER:** W5100

## 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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