

**Series: SMD Helical Antenna**

**Description:** 860-930MHz Embedded Helical Antenna

**PART NUMBER: W3136**



**Features:**

- 860-930MHz
- Impedance 50 Ohm
- Plastic support helical antenna
- Length 29.5mm,
- Gain 2dBi
- SMD Mounting on PCB
- RoHS Compliant

**Applications:**

- 868MHz and 915MHz ISM Band Systems
- IoT systems
- Metering, Automation
- Security, surveillance
- Remote controls, toys

All dimensions are in mm / inches

Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

For more information:

Pulse Worldwide Headquarters  
15255 Innovation Drive #100  
San Diego, CA 92128  
USA  
Tel: 1-858-674-8100

Pulse/Larsen Antennas  
18110 SE 34<sup>th</sup> St Bldg 2 Suite 250  
Vancouver, WA 98683  
USA  
Tel: 1-360-944-7551

Europe Headquarters  
Pulse GmbH & Do, 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: SMD Helical Antenna

Description: 860-930MHz Embedded Helical Antenna

PART NUMBER: W3136

### ELECTRICAL SPECIFICATIONS

Antenna Type	Helical monopole
Frequency	860-930MHz
Nominal Impedance	50 Ω
VSWR	Max 2.5
Radiation Pattern	Omn
Gain	2 dBi
Efficiency	65%
Polarization	Linear
Power Withstanding	2W

### MECHANICAL SPECIFICATIONS

Overall Length	29.5mm
Weight	2.52g
Antenna Color / Material	White
Fix system	SMD+Glue
Recommended Glue	Resinlab EP1320LV Black
Solder Paste Thickness	Min 0.15mm
MSL	3

### ENVIRONMENTAL SPECIFICATIONS

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

### OTHER SPECIFICATIONS

Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

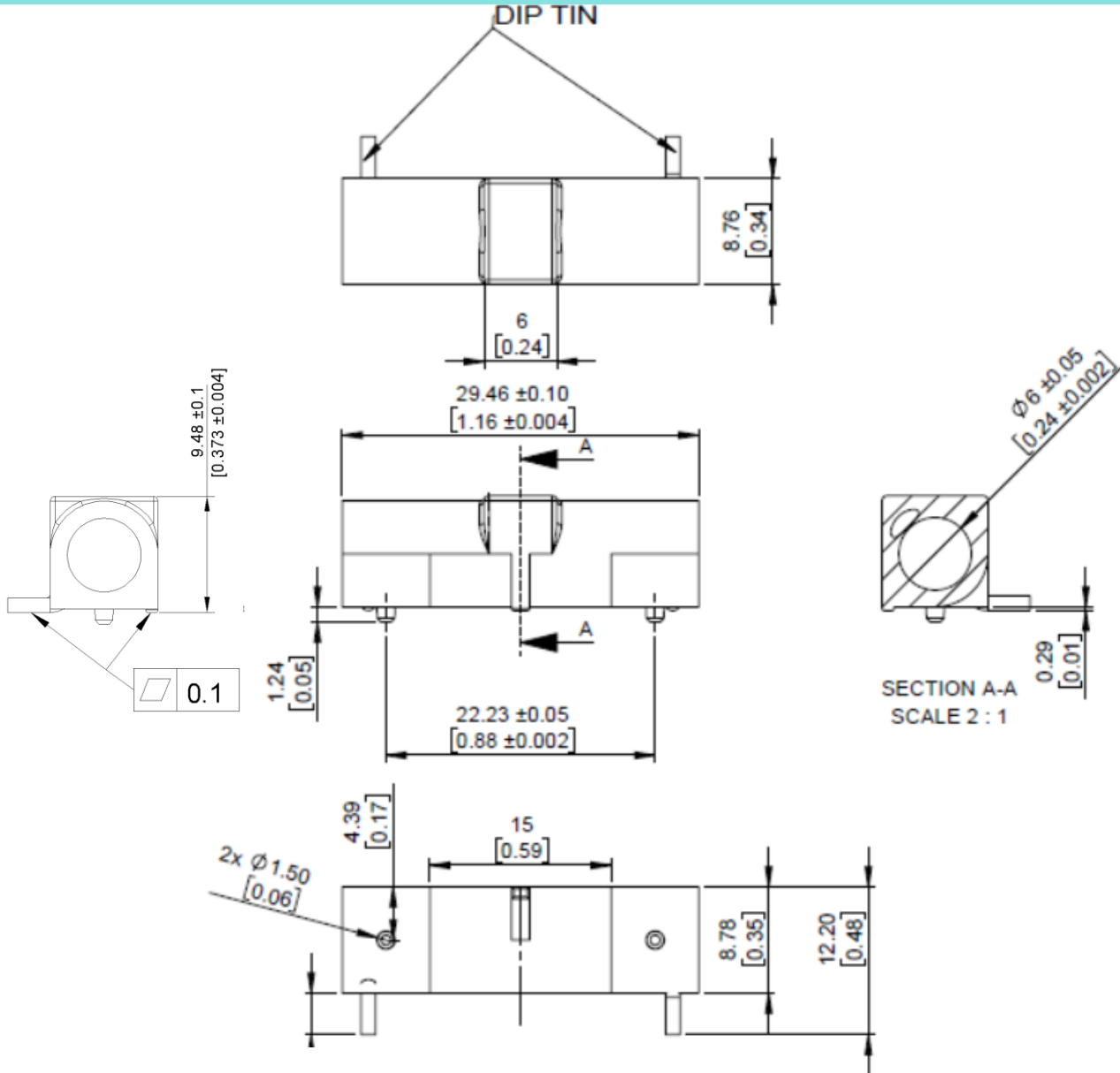
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

**MECHANICAL DRAWING**



**Suction Pick Area**

Dimension Unit: mm[inch]

Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

### FIX SYSTEM RECOMMENDATION

Fix system

1. SMD process
2. Solder paste thickness: minimum 0.15mm
3. Glue is required, Recommended Glue: Resinlab EP1320LV Black, usage and position see below recommended area.



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

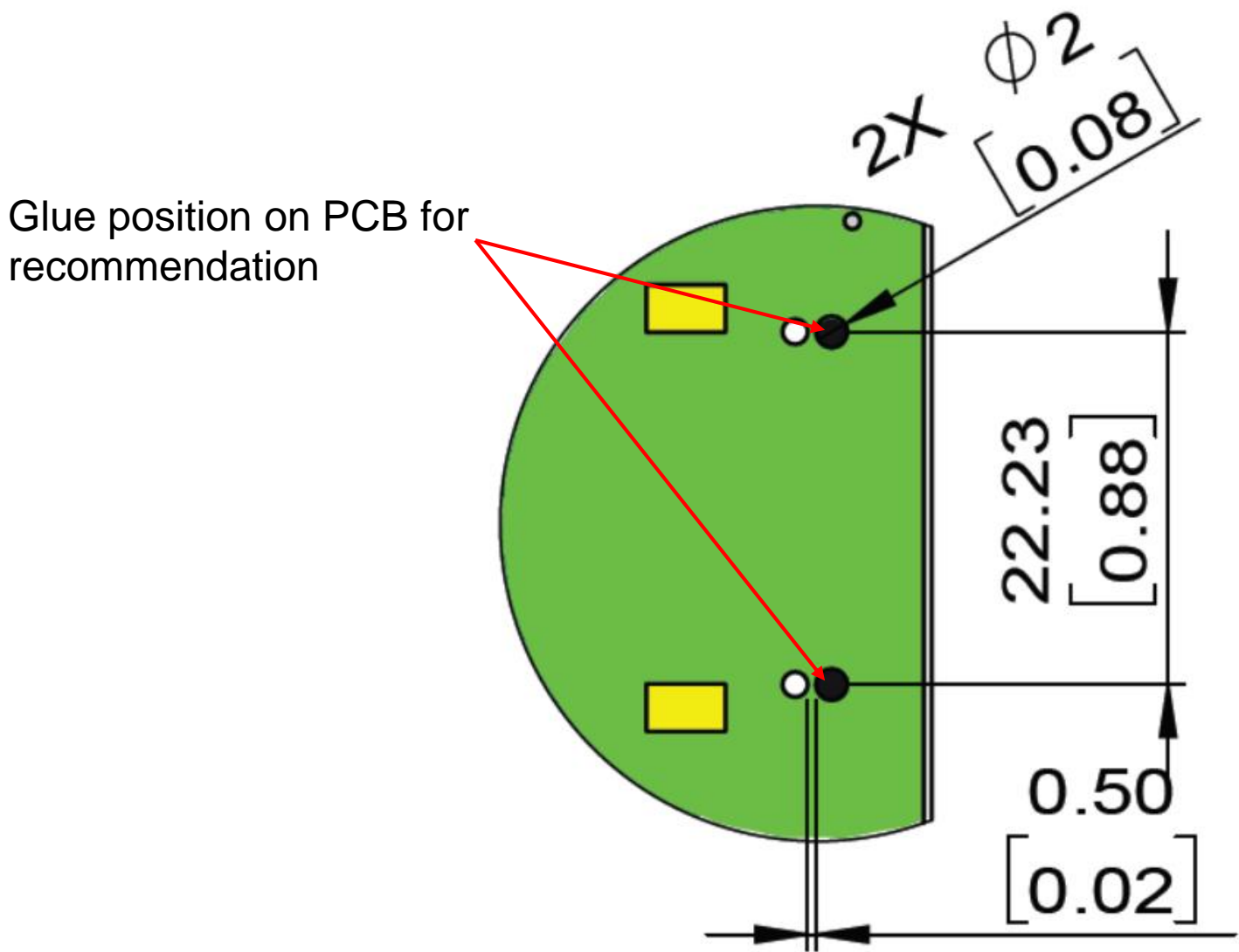
Series: SMD Helical Antenna

PART NUMBER: W3136

**FIX SYSTEM RECOMMENDATION**

Fix system

- 1. Glue position on PCB for recommendation



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

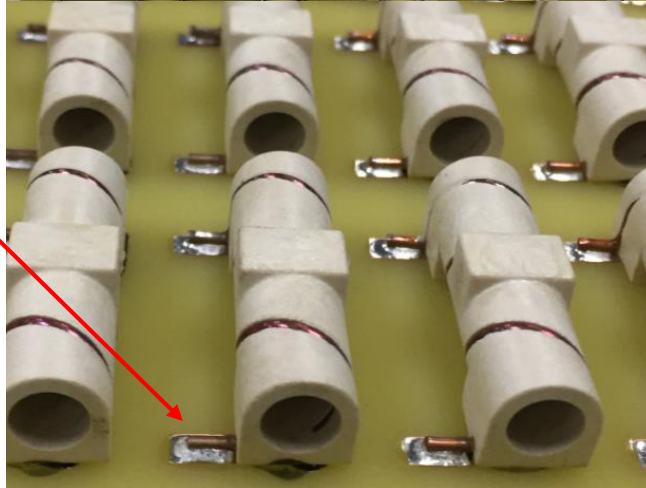
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

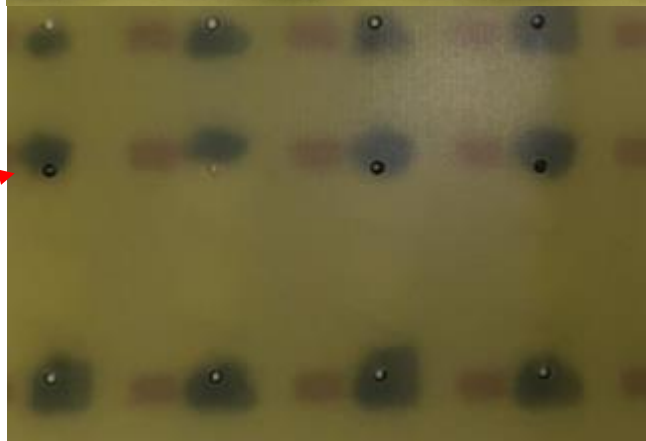
PART NUMBER: W3136

**FIX SYSTEM RECOMMENDATION**

Solder effect



Back view of glue area



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

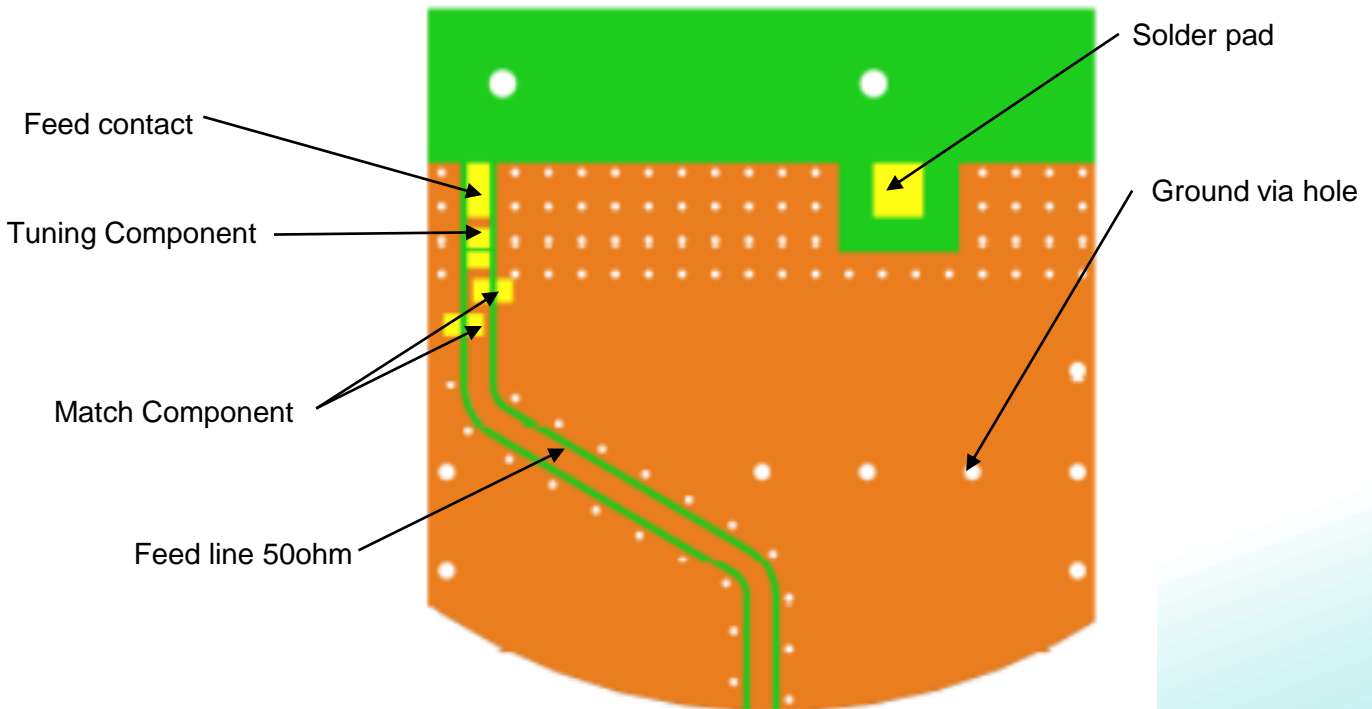
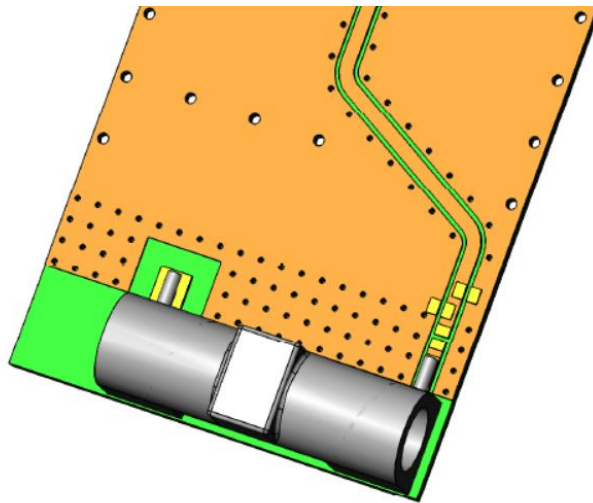
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

TEST SETUP

PWB Layout for W3136 SMD Helical Antenna



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

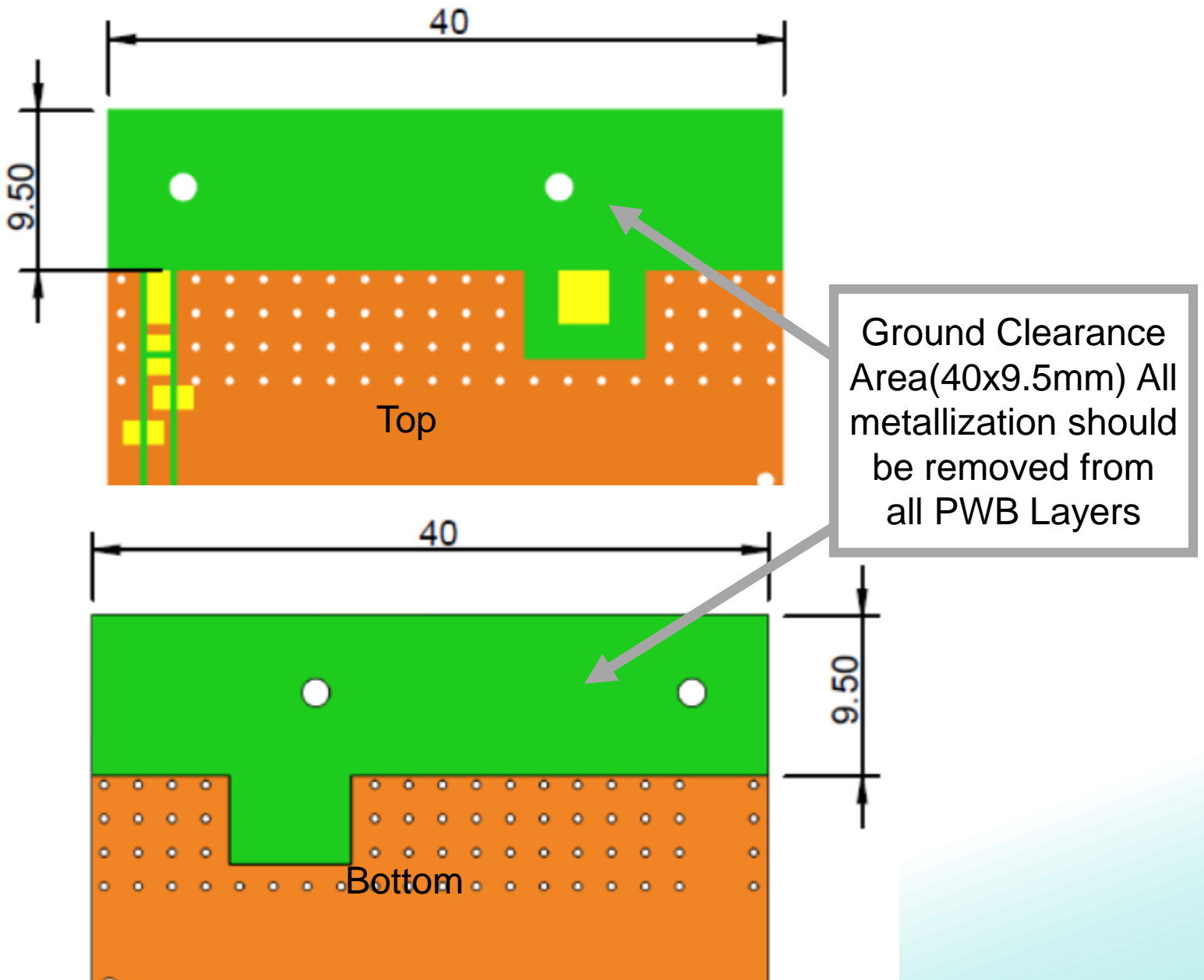
Series: SMD Helical Antenna

PART NUMBER: W3136

**TEST SETUP**

PWB ground clearance area (Top): 40x9.5mm

PWB ground clearance area (Bottom): 40x9.5mm



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.



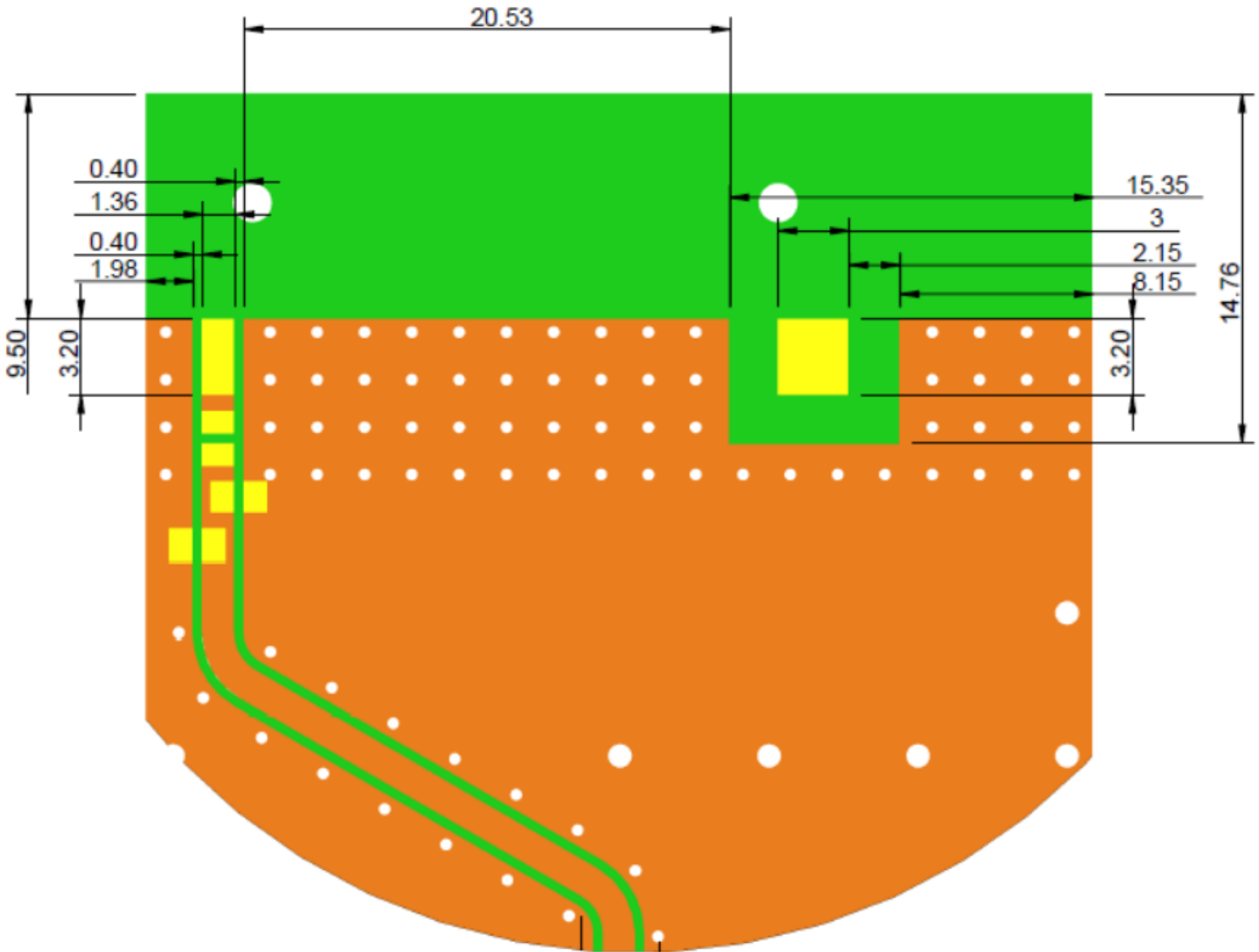
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

TEST SETUP

PWB Pad dimension in top copper



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

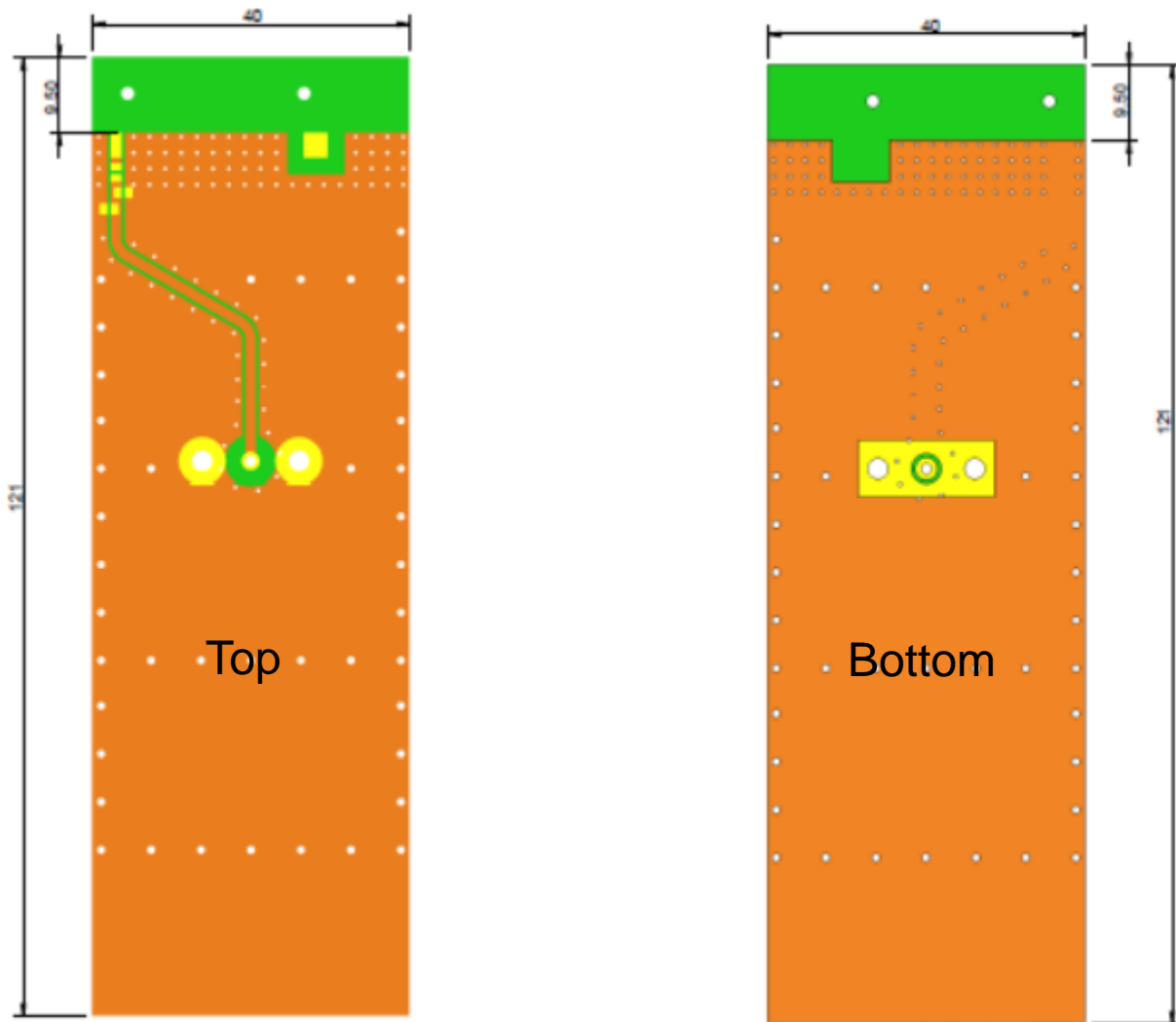
**Description:** 860-930MHz Embedded Helical Antenna

**Series:** SMD Helical Antenna

**PART NUMBER:** W3136

**TEST SETUP**

PWB Layout, Pulse PWB size:121x40mm, Thickness 1.0mm, other size boards can be used depending on customer size.



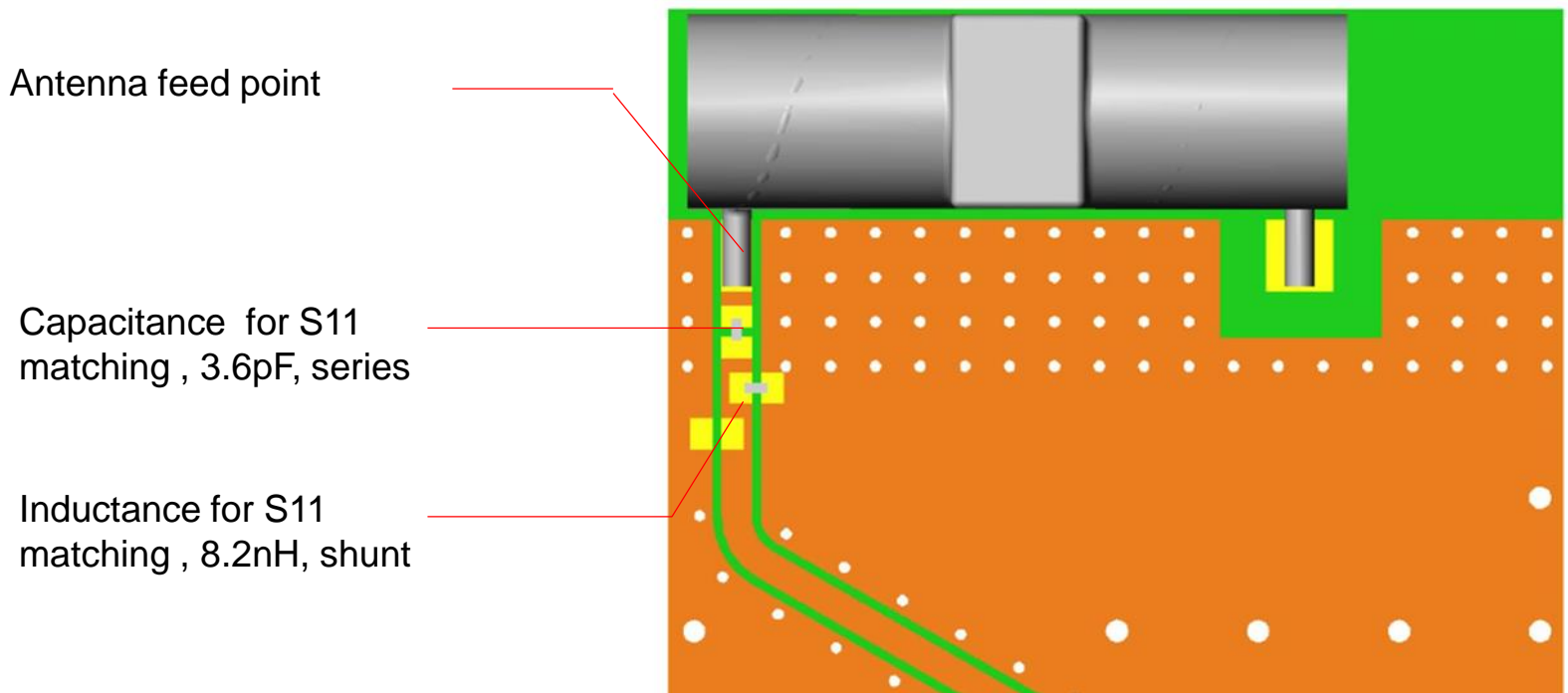
**Description:** 860-930MHz Embedded Helical Antenna

**Series:** SMD Helical Antenna

**PART NUMBER:** W3136

**TEST SETUP**

PWB Layout, Pulse PWB size:121x40mm, Thickness 1.0mm, other size boards can be used depending on customer size.



Note : Exact matching and tuning components value depend on application , board size ,cover etc.

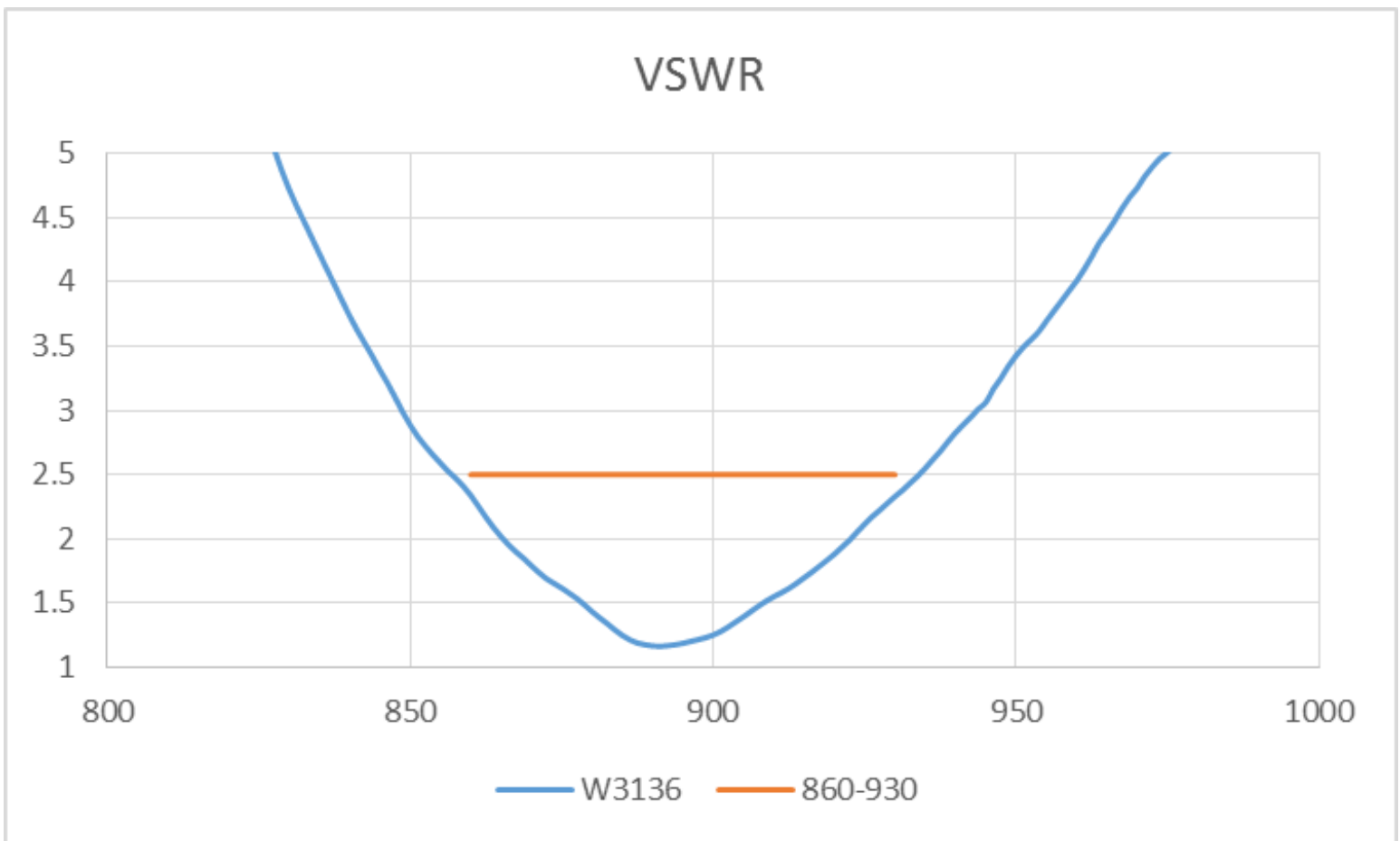
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS

Measured on the 121x40mm test board with tuning and matching circuit



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

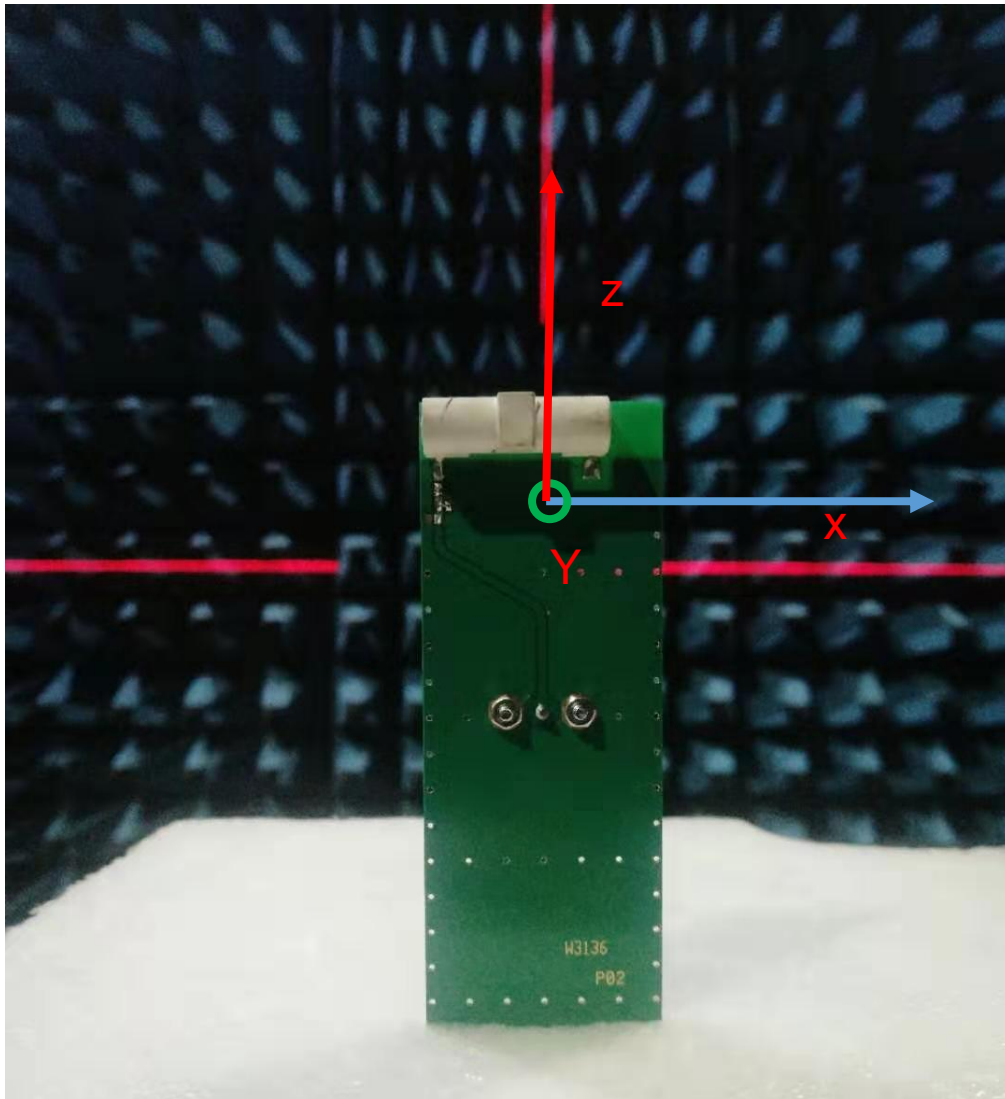
Series: SMD Helical Antenna

PART NUMBER: W3136

### TEST SETUP

Measured on the 121x40mm test board with tuning and matching circuit.

Test in PSU China Chamber.



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

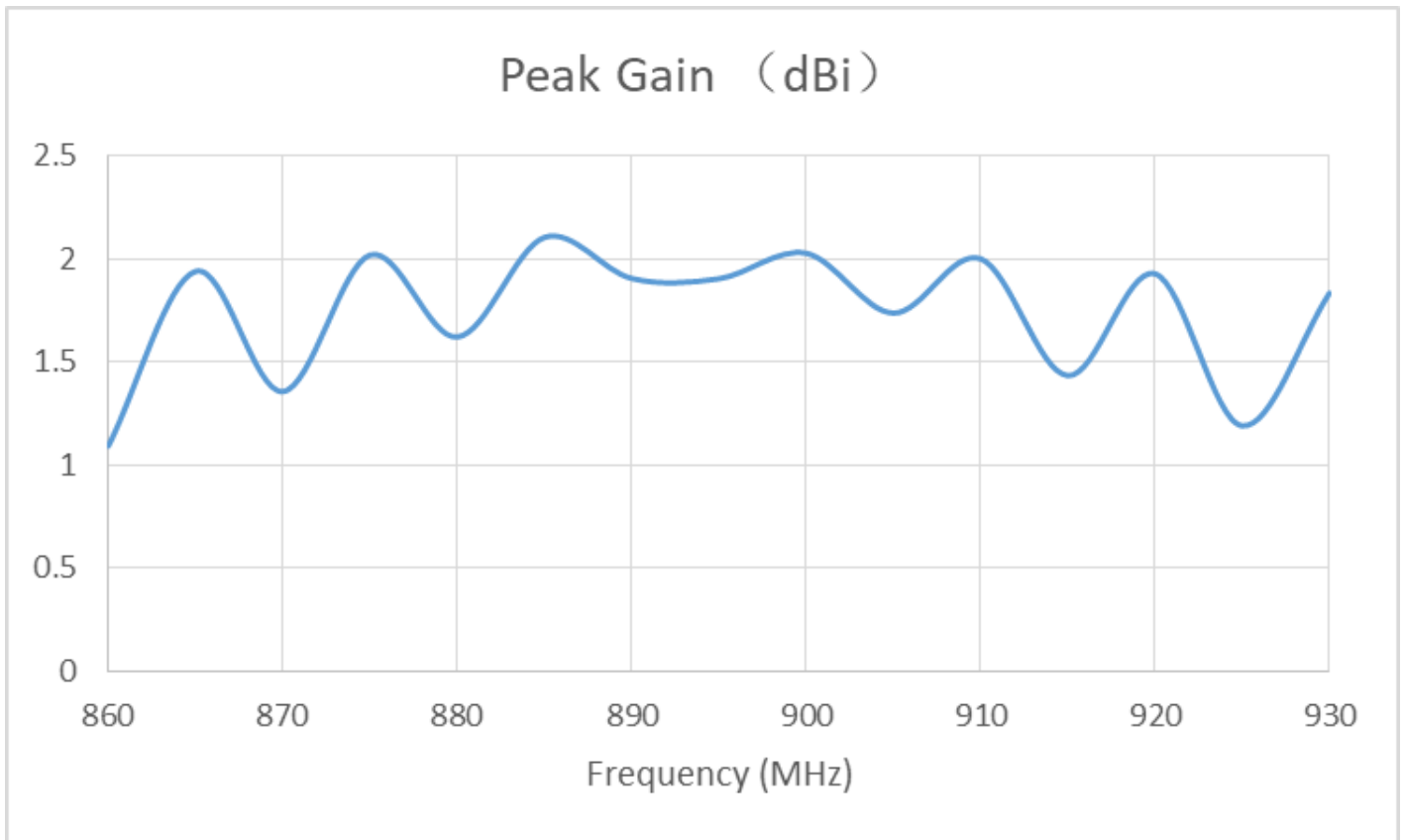
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

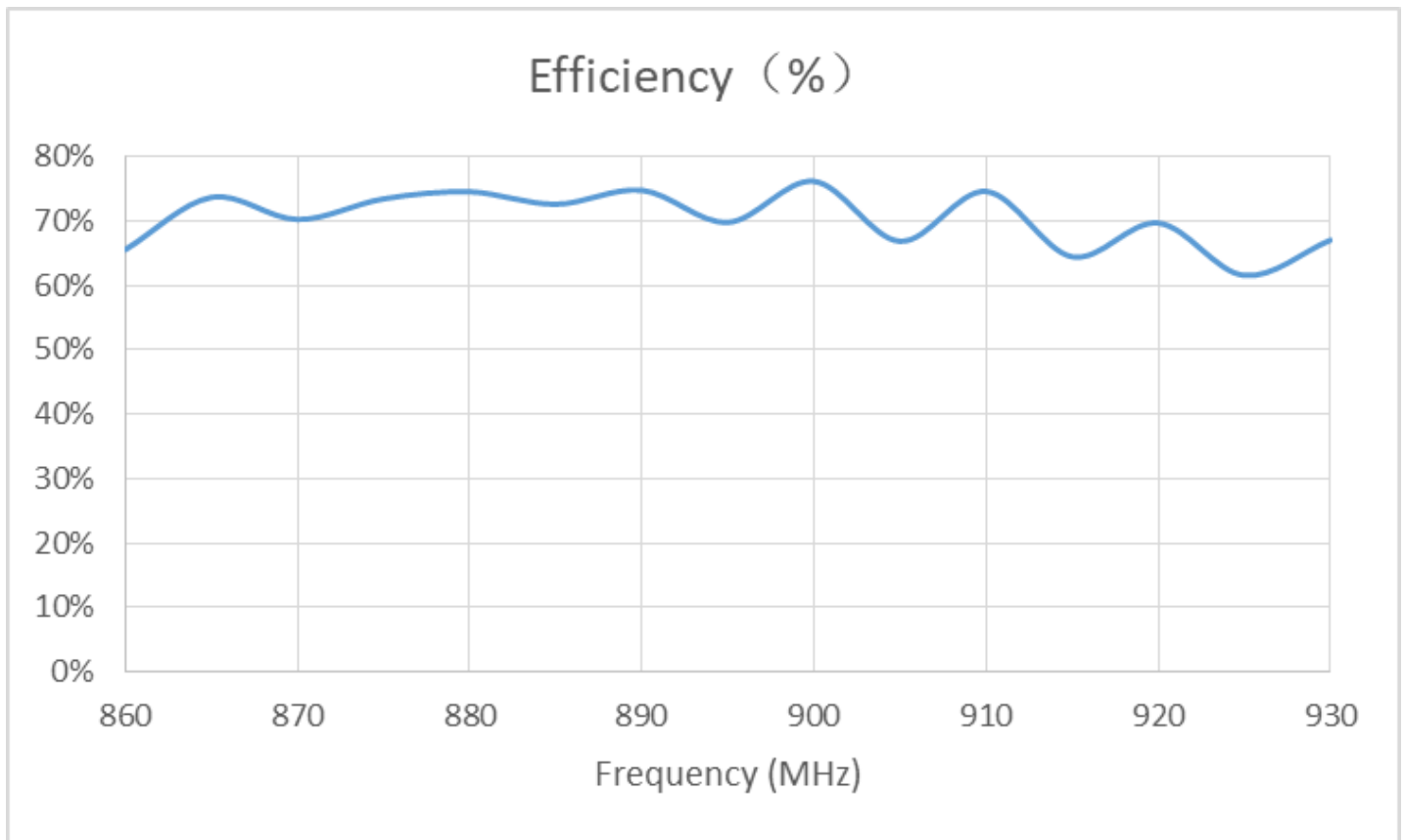
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

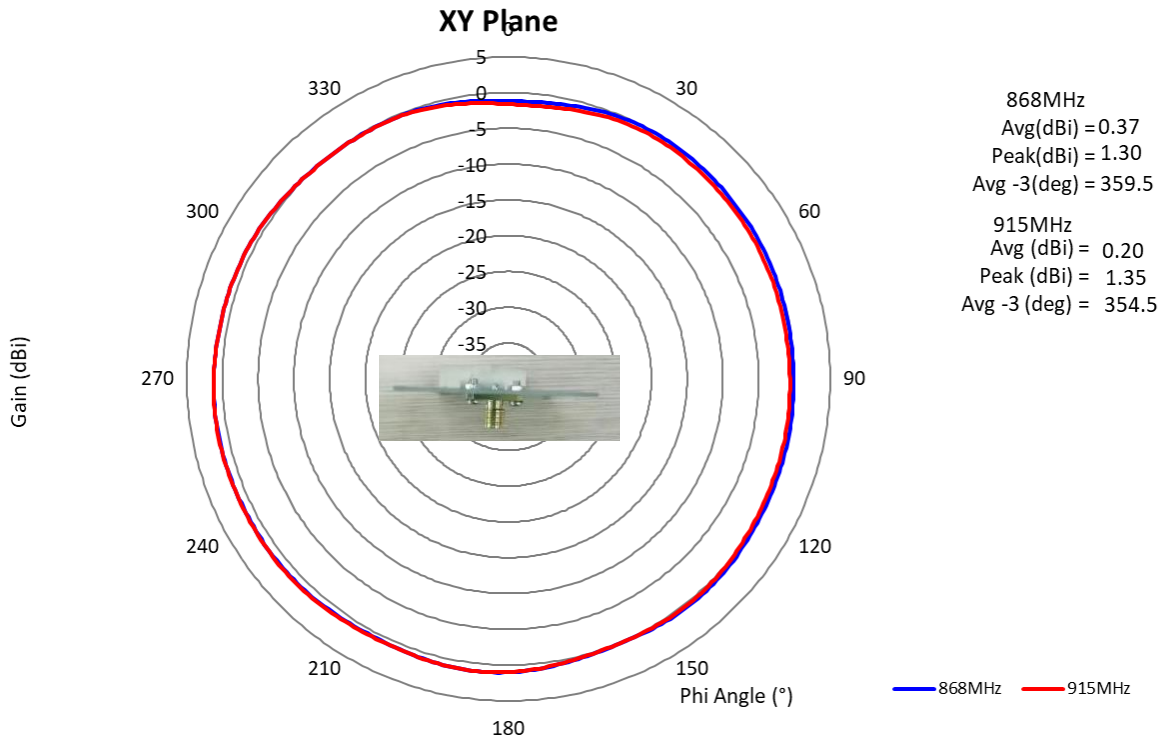
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS

Typical radiation pattern in free space



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.



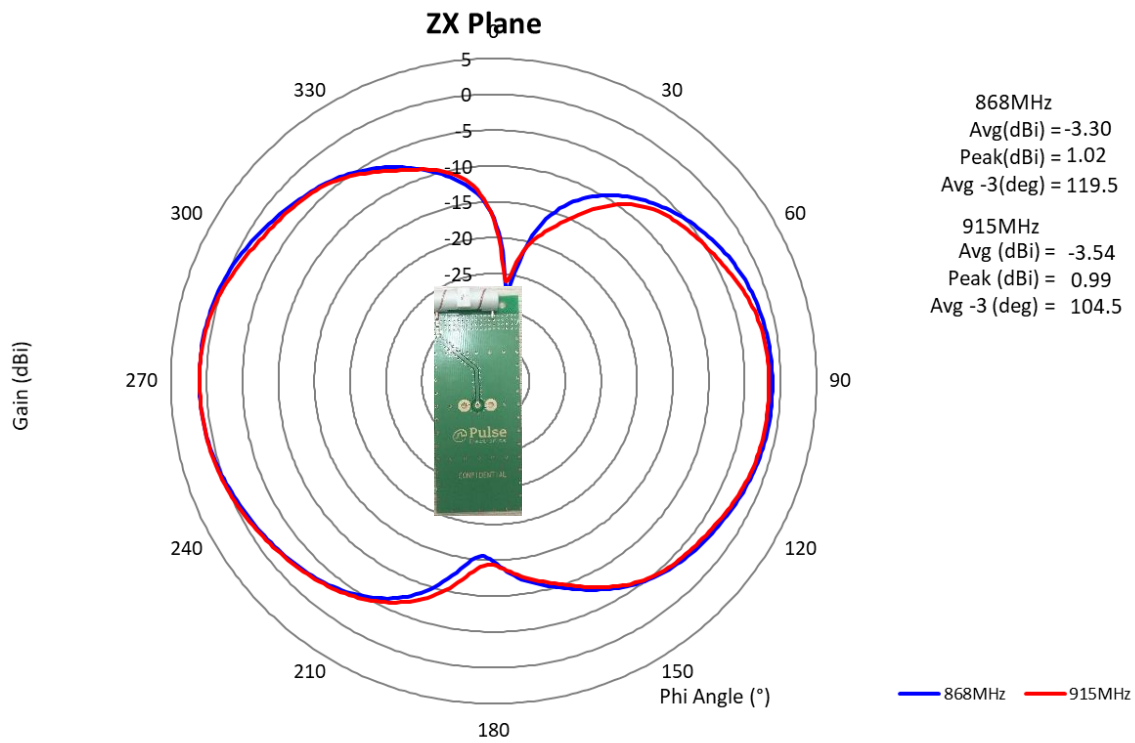
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS

Typical radiation pattern in free space



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

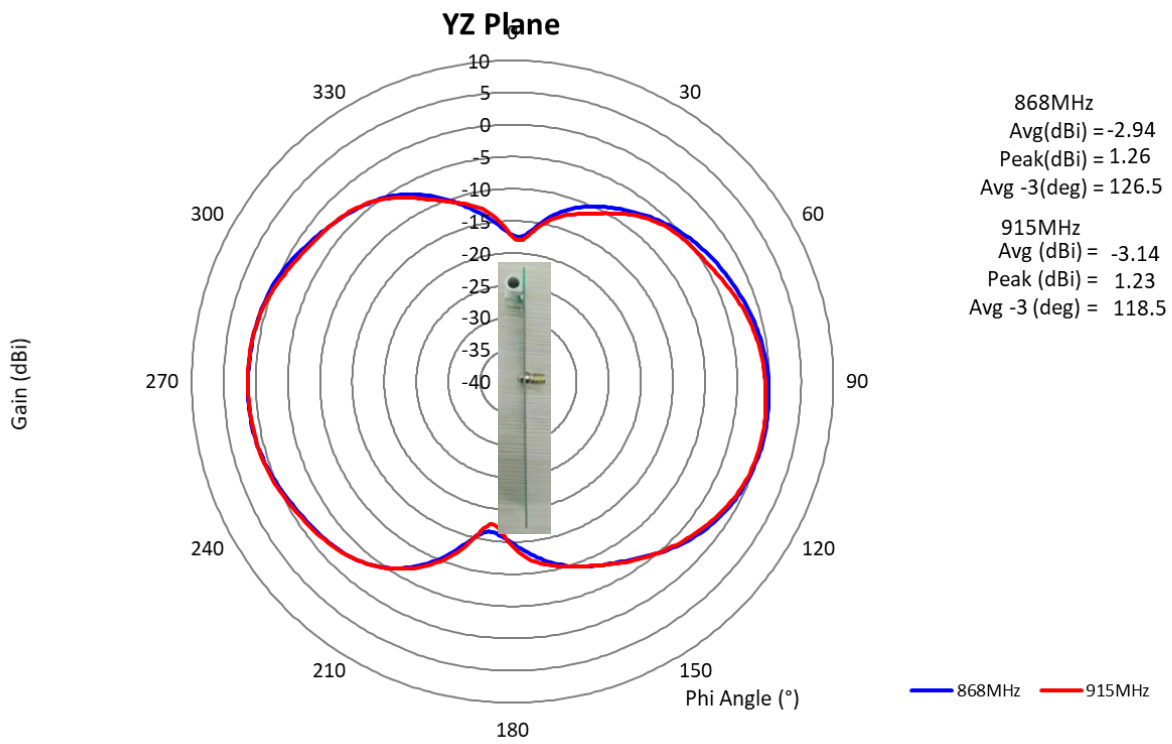
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

PART NUMBER: W3136

CHARTS

Typical radiation pattern in free space



Issue: 1943

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

CONFIDENTIAL AND PROPRIETARY INFORMATION

This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

**Series: SMD Helical Antenna**

**Description: 860-930MHz Embedded Helical Antenna**

**PART NUMBER: W3136**

**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

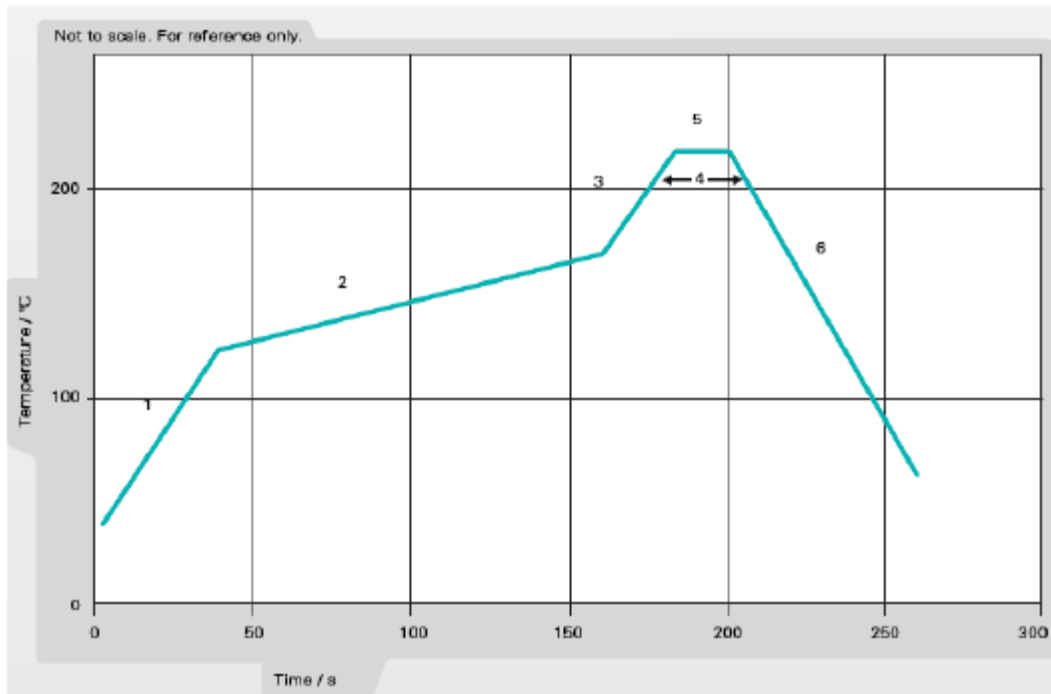
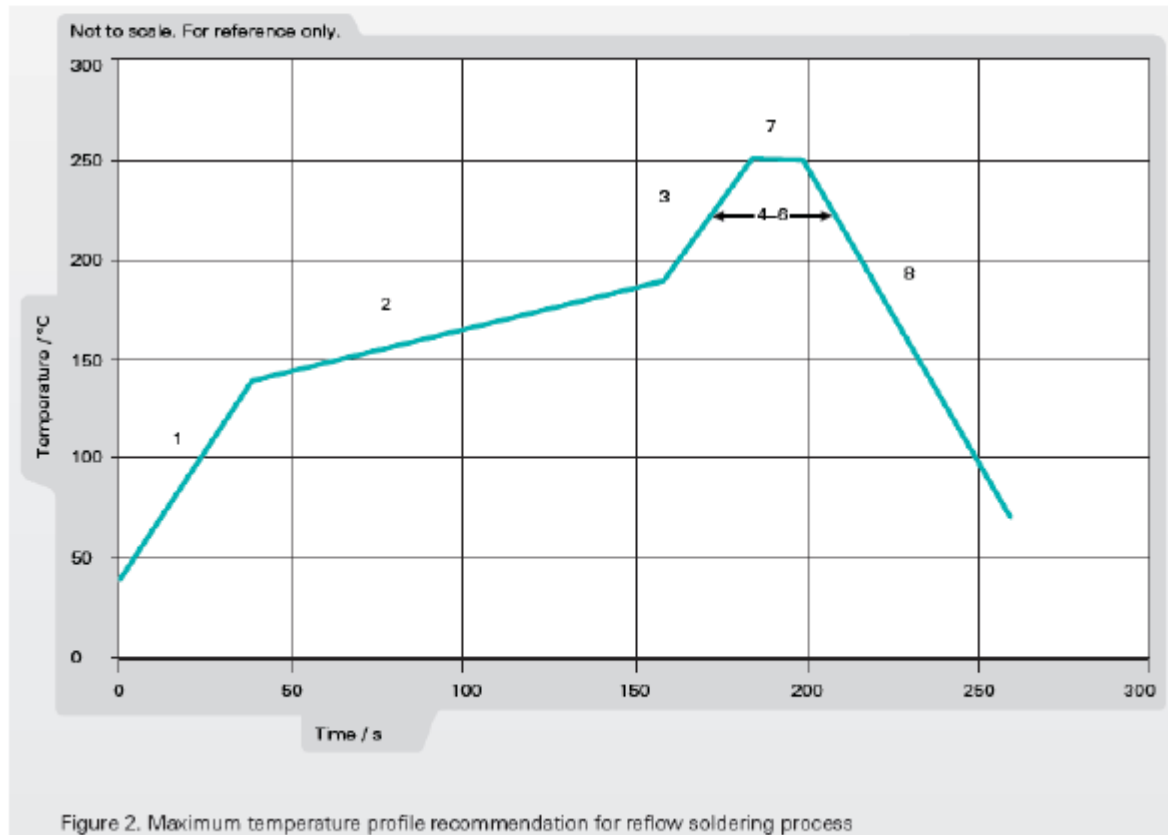


Figure 1. Minimum temperature profile recommendation for reflow soldering process

**Description:** 860-930MHz Embedded Helical Antenna  
**Series:** SMD Helical Antenna  
**PART NUMBER:** W3136

**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	250 °C for 5 seconds
8	Temperature gradient in cooling	Max -5 °C/s



Issue: 1943

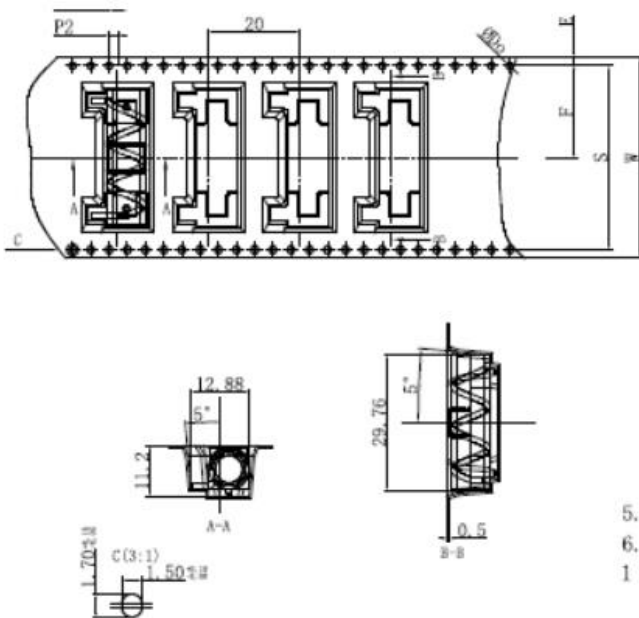
In the effort to improve our products, we reserve the right to make changes judged to be necessary.

CONFIDENTIAL AND PROPRIETARY INFORMATION

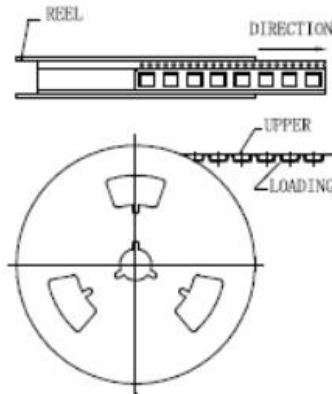
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Reproduction, disclosure or use without specific written authorization of Pulse is strictly forbidden.

**Description:** 860-930MHz Embedded Helical Antenna  
**Series:** SMD Helical Antenna  
**PART NUMBER:** W3136

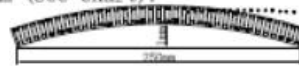
**PACKAGING**



REFERENCE VIEW



- 5. All the size design with reference to the EIA - 481 - C - 2003.
- 6. Loading within 250 mm length maximum curvature is less than 1 mm (see chart).



Notes:

- 1. 10 side hole of the cumulative tolerance cannot be more than + / - 0.2 mm.
- 2. Material specifications: PS black antistatic, thickness of 0.50 mm.
- 3. 13 inches (100) axis reel package length: 4.6 m. (the front air bag length: 0.33 m, parts packing length: 4 m, after a period of empty packet length: 0.33 meters).
- 4. 13 inches (100) axis reel packaging components to the total number of stars: 230. (the front air bag star count: 15, actual packing parts the number: 200, after a period of empty bag star count: 15).

Manufacture Data	
Total PCS	230PCS
Reel	13"/44
Package Qty	200PCS

**Total 200 PCS In Reel**  
**Reel Size: 330MM[13INCH]**  
**Total 2 PCS Reel In Package Box**  
**Package Box Size:350x350x120mm**

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».



## JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А