

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 34th 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,4th 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

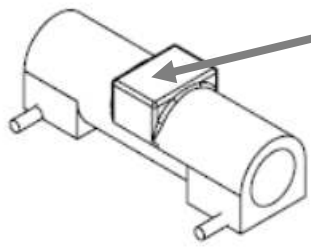
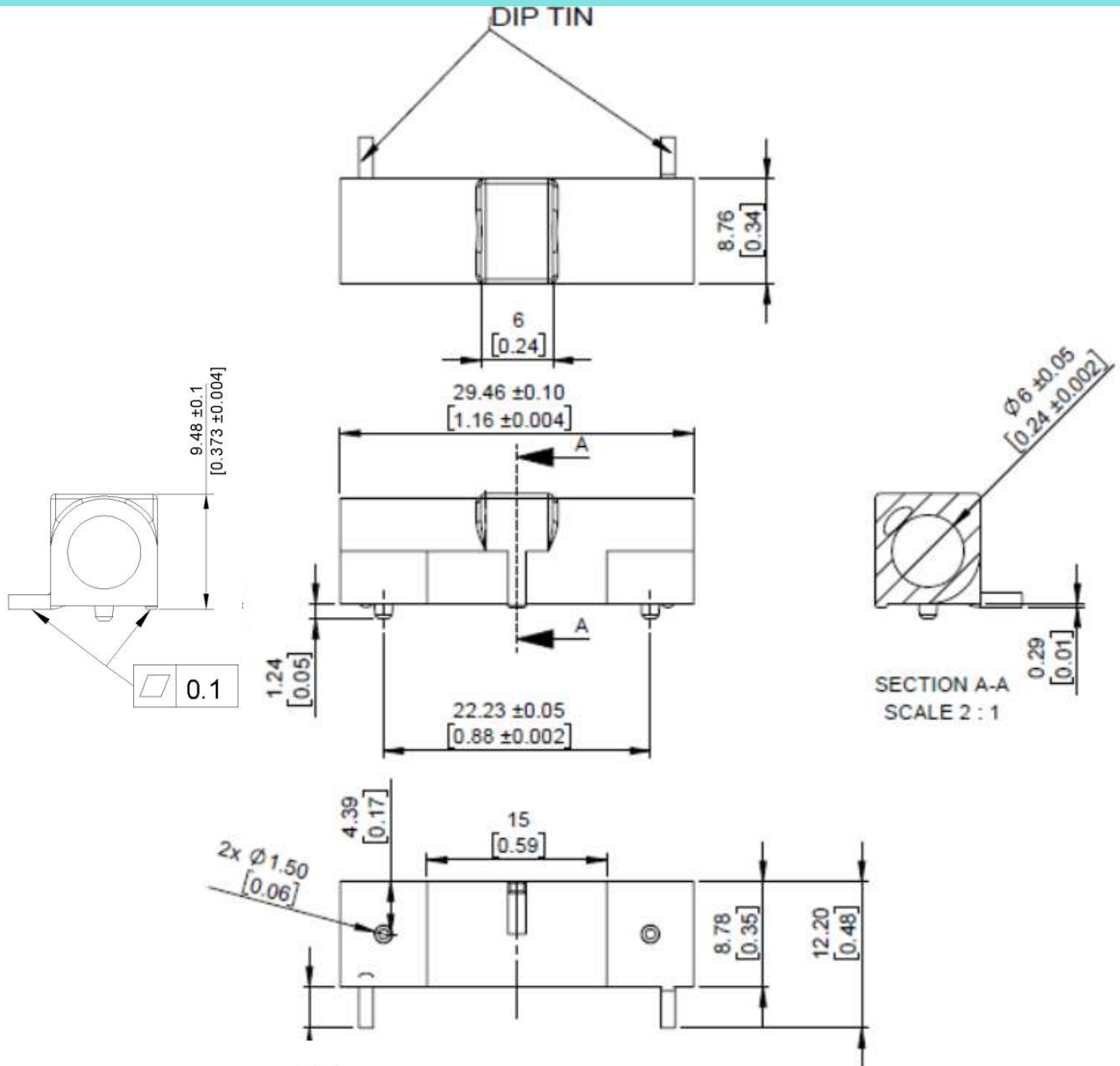
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything 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

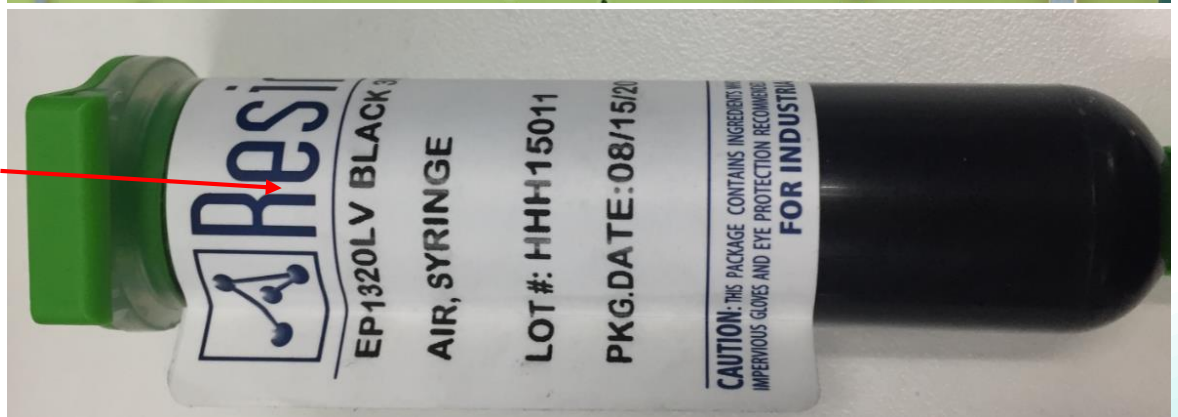
1. SMD process
2. Solder paste thickness: minimum 0.15mm
3. Glue is required, Recommended Glue: Resinlab EP1320LV Black, usage and position see below recommended area.

Solder paste

Glue



Recommended Glue Type



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

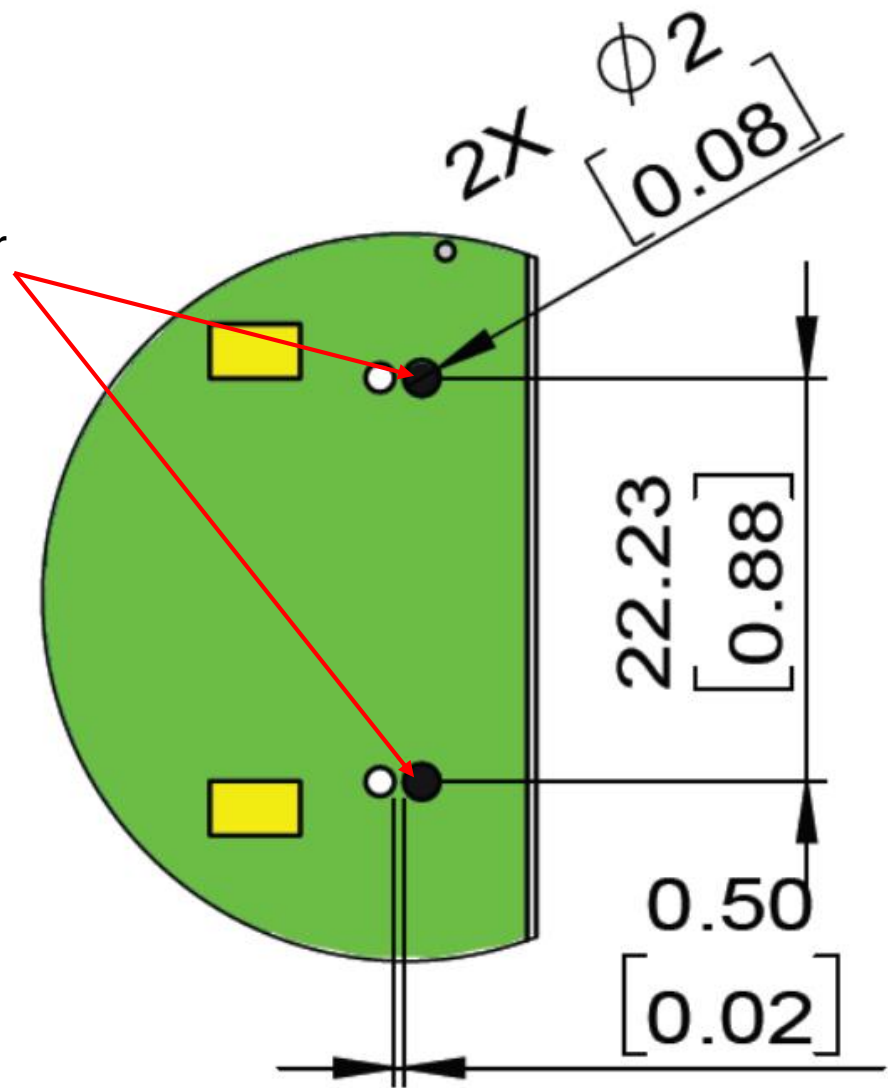
PART NUMBER: W3136

FIX SYSTEM RECOMMENDATION

Fix system

1. Glue position on PCB for recommendation

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.

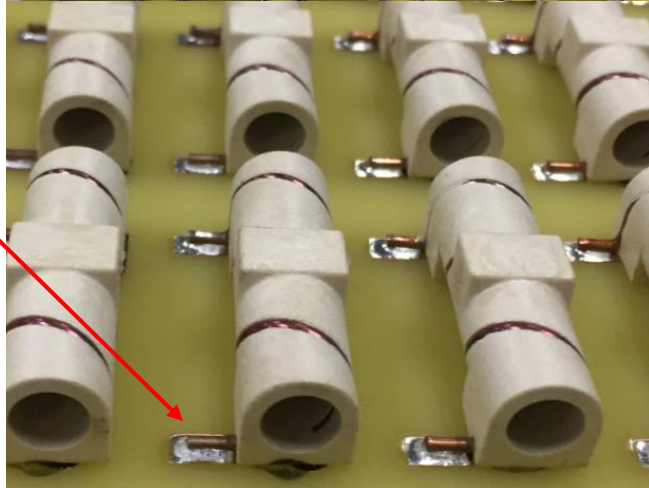
Description: 860-930MHz Embedded Helical Antenna

Series: SMD Helical Antenna

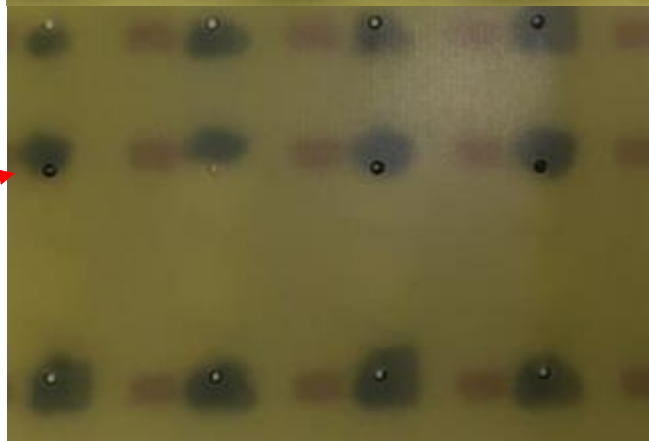
PART NUMBER: W3136

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.

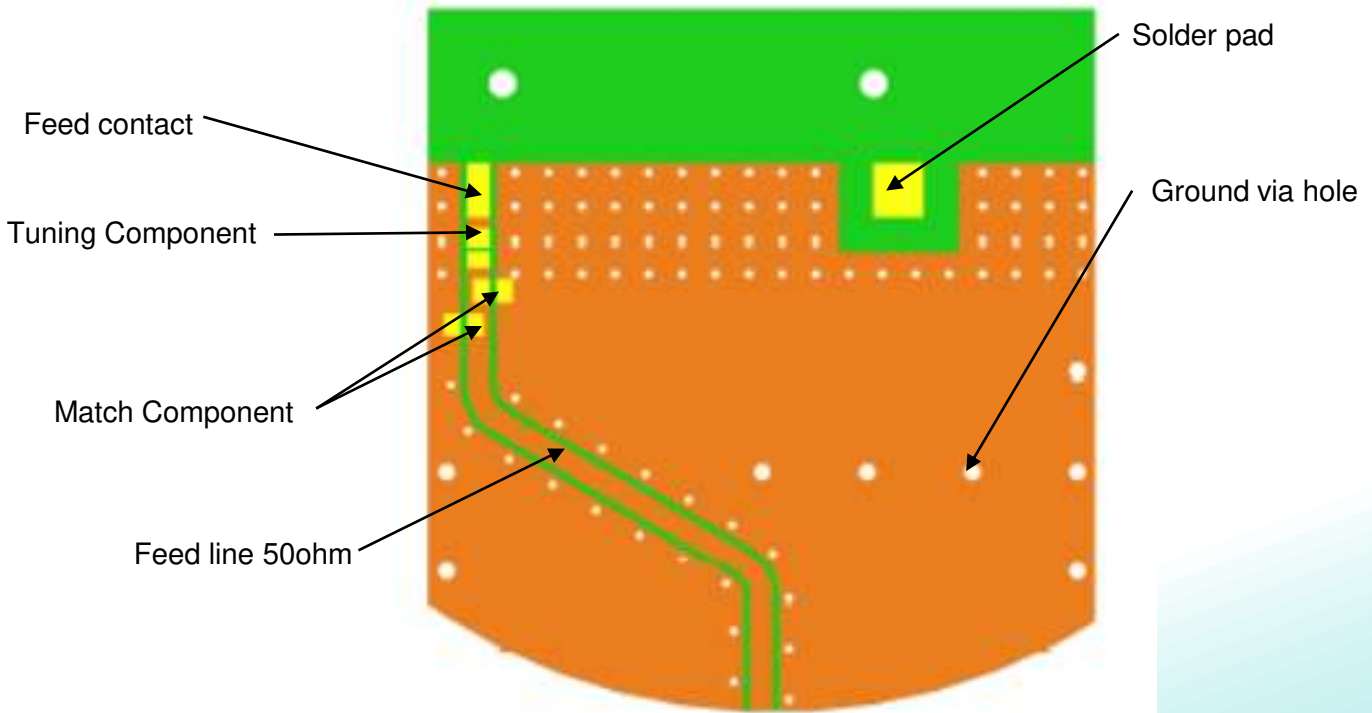
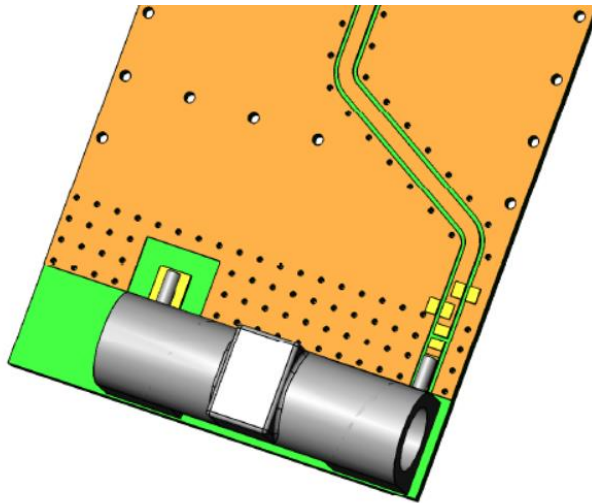
Description: 860-930MHz Embedded Helical Antenna

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.

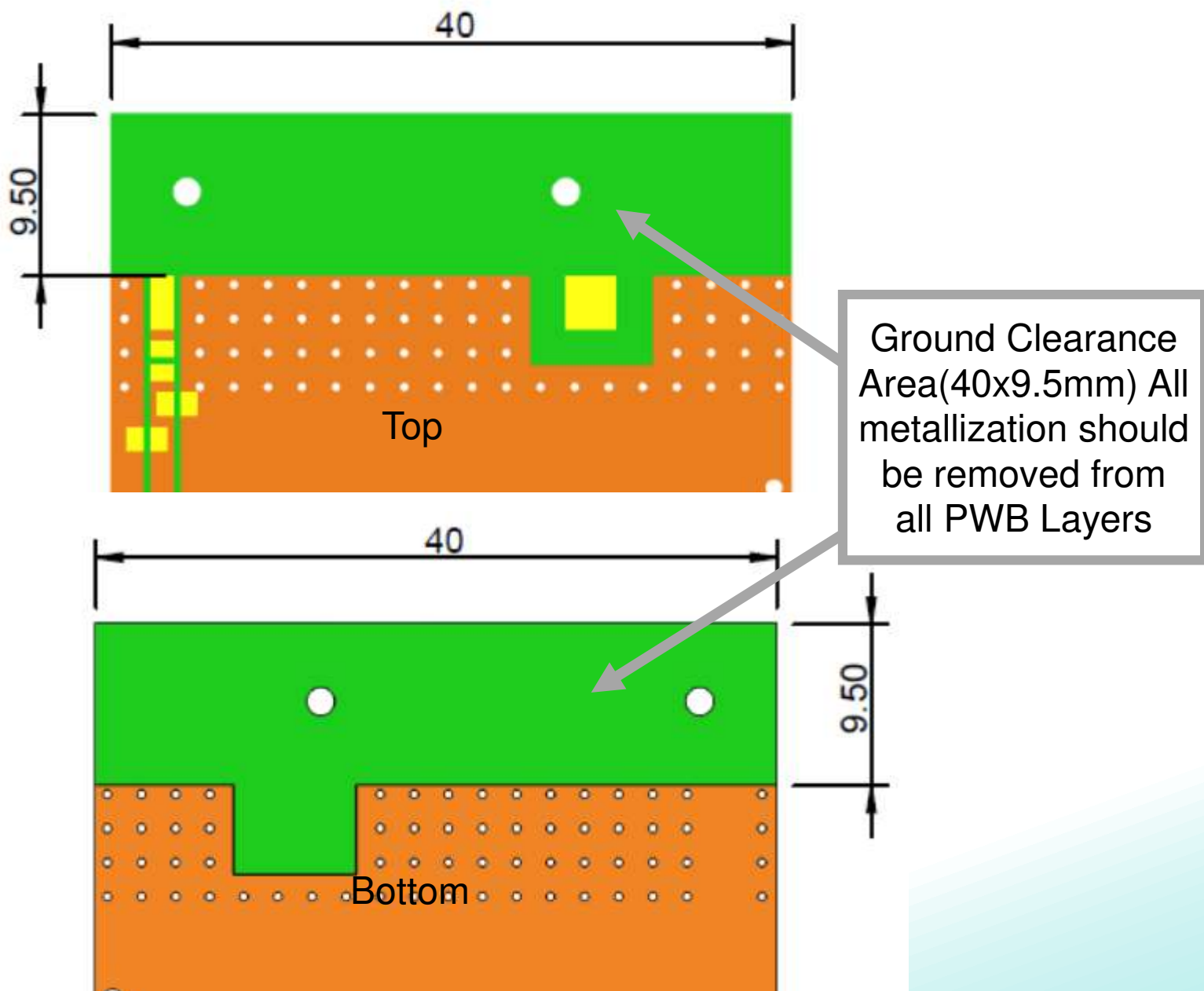
Description: 860-930MHz Embedded Helical Antenna

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.

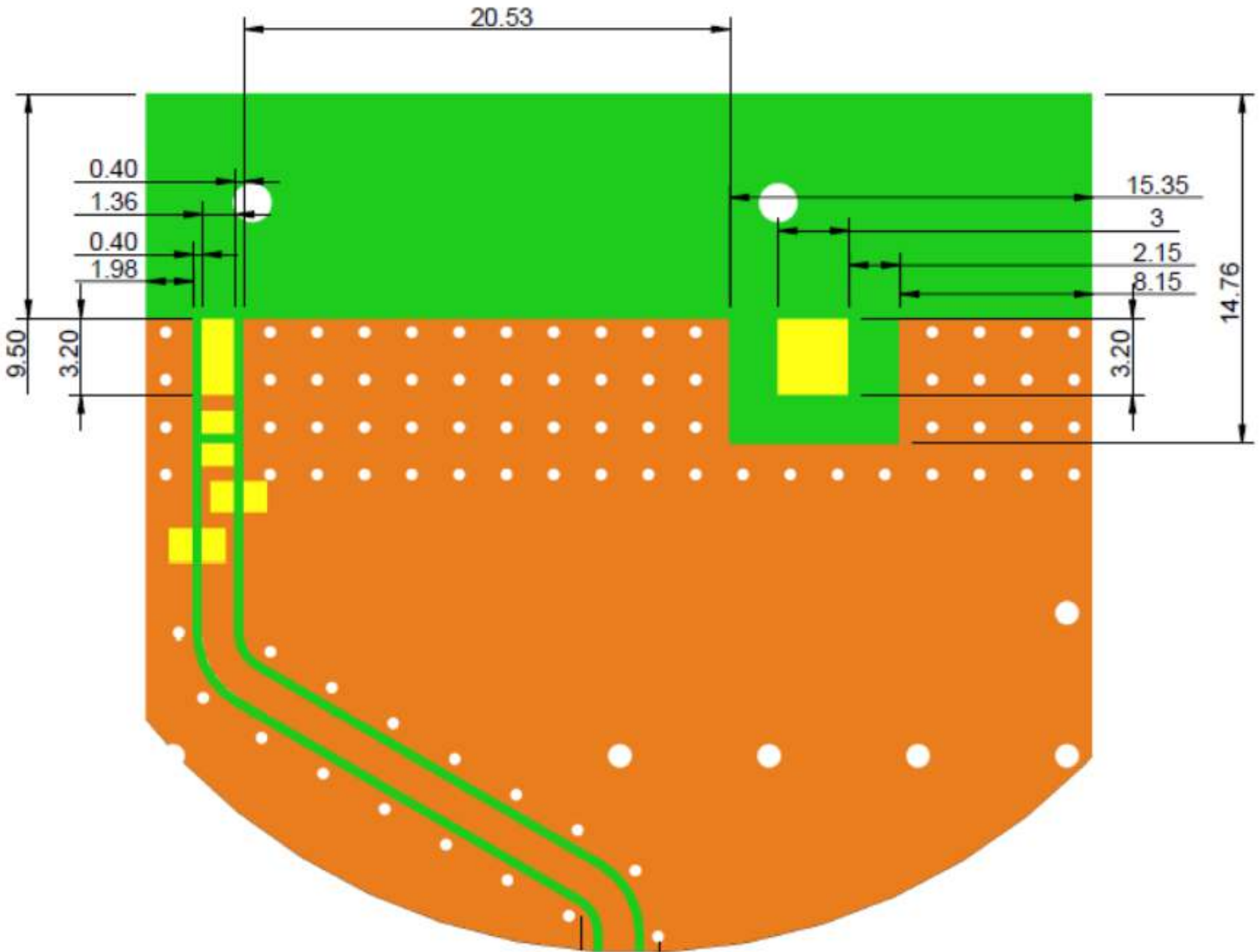
Description: 860-930MHz Embedded Helical Antenna

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.

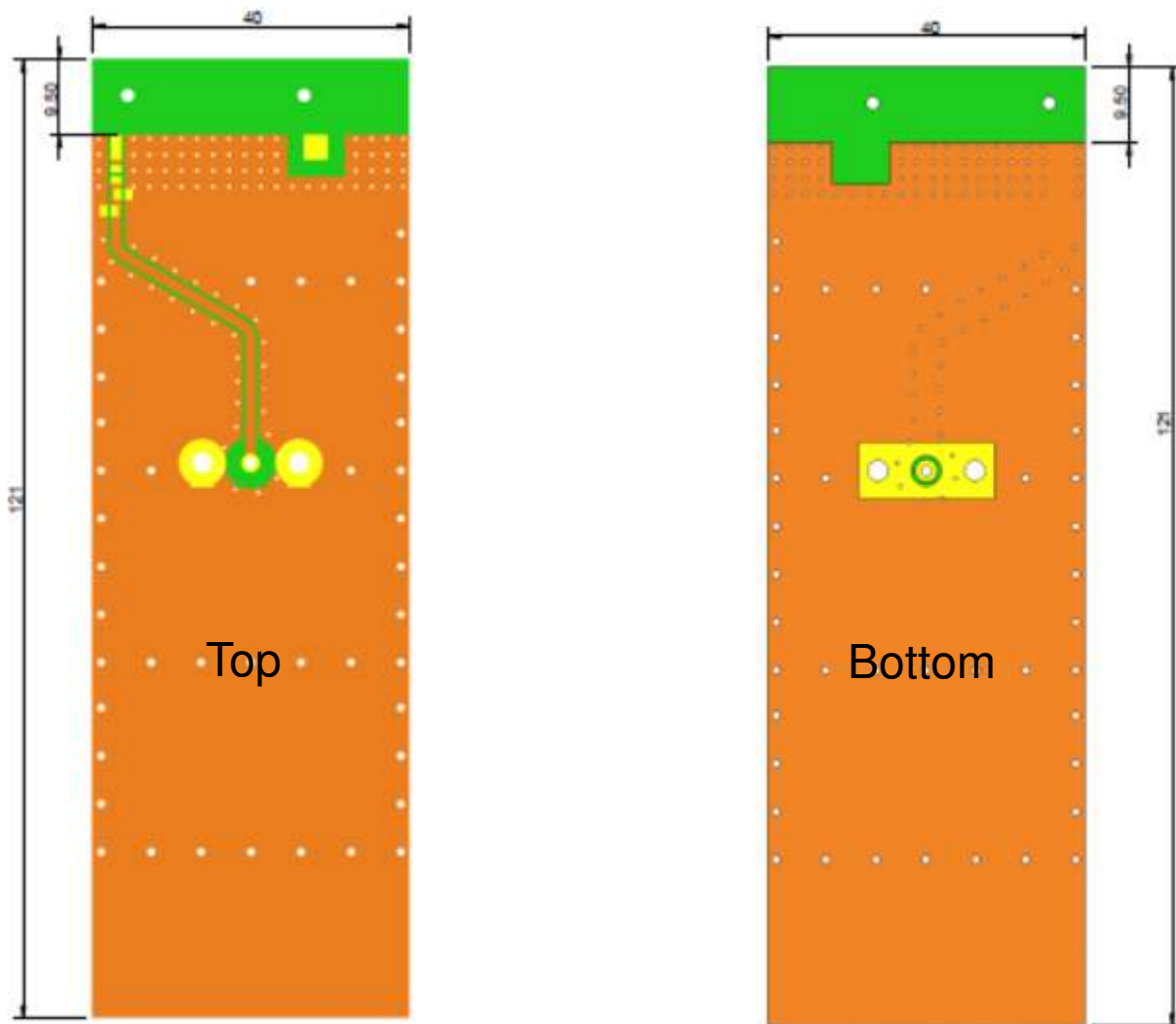
Description: 860-930MHz Embedded Helical Antenna

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

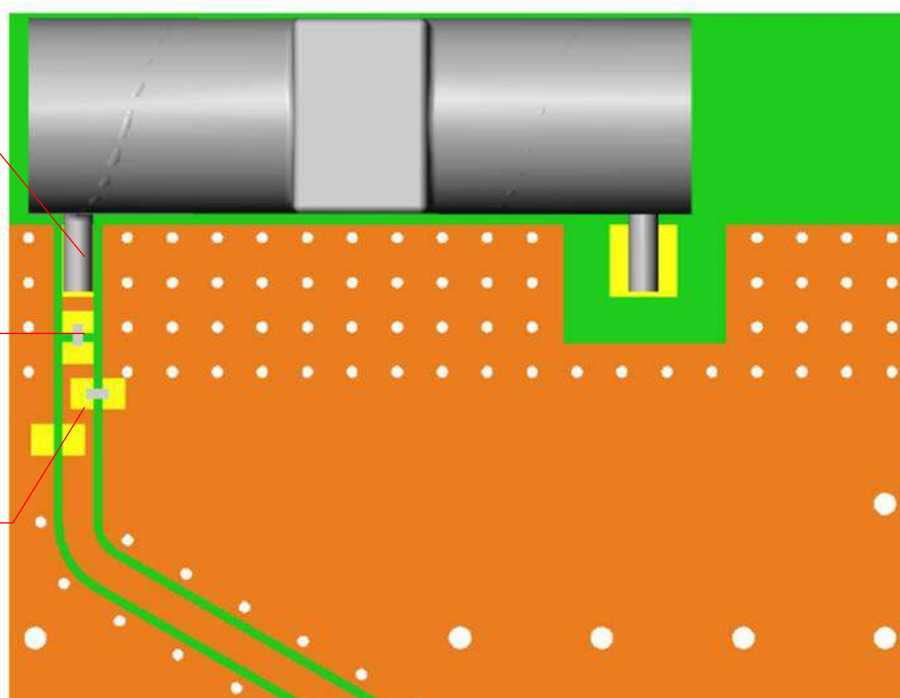
TEST SETUP

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

Antenna feed point

Capacitance for S11 matching , 3.6pF, series

Inductance for S11 matching , 8.2nH, shunt



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

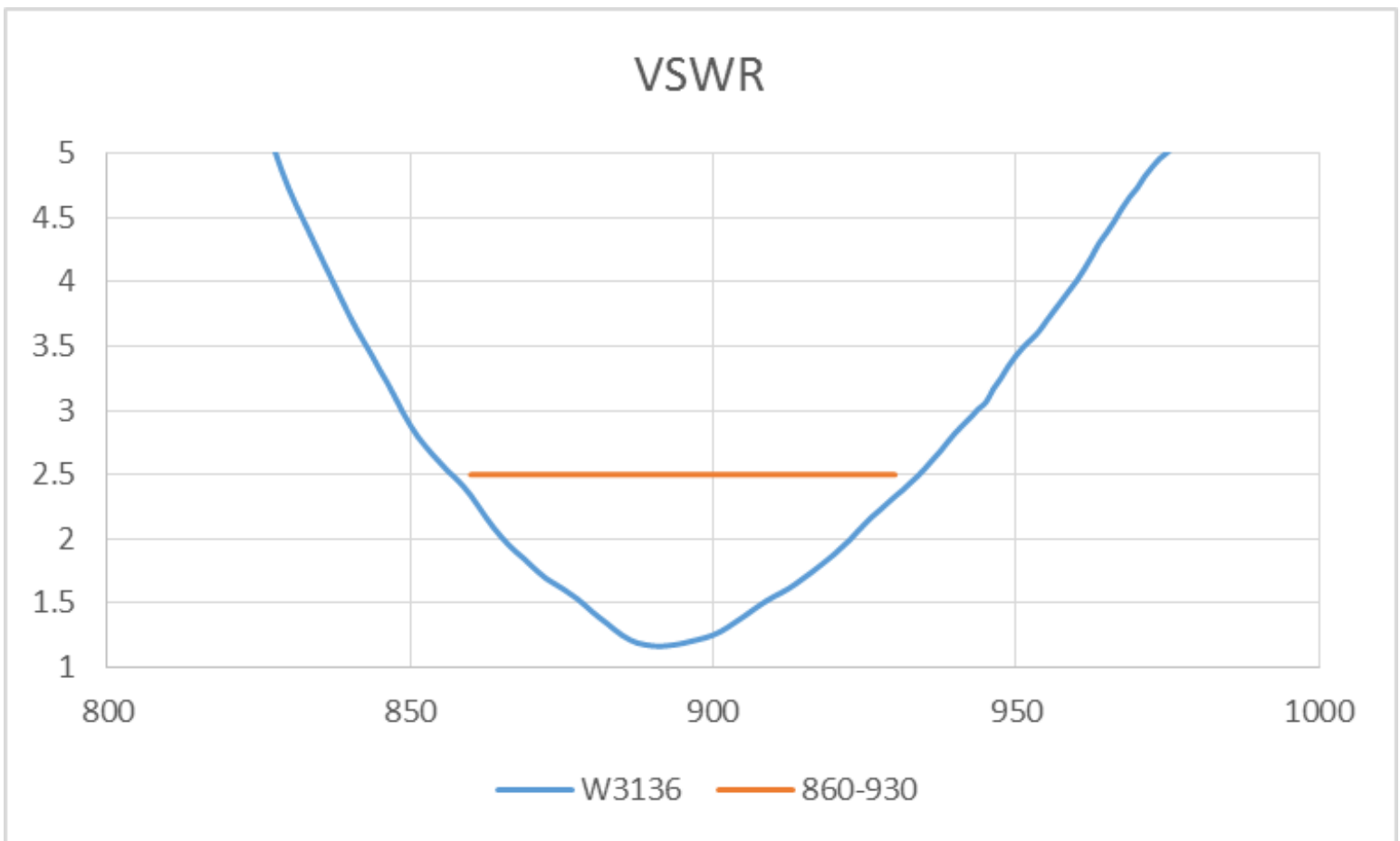
Description: 860-930MHz Embedded Helical Antenna

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

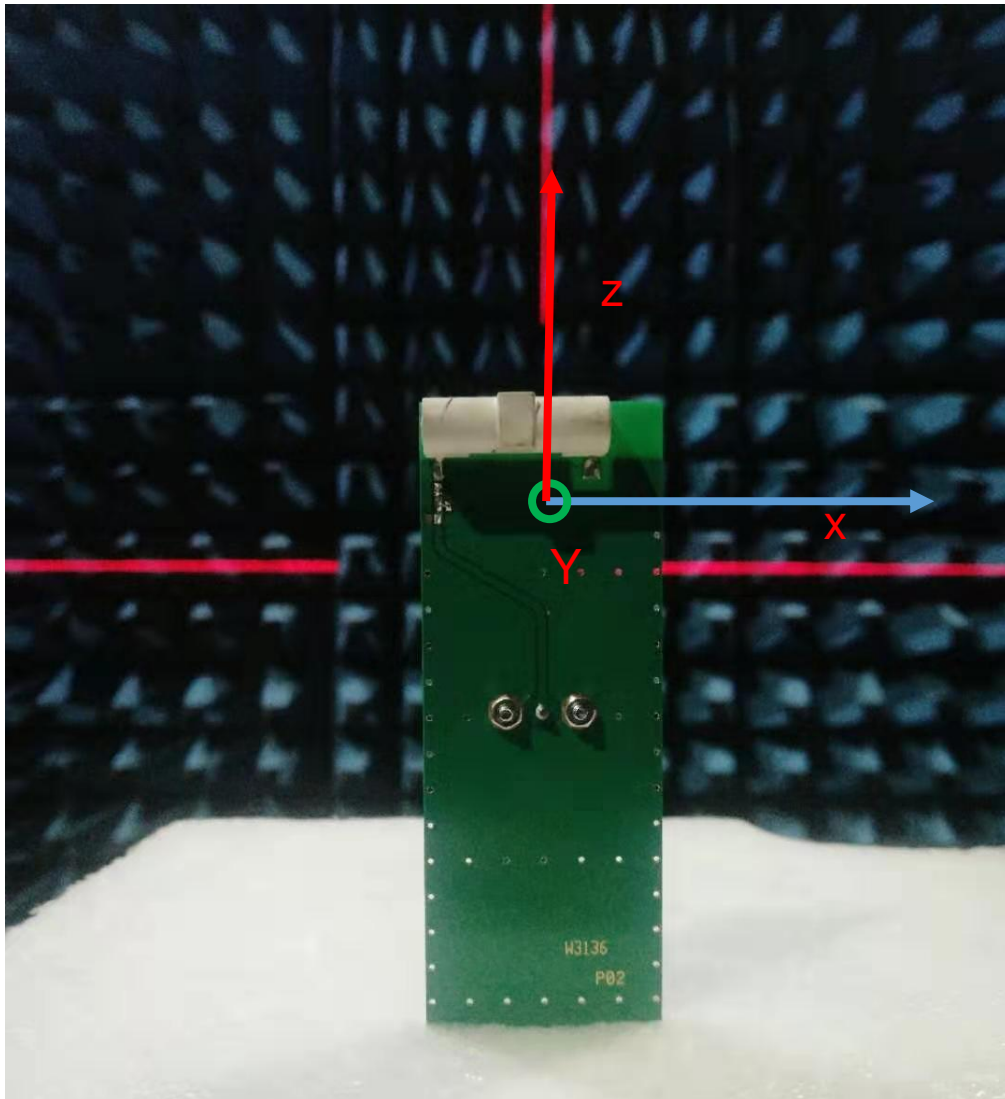
Series: SMD Helical Antenna

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

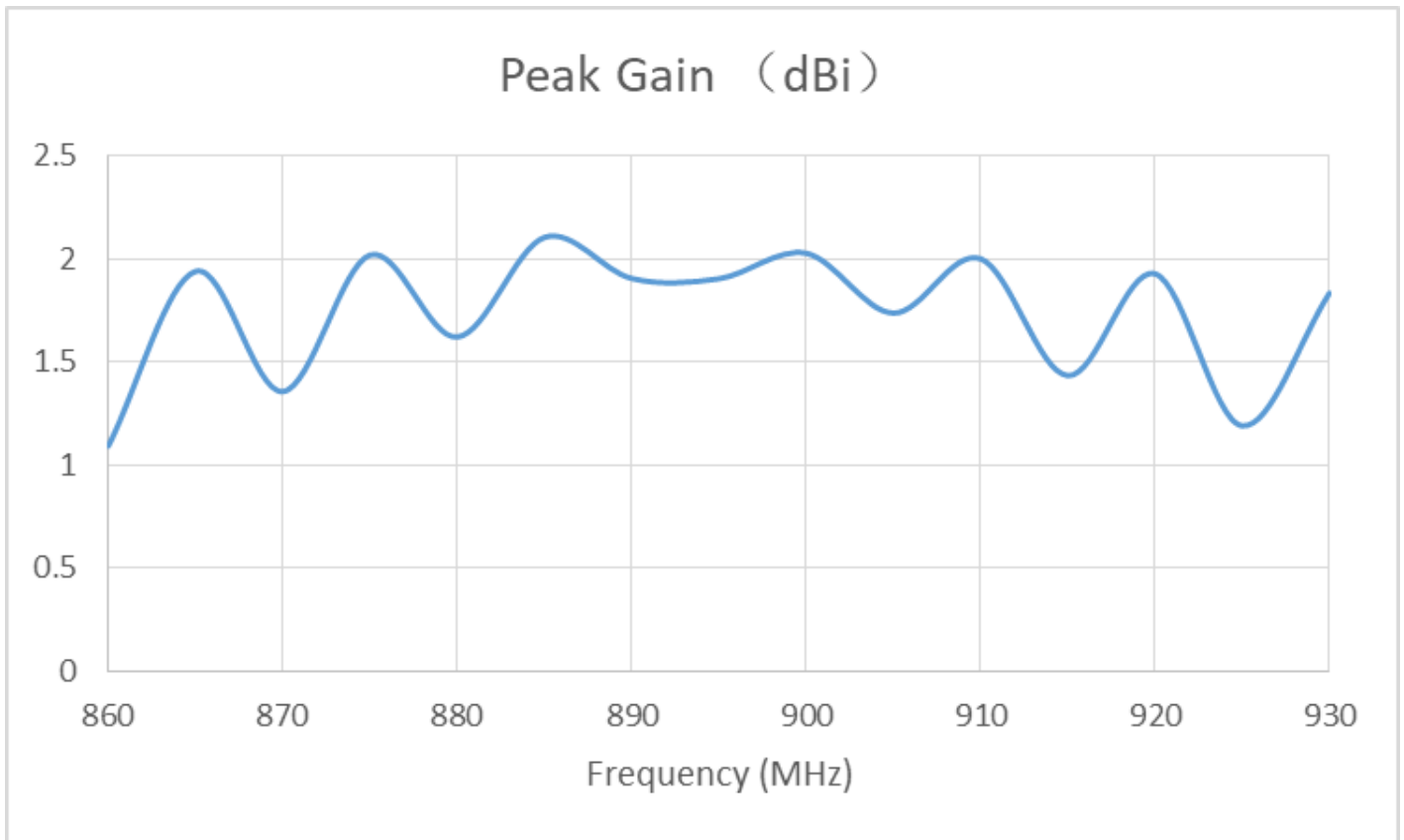
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything 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

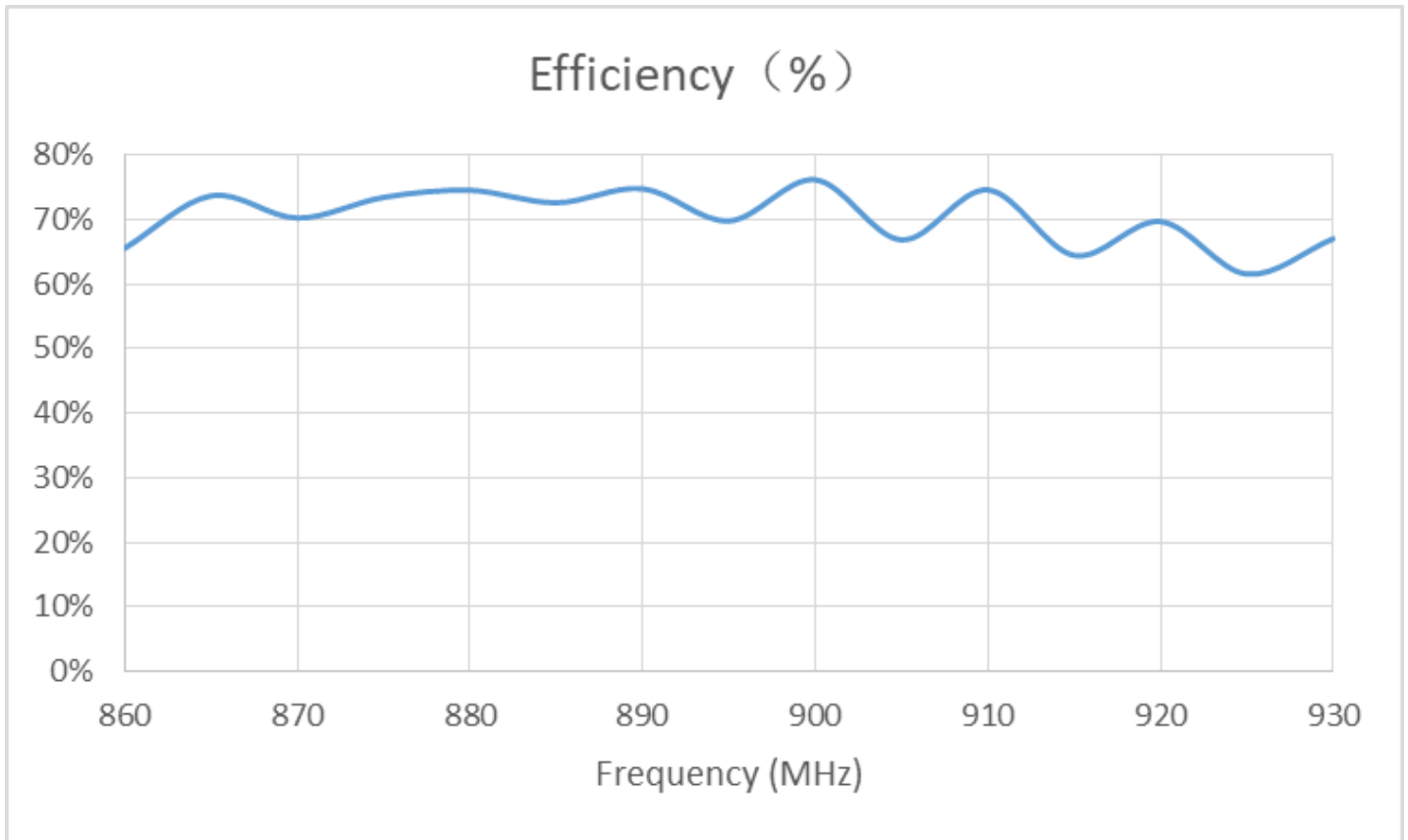
This document contains confidential and proprietary information of Pulse Electronics, Inc. (Pulse) and is protected by copyright, trade secret and other state and federal laws. Its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything 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.

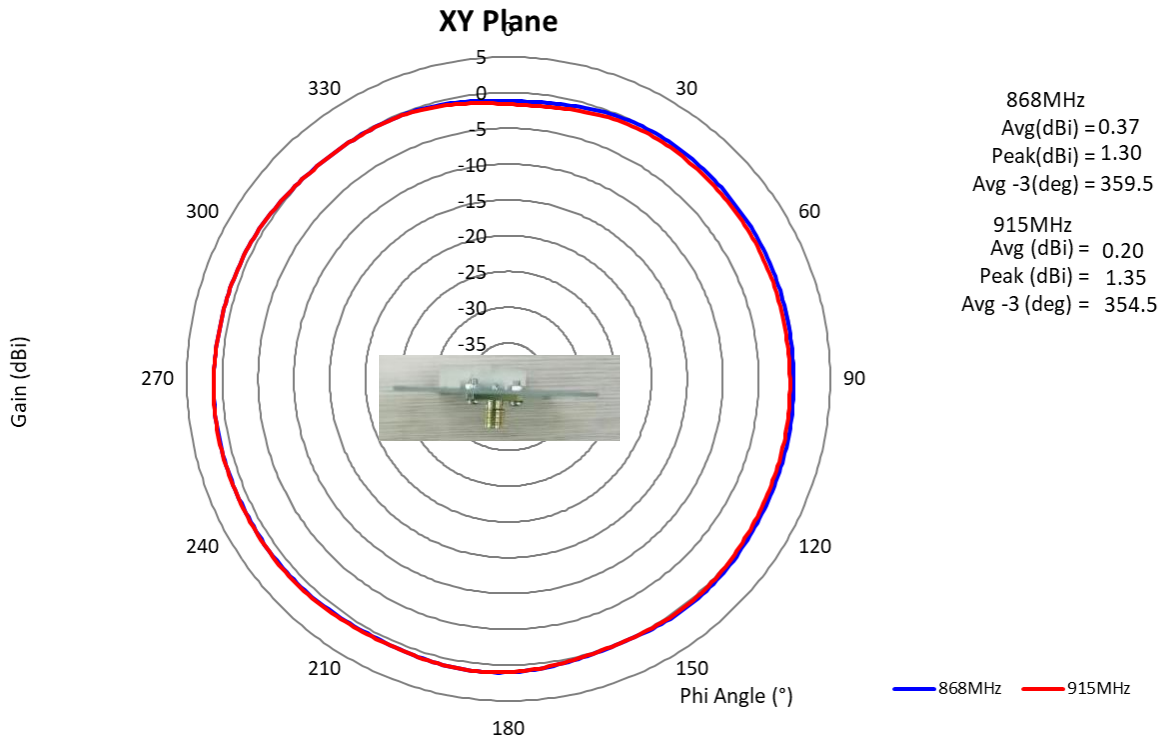
Description: 860-930MHz Embedded Helical Antenna

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.

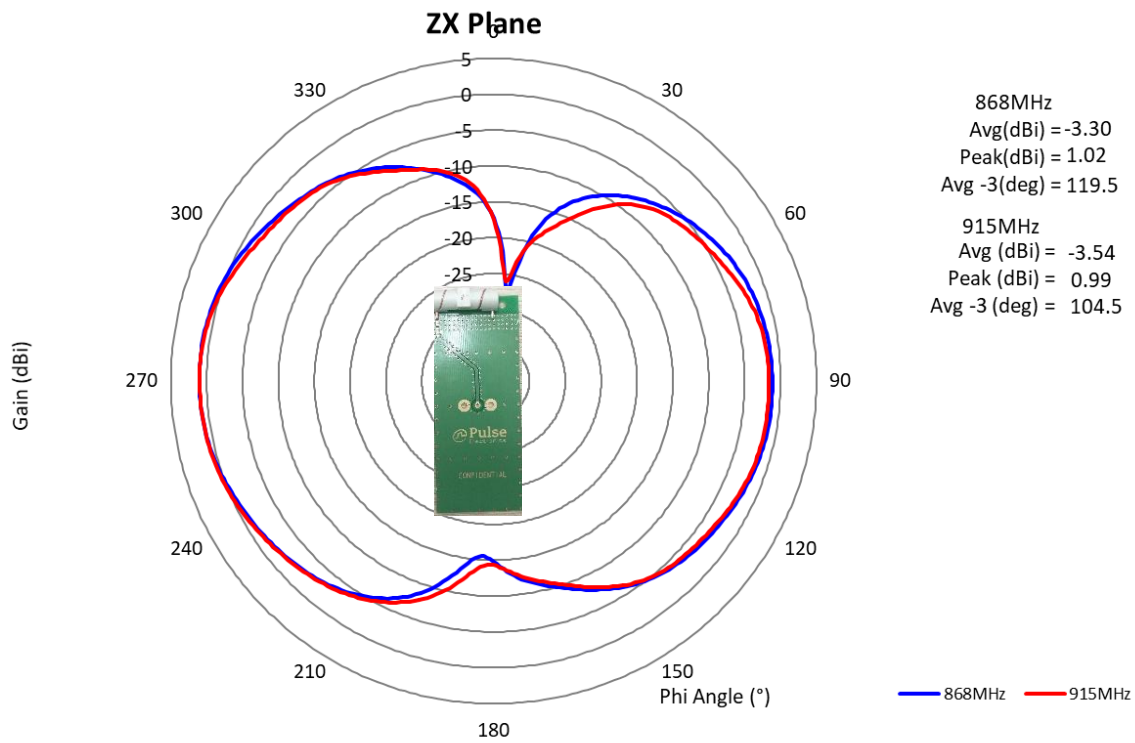
Description: 860-930MHz Embedded Helical Antenna

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.

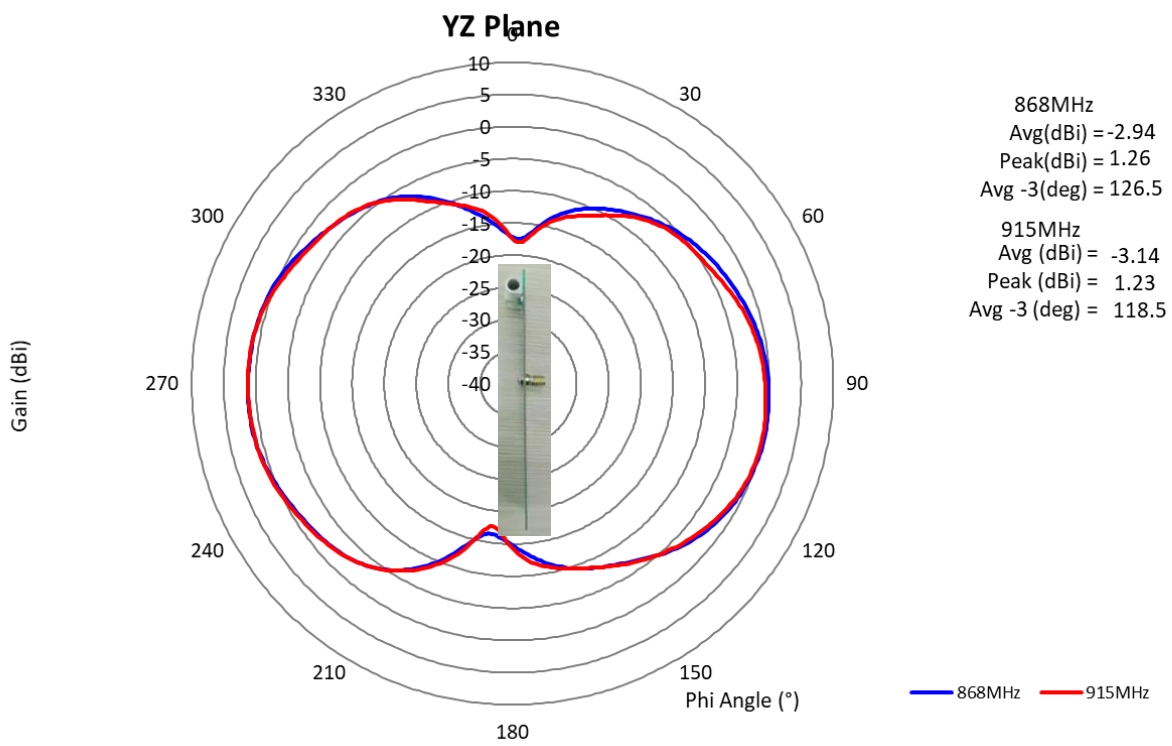
Description: 860-930MHz Embedded Helical Antenna

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

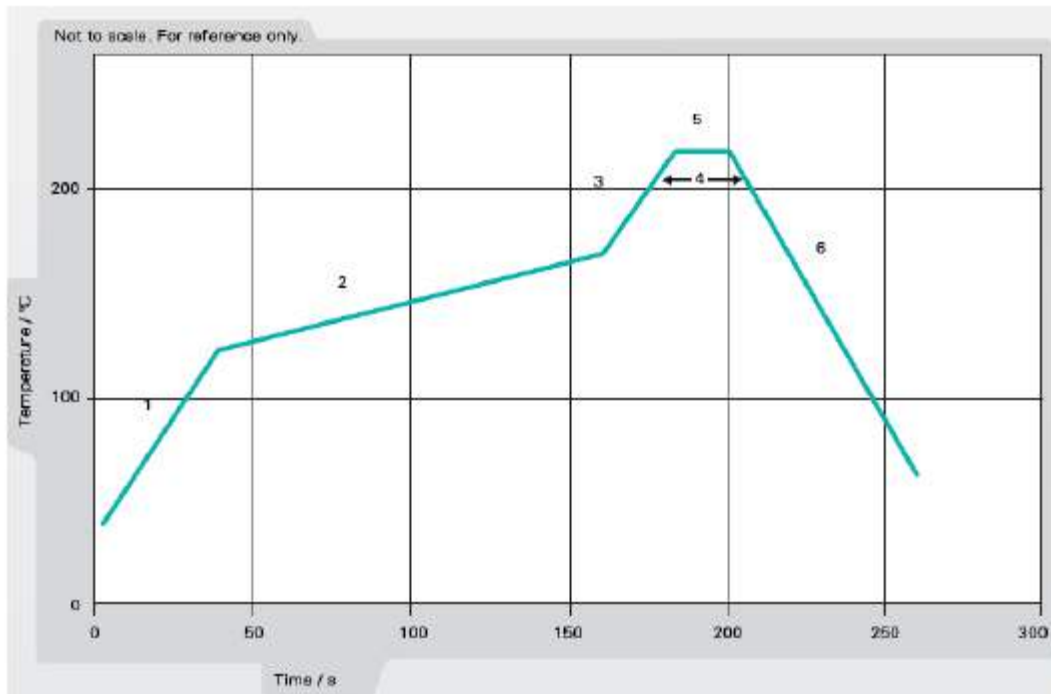


Figure 1. Minimum temperature profile recommendation for reflow soldering process

Issue: 1943

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

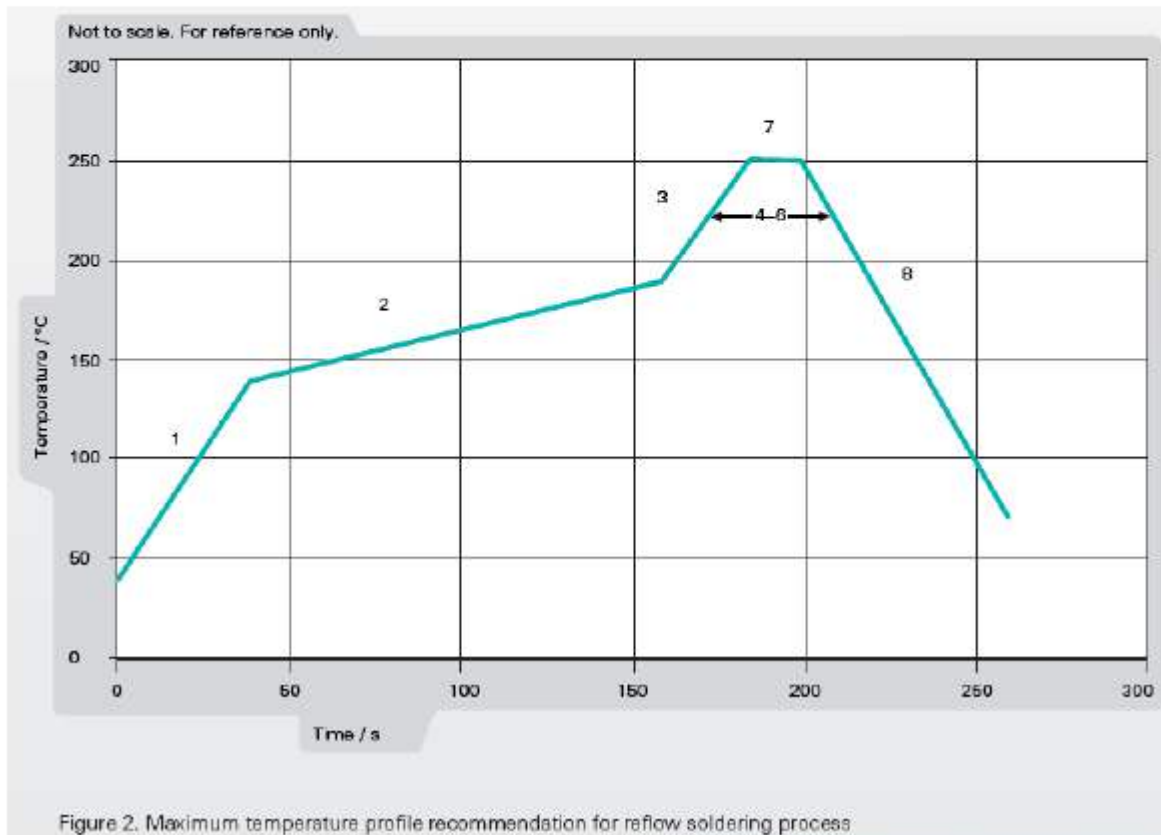
CONFIDENTIAL AND PROPRIETARY INFORMATION

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

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	260 °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.

