YAGEO PULSE GROUP

Series: Chip Antenna

TECHNICAL DATA SHEET

Description: 4-in-1 Combo GNSS L1+L2+L5+L6 Ceramic SMD Antenna, Single Feed

PART NUMBER: W3244

Features:

- 4-in-1 Combo antenna
- Single feed point:
  - 1174-1278 / 1559-1608 MHz
- Compact size 3.2 x 10 x 1.5 mm
- Omni radiation pattern
- SMT mounting on PCB
- Tape & Reel packing
- MSL-1

Applications:

- Multiband GNSS Receivers
- All bands in one antenna:
  - L1, L2, L5, L6
- GNSS (GPS, Glonass, Beidou, Galileo)
- High precision navigation and location based services

Issue: 2444

RoHS COMPLIANT

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

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ELECTRICAL SPECIFICATIONS

Antenna Type	ceramic
Frequency	1174-1278MHz, 1559-1608MHz
Nominal Impedance	50 Ω
Radiation Pattern	Omni
Return Loss	<-9 dB
Gain	>2 dBi
Efficiency	>70 %
Polarization	Linear
Power Withstanding	2 W

TECHNICAL DATA SHEET

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MECHANICAL SPECIFICATIONS

Weight	0.3 g
Overall Length	10 [0.39] mm [INCHES]
Overall width	3.2 [0.13] mm [INCHES]
Overall thickness	1.5 [0.06] mm [INCHES]
MSL (Moisture Sensitivity Level)	1

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 / +85 ° C
Storage Temperature	-10 / +30 ° C
RoHS Compliant	Yes

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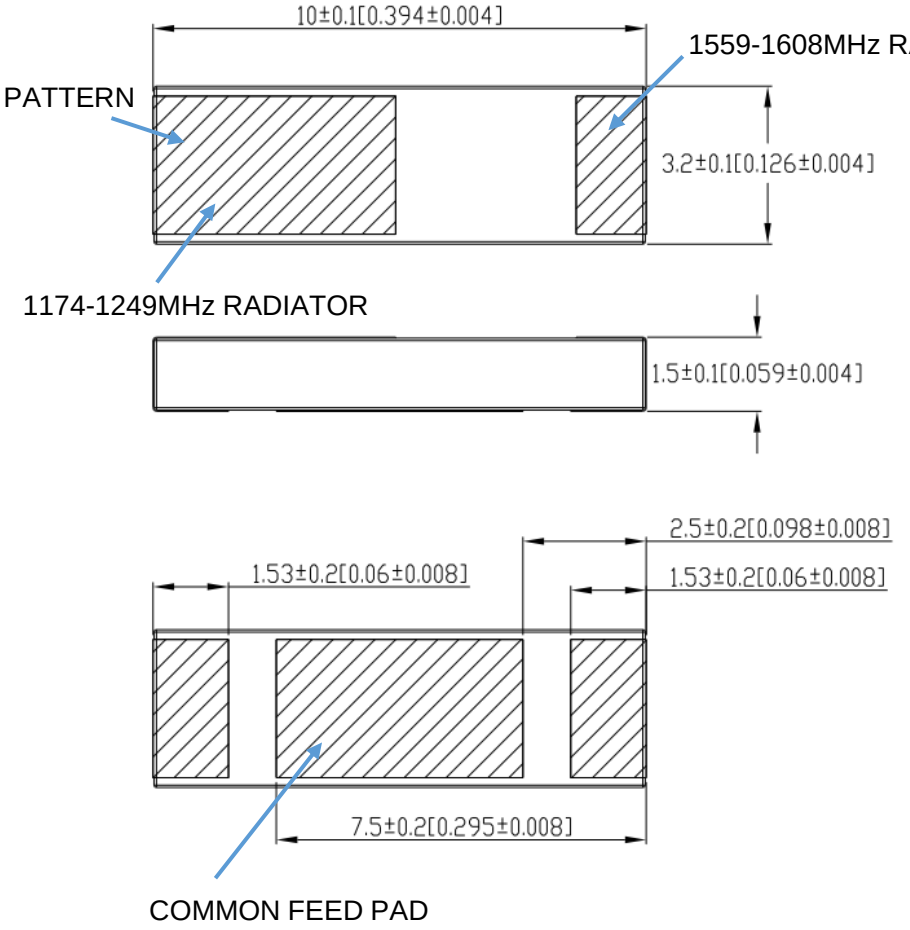
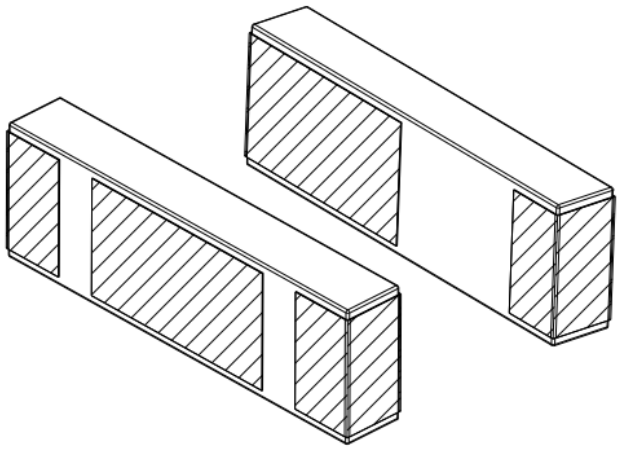
MECHANICAL DRAWING





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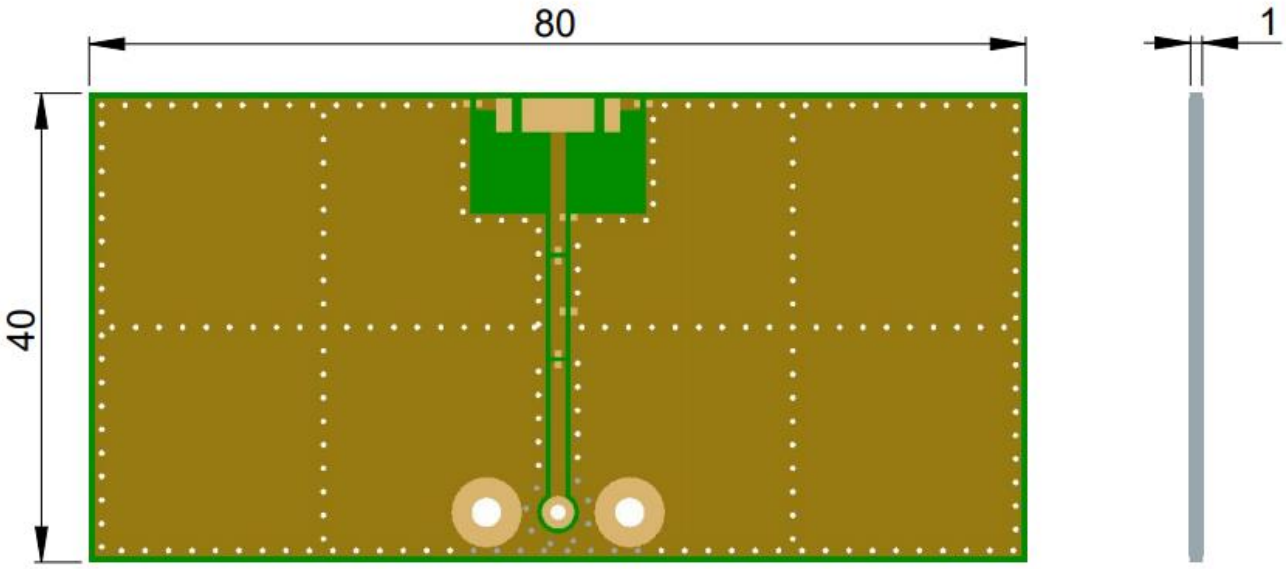
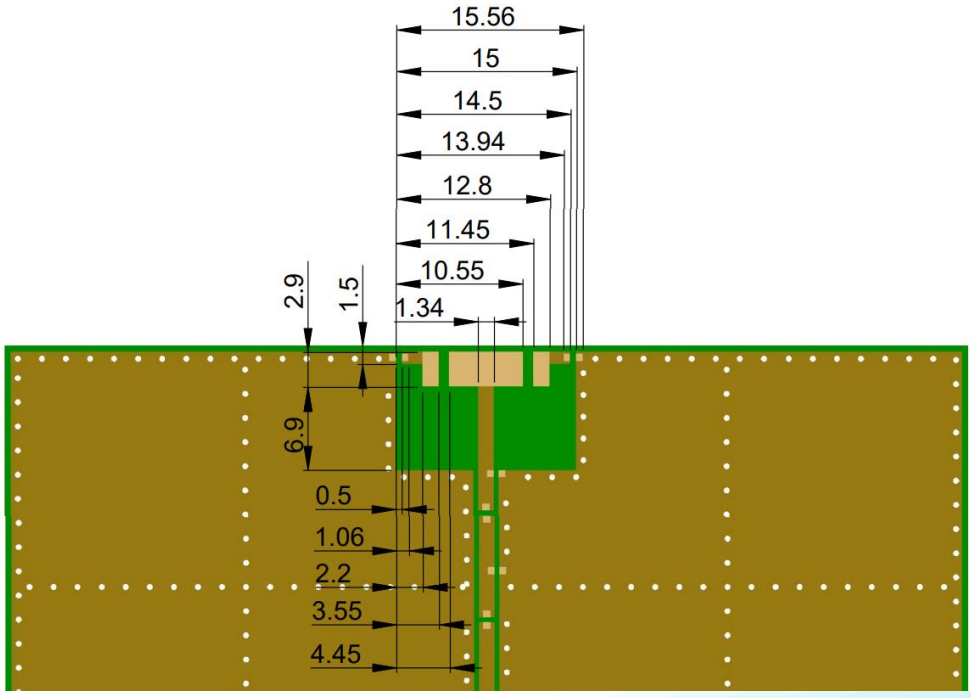
OTHER SPECIFICATIONS

PCB LAYOUT

1. PCB material, ISOLA 185HR, size, 80X40X1mm



2. Clearance area (Top)



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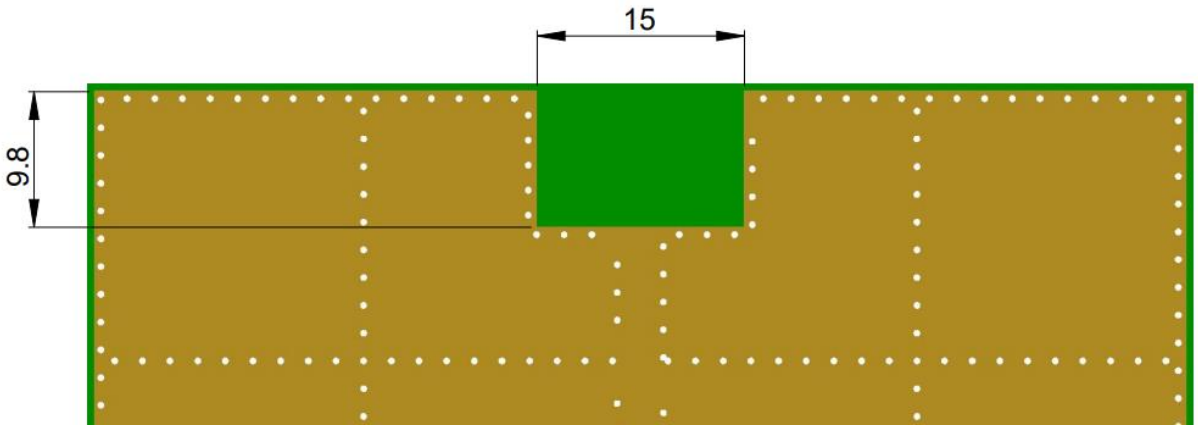
Series: Chip Antenna

PART NUMBER: W3244

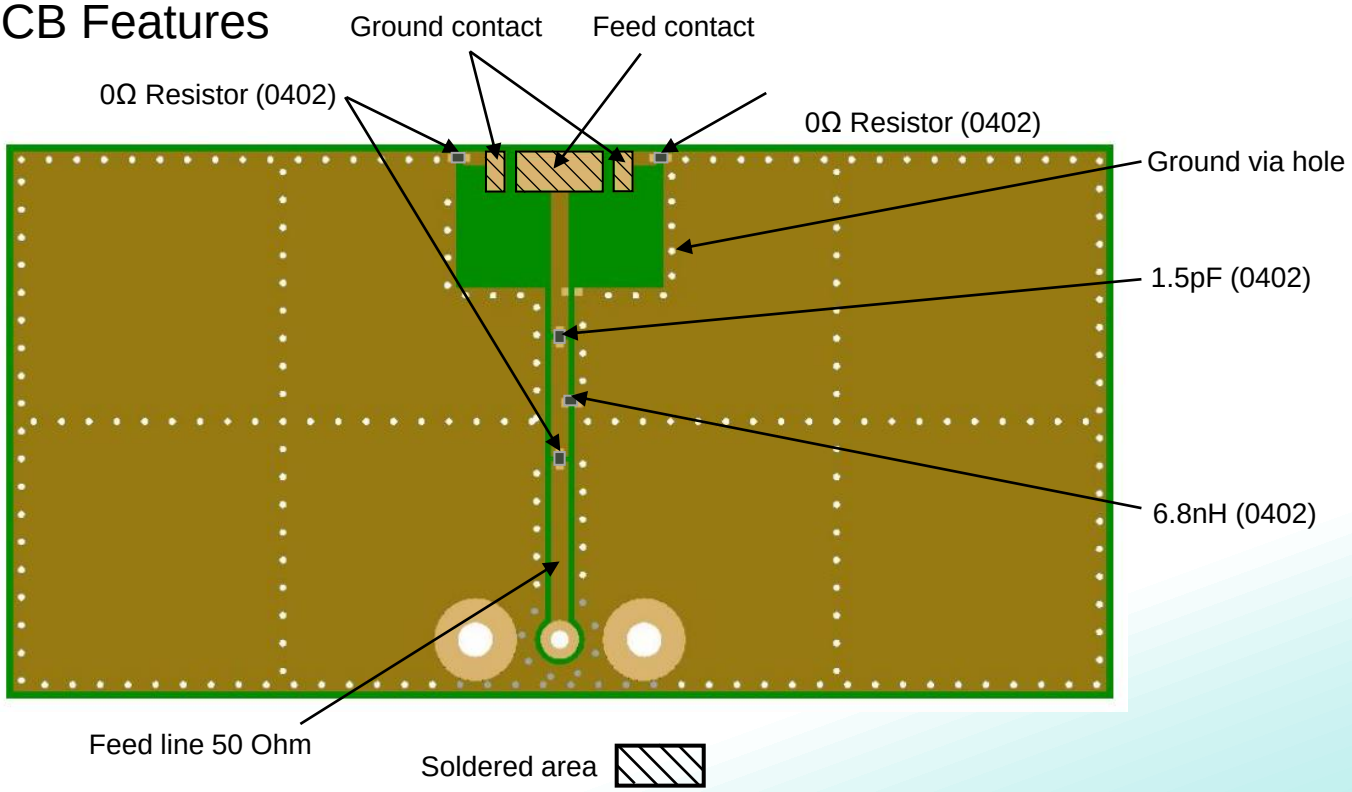
OTHER SPECIFICATIONS

PCB LAYOUT

3. Clearance area (Bottom)



4. PCB Features



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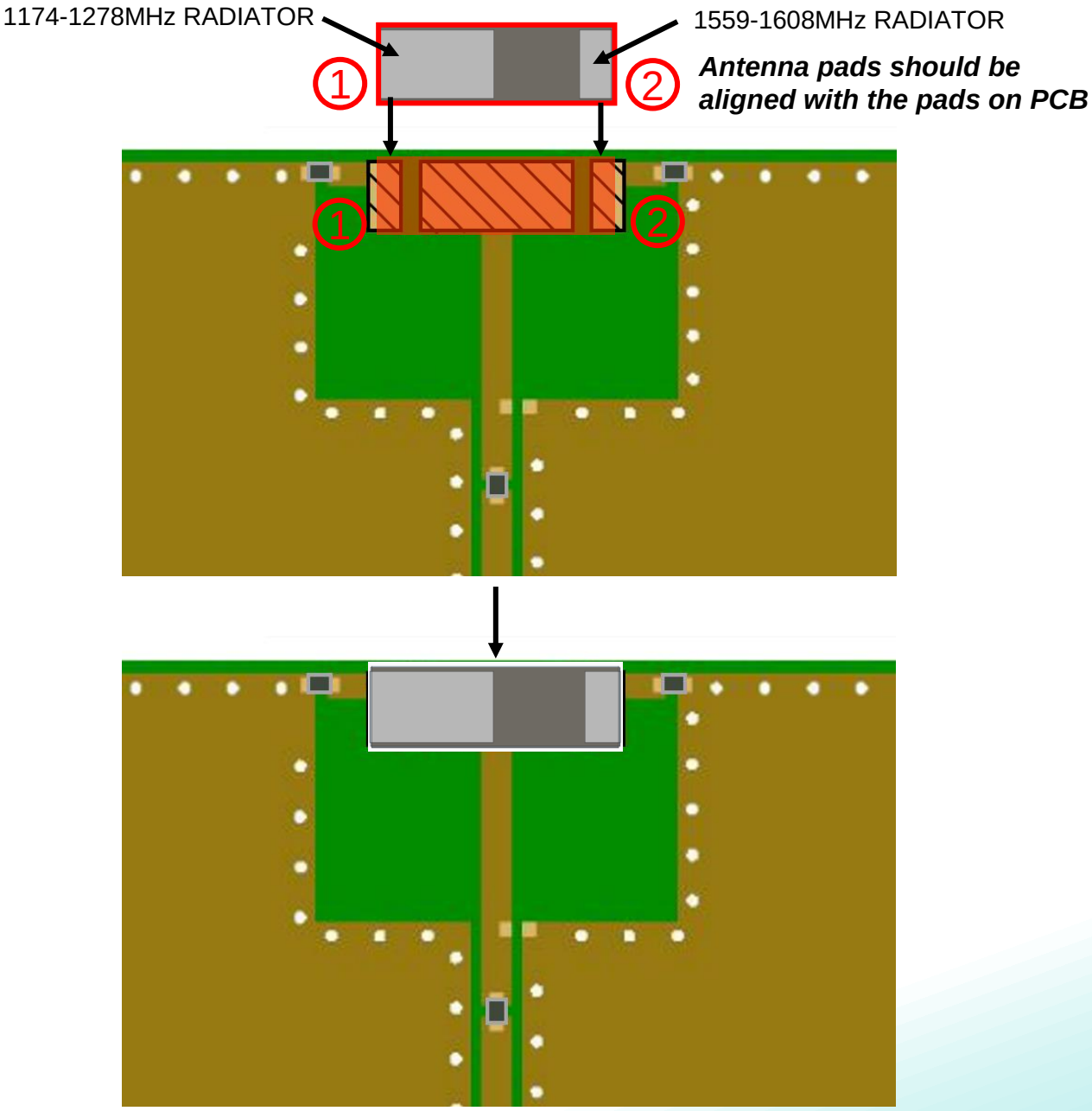
OTHER SPECIFICATIONS

PCB LAYOUT

5. Antenna Alignment on PCB Layout



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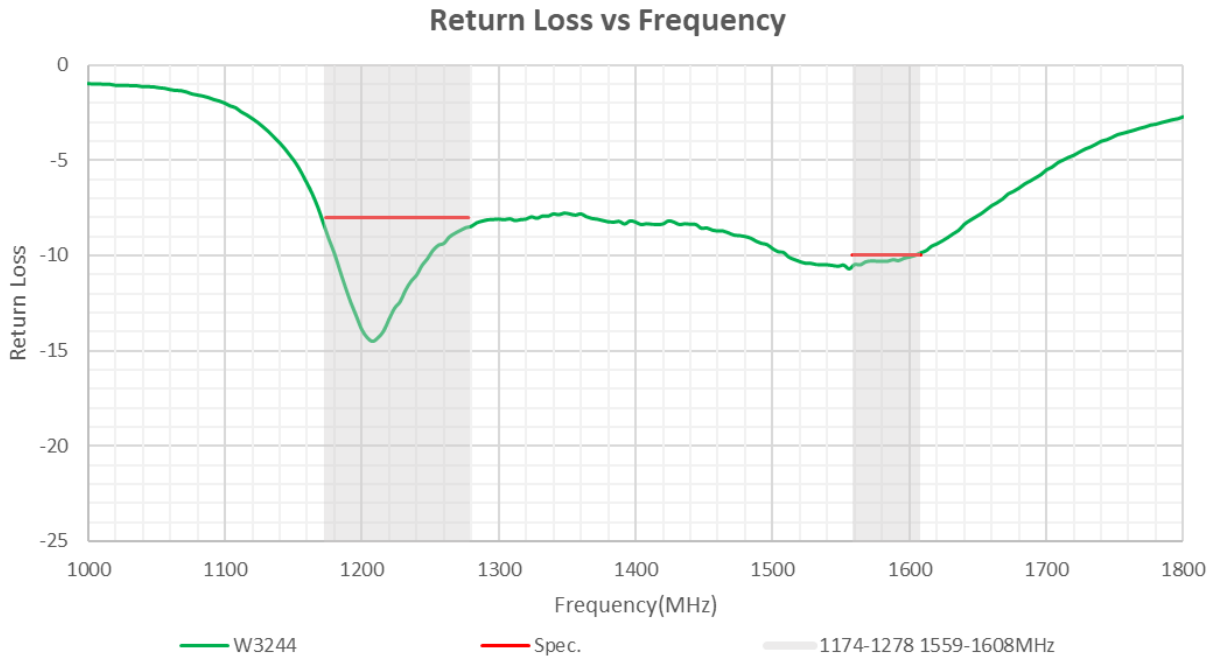
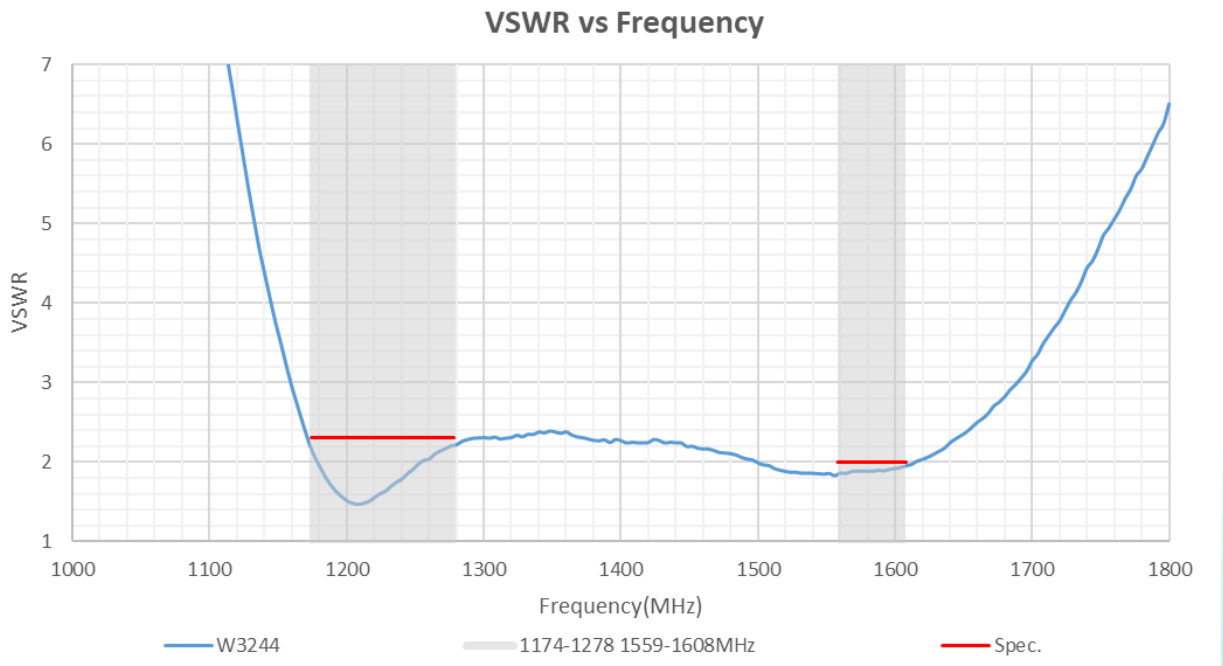
CHARTS





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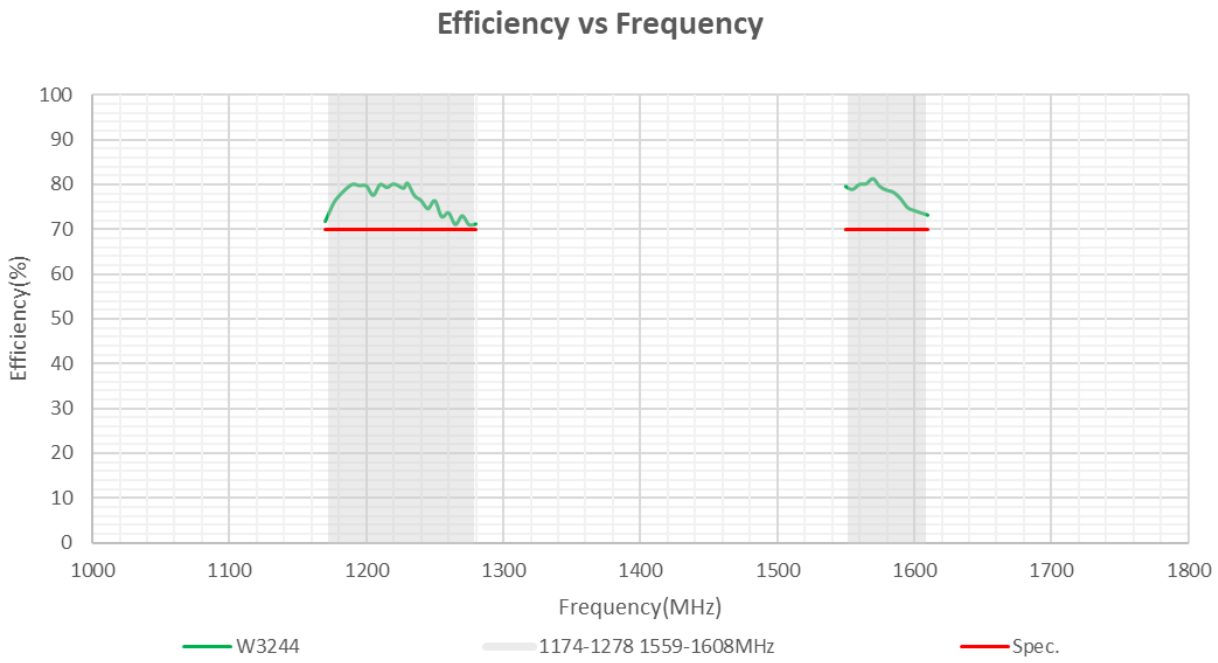

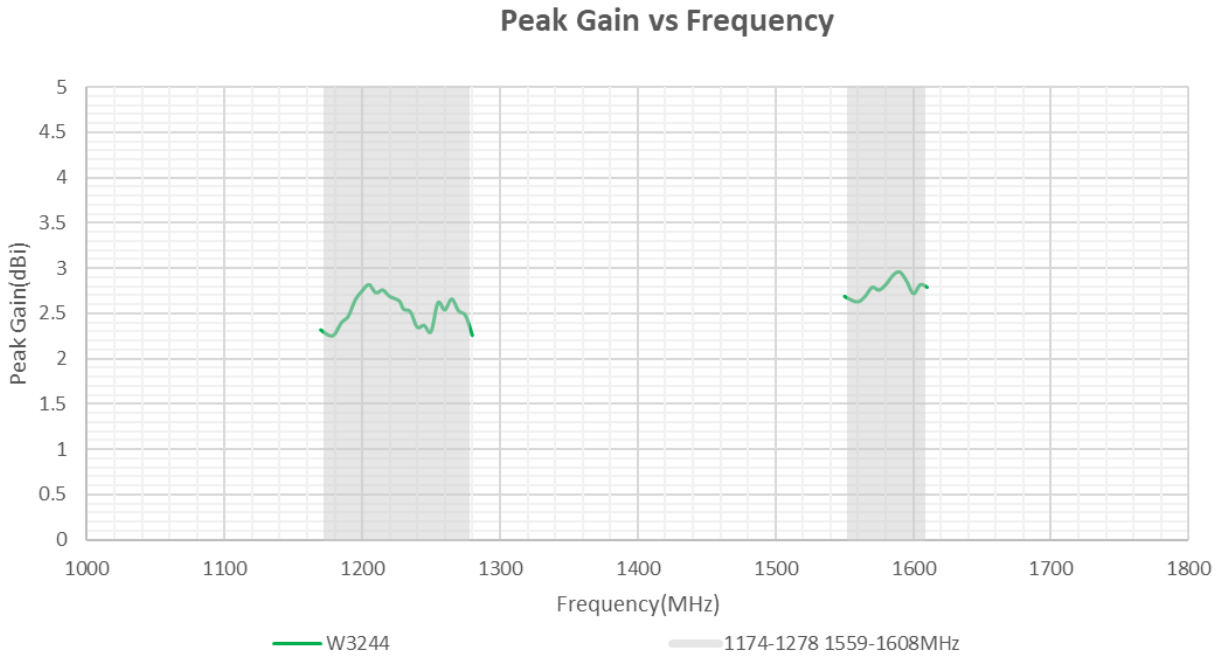

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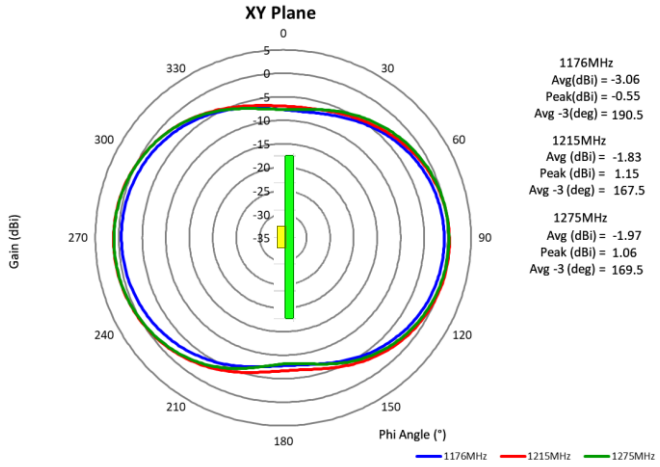

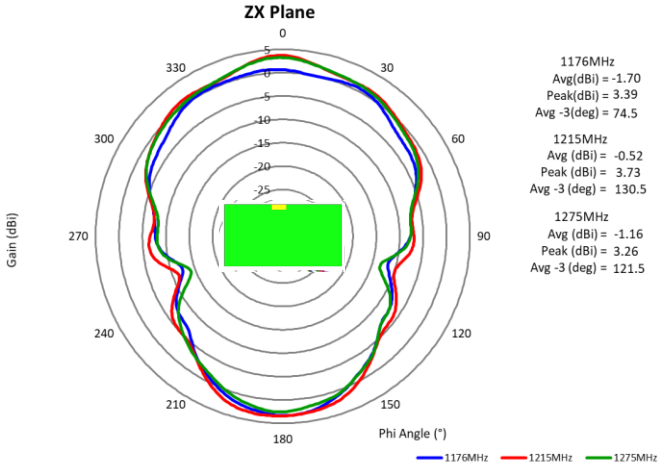

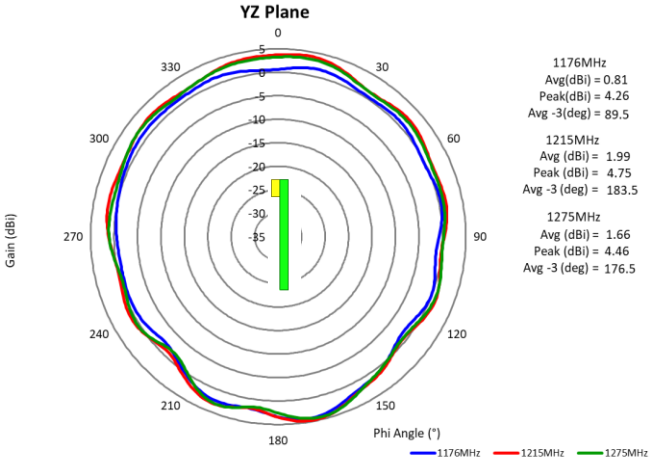

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

RoHS COMPLIANT

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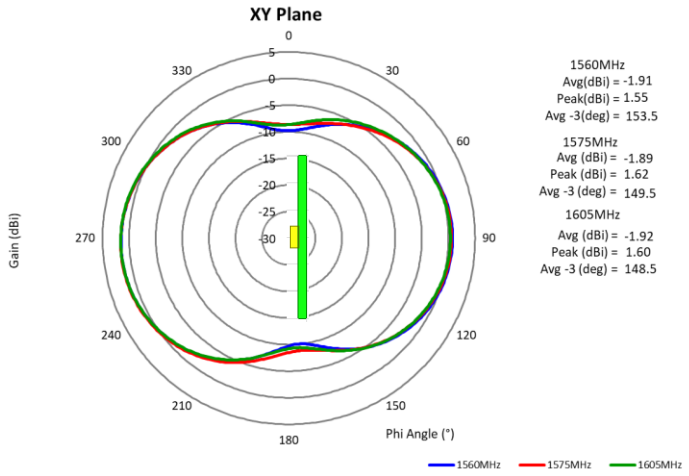

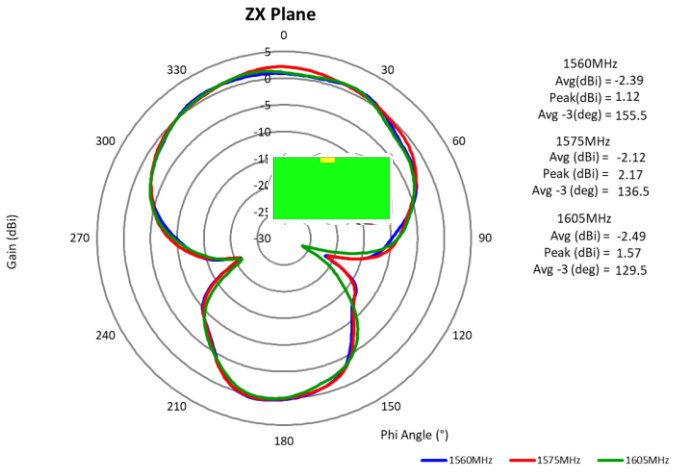

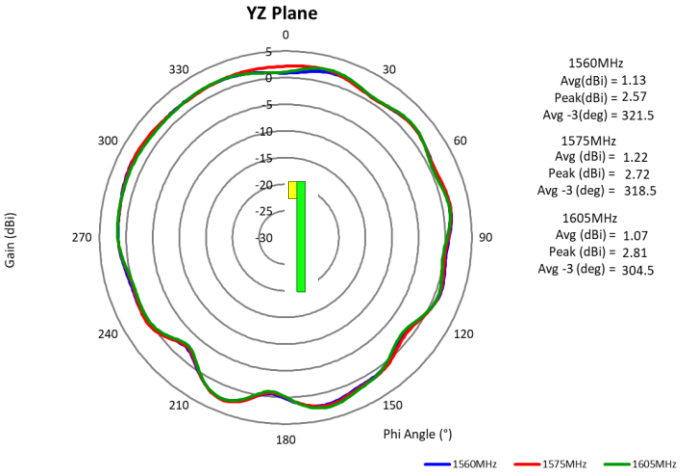

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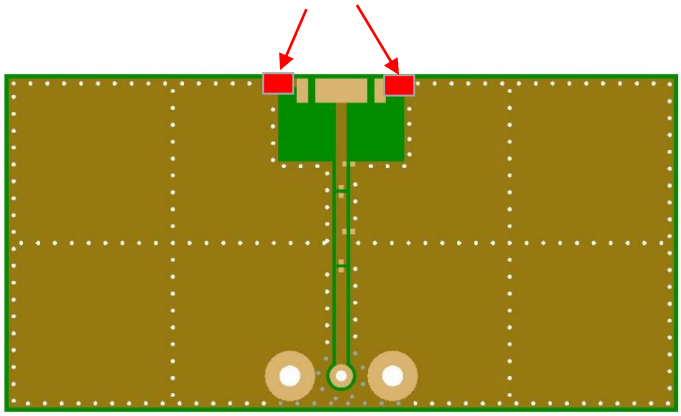
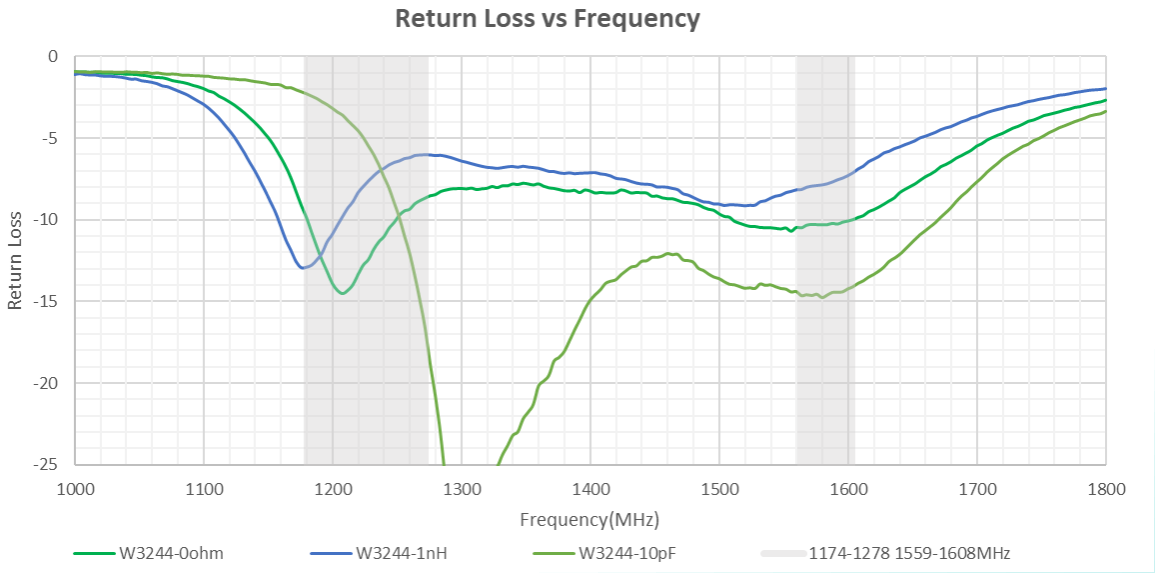
Antenna frequency tuning instructions

1. 0 Ω resistor changed to 10pF capacitor, and the frequency is shifted to 50MHz higher. The smaller the capacitance, the more tuning effect in MHz.

2. 0 Ω resistor changed to 1nH inductance, and the frequency is shifted to 30MHz lower. The larger the inductance, the more tuning effect in MHz.



Antenna resonance tuning way



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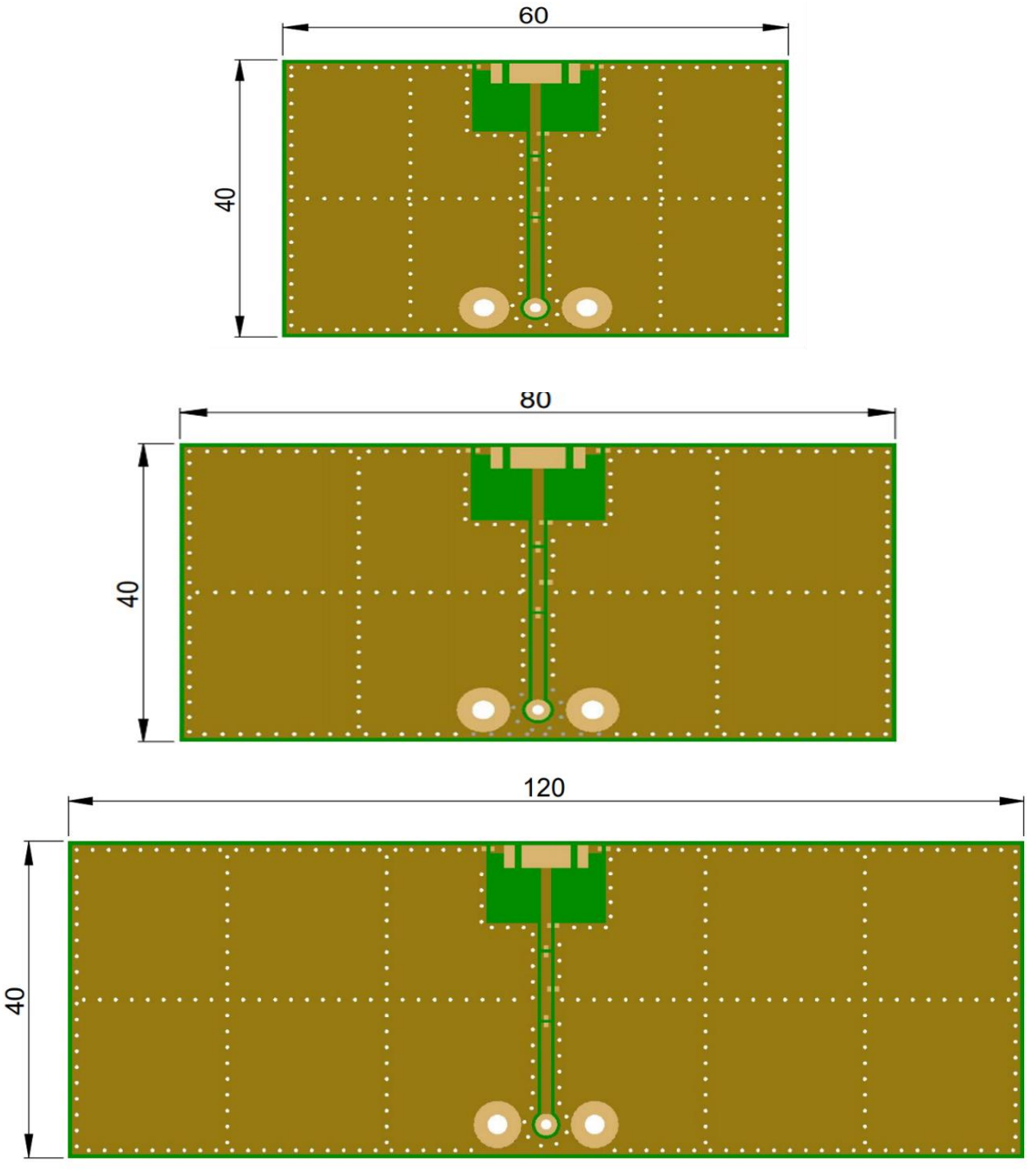
PCB length effect



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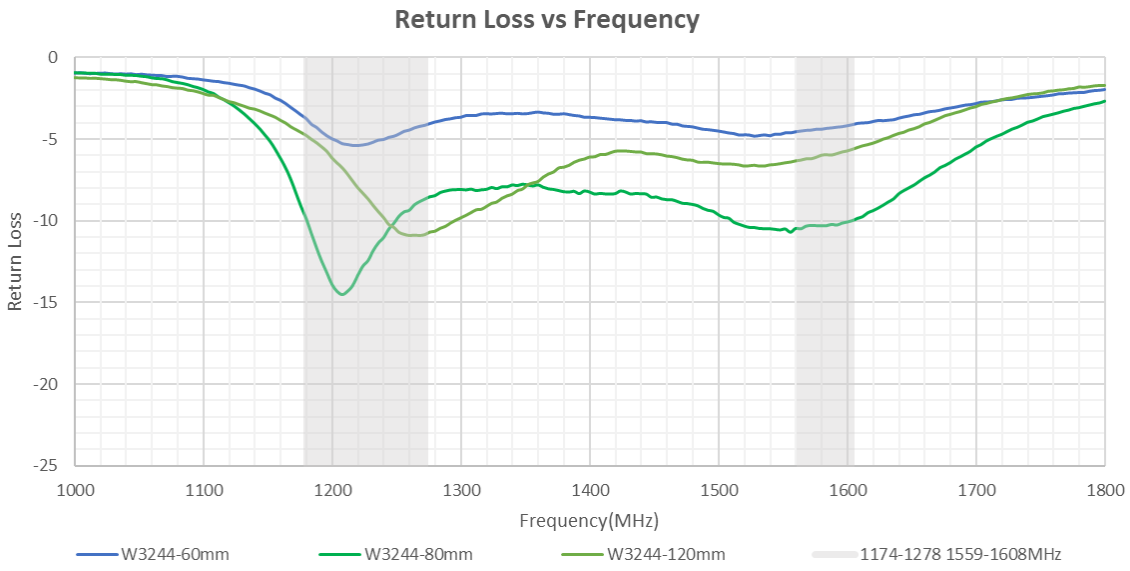
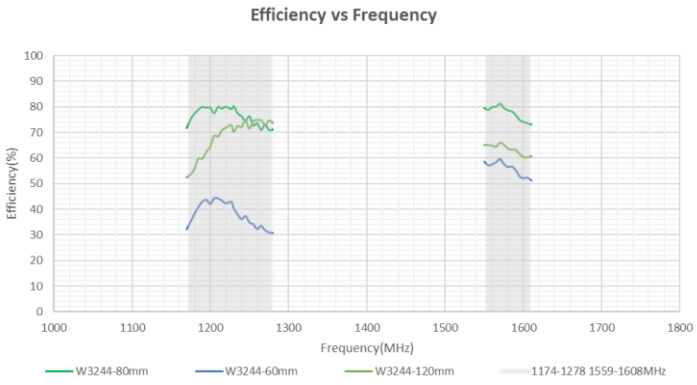
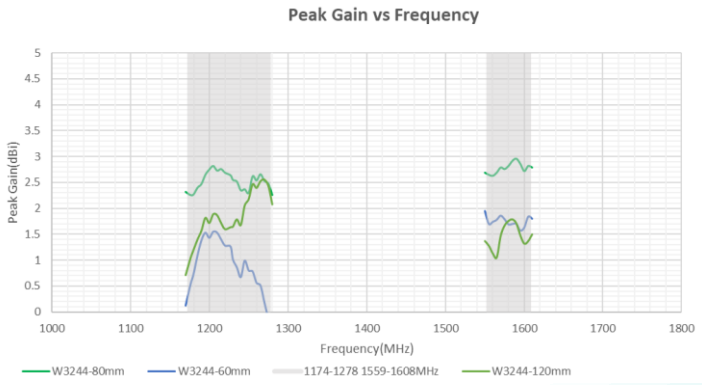
PCB length effect







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Recommendations for ceramic chip antenna storage

Storage time

Products should be used within 6 months from the day of manufacturers packaging even when they are stored under below mentioned conditions. Longer storage period may decrease the component solderability.

Storage environmental conditions

To maintain solderability of Pulse ceramic products care must be taken to control the storage and use conditions:

- Do not store or use products in a corrosive atmosphere, especially where chloride, sulphur or sulfide, alkali or acid salts exist in the air. Corrosive gases may cause oxidation of electrodes and reduce solderability
- Keep temperature and humidity stabile and do not exceed the below mentioned minimum and maximum conditions: Temperature: -10 to +30 Deg C Humidity: below 60% RH
- Do not store the products under direct sun light.

It is recommended to keep the products in manufacturers packing (tape&reel) until the time of assembly and soldering process. Air tight vacuum package is recommended in the conditions where it is know to be some corrosive gases.

Handling

Do not touch the components with bare hands. Protective gloves must be used to prevent contamination of terminals which may cause reduced solderability. Do not touch or damage the silver plated surface by any sharp objects. Soft materials (plastic, wood etc.) must be used if tweezers or other tools are used to pick the components. Avoid any excess mechanical shock or vibration during storage and handling.

Description: 4-in-1 Combo GNSS L1+L2+L5+L6 Ceramic SMD Antenna, Single Feed

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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

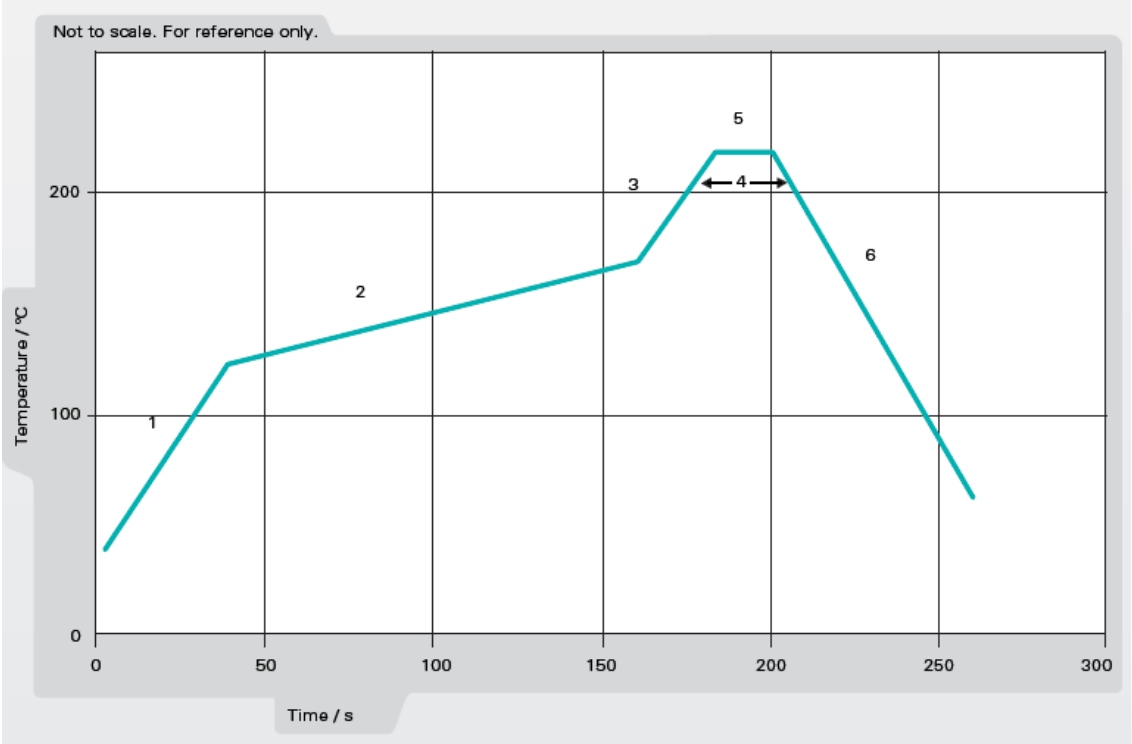

Figure 1. Minimum temperature profile recommendation for reflow soldering process

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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

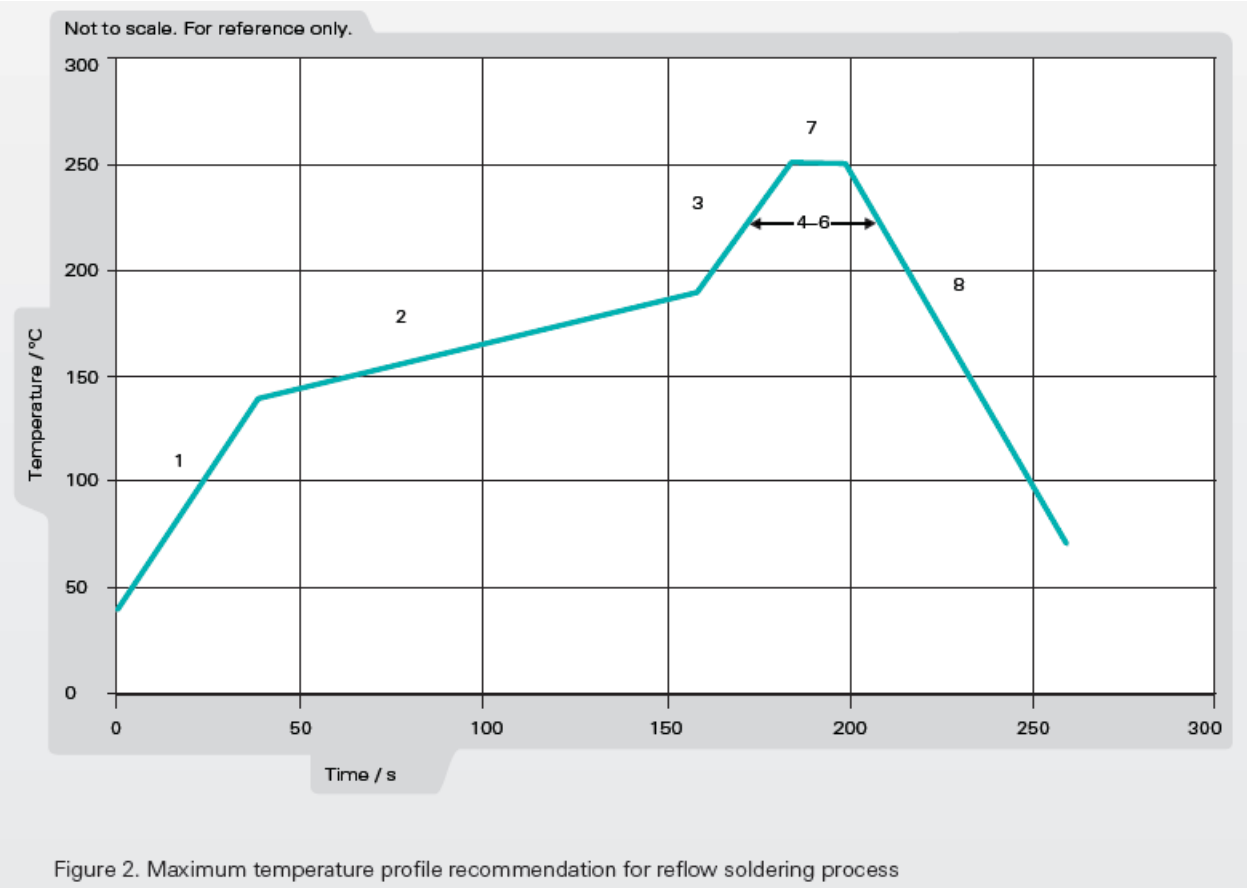

Figure 2. Maximum temperature profile recommendation for reflow soldering process

Series: Chip Antenna

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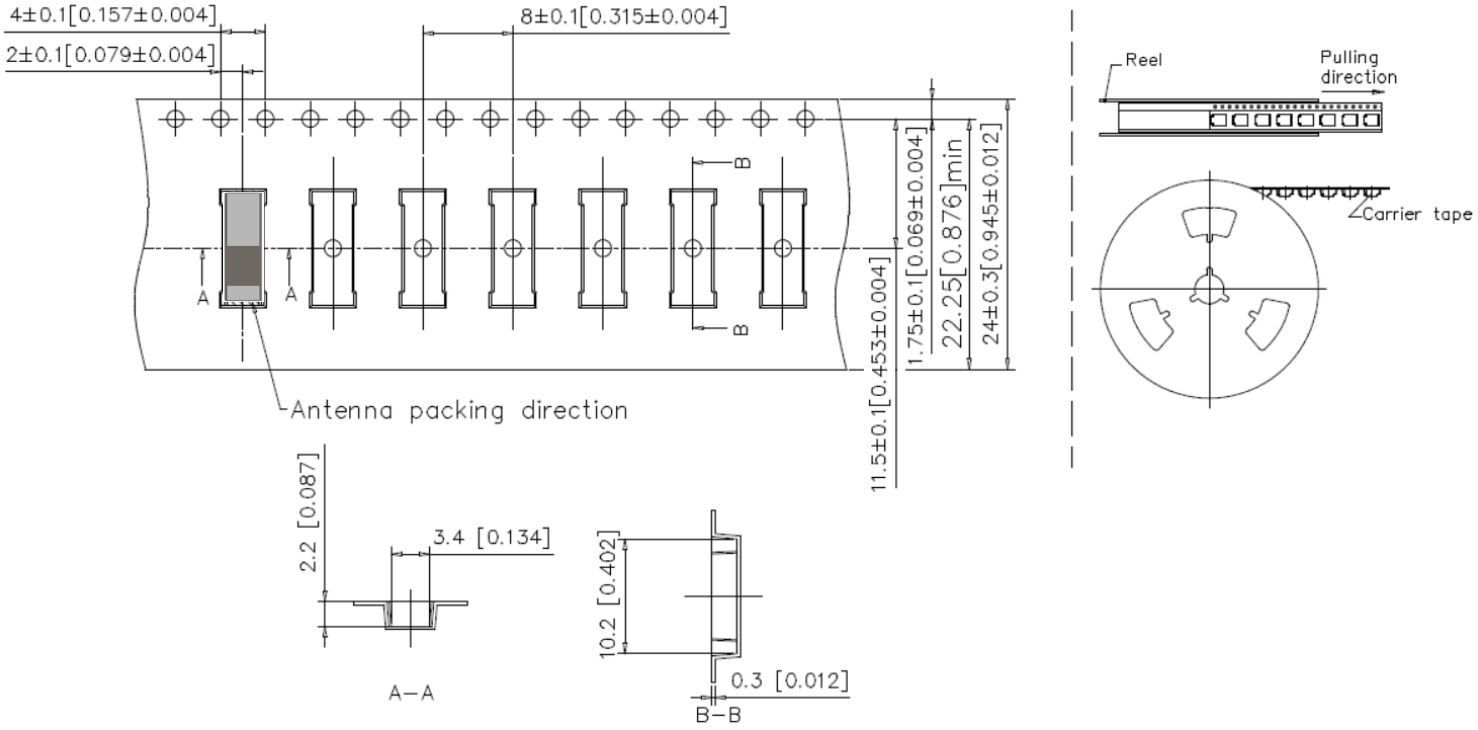
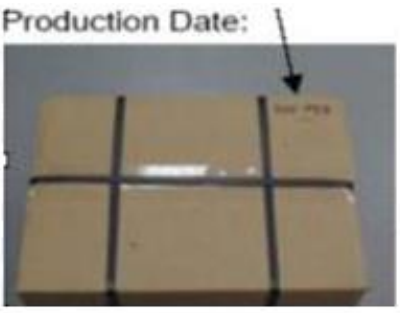
PACKAGING

Taping package
1000PCS/Reel
3000PCS/Small box
6000PCS/Carton box





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