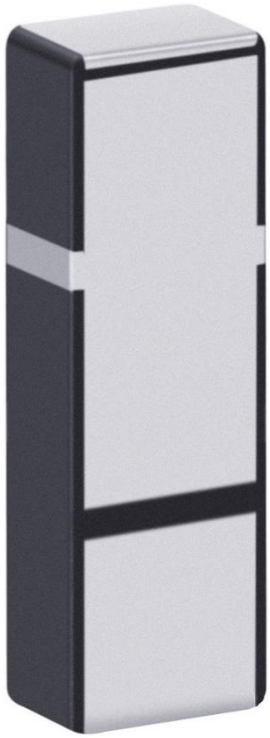
Pulse | LARSEN Antennas
A YAGEO Company

TECHNICAL DATA SHEET

Description: 3-in-1 Combo GNSS L1+L2+L5 Ceramic SMD Antenna

Series: Chip Antenna

PART NUMBER: W3089



Features:

- 3 in1 –combo antenna
  - Port 1: 1170-1249 MHz
  - Port 2: 1559-1608 MHz
- Compact size 3.2 x 10 x 2mm
- Omni radiation pattern
- SMT mounting on PCB
- Tape & Reel packing
- MSL-1

Applications:

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

Issue: 2035

RoHS COMPLIANT

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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	1170-1249MHz; 1559-1608MHz
Nominal Impedance	50 Ω
Radiation Pattern	Omni
Return Loss	1170-1249MHz <-5
	1559-1608 <-8
Gain	1dBi @ 1.2GHz
	-1dBi @ 1.6GHz
Efficiency	50% @ 1.2GHz
	45% @ 1.6GHz
Polarization	Vertical
Power Withstanding	2W

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MECHANICAL SPECIFICATIONS

Weight	0.3 g
Overall Length	10[0.39] MM[INCHES]
Over all width	3.2[0.13] MM[INCHES]
Over all thickness	2[0.08] 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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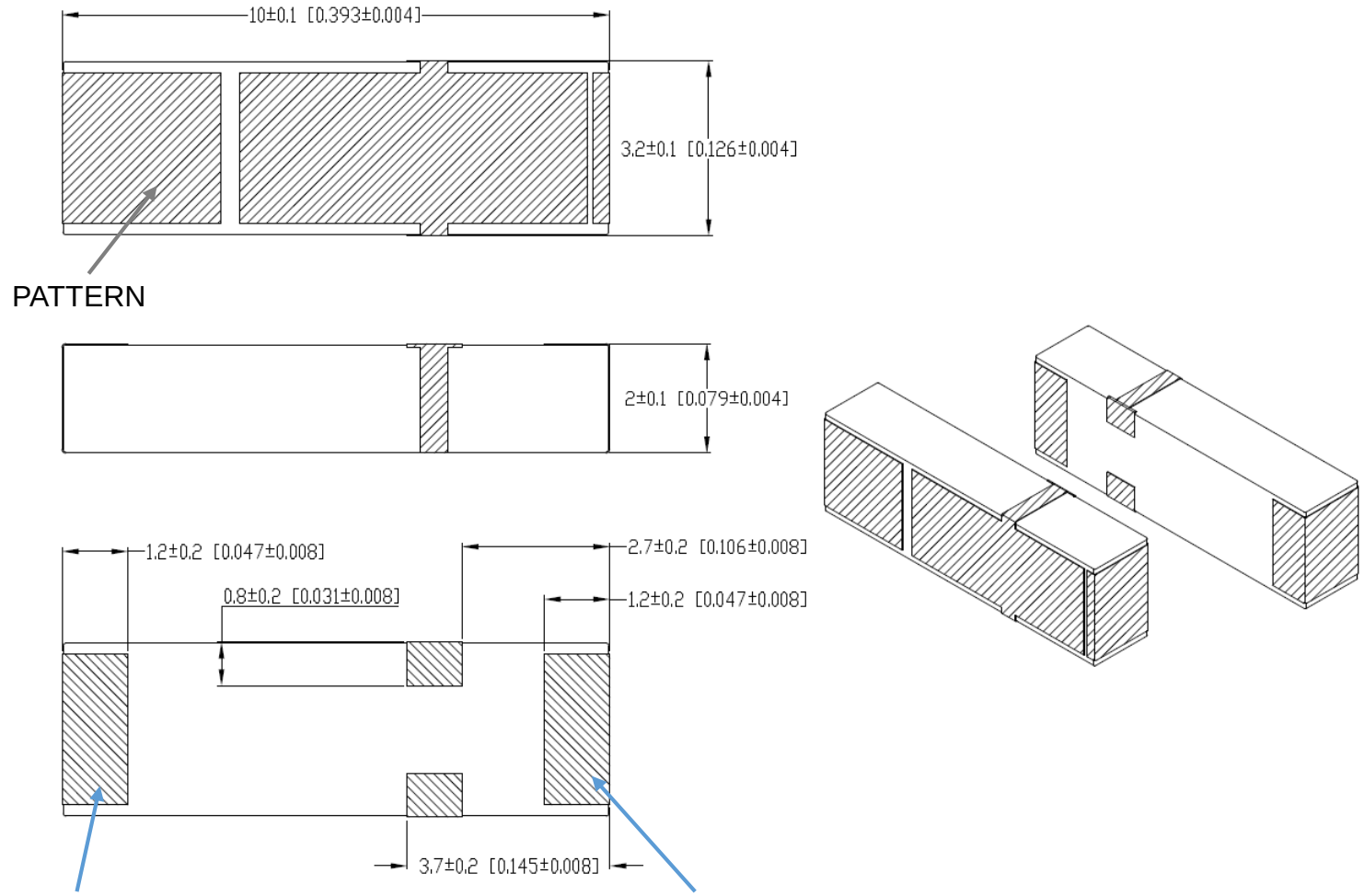
MECHANICAL DRAWING



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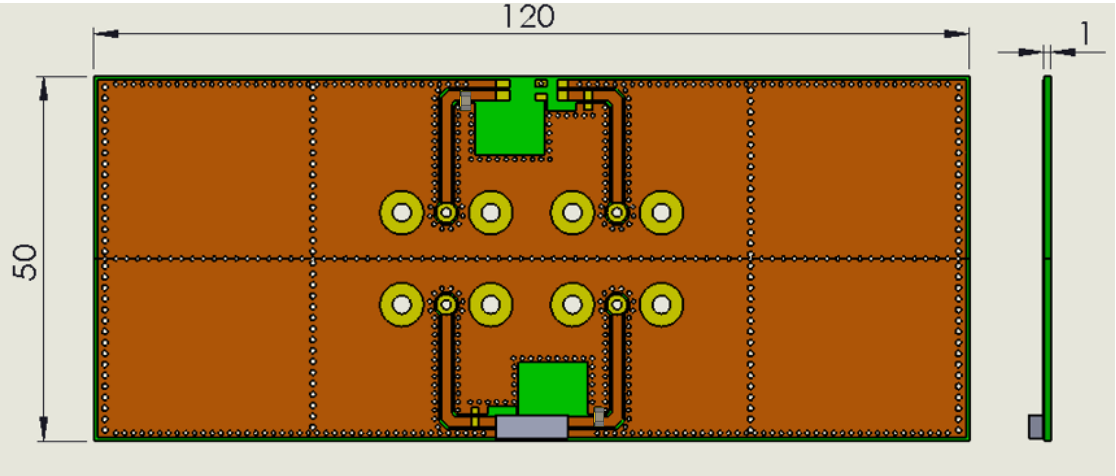
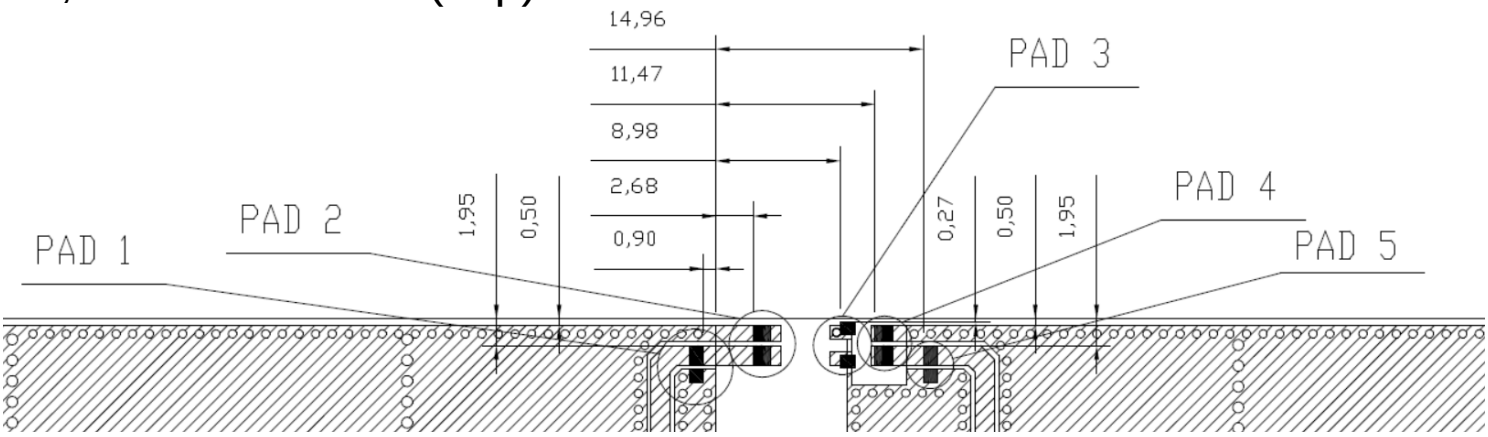
OTHER SPECIFICATIONS

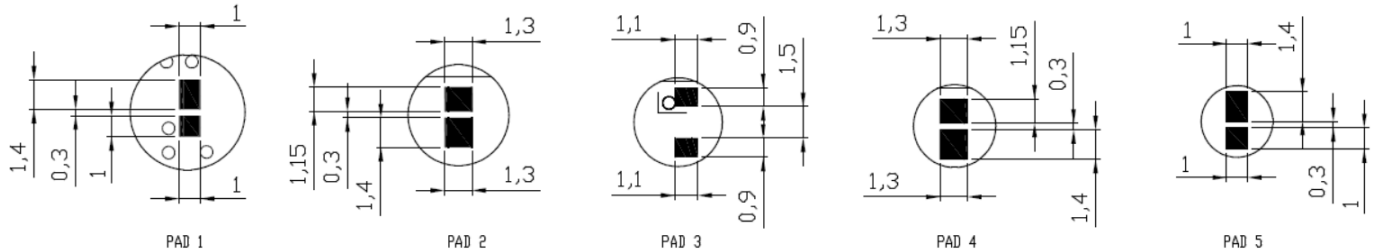
PCB LAYOUT

1， PCB material, ISOLA 185HR, size, 120X50X1mm



2, Clearance area (Top)





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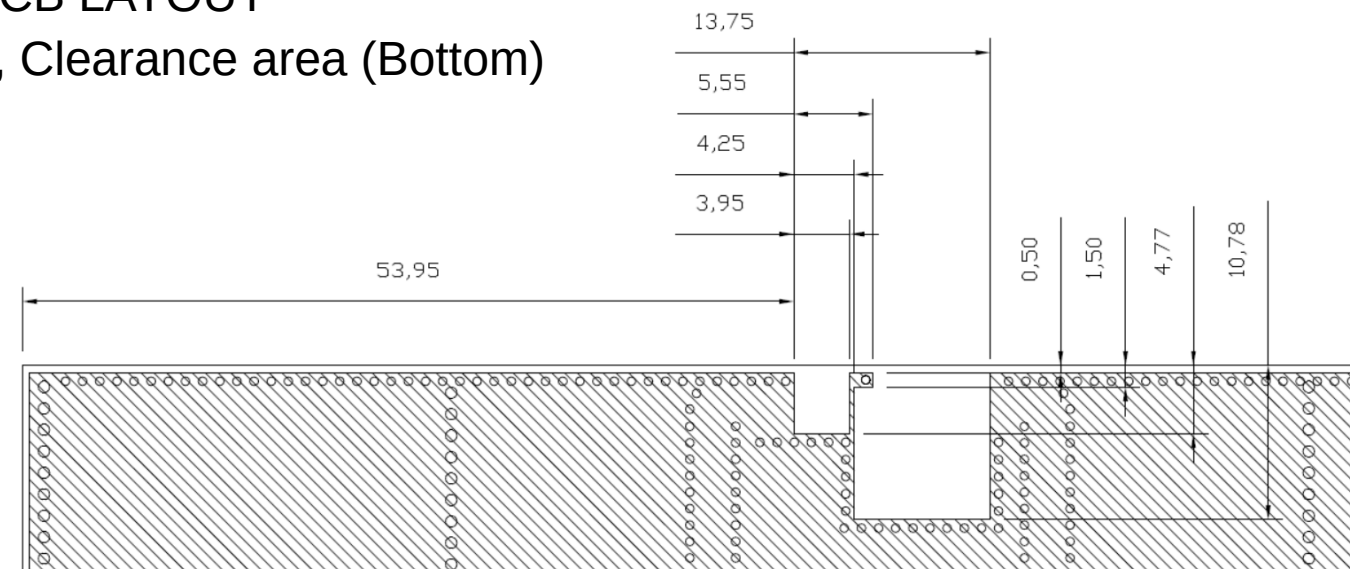
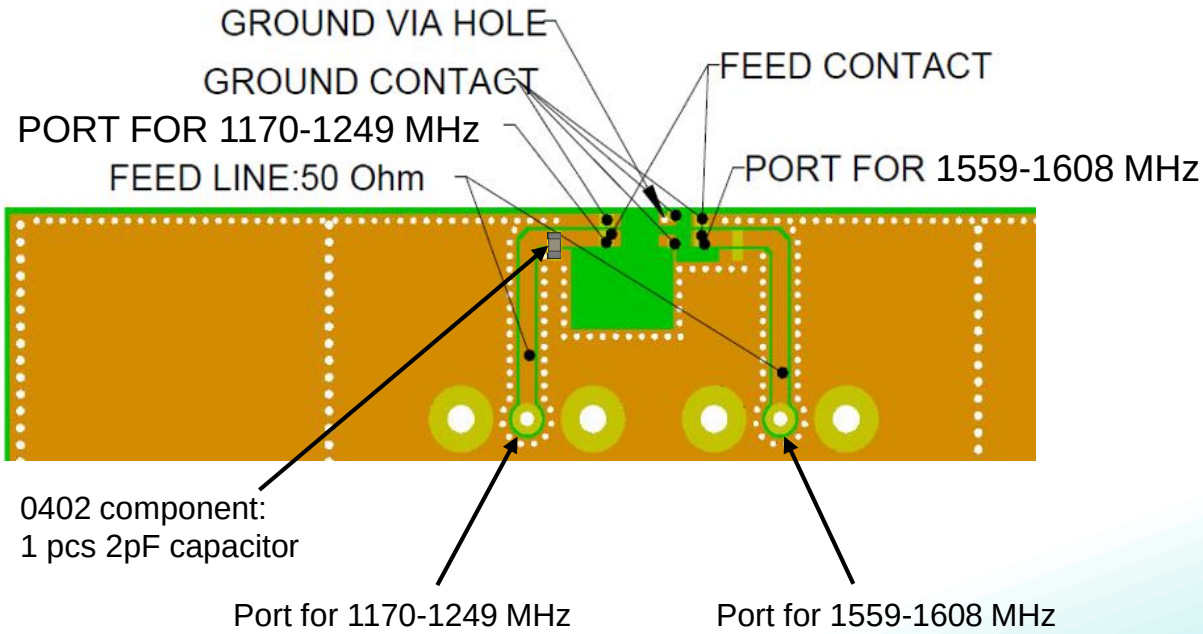
OTHER SPECIFICATIONS

PCB LAYOUT

3, Clearance area (Bottom)



4, PCB Features



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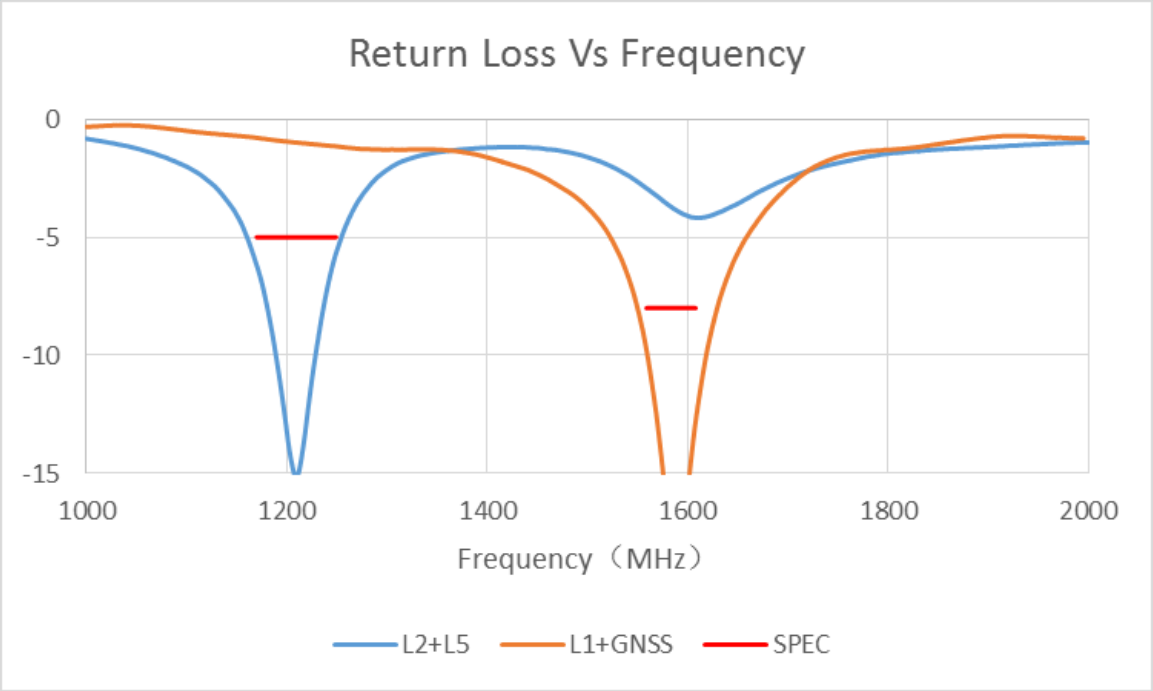
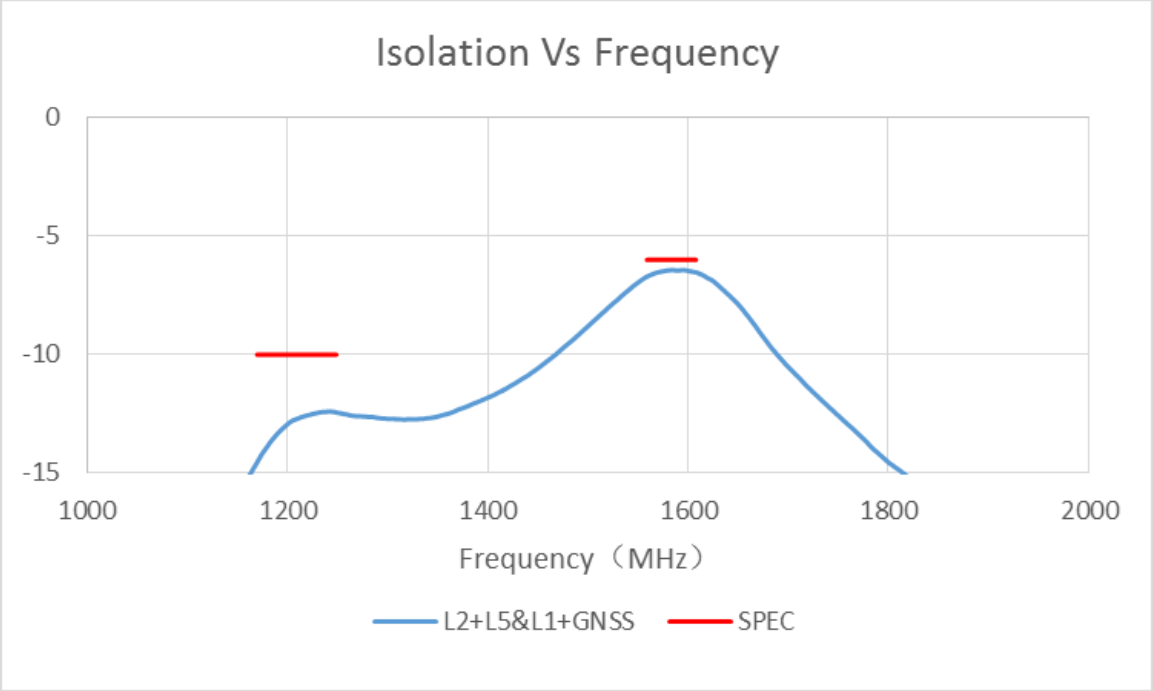
CHARTS





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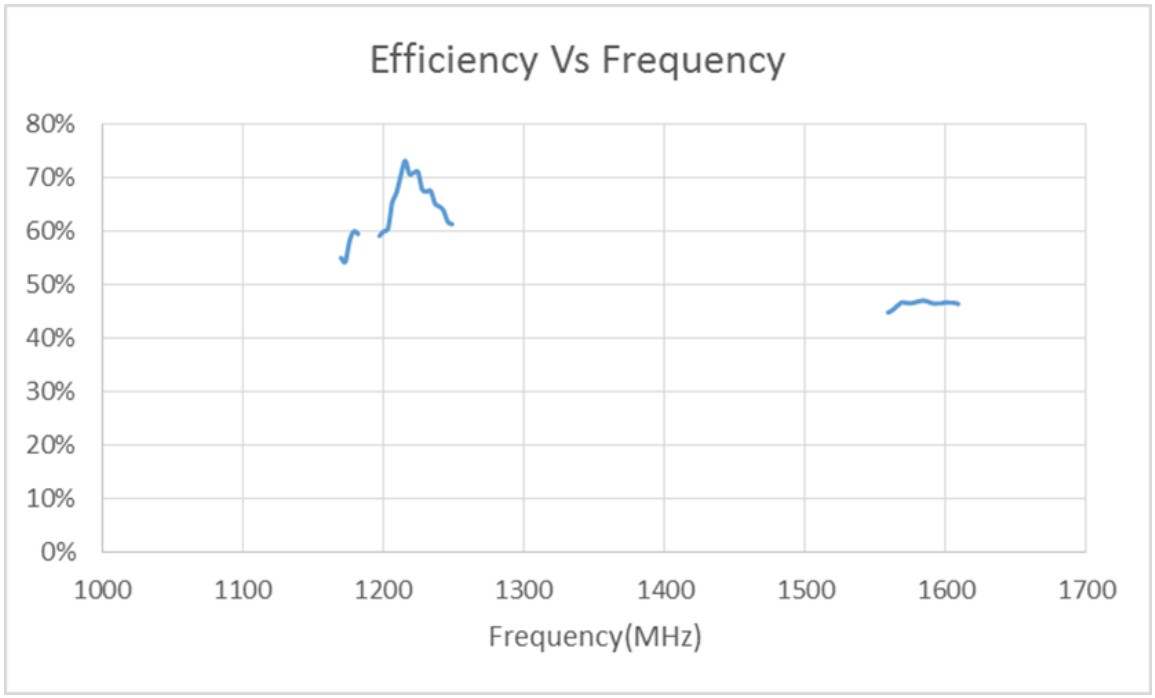

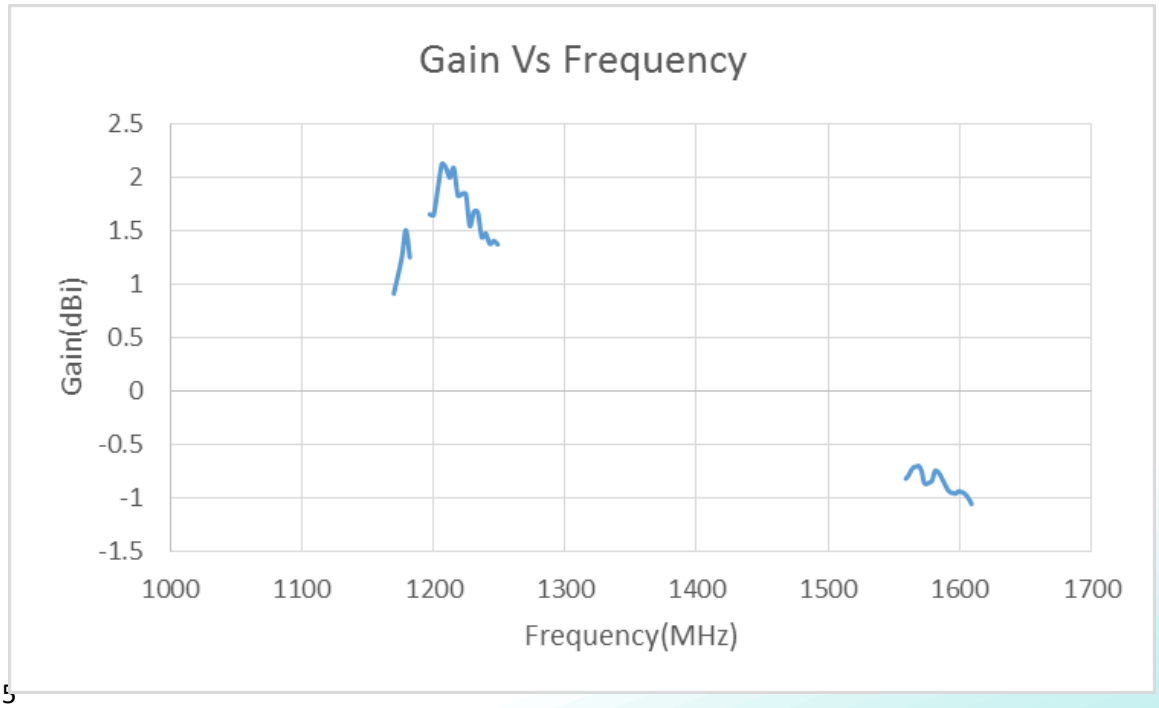

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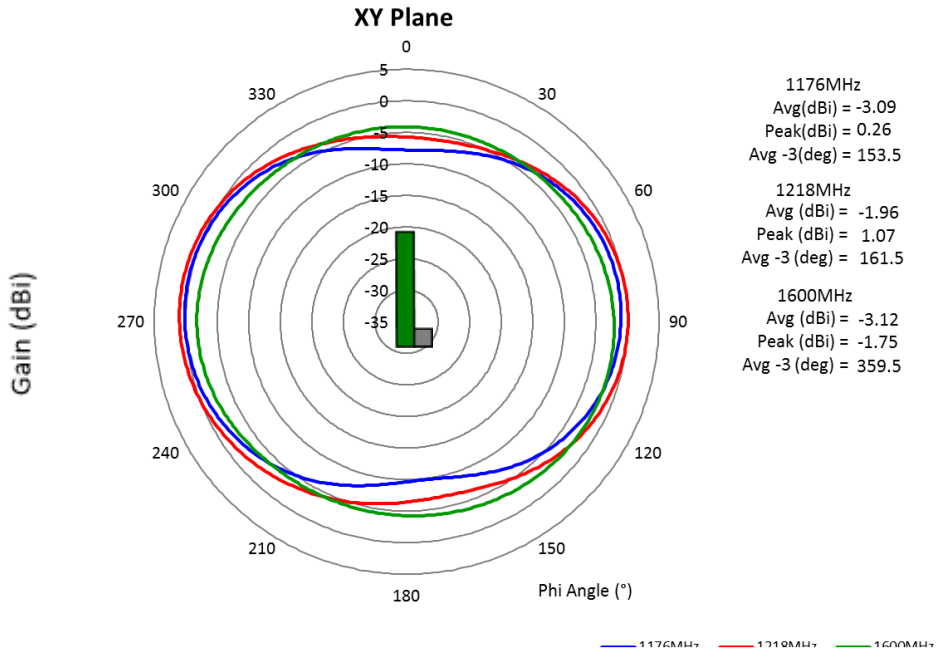

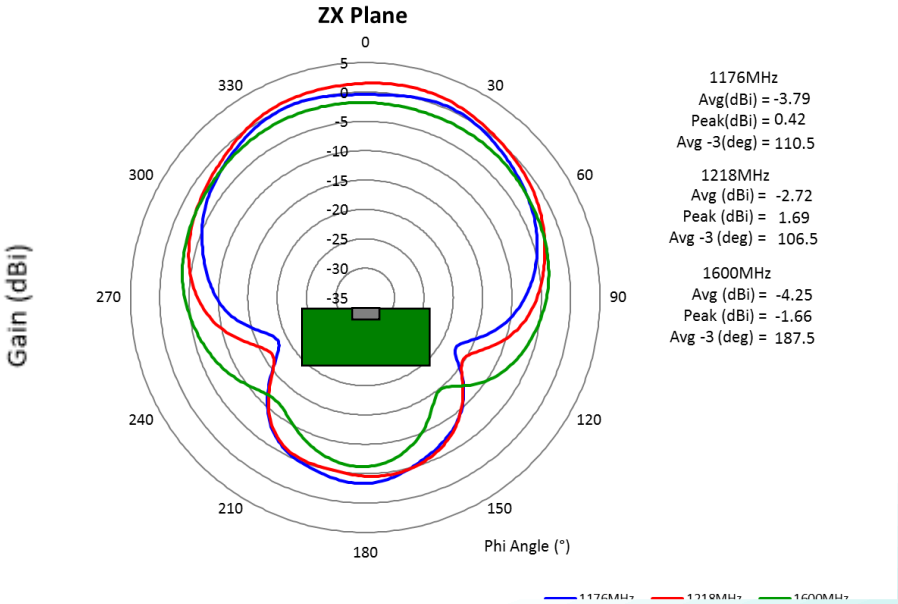

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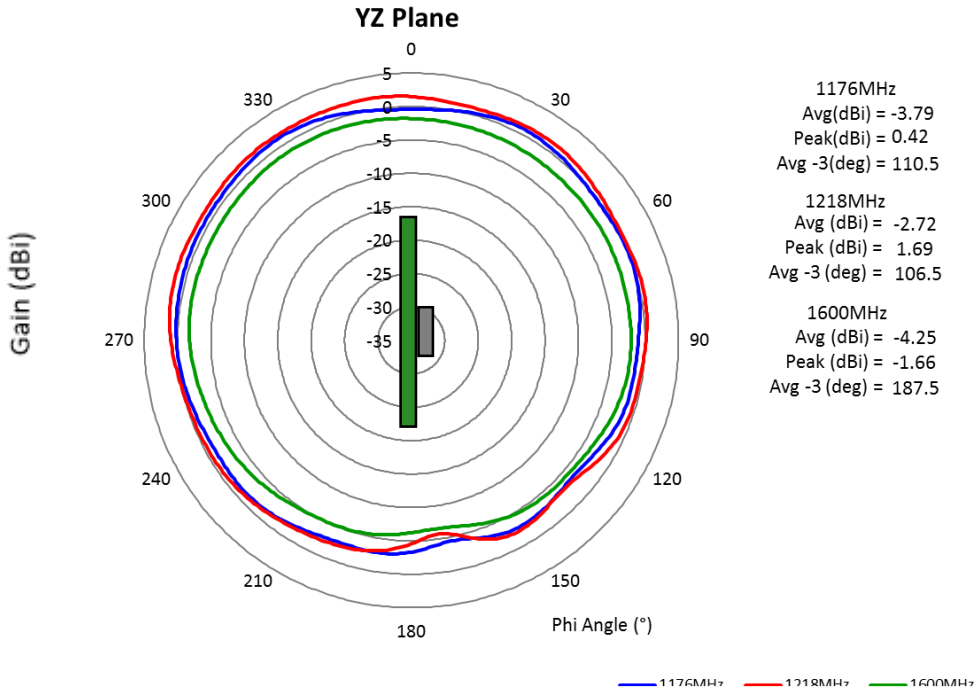

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Recommendations for ceramic chip antenna storage

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.

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Recommendations 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

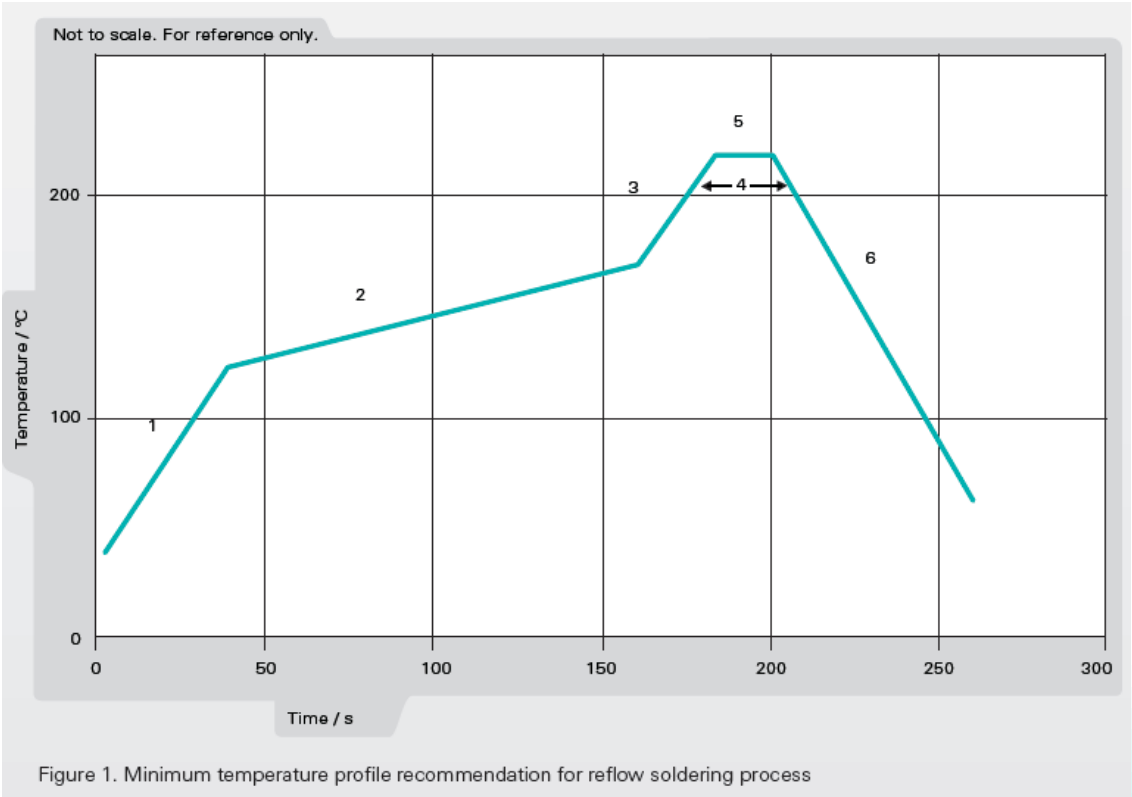

Figure 1. Minimum temperature profile recommendation for reflow soldering process

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Recommendations 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

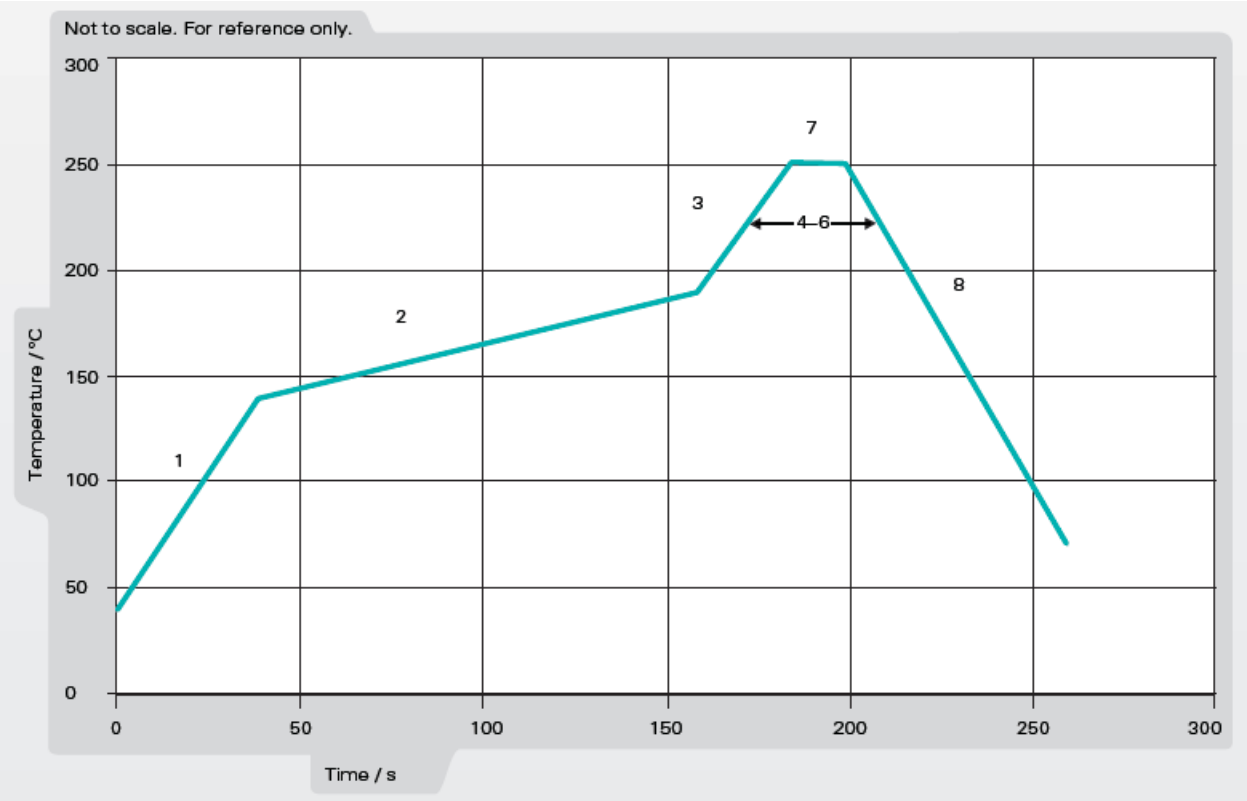

Figure 2. Maximum temperature profile recommendation for reflow soldering process

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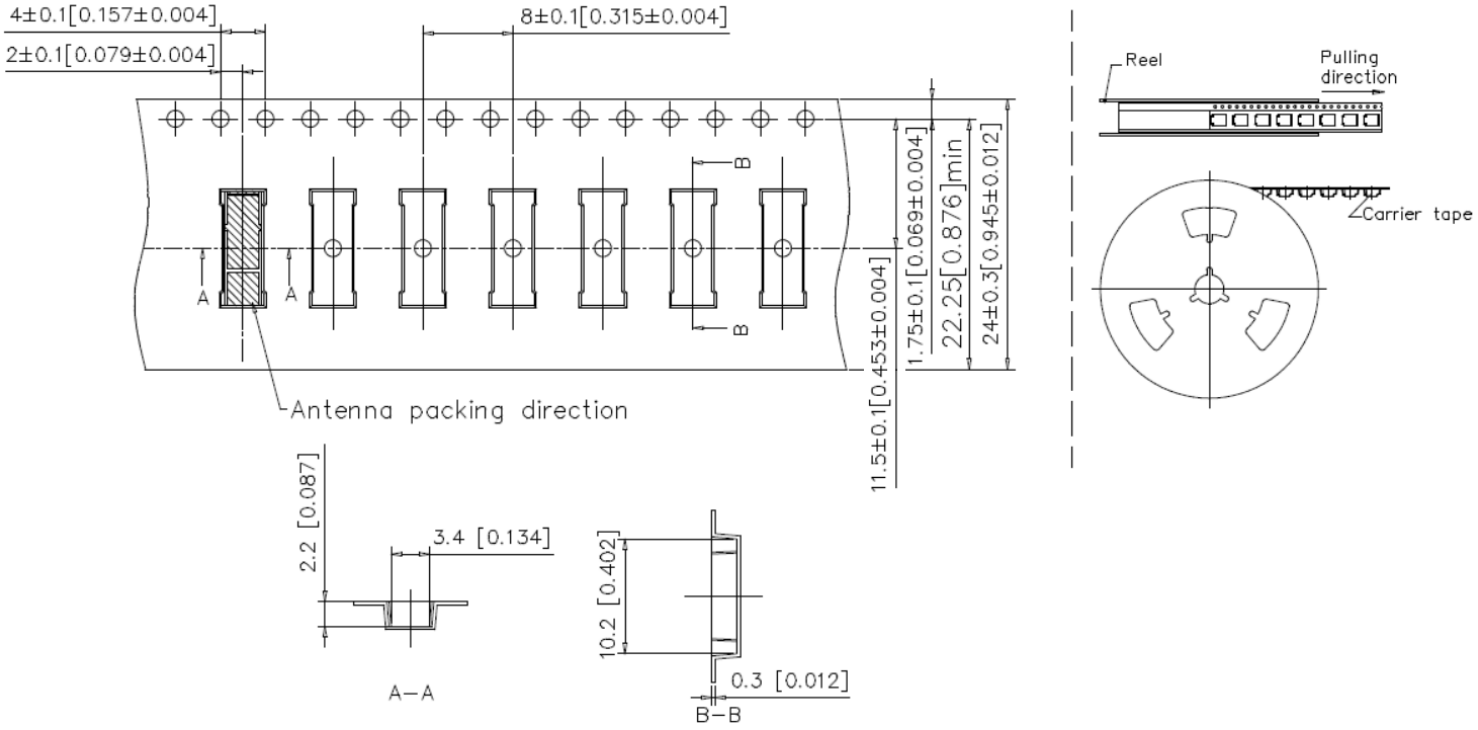
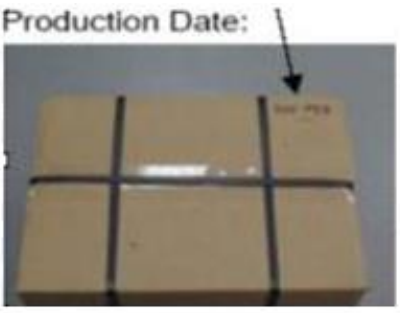
PACKAGING

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





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