Pulse | LARSEN Antennas
A YAGEO Company

TECHNICAL DATA SHEET

Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

PART NUMBER: W3011

Features:

- Frequency 1559-1606.6MHz
- Gain 1 / 1.8 / 1.4dBi
- Size 3.2 x 1.6 x 1.1 mm
- PCB Keep out 4 x 4.25 mm
- Polarization Linear
- Radiation pattern Omni

Applications:

- L1 GNSS Receivers
- Beidou, GPS, Galileo Glonass
- IoT, M2M
- Asset tracking
- Portable satellite receivers

All dimensions are in mm / inches

Issue: 2019

RoHS COMPLIANT

For more information:

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ELECTRICAL SPECIFICATIONS

Antenna Type	Chip antenna
Frequency	1559-1563MHz 1574.4-1576.4MHz 1598.6-1606.6MHz
Nominal Impedance	50 Ω
Return Loss (Max)	-6 / -10 / -7 dB
Radiation Pattern	Omni
Gain(Min)	1 / 1.8 / 1.4dBi
Efficiency(Min)	50 / 68 / 60 %
Polarization	Vertical
Power Withstanding	2W

MECHANICAL SPECIFICATIONS

Compact size	3.2 x 1.6 x 1.1mm
Weight	0.033g
Fixing system	SMT
MSL(MOISTURE SENSITIVITY LEVEL)	1

ENVIRONMENTAL SPECIFICATIONS

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

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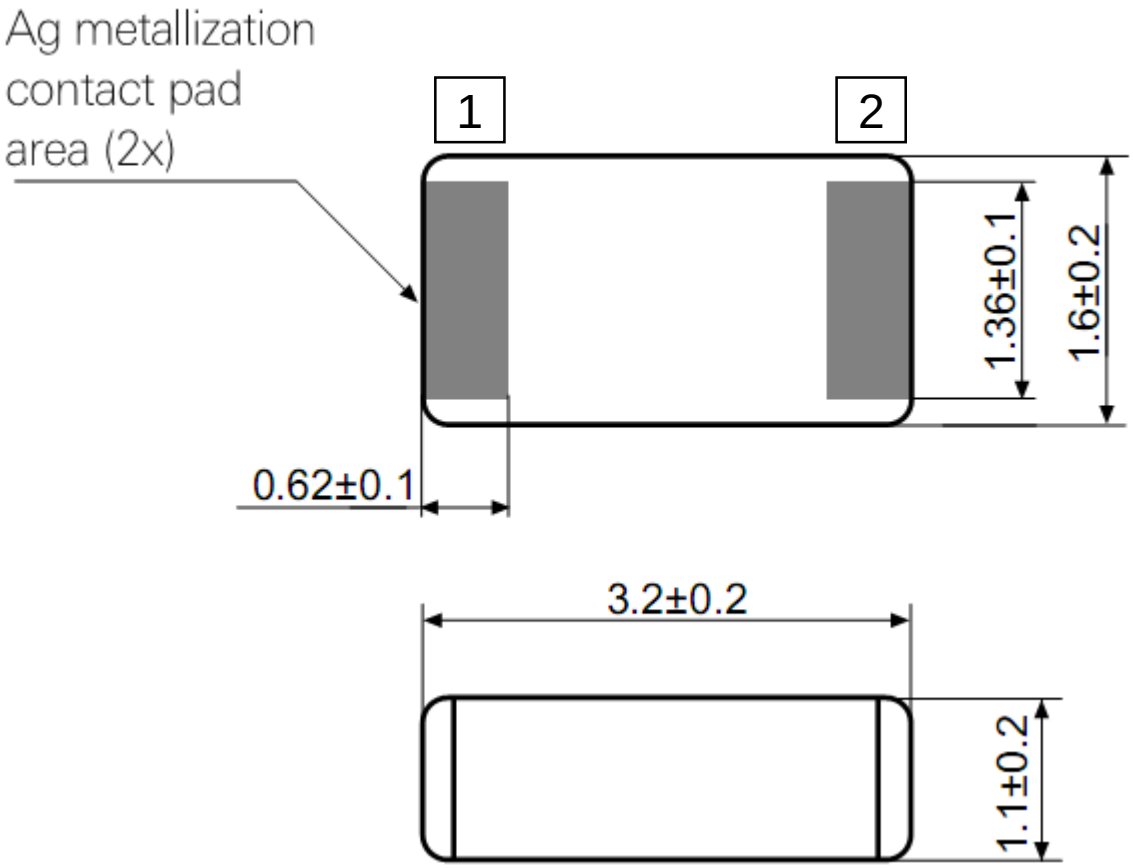
MECHANICAL DRAWING



Antenna features

No.	Terminal name	Terminal Dimensions
1	Feed / GND	0.62 x 1.36 mm
2	Feed / GND	0.62 x 1.36 mm

Antenna is symmetrical.
Either of terminals 1 or 2 can be feed / GND

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W3011 GPS Antenna PWB Layout

Ground cleared under antenna, clearance area 4.00 x 4.25 mm
Matching and tuning component value and placement depend on application and surrounding mechanics / materials.

Feed line should be designed to match 50 Ω characteristic impedance, depending on PWB material and thickness.
Recommended test board layout for electrical characteristic measurement, test board outline size 80 x 37 mm.

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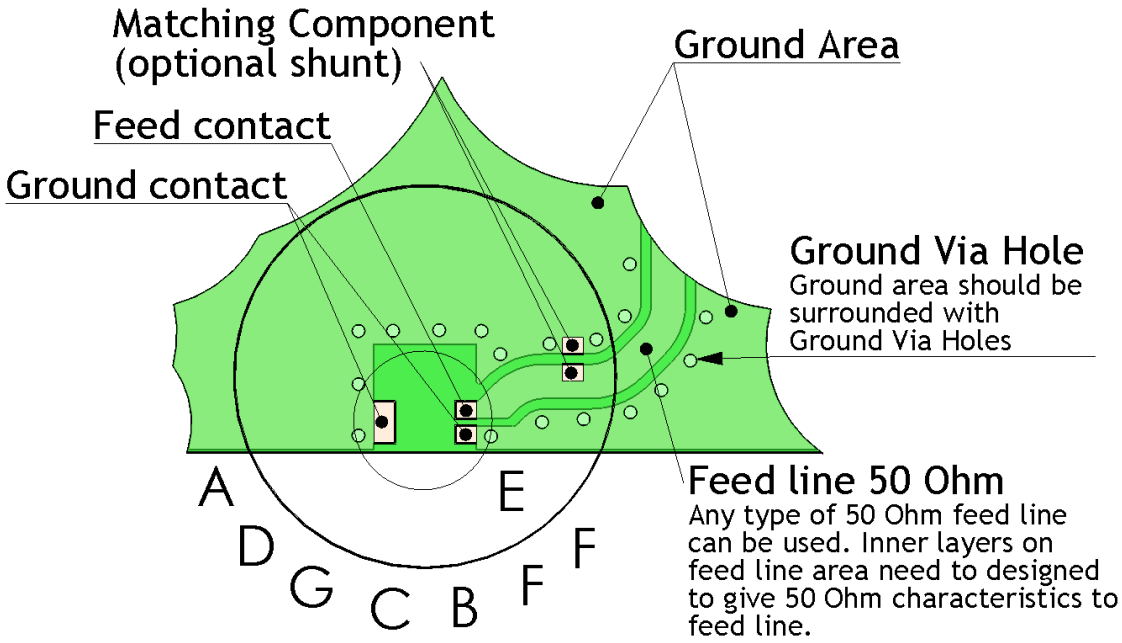
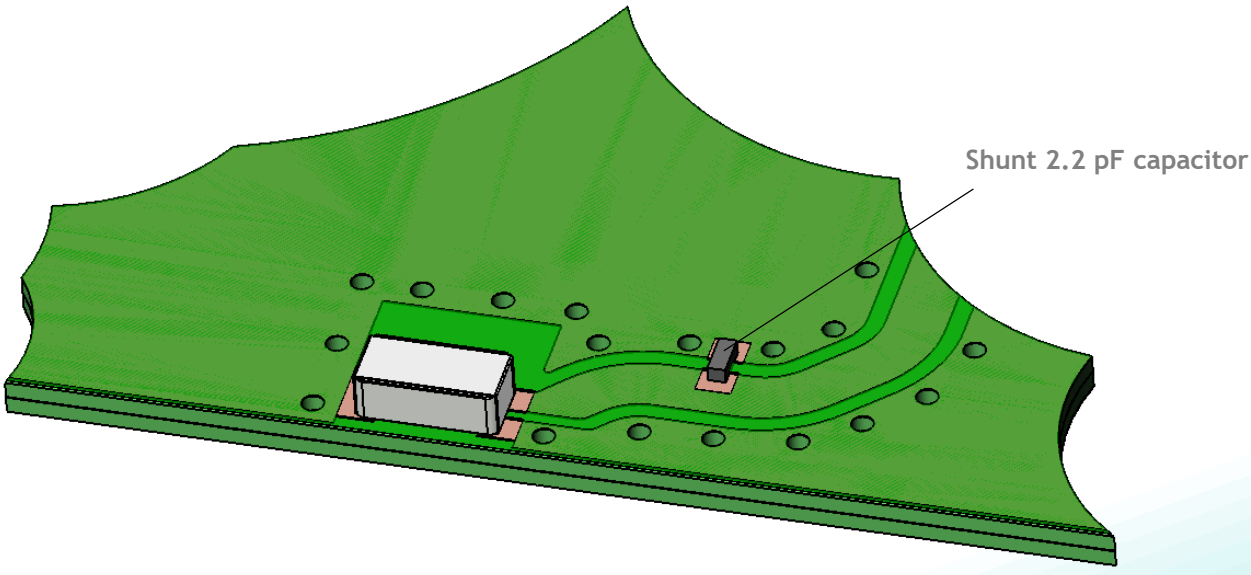
PWB layout for W3011 GPS Antenna

Note: All dimensions are in metric system.





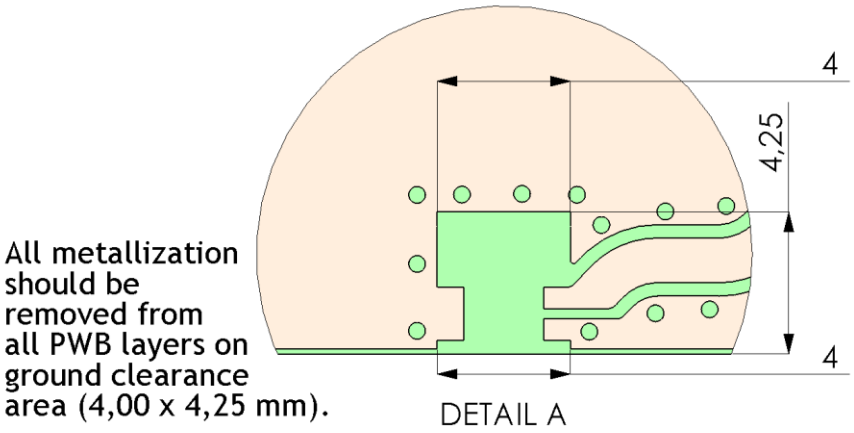
Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

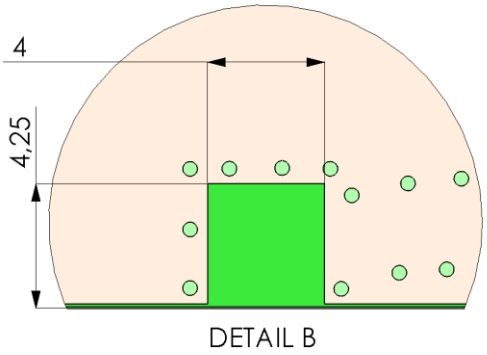
PART NUMBER: W3011

Ground clearance area for W3011 GPS Antenna

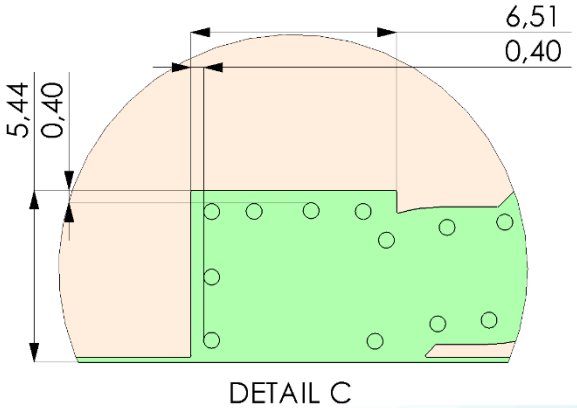
Ground clearance area (4,00 x 4,25 mm)



Opening in bottom/inner ground layers



Opening in other layers (no ground/ RF)



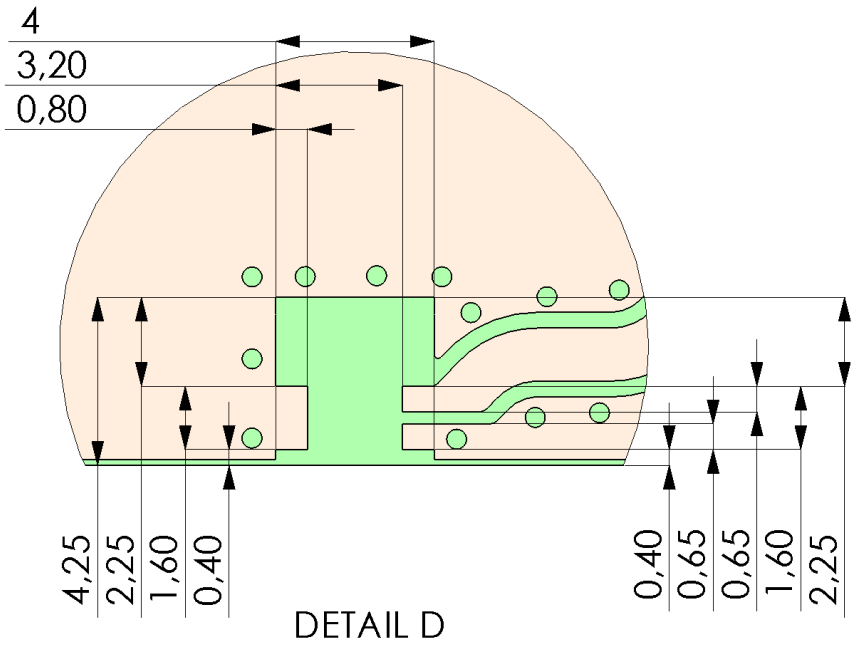
Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

PART NUMBER: W3011

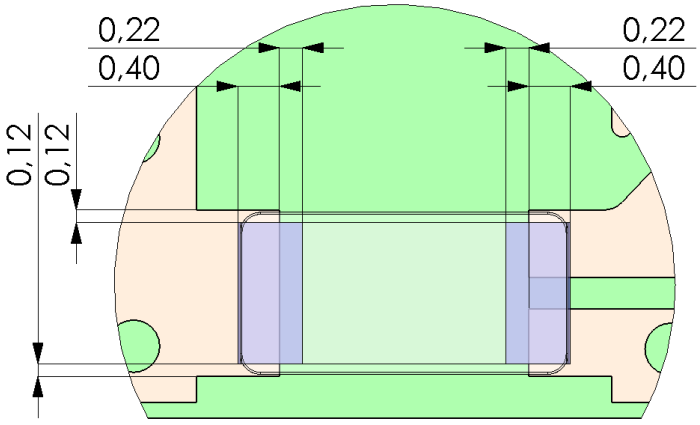
PWB pad dimensions and antenna position for W3011 GPS Antenna

Pad dimensions in top copper



DETAIL D

Antenna position on PWB layout



Antenna pads are marked blue

DETAIL E

Description: 1.575 GHz GNSS Ceramic Chip Antenna

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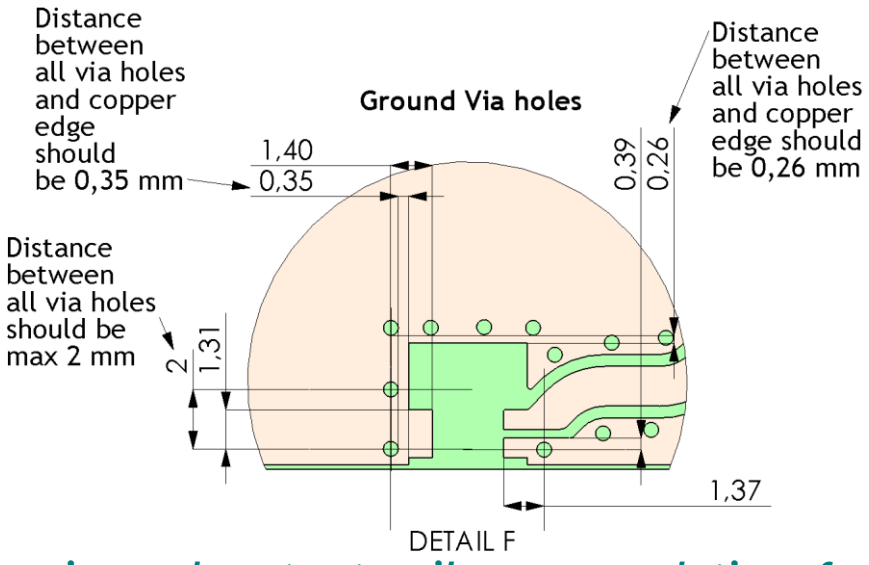
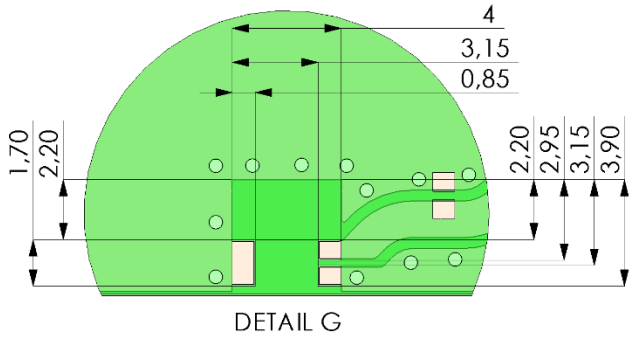
Typical Ground via hole placement in PWB layout for W3011 GPS Antenna

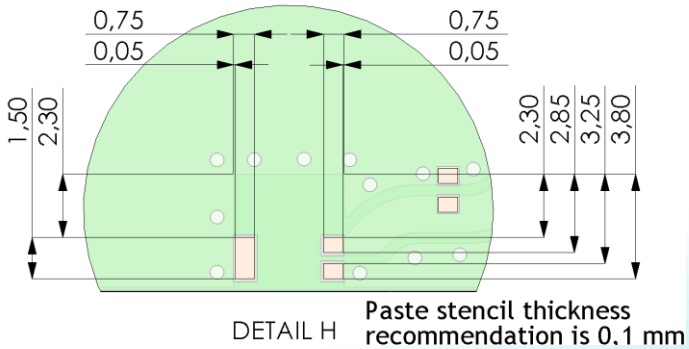


Solder resist opening and paste stencil recommendations for W3011 GPS Antenna

Solder resist opening



Paste stencil recommendation



RoHS COMPLIANT

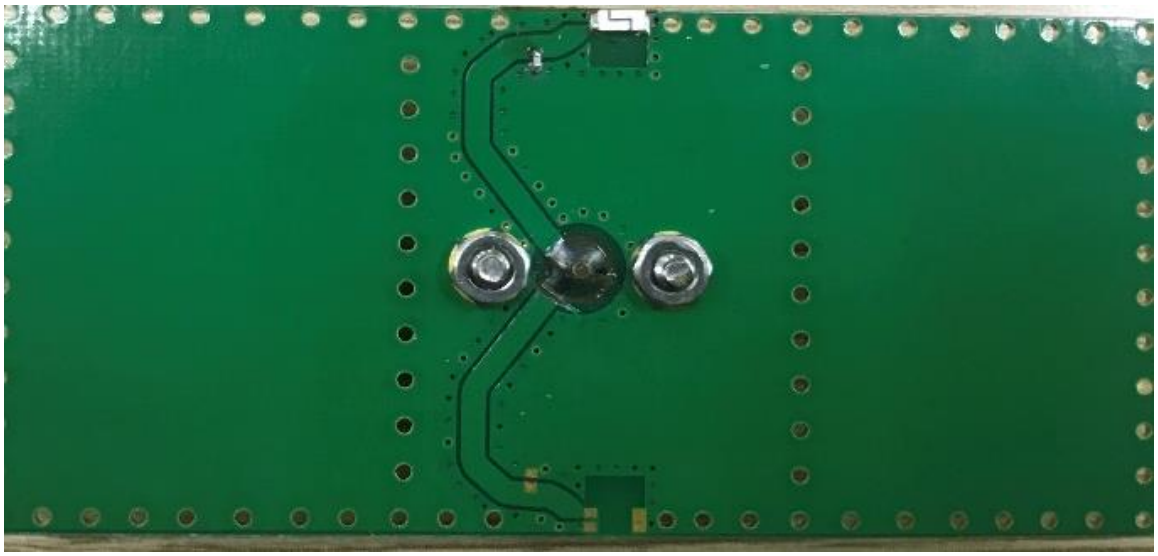
Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

PART NUMBER: W3011

TEST SETUP

All RF parameters tested on 80x37mm sized test board.
Antenna position on side center of PCB long edge.



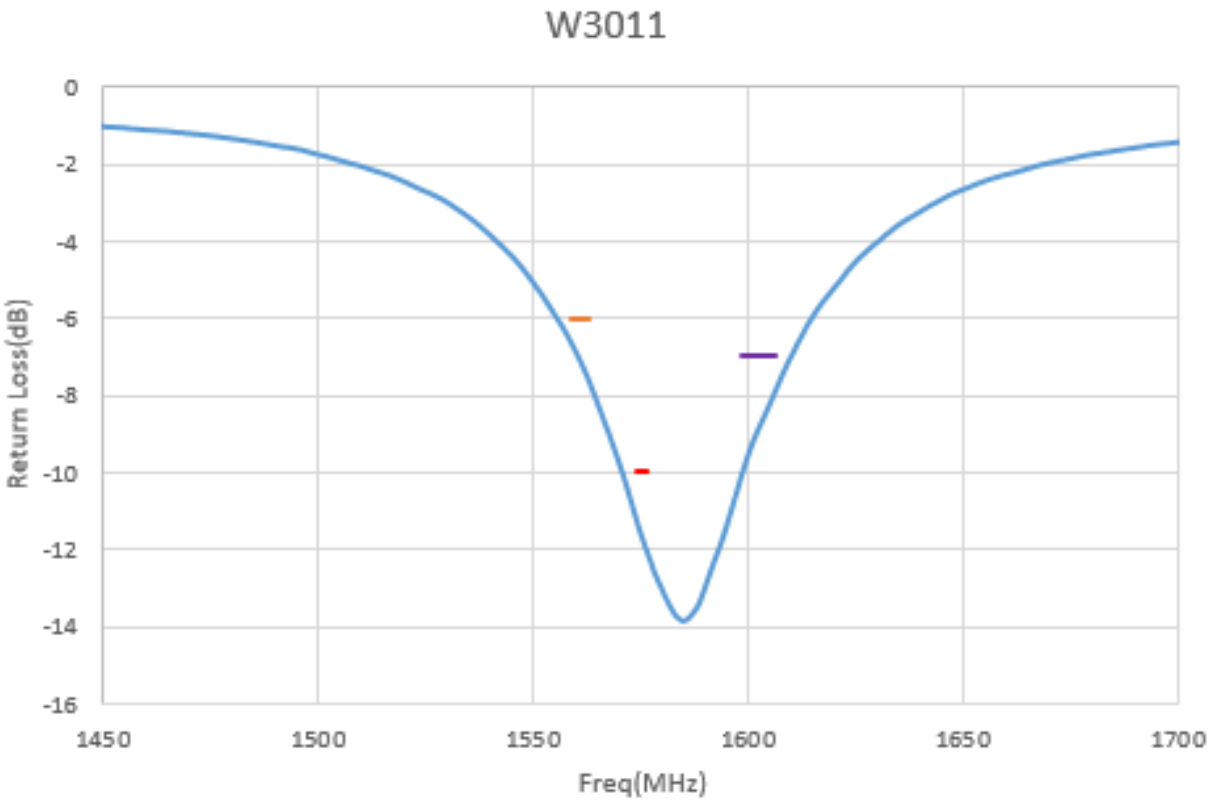
Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

PART NUMBER: W3011

CHARTS

Return Loss vs Frequency



RoHS COMPLIANT

Description: 1.575 GHz GNSS Ceramic Chip Antenna

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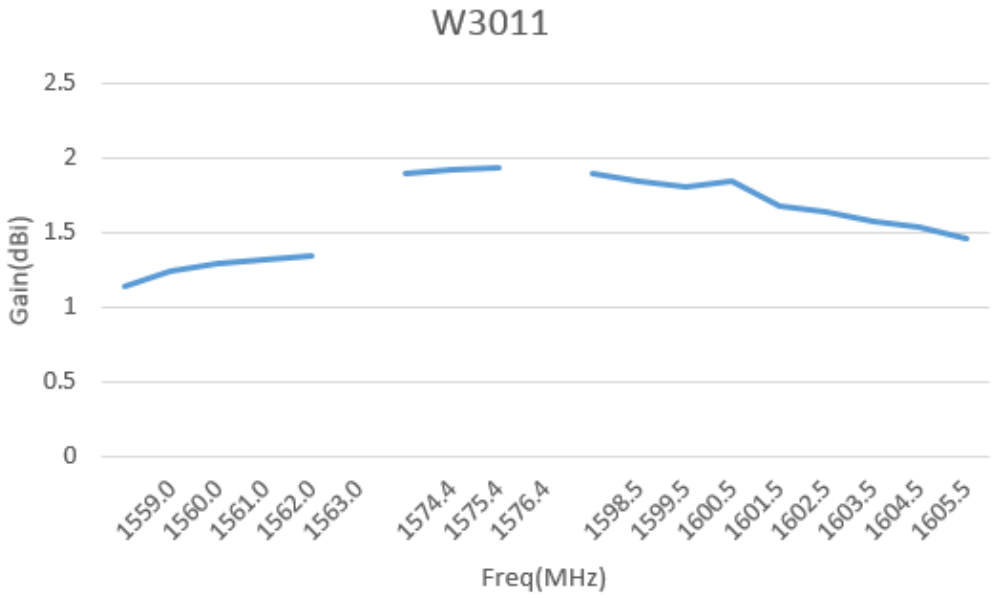
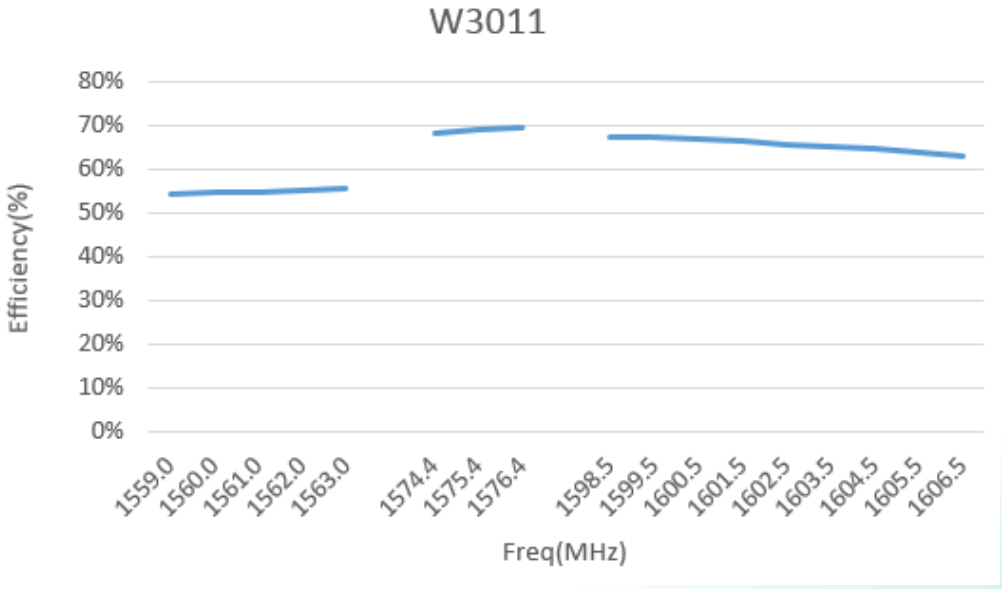
PART NUMBER: W3011

CHARTS

Gain vs Frequency



Radiation Efficiency vs Frequency



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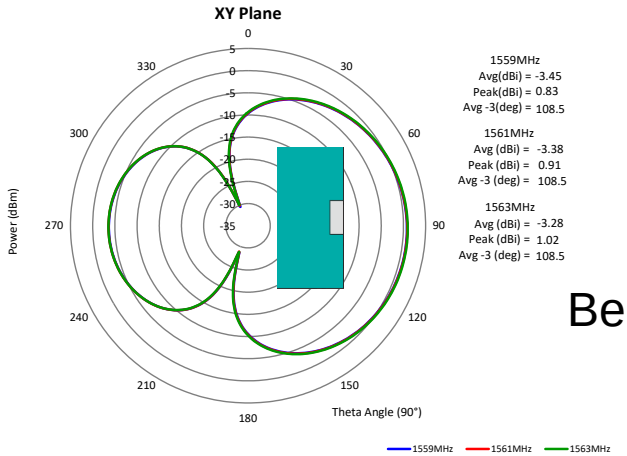
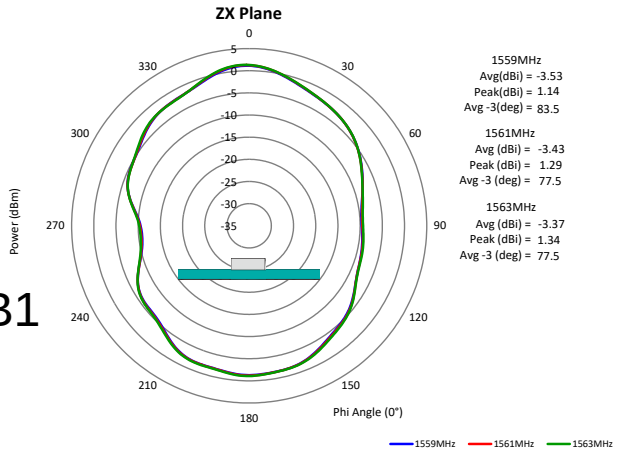
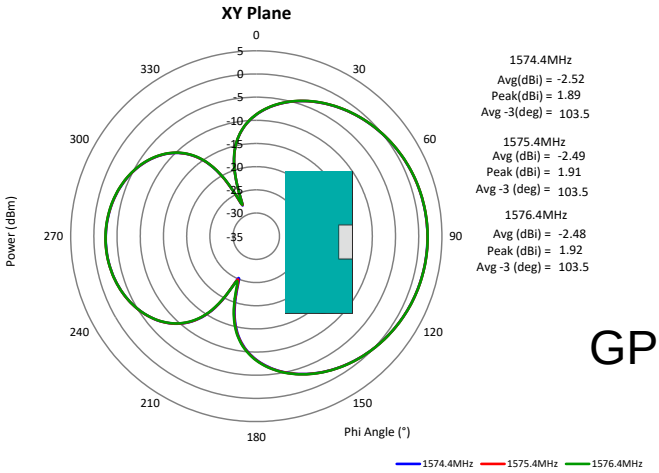
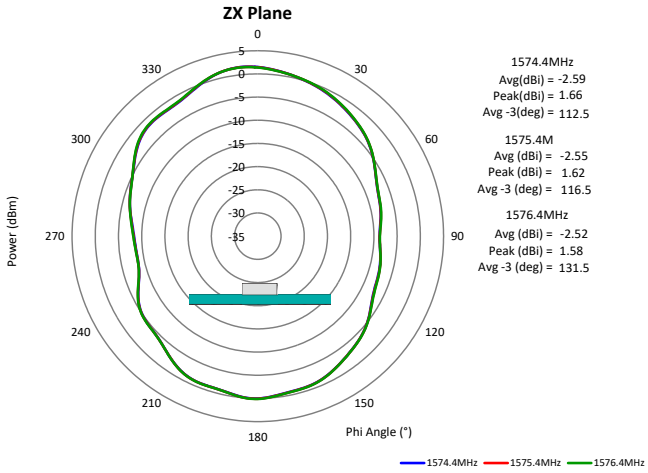
CHARTS



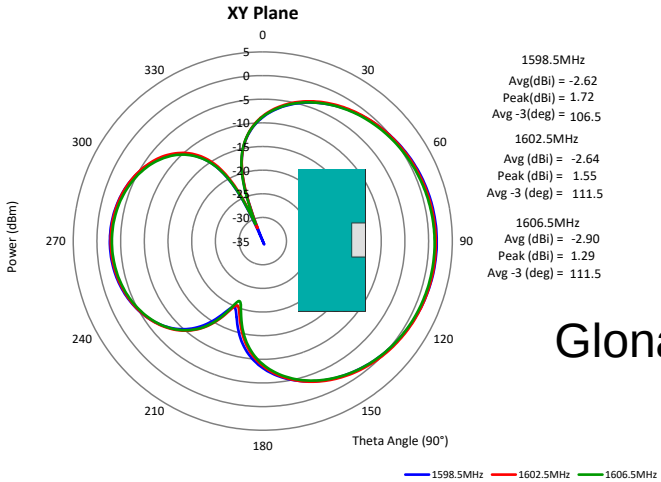


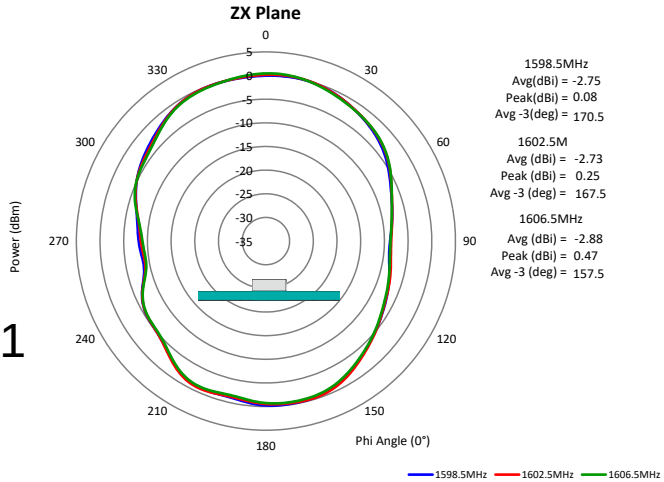
Beidou B1





GPS L1





Glonass L1

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

RoHS COMPLIANT

Description: 1.575 GHz GNSS Ceramic Chip Antenna

Series: Ceramic Chip Antenna

PART NUMBER: W3011

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

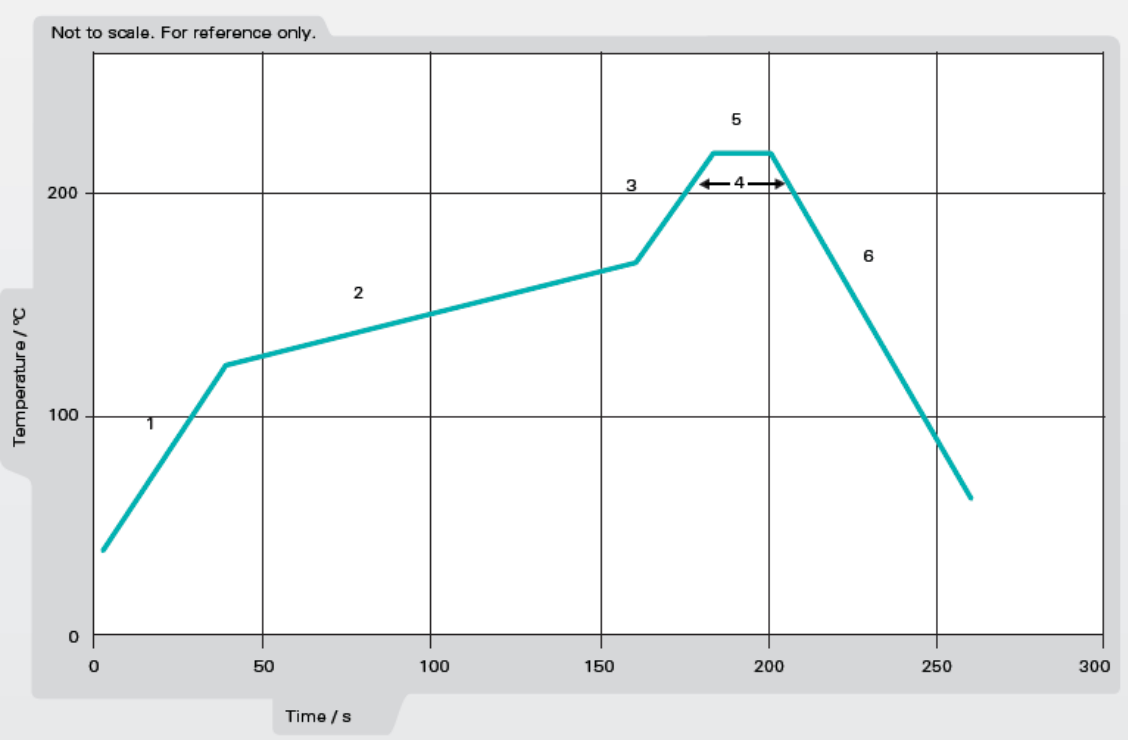


Figure 1. Minimum temperature profile recommendation for reflow soldering process

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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

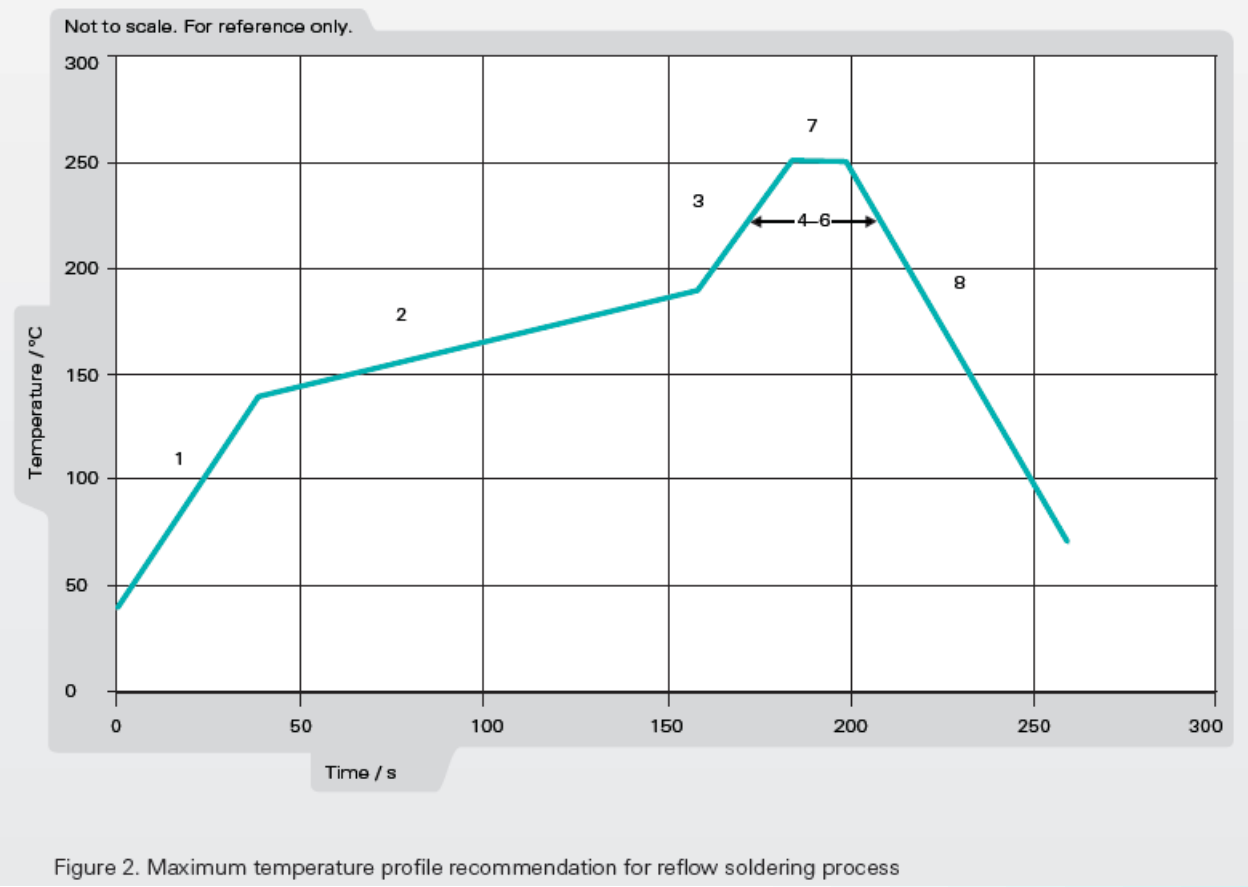

Figure 2. Maximum temperature profile recommendation for reflow soldering process

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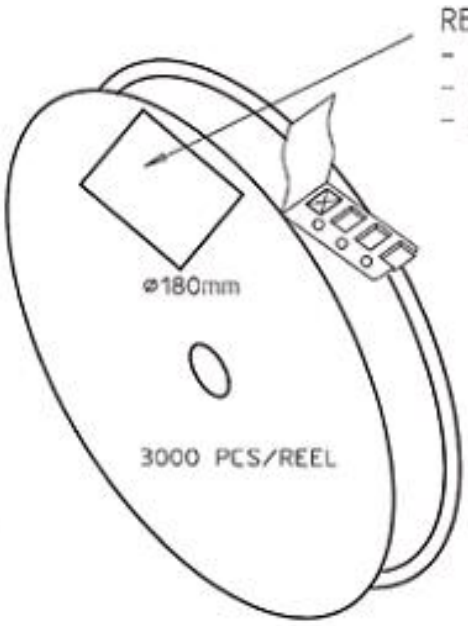
PACKAGING

Taping package
3000PCS/Reel
30000PCS/Carton box

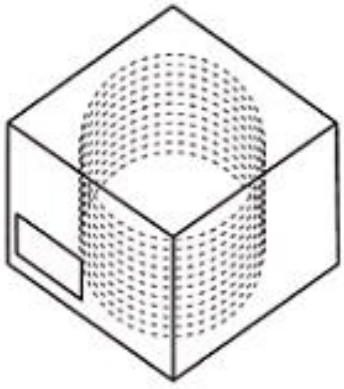


CARRIER TAPE H85-00125
width=8,00 depth=1,22
COVER TAPE H85-00126
width=5,60

LENGTH OF TAPE:

- Leader section: 50 empty cavities before component section
- Trailer section: 25 empty cavities after component section.

Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.



BOX H85-00128 (182x182x132)	1 pcs
- LABEL	1 pcs/BOX
REEL H85-00127 (D180,W12)	10 pcs
- REEL LABEL	1 pcs/REEL

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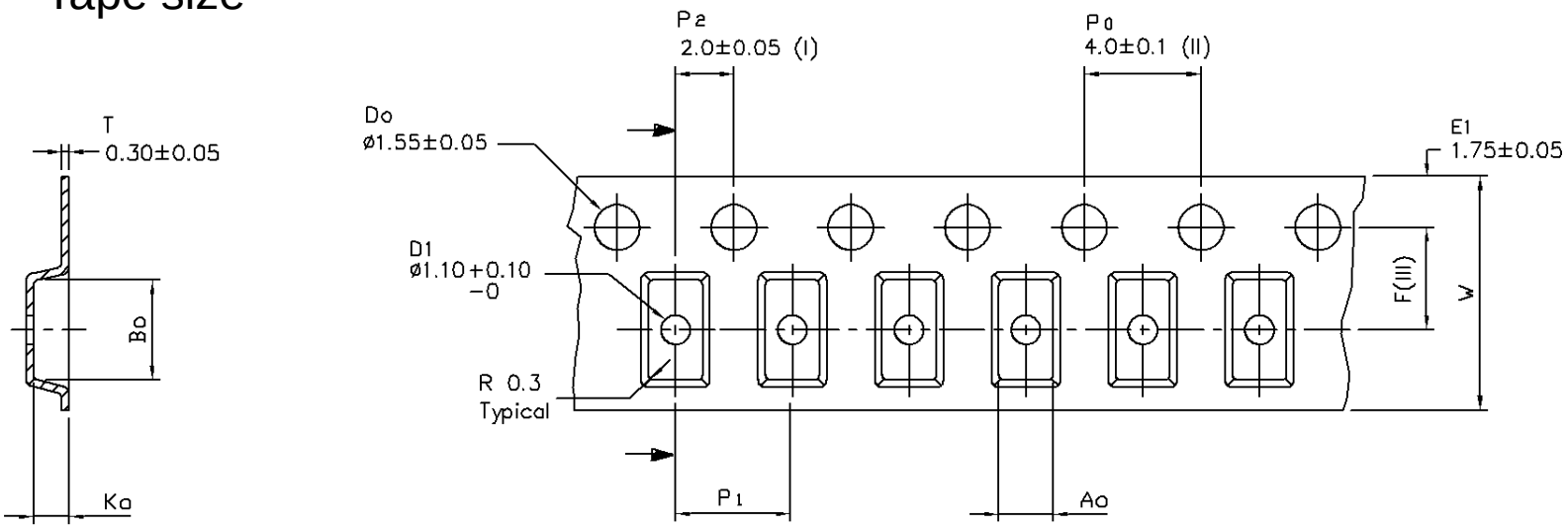
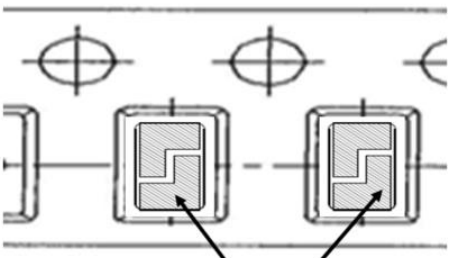
PACKAGING

Tape size



Ao	1.85	+/− 0.1
Bo	3.43	+/− 0.1
Ko	1.22	+/− 0.1
F	3.50	+/− 0.05
P1	4.00	+/− 0.1
W	8.00	+/− 0.1



TOP SURFACE OF THE ANTENNA (ANTENNA SOLDERING PADS FACING SOWN TO THE BOTTOM OF THE CARRIER TAPE)

TOP VIEW OF THE CARRIER TAPE

单击下面可查看定价，库存，交付和生命周期等信息

>>Pulse(普思)