



PRODUCT SPECIFICATION

TITLE

Ceramic GPS/BEIDOU/GLONASS Antenna (25mm*25mm*4mm)

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REVISION: A	ECR/ECN INFORMATION: EC No: 116781 DATE: 2017/05/11	TITLE: Ceramic GPS/BEIDOU/GLONASS Antenna	SHEET No. 1 of 5
DOCUMENT NUMBER: PS-204286-001	CREATED / REVISED BY: Benson Liu 2017/05/02	CHECKED BY: Ryan Liu 2017/05/02	APPROVED BY: Welson Tan 2017/05/02



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Ceramic GPS/BEIDOU/GLONASS Antenna (25mm*25mm*4mm)

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances requirements and test methods for Ceramic GPS/BEIDOU/GLONASS Antenna (25mm*25mm*4mm).

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER

Product name: Ceramic GPS/BEIDOU/GLONASS Antenna 204286-0001

2.2 Design and Construction

Antenna shall be of the design, construction and physical dimensions specified on the applicable sales drawing.

2.3 Materials

- a) Ceramic: Refer to respective Molex sales drawings
- b) Plating: Refer to respective Molex sales drawings

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See drawings and other sections of this specification for the relevant reference documents. In cases where the specification differs from the drawings, the drawings take precedence.

4.0 RATINGS

4.1 RF POWER

2 Watts

4.2 TEMPERATURE

Operating: - 40°C to 125°C
 Storage : - 40°C to 125°C

4.3 HUMIDITY

Storage : 15~70% RH
 Test : 80~95% RH

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5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	Test Condition	Requirements		
		1561MHz +/-5MHz	1575MHz +/-5MHz	1602MHz +/-5MHz
Frequency Range	Measure antenna on recommended PCB through VNA E5071C	1561MHz +/-5MHz	1575MHz +/-5MHz	1602MHz +/-5MHz
Return Loss	Measure antenna on recommended PCB through VNA E5071C	< -10 dB		
Peak Gain	Measure antenna on recommended PCB through OTA chamber	5.2dBi (Max)	2.1dBi (Max)	4.1dBi (Max)
Avg. Total Efficiency	Measure antenna on recommended PCB through OTA chamber	>70%	>70%	>75%
Polarization	Measure antenna on recommended PCB through OTA chamber	RHCP		
Avg. Axial Ratio	Measure antenna on recommended PCB through OTA chamber	<13dB	<7dB	<12dB
Input Impedance	Measure antenna on recommended PCB through VNA E5071C	50Ohms		

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	Ag thickness measure	Use X-ray measure the thickness of Ag	Ag thickness spec: 4-7um
5.2.2	Tape test	Attach the tape (3M610) on to the above without air bubble. Wait for 5 minutes Release tape at fast speed.	Acceptance <10% peeling off.

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Humidity Test	1.Test condition: The device under test is kept for 12 hours in an environment with a temperature of 55 degrees and a relating humidity of 95%. Thereafter for 12 Hours in an environment with a temperature of 25 degrees and a relative humidity of 95%. The cycle is repeated until a total of 6 cycles have been completed. Hereafter the conditions are stabilized at room temperature.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.2	Temperature cycling test	1.Test condition: The device under test at -40 °C ⇔ 125 °C by 72 cycles, Dwell of 30 min, transition time between Dwell 15 sec (~ 61 min / cycle) and each item should be measured after exposing them in normal temperature and humidity for 24 h.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.3	High Temperature	Test condition: 1) Temperature:125°C , time:1008hours 2) There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.4.4	Salt mist test	1.Test condition: The device under test is exposed to a spray of a 5% (by volume) resolution of Nacl in water for 2 hours. Thereafter the device under test is left for 1 week in room temperature at a relative humidity of 95%. The cycle is repeated until a total of 2 cycles have been completed. Here after the conditions are stabilized at room temperature.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem

The meaning of text “**No mechanical damage**” in the table above is:

- no soldering problem
- no adhesion problem of glue
- no peel off of plating

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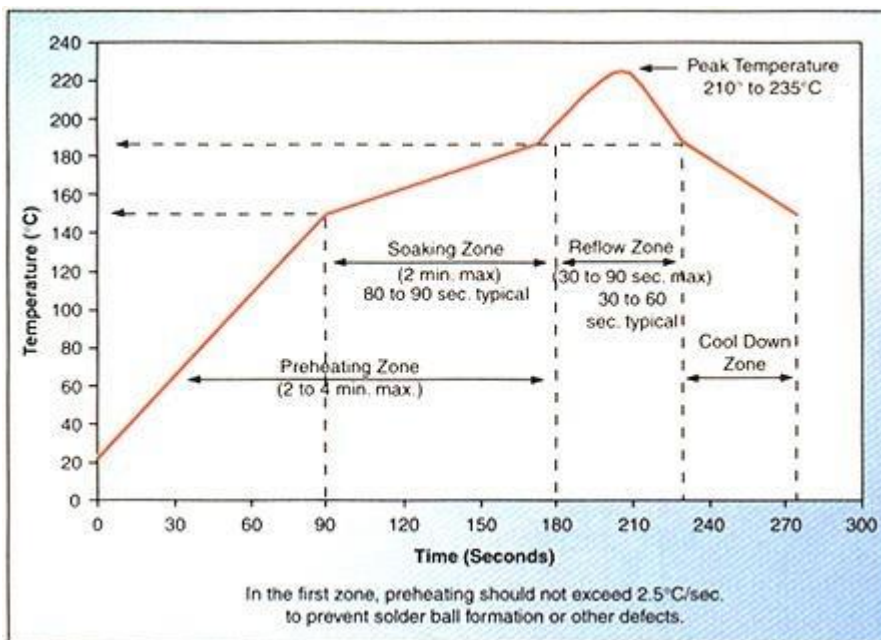
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6.0 TEST GROUPINGS

Note: All test specimens (except group 5) shall pass the reflow process for 3 times.

Test Item	Description	Group1	Group2	Group3	Group4	Group5	Group6
5.2.1	Ag thickness measure	X					
5.2.2	Tape test		X				
5.3.1	Humidity Test			X			
5.3.2	Temperature cycling test				X		
5.3.3	High Temperature					X	
5.3.4	Slat mist test						X
	Sample Quantity	5	5	5	5	5	5

7.0 RECOMMENDED REFLOW CONDITION



8.0 PACKAGING

Refer to the Molex related packaging drawings.

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