



PRODUCT SPECIFICATION

TITLE

698MHz-2.7GHz FULL LTE SMT ANTENNA

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REVISION: C	ECR/ECN INFORMATION: EC No: 170025 DATE: 2017/12/27	TITLE: 698MHz-2.7GHz FULL LTE SMT ANTENNA	SHEET No. 1 of 7
DOCUMENT NUMBER: PS-1462000001	CREATED / REVISED BY: Kang Cheng 2017/12/27	CHECKED BY: Colin Xu 2017/12/27	APPROVED BY: Stary Song 2017/12/27



PRODUCT SPECIFICATION

698MHz-2.7GHz FULL LTE SMT ANTENNA

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances Specification and test methods for Full LTE SMT Antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product name: Full LTE SMT Antenna.

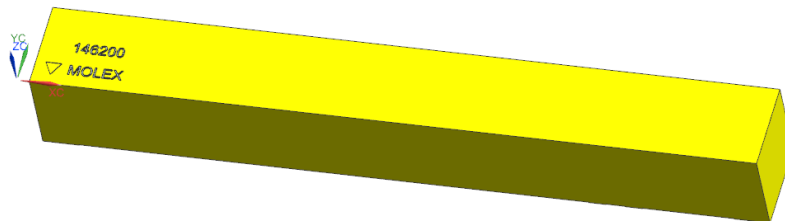
Series Number: 146200.

2.2 DESCRIPTION

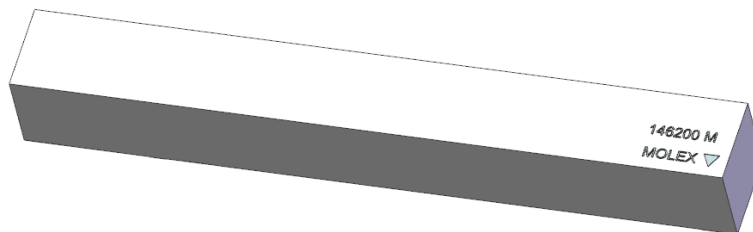
This is a SMT wide band high performance antenna implemented using ceramic with recommendation to meet the customer needs. It is designed to cover the various frequency bands from 698MHz~2.7GHz.

2.3 FEATURES.

- Working frequency 698-960MHz, 1710-2700MHz
- High efficiency over 40% on all bands
- SMT embedded LTE 2*2 MIMO system application
- Antenna size 40mmx5mmx5mm, PCB keep-out area 50x10mm
- RoHS Compliant



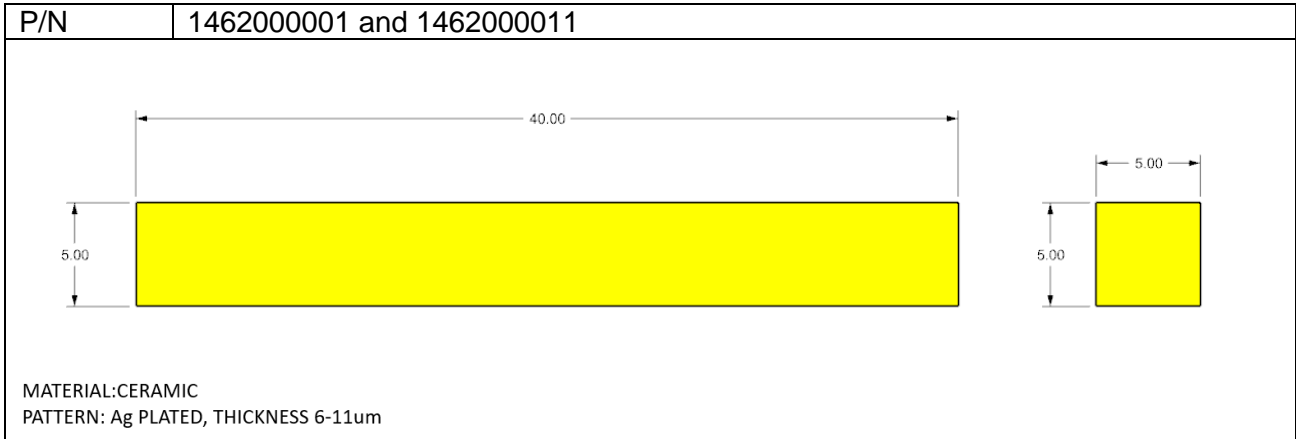
3D VIEW P/N: 1462000001



3D VIEW P/N: 1462000011

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2.4 PRODUCT STRUCTURE INFORMATION



3.0 APPLICABLE DOCUMENTS

Document	Number	Description
Sale Drawing(SD)	SD-1462000001	Mechanical Dimension of the product
Application Guide(AS)	AS-1462000001	Antenna Application and surrounding
Packing Drawing(PK)	PK-1462000001	Product packaging specifications

4.0 GENERAL SPECIFICATION

Product name	698MHz-2.7GHz Wide Band Antenna.			
Part number	1462000001		1462000011	
Frequency Range	698MHz~960MHz	1.7GHz~2.7GHz	698MHz~960MHz	1.7GHz~2.7GHz
Return Loss	>-4 dB	>-5 dB	>-5 dB	> -5 dB
Peak Gain	0.2 dBi	3.8 dBi	0.5 dBi	3.7 dBi
Avg. Total Efficiency	>40%	>60%	>45%	>60%
Polarization	Linear			
Impedance with matching	50 Ohms			
Operating with matching	-40°C to 125°C			
Storage with matching	-40°C to 125°C			
RF Power	2 Watts			
Antenna type	ceramic			

Note that the above antenna performance is measured under stand-alone condition. When implement into the system, the frequency resonant might be off-tune due to the loading of surrounding components especially metal plane. This off-tune can be compensated through matching. Although module manufacturers specify a peak gain limit, it is based on free-space conditions. The peak gain will be degraded by 1 to 2dBi in the actual implementation as the radiation pattern will change due to the surround components. As such, during selection of antenna, you can select one with high peak gain to compensate for the loss. Molex can offer assistance to choose the best location and best tuning in order for you to meet this peak gain requirement.

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PS-1462000001	Kang Cheng 2017/12/27	Colin Xu 2017/12/27	Stary Song 2017/12/27



PRODUCT SPECIFICATION

5.0 MECHANICAL REQUIREMENTS

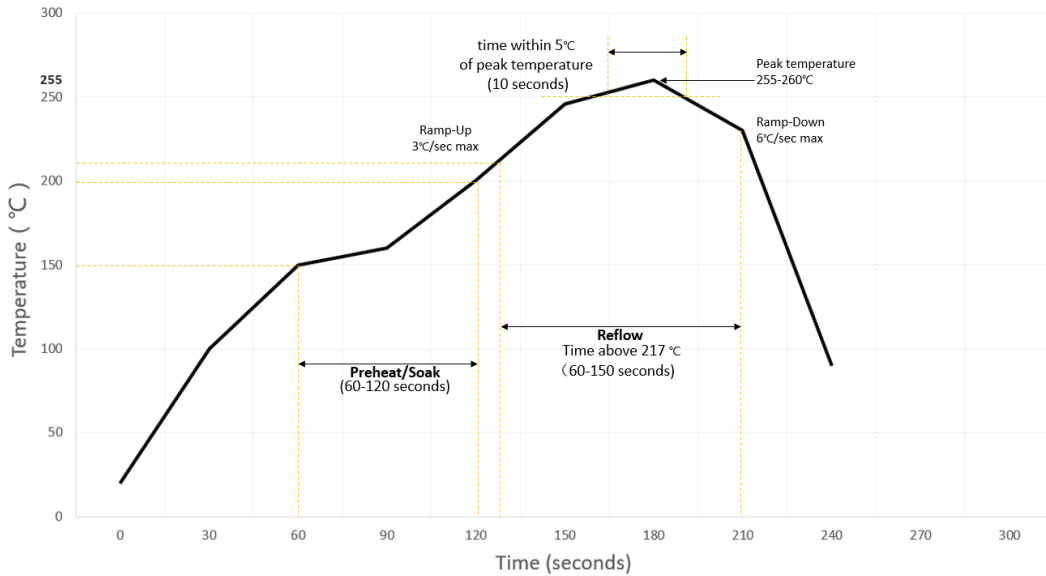
DESCRIPTION	SPECIFICATION
Shear Force	Apply three axial peeling force on parts soldered on the PCB at the speed rate of 25±3 mm/minute. Shear force:50N Min.

6.0 ENVIRONMENTAL SPECIFICATION

DESCRIPTION	SPECIFICATION
Humidity Test	<ol style="list-style-type: none"> 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. Parts should meet RF spec before and after test. No cosmetic problem (No bubble issue、 No plating peeling off issue、 No mechanical damage.)
Temperature cycling test	<ol style="list-style-type: none"> 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. Parts should meet RF spec before and after test. No cosmetic problem (No bubble issue、 No plating peeling off issue、 No mechanical damage.)
High Temperature	<ol style="list-style-type: none"> Temperature:125°C, time:1008 hours There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other Parts should meet RF spec before and after test. No cosmetic problem (No bubble issue、 No plating peeling off issue、 No mechanical damage.)
Salt mist test	<ol style="list-style-type: none"> 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. Parts should meet RF spec before and after test. No visible corrosion. Discoloration accept.

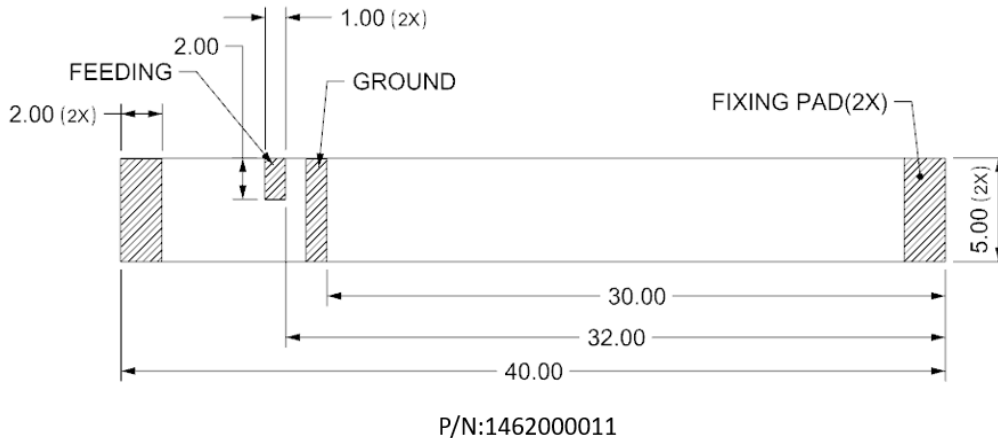
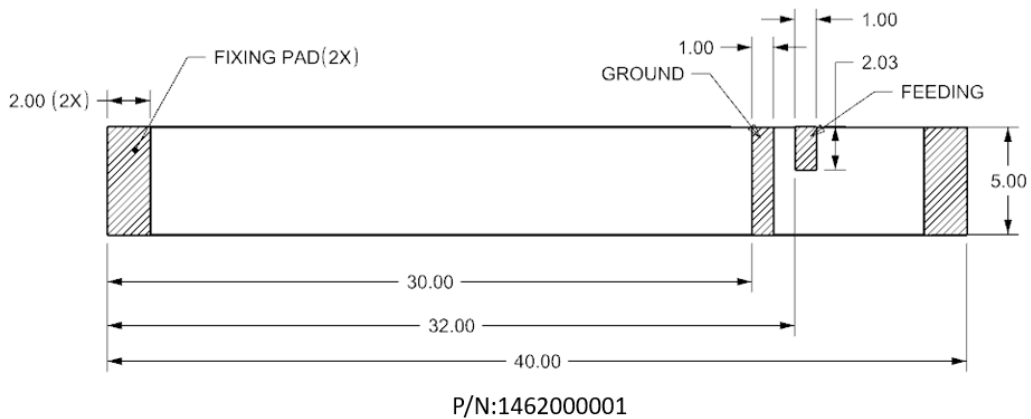
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7.0 RECOMMENDED REFLOW CONDITION



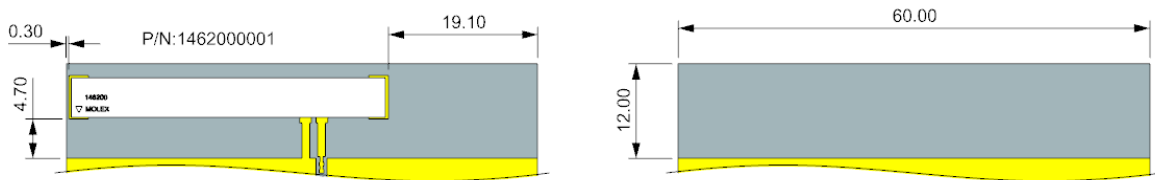
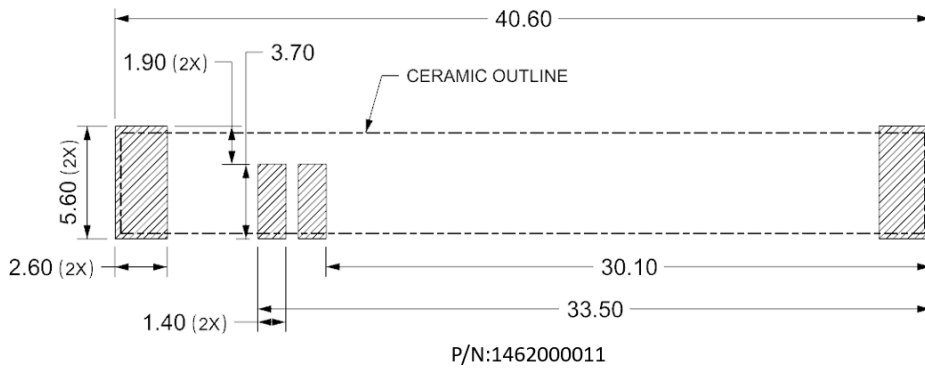
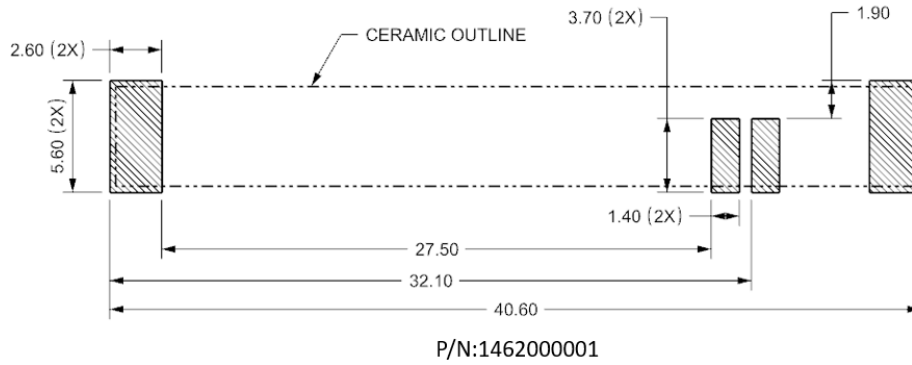
Recommended solder paste is ALPHA CAP-390 SAC305, customer can use red glue before IR reflow (to increase force) if the application condition is very strict.

8.0 PADS OF PRODUCT FOR SOLDERING

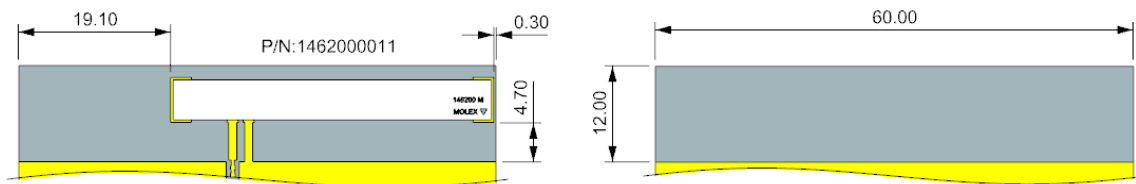


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9.0 RECOMMENDED FOOTPRINT ON PCB FOR SOLDERING



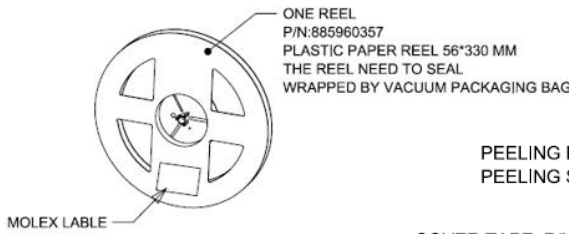
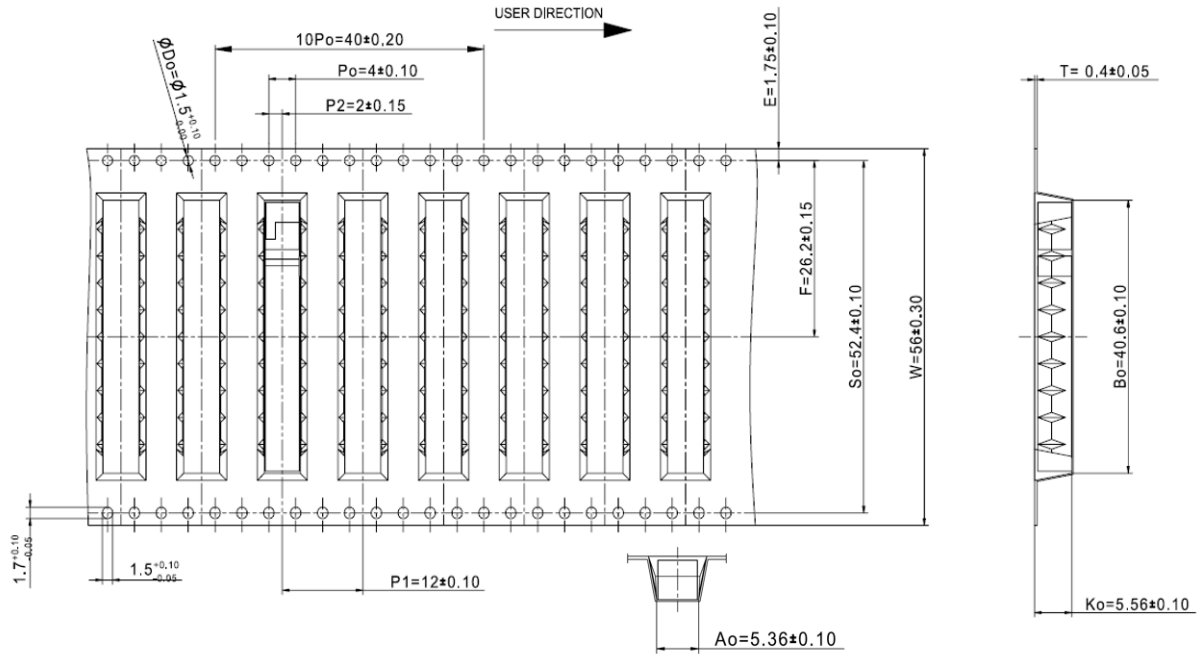
RECOMMENDED PCB KEEP OUT AREA



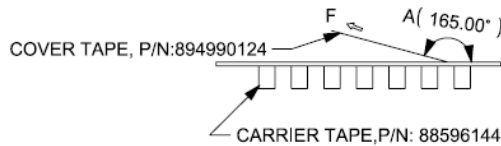
RECOMMENDED PCB KEEP OUT AREA

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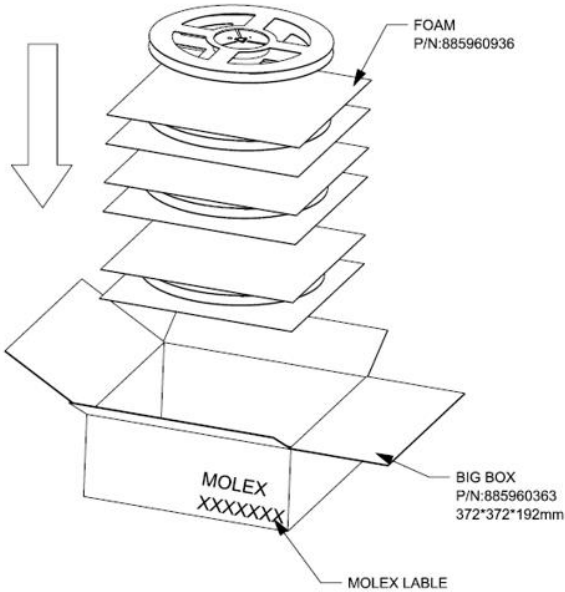
10.0 PACKING



PEELING FORCE OF CARRIE TAPE:SEE TABLE BELOW;
PEELING SPEED 300M/MIN



A	165°~180°
F	0.1N~1.3N



NOTES:

- 1.PRODUCTS MUST BE PACKED IN CARTONS AND SEALED UP WITH TAPE.
- 2.STICK LABEL WITH PART NUMBER AND DATE CODE
- 3.STANDARD PACKAGING QUANTITY:SEE TABLE
- 4.THIS PACKAGING SPECIFICATION TO BE USED FOR "FULL LTE CERAMIC MIRRORED ANTENNA".

P/N	PCS/REEL	REEL/BOX	PCS/BOX
1462000001/1462000011	500	2	1000

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