TITLE

698MHz~2700MHz CERAMIC ANTENNA LOW PROFILE 3MM

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698MHz~2700MHz CERAMIC ANTENNA LOW PROFILE 3MM

1.0 SCOPE

This product specification covers the mechanical, electrical and environmental performances specification for 698~2700MHz ceramic antenna low profile 3mm.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

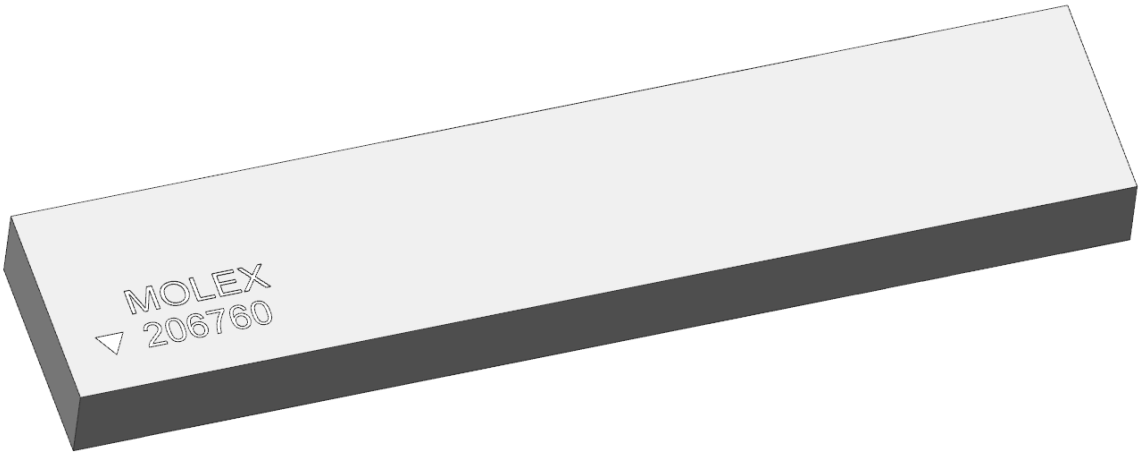
Product name: 698MHz~2700MHz ceramic antenna low profile 3mm
Series Number: 206760

2.2 DESCRIPTION

206760 is a low profile SMT LTE/Cellular 2G/3G/4G ceramic embedded antenna. It provides high efficiency with small factor 38x8x3mm.

2.3 FEATURES.

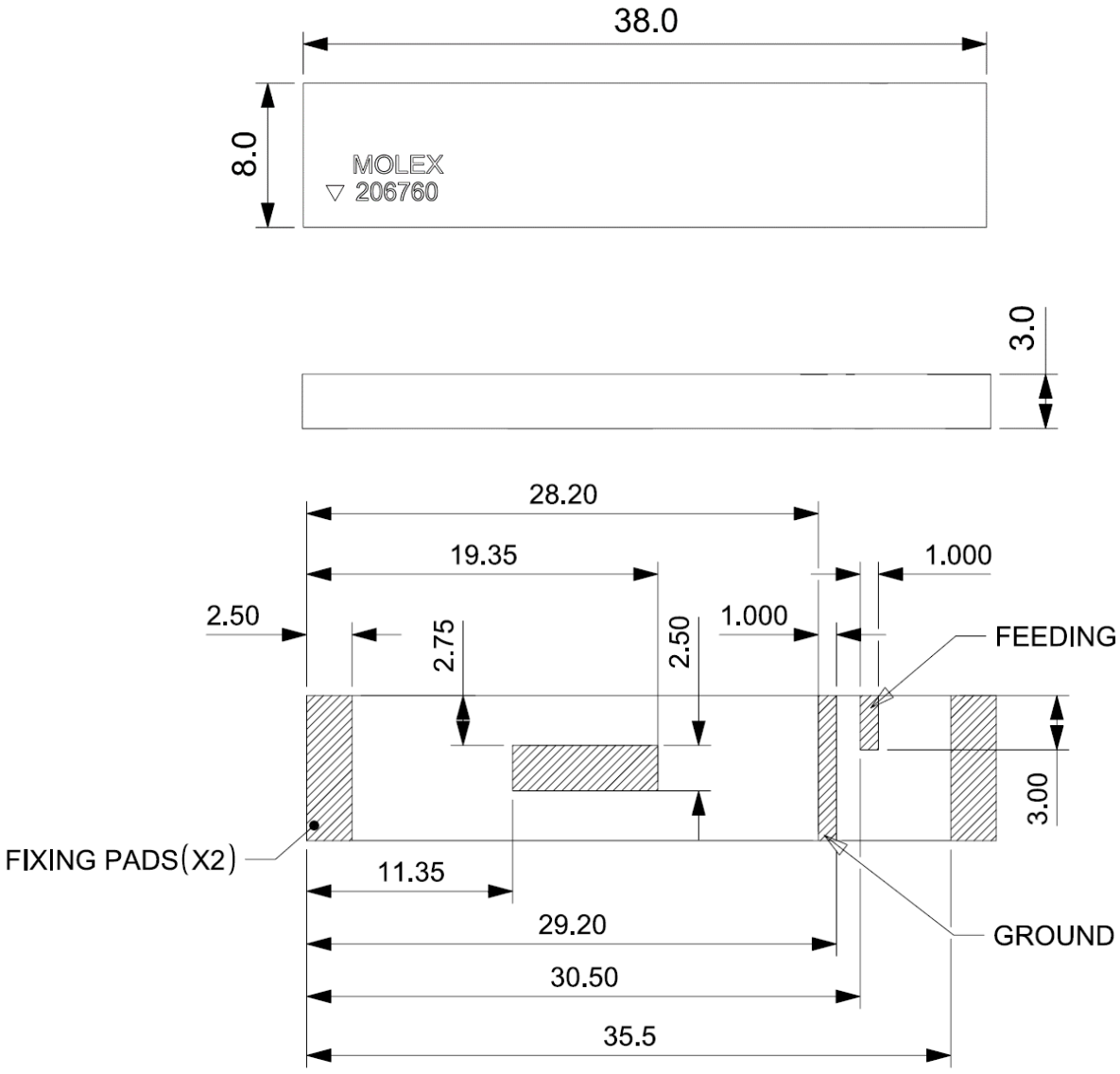
- 698-960MHz, 1710-2700MHz with high efficiency
- Ceramic low profile 38x8x3mm, PCB keep-out area 48x13m
- RoHS Compliant



Molex 2067600001 698~2700MHz Ceramic Antenna Low Profile 3mm 3D View

2.4 PRODUCT STRUCTURE INFORMATION

P/N	2067600001



PADS OF PRODUCT FOR SOLDER

NOTE:
1. MATERIAL:CERAMIC.
2. PATTERN: Ag PLATED, THICKNESS 4-10um.
3. PACKAGE SPEC. REFER TO PK OF 2067600001.
4. PRODUCT SPEC. REFER TO PS OF 2067600001.
5. APPLICATION SPEC. REFER TO AS OF 2067600001.
6. SUGGEST TO USE RED GLUE UNDER PART BEFORE SMT IF APPLICATION CONDITION IS STRICT.

MECHANICAL STRUCTURE INFORMATION FOR 2067600001

3.0 APPLICABLE DOCUMENTS

Document	Number	Description
Sale Drawing(SD)	SD-2067600001	Mechanical Dimension of the product
Application Guide(AS)	AS-2067600001	Antenna Application and surrounding
Packing Drawing(PK)	PK-2067600001	Product packaging specifications

4.0 GENERAL SPECIFICATION

PRODUCT NAME	698MHz-2700MHz Ceramic Antenna Low Profile 3mm	
PART NUMBER	2067600001	
FREQUENCY RANGE	698MHz~960MHz	1.7GHz~2.7GHz
POLARIZATION	Linear	
IMPEDANCE WITH MATCHING	50 Ohms	
OPERATING WITH MATCHING	-40℃ to 125℃	
STORAGE WITH MATCHING	-40℃ to 125℃	
RF POWER	2 Watts	
ANTENNA TYPE	ceramic	

5.0 ANTENNA SPECIFICATION

All measurements are done of the antenna mounted on reference PCB (138*48*0.8mm) with VNA Agilent 5071C and Over-The-Air (OTA) chamber.

5.0.1 ANTENNA PERFORMANCE		
P/N	2067600001	
FREQUENCY RANGE	698MHz~960MHz	1710MHz~2700MHz
PEAK GAIN(MAX)	1.3dBi	4.4dBi
AVERAGE TOTAL EFFICIENCY	>60%	>70%
RETURN LOSS	<-5dB	<-5dB

Note that the above antenna performance is measured with just the antenna mounted on a reference PCB (130*48mm) in free space. 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 assistant to choose the best location and best tuning in-order to meet this peak gain requirement.

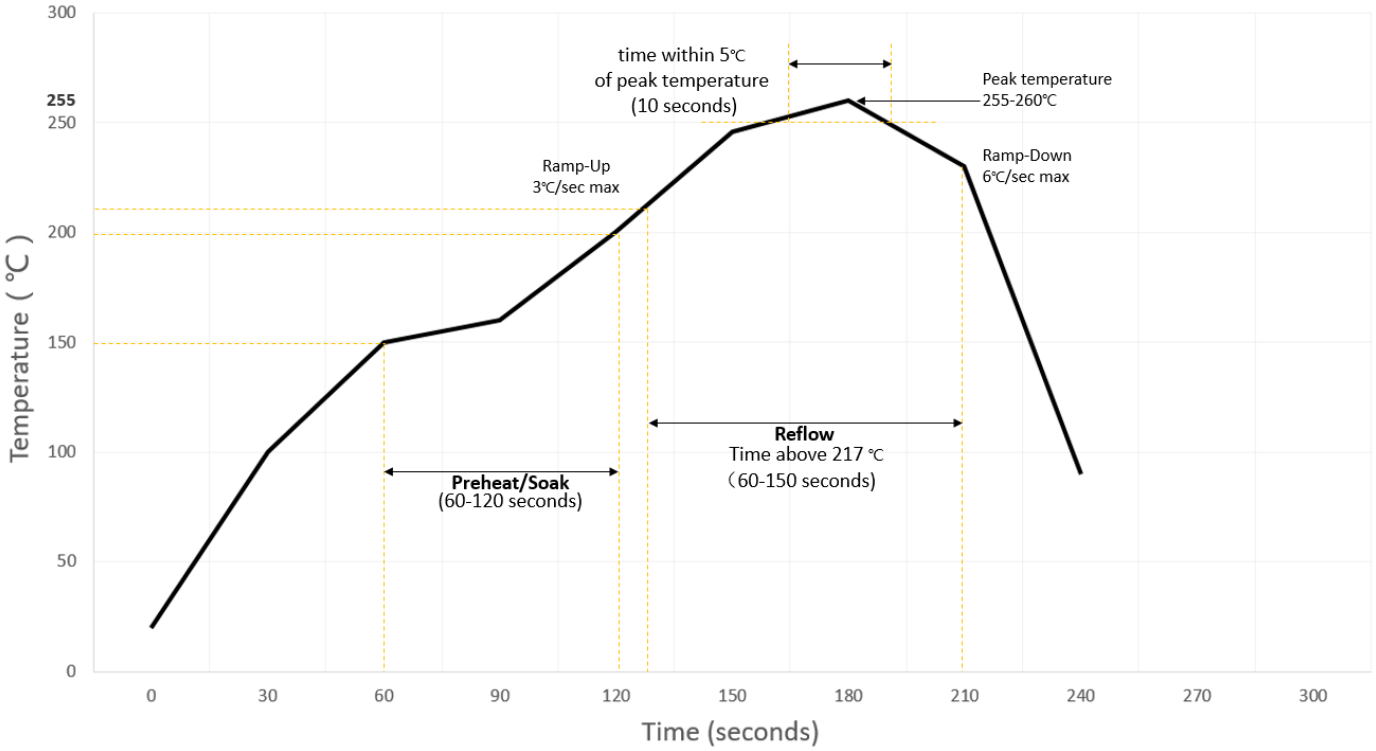
6.0 MECHANICAL REQUIREMENTS

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.

7.0 ENVIRONMENTAL SPECIFICATION

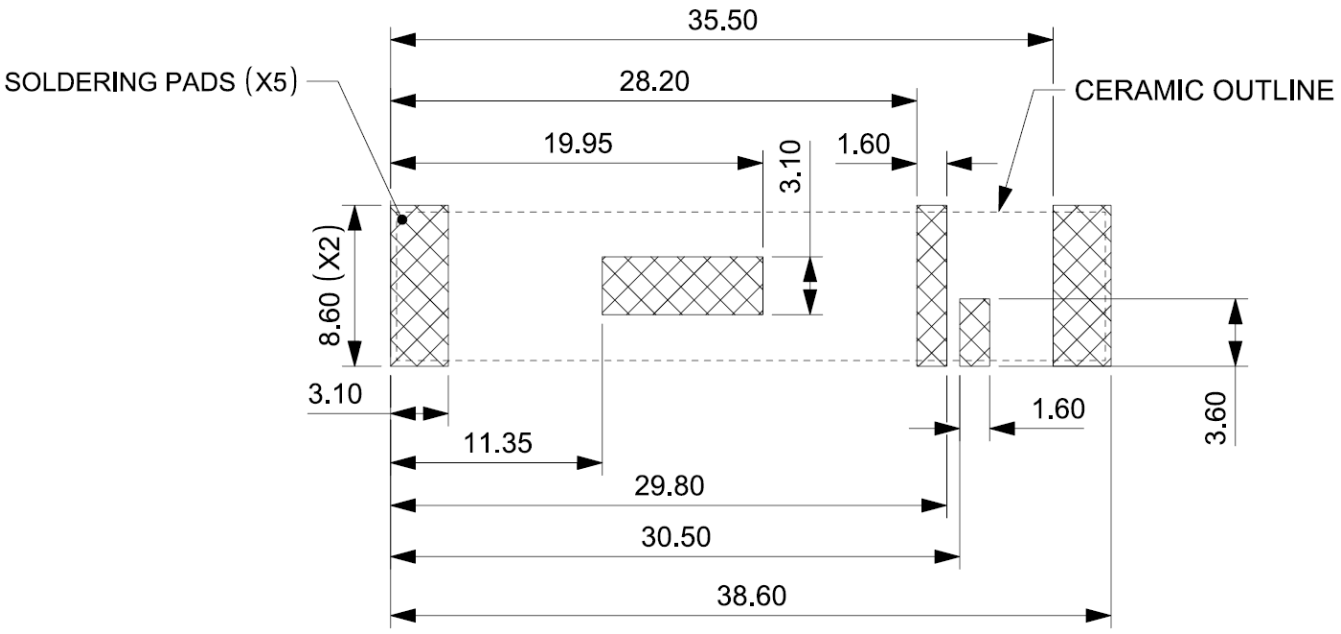
DESCRIPTION	SPECIFICATION
HUMIDITY TEST	1. The device under test is kept for 12 hours in an environment with a temperature of 55 degrees and a relating humidity of 95%. Thereafter for 12 Hours in an environment with a temperature of 25 degrees and a relative humidity of 95%. The cycle is repeated until a total of 6 cycles have been completed. Hereafter the conditions are stabilized at room temperature. 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No bubble issue、No plating peeling off issue、 No mechanical damage.)
TEMPERATURE CYCLING TEST	1. The device under test at -40 ℃⇔125 ℃ 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. 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No bubble issue、No plating peeling off issue、 No mechanical damage.)
HIGH TEMPERATURE	1. Temperature:125℃, time:1008 hours 2. There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other 3. Parts should meet RF spec before and after test. 4. No cosmetic problem (No bubble issue、No plating peeling off issue、 No mechanical damage.)
SALT MIST TEST	1. 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. 2. Parts should meet RF spec before and after test. 3. No visible corrosion. Discoloration accept.

8.0 RECOMMENDED REFLOW CONDITION

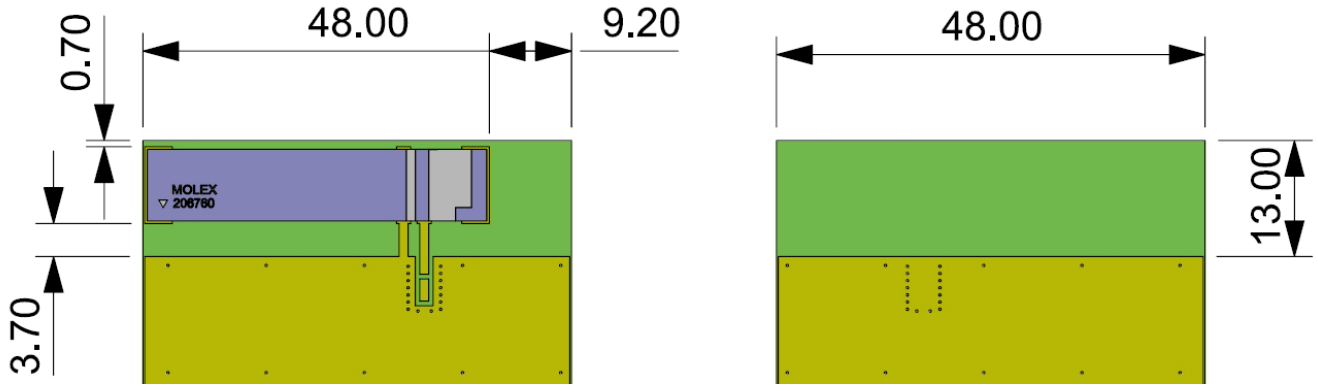


Recommended solder paste: ALPHA CAP-390 SAC305
For mechanically challenging applications Molex recommends using surface mount adhesive (e.g. Loctite 3611) before reflow soldering process, to ensure increased mechanical retention on the PCB.

9.0 RECOMMENDED FOOTPRINT ON PCB FOR SOLDERING

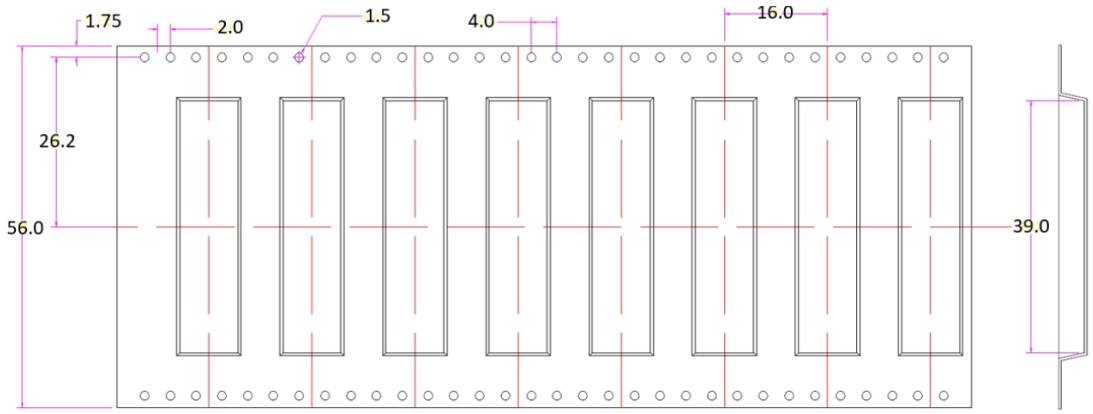


9.0.1 RECOMMENDED PCB KEEP OUT AREA

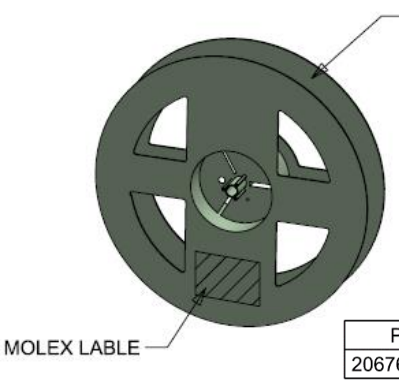


9.0.2 RECOMMENDED PCB KEEP OUT AREA

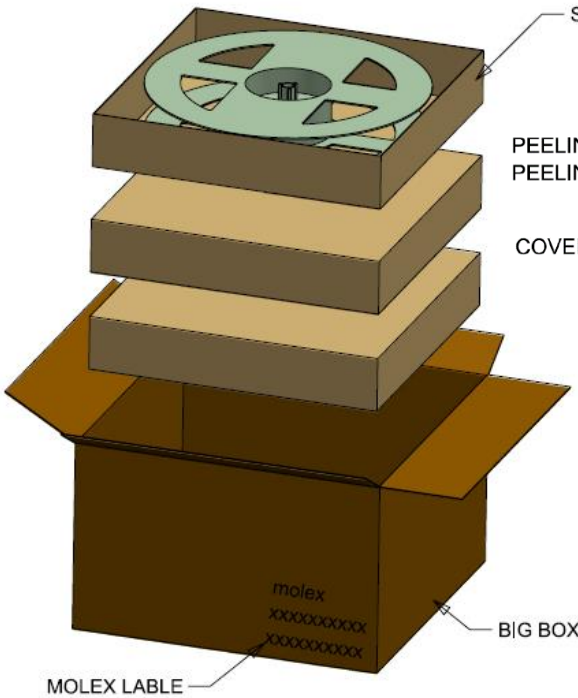
10.0 PACKING



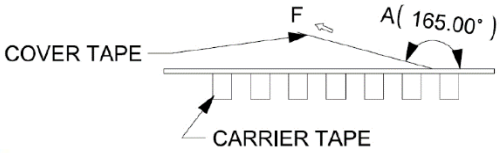
CARRIER TAPE



P/N	QTY/REEL	REEL/SMALL BOX	SMALL BOX/BIG BOX	SPQ
2067600001	600	1	3	1800



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 PACKAGINGSPECIFICATION TO BE USED FOR "698~2700MHz CERAMIC ANTENNA".

PACKAGING INFORMATION FOR 2067600001