Automotive grade product

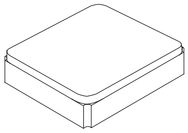
RFMi
A BRAND OF AKOUSTIS

Preliminary

RoHS compliant

# XTL2036G

## 16.000000 MHz Crystal Unit



## Features:

- Surface Mount Hermetic Package
- Excellent Reliability Performance
- Good Frequency Perturbation and Stability over temperature
- Ultra Miniature Package
- Moisture Sensitivity Level (MSL) : Level-1
- AEC-Q200 Qualified

## Description and Applications:

Surface mount 2.5mmx2.0mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

## Electrical Specifications:

| **XTL2036G** | **Specification** |
|---|---|
| Nominal Frequency | 16.000000 MHz |
| Mode of Oscillation | Fundamental |
| Storage Temperature Range | -40°C to +125°C |
| Operating Temperature Range | -40°C to +125°C |
| Frequency Stability over Operating Temperature Range | +/-100 ppm (referred to the value at 25°C) |
| Frequency Make Tolerance (FL) | +/-100 ppm @ 25°C +/- 3°C |
| Equivalent Series Resistance (ESR) | 100 Ω max |
| Nominal Drive Level | 50uW typical and 300uW max |
| Shunt Capacitance (Co) | 3.0 pF max |
| Load Capacitance (CL) | 8 pF |
| Aging | +/-2ppm/year |
| Insulation Resistance | 500 MΩ min./DC 100V |
| Marking | Laser Marking |
| Unit Weight | 9.5 +/-0.5mg |

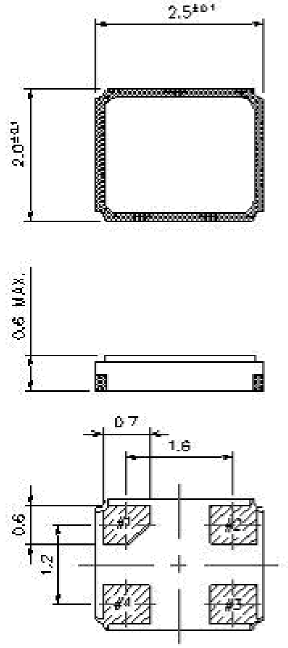
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

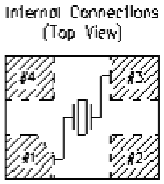
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. This component was always RoHS compliant from the first date of manufacture.

# Mechanical Dimensions (mm):

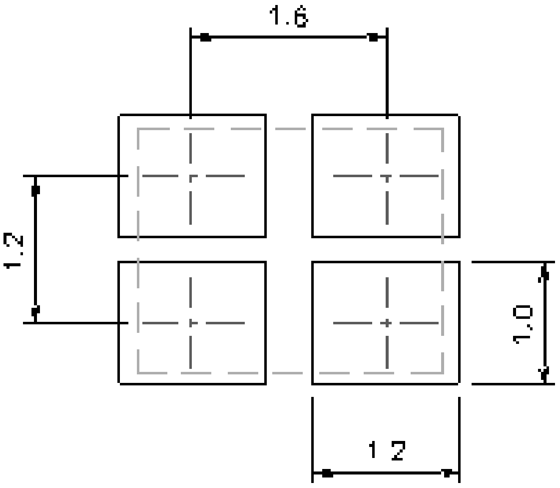
Base



| | Pin Connection |
|---|---|
| #1 pin | IN/OUT |
| #2 pin | GND |
| #3 pin | IN/OUT |
| #4 pin | GND |

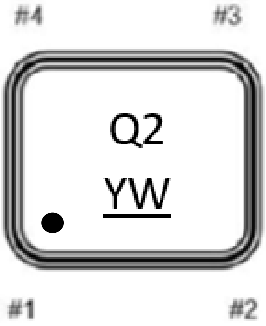

Internal Connections
(Top View)

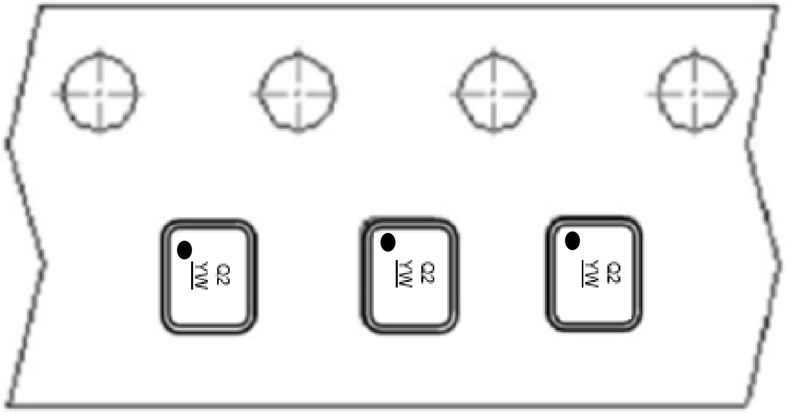
# Recommended Land Pattern: (unit: mm)



## Marking:

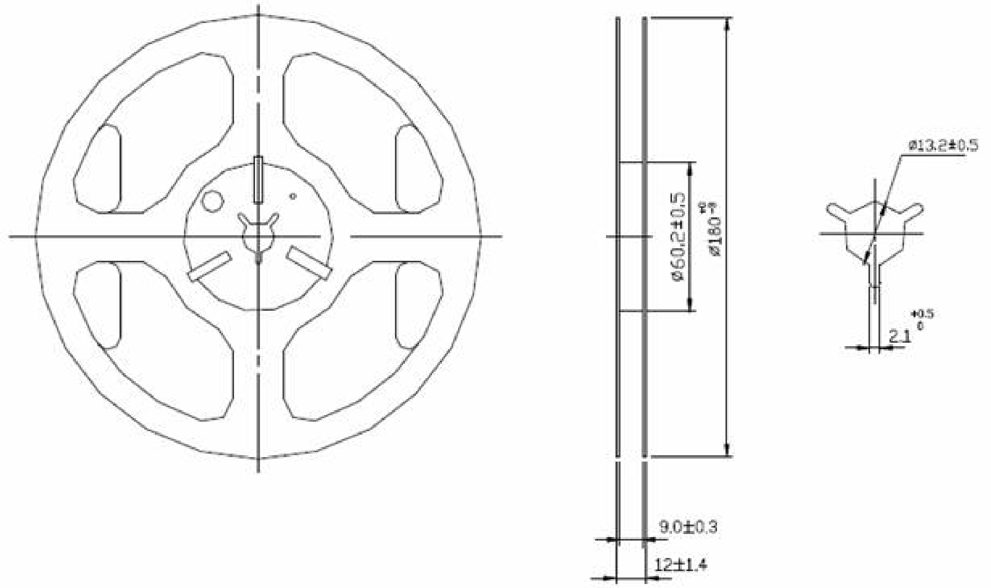
Y = Year, W = week



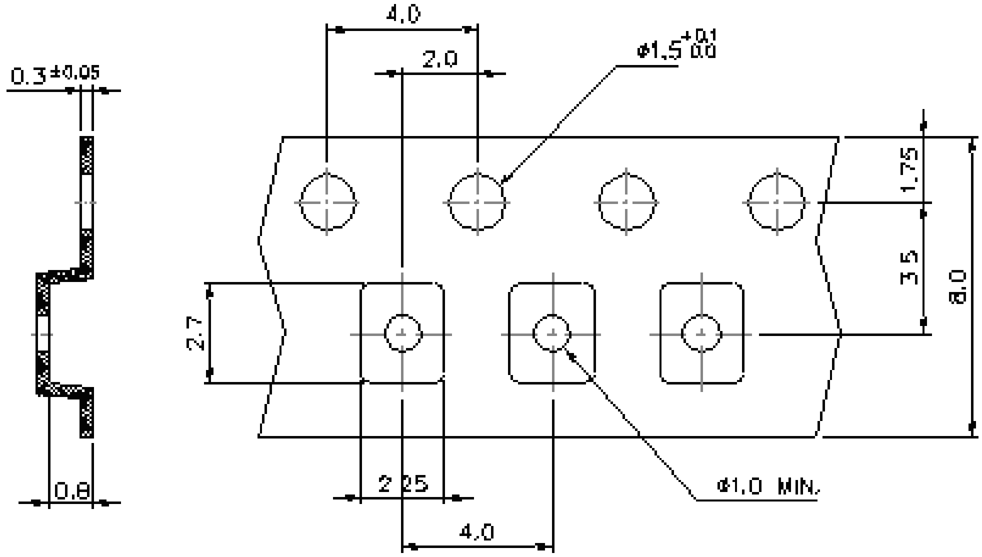


## Reel Dimensions (mm):

Reel Count: 7" = 3000



# Tape Dimensions (mm)

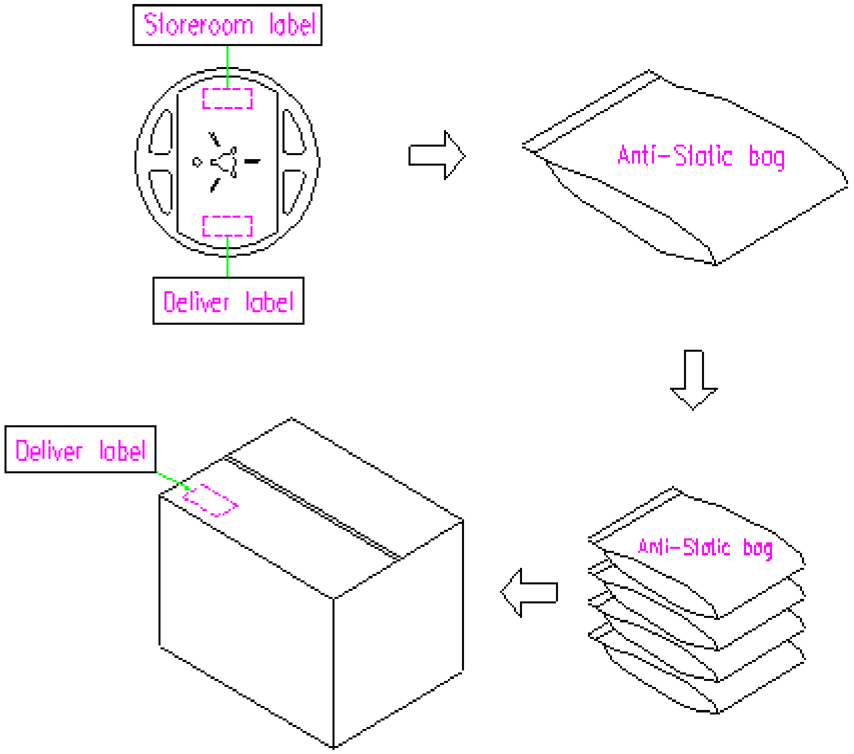


[NOTE]:

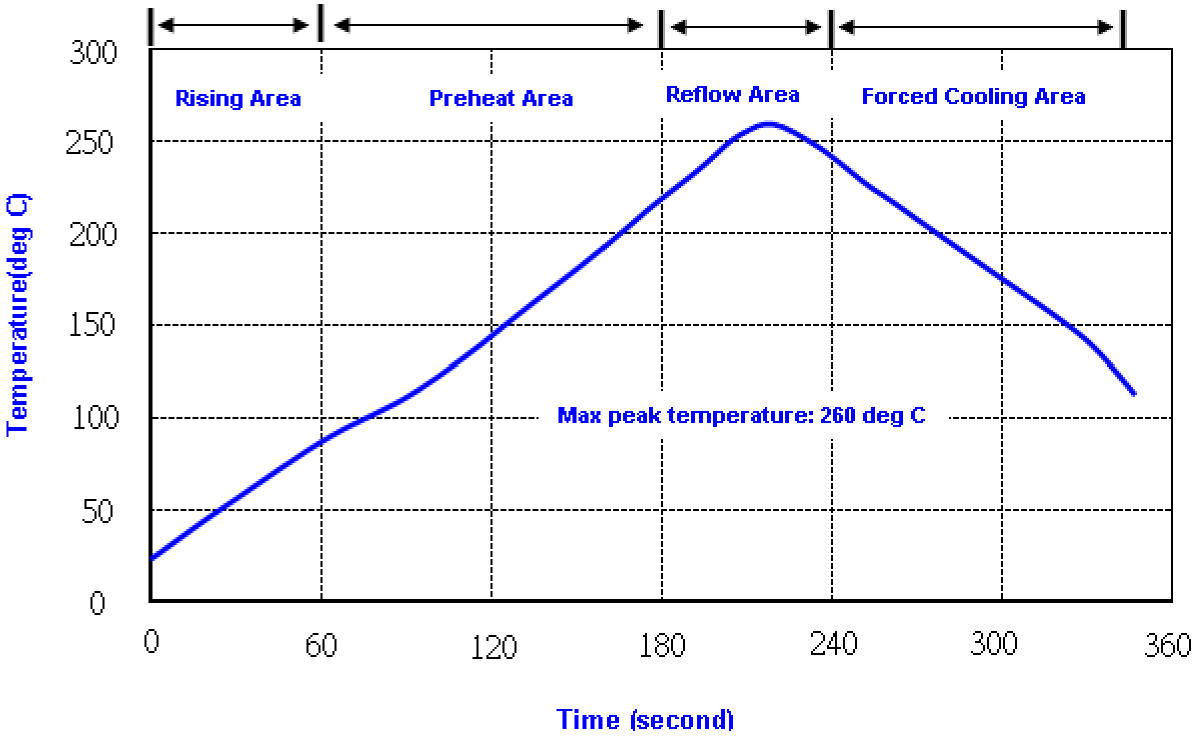
1. Unless otherwise specified tolerance on dimension +/-0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance +/-0.2 mm.

## Packing Quantity/Packing:

**3K pcs maximum per reel**



## Reflow Profile:



**Note: 1.Max peak temperature: 260+/-5 deg C; Time: 10+/-2 sec**

**2. Temperature: 217+/-5 deg C; Time: 90~100 sec**

## Reliability Specifications (AEC-Q200)

| Test name | Test process / method | Reference standard |
|---|---|---|
| **Mechanical characteristics** | | |
| resistance to Soldering heat (IR reflow) | Temp./ Duration : 265°C /10sec ×2 times<br>Total time : 4min.(IR-reflow) | EIAJED-4701<br>-300(301)M(II) |
| Vibration | Total peak amplitude : 1.5mm<br>Vibration frequency : 10 to 2000 Hz<br>Sweep period : 20 minute<br>Vibration directions : 3 mutually perpendicular | MIL-STD 202G method 204 |
| Mechanical Shock | directions : 3 impacts per axis<br>Acceleration : 6000g's, +20/-0 %<br>Duration : 0.3 ms (total 18 shocks)<br>Waveform : Half-sine | MIL-STD 202G method 213 |
| Solderability | Solder Temperature:265±5°C<br>Duration time: 5±0.5 seconds. | J-STD-002 |
| **Environmental characteristics** | | |
| Thermal Shock | Heat cycle conditions<br>-55 ℃ (30min) ⟷ 125 ℃ (30min)<br>* cycle time : 1000 times | MIL-STD 883G method 1010.8 |
| Humidity test | Temperature : 85 ± 2 °C<br>Relative humidity : 85%<br>Duration : 1000 hours | MIL-STD 202G method 103 |
| Dry heat ( Aging test ) | Temperature : 125 ± 2 °C<br>Duration : 1000 hours | MIL-STD 202G method 108A |
| Cold resistance (Low Temp Storage) | Temperature : -40 ± 3 °C<br>Duration : 1000 hours | IEC 60068-2-1 |