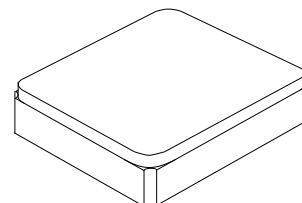


Features:

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

XTL2102J

60.000000 MHz
Crystal Unit



SM1612-4 Case

Description and Applications:

Surface mount 1.6mmx1.2mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

Electrical Specifications:

XTL2102J	Specification
Nominal Frequency	60.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-30°C to +105°C
Frequency Stability over Operating Temperature Range	+/-20 ppm (referred to the value at 25°C)
Frequency Make Tolerance (FL)	+/-10 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	50 Ω max
Nominal Drive Level	100uW typical and 200uW max
Shunt Capacitance (Co)	2.0 pF max
Load Capacitance (CL)	9 pF
Aging	+/-2ppm/year
Insulation Resistance	500 M Ω min./DC 100V
Marking	Laser Marking
Unit Weight	2.8mg+/-0.5mg

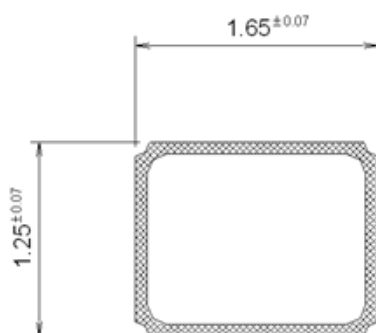


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

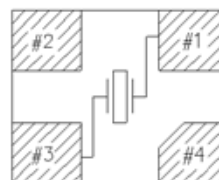
NOTES:

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

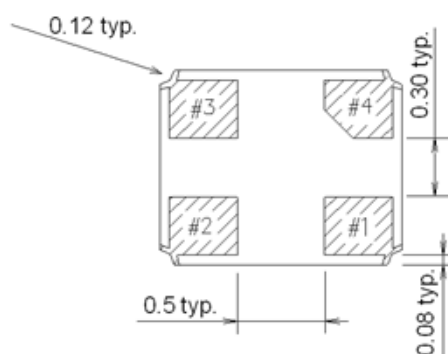
Mechanical Dimensions (mm):



Internal Connections
(Top View)



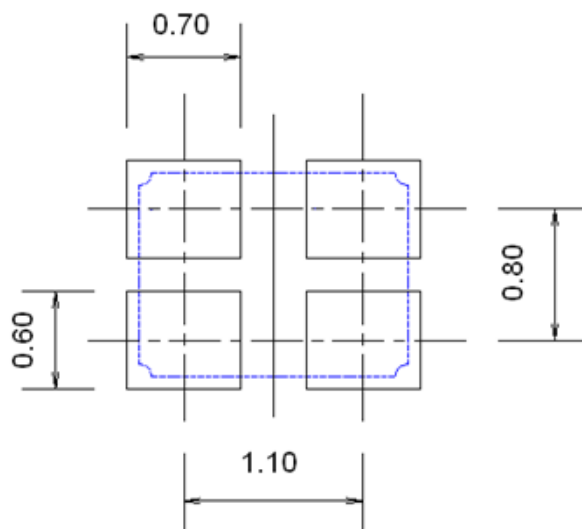
[NOTE] #4=NC, #2 is connected with a metal cover



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

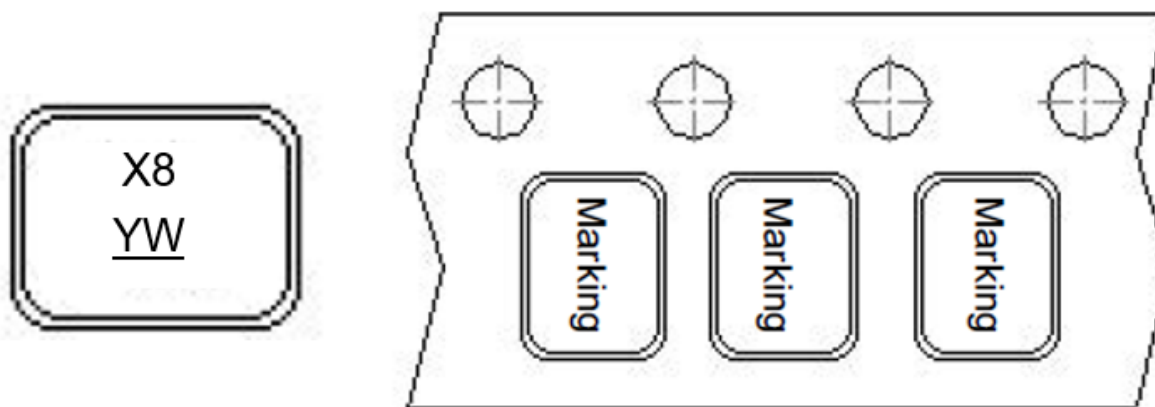
Recommended Land Pattern: (unit: mm)

Reference FootPrint



Marking:

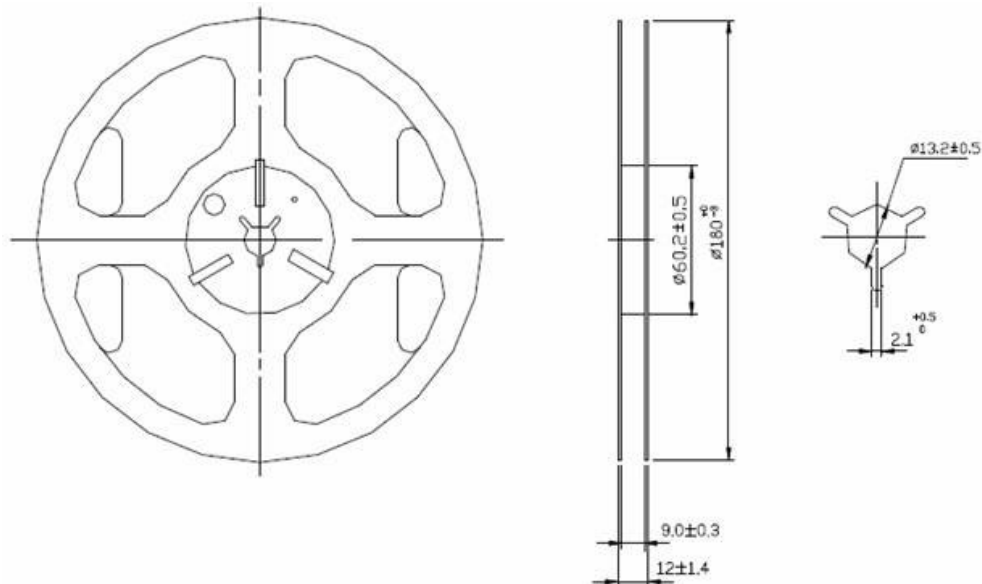
Y = Year, W = Week



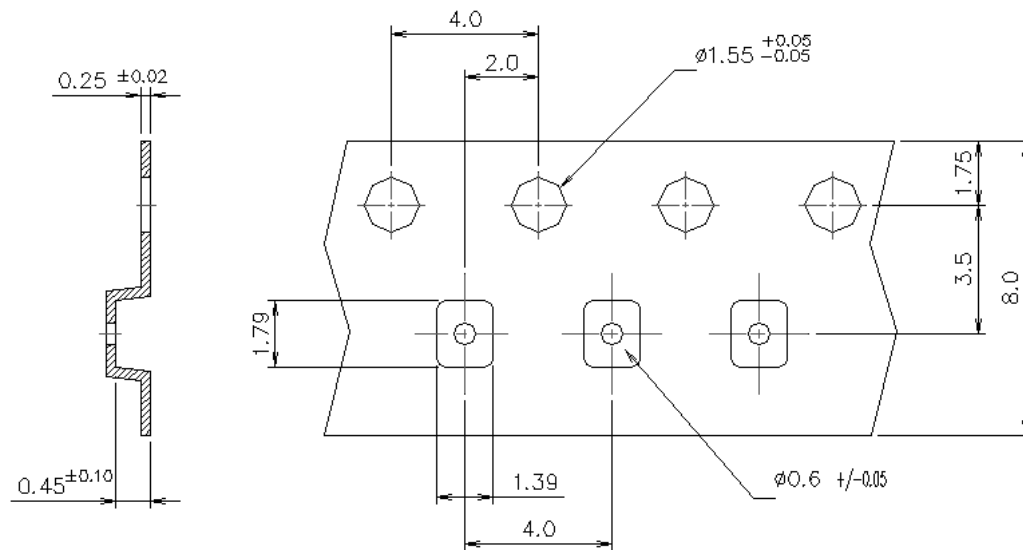
Reel Dimensions (mm):

Reel Count: 7" = 3000

Tape and Reel Standard per ANSI/EIA-481



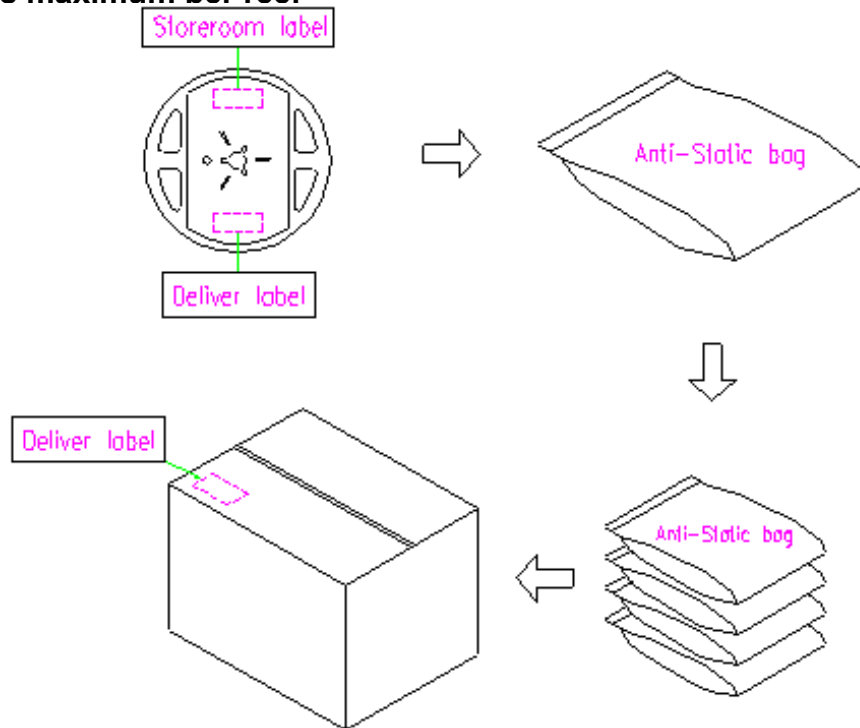
Tape Dimensions (mm):



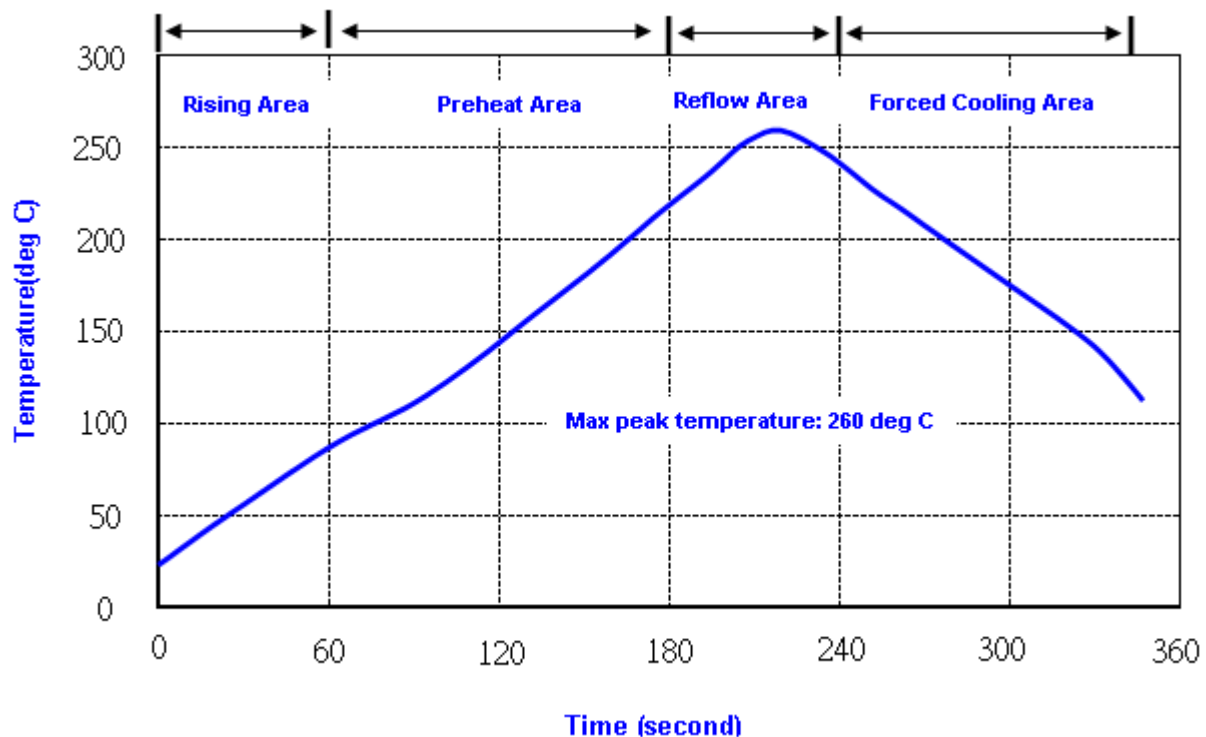
1. Unless otherwise specified tolerance on dimension ± 0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance ± 0.2 mm.

Packing Quantity/Packing:

3K pcs maximum per reel



Reflow Profile:



Note: 1. Max peak temperature: 260 \pm 5 deg C; Time: 10 \pm 2 sec
2. Temperature: 217 \pm 5 deg C; Time: 90~100 sec

Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 265°C /10sec ×2 times Total time : 4min.(IR-reflow)	EIAJED-4701 -300(301)M(II)
Vibration	Total peak amplitude : 1.5mm Vibration frequency : 10 to 2000 Hz Sweep period : 20 minute Vibration directions : 3 mutually perpendicular Duration : 2 hr / direc.	MIL-STD 202G method 204
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202G method 213
Solderability	Solder Temperature:265±5°C Duration time: 5±0.5 seconds.	J-STD-002
Environmental characteristics		
Thermal Shock	Heat cycle conditions -40 °C (30min) ↔ 85 °C (30min) * cycle time : 10 times	MIL-STD 883G method 1010.8
Humidity test	Temperature : 85 ± 2 °C Relative humidity : 85% Duration : 96 hours	MIL-STD 202G method 103
Dry heat (Aging test)	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 202G method 108A
Cold resistance (Low Temp Storage)	Temperature : -40 ± 2 °C Duration : 96 hours	IEC 60068-2-1