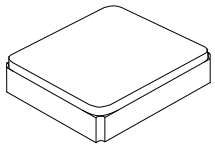
RFMi
BRAND OF AKOUSTIS

RoHS compliant

XTL2105H-1

39.000000 MHz Crystal Unit



SM2016-4

Features:

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

Description and Applications:

Surface mount 2.0mmx1.6mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

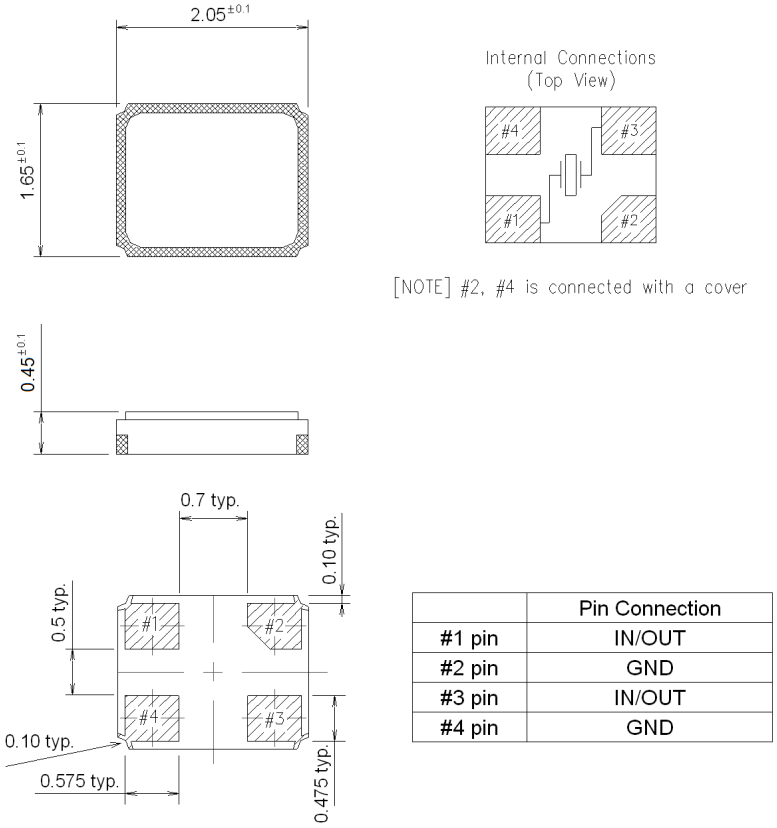
Electrical Specifications:

XTL2105H-1	**Specification**
Nominal Frequency	39.000000 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	+/-35 ppm (referred to the value at 29°C)
Frequency Slope over Temperature	2 ppm/C max @120°C (referred to the value at 29°C)
S curve 3 order curve fitting coefficient 1	-0.13 ppm/℃ typical
S curve 3 order curve fitting coefficient 2	-12.73 e^{4}-ppm/°C^{2} typical
S curve 3 order curve fitting coefficient 3	9.92 e^{5}-ppm/°C^{3} typical
Frequency Perturbations	1.0 ppm max
Frequency Make Tolerance (FL)	+/-8 ppm @ 25°C +/- 3°C
Equivalent Series Resistance (ESR)	35 Ω max
Nominal Drive Level	50uW typical and 200uW max
Shunt Capacitance (Co)	2.0 pF max
Load Capacitance (CL)	10 pF

Aging	+/-3ppm/5year
Insulation Resistance	500 MΩ min./DC 100V
Marking	Laser Marking
Unit Weight	5.7mg+/-0.5mg

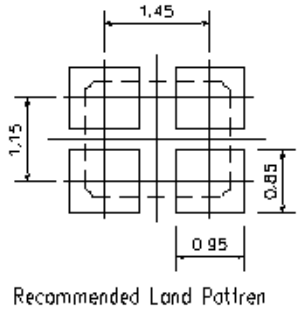
Mechanical Dimensions (mm):

Base



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

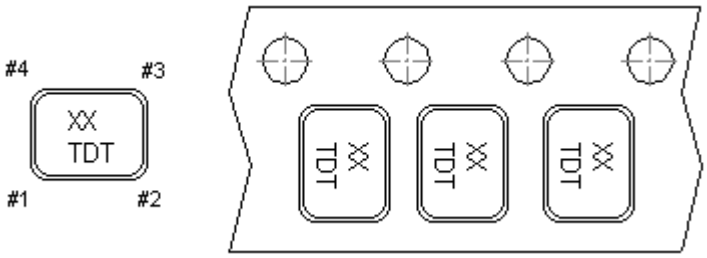
Recommended Land Pattern: (unit: mm)



Marking:

Line 1: XX; Frequency (39)

Line 2: T; Traceable Code + D; date Code of Year/Month+ T ; Traceability code (1 or no letter)

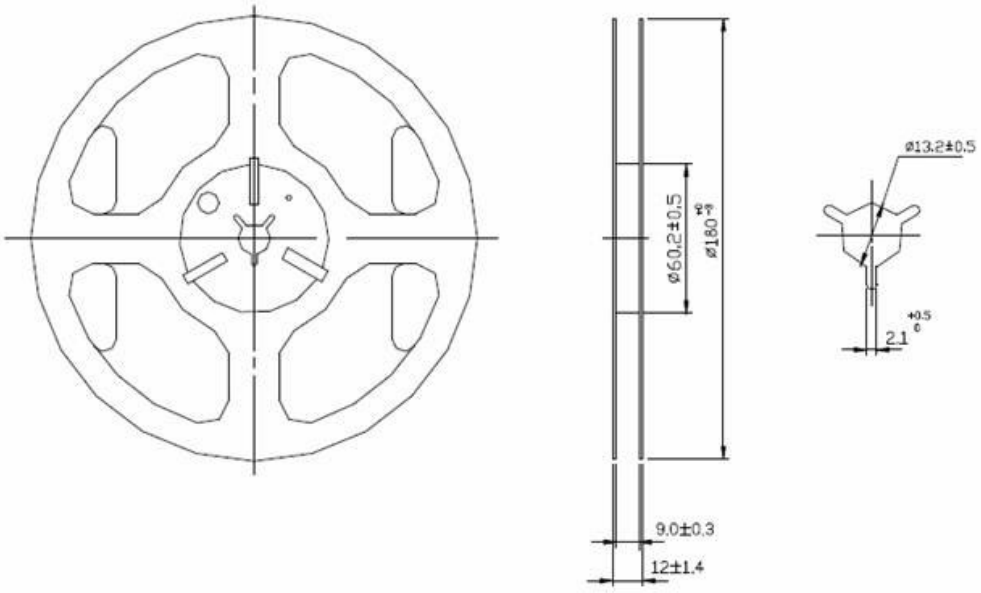


Date Code Table: Year/Month

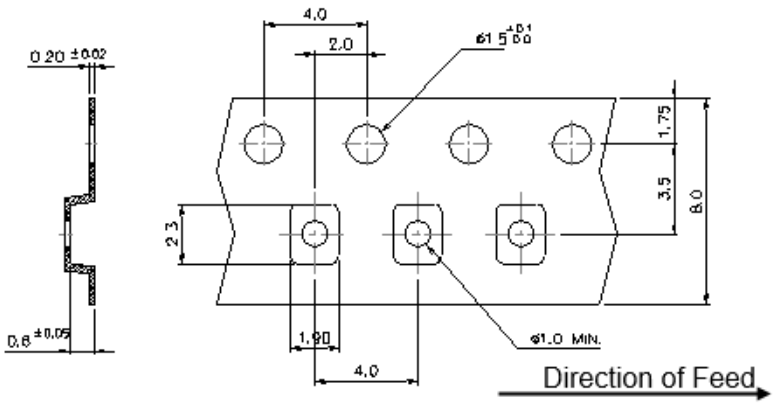
Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2018	A	B	C	D	E	F	G	H	J	K	L	M
2019	N	P	Q	R	S	T	U	V	W	X	Y	Z
2020	a	b	c	d	e	f	g	h	i	j	k	m
2021	n	p	q	r	s	t	u	v	w	x	y	z
2022	A	B	C	D	E	F	G	H	J	K	L	M
2023	N	P	Q	R	S	T	U	V	W	X	Y	Z
2024	a	b	c	d	e	f	g	h	i	j	k	m
2025	n	p	q	r	s	t	u	v	w	x	y	z
2026	A	B	C	D	E	F	G	H	J	K	L	M
2027	N	P	Q	R	S	T	U	V	W	X	Y	Z
2028	a	b	c	d	e	f	g	h	i	j	k	m
2029	n	p	q	r	s	t	u	v	w	x	y	z

Reel Dimensions (mm):

Reel Count: 7" = 3000



Tape Dimensions (mm):

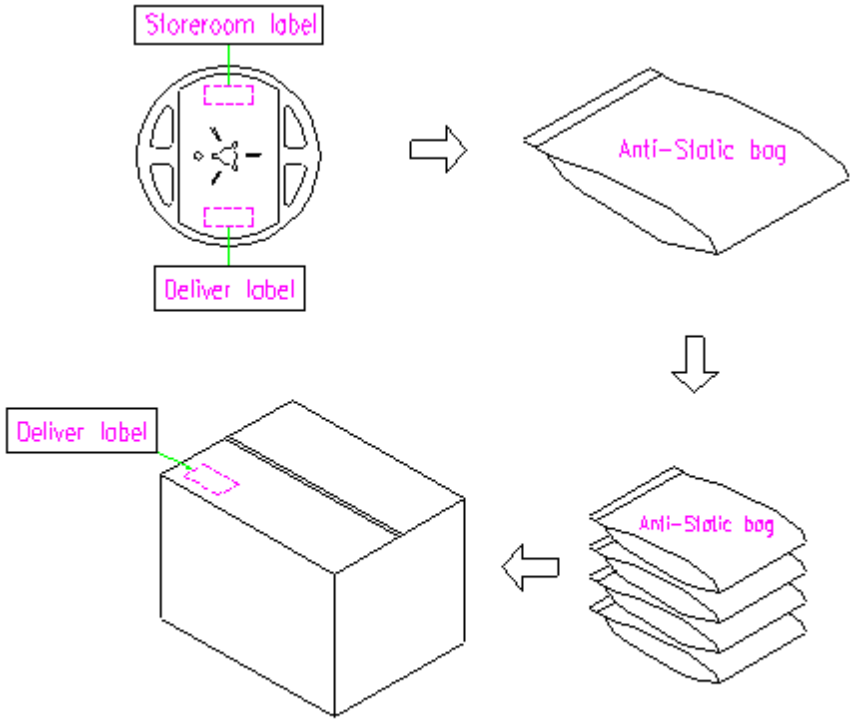


[NOTE]:

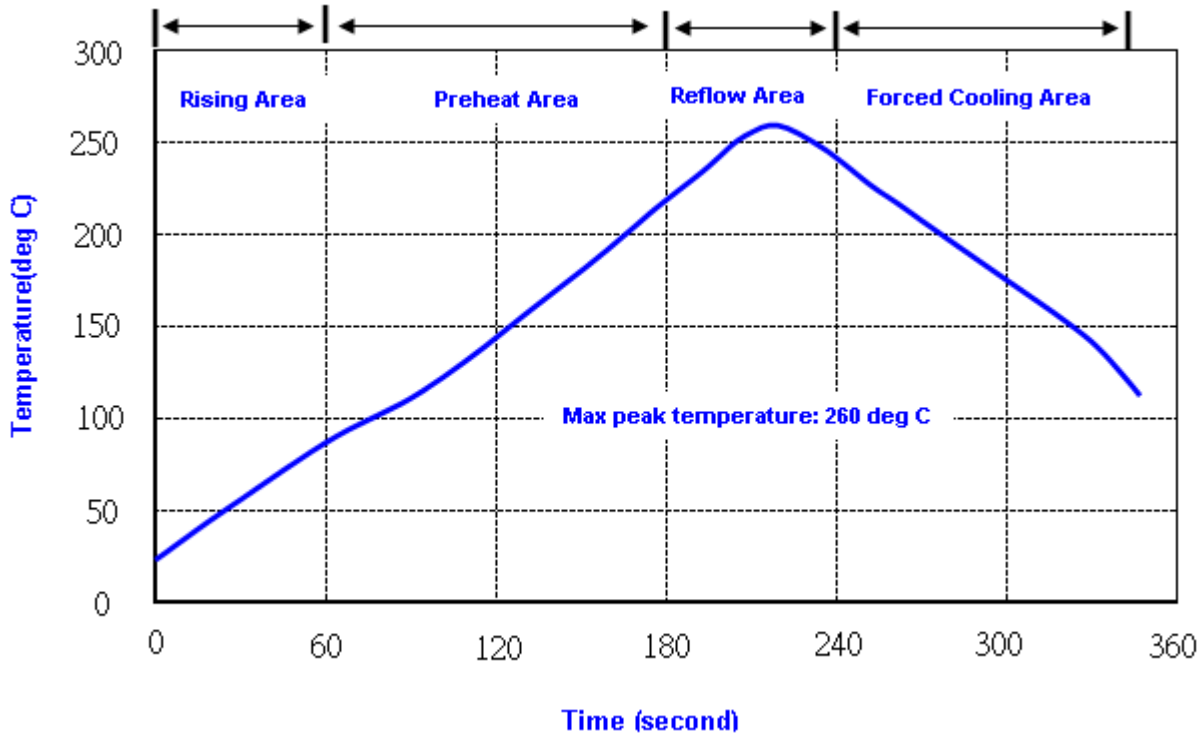
1. Unless otherwise specified tolerance on dimension +/-0.1 mm.
2. Material: conductive polystyrene with color black.
3. 10 pitch cumulative tolerance +/-0.2 mm.

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

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 ℃ (30min) ⟷ 85 ℃ (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

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.