



RFM Integrated Device, Inc.

## PRODUCT SPECIFICATION

Part Number: XTS4200

TSX, 26 MHz, +/-10 ppm  
@ 25C +/- 3C

## SMD TSX 2.5x2.0 26MHz

### 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:

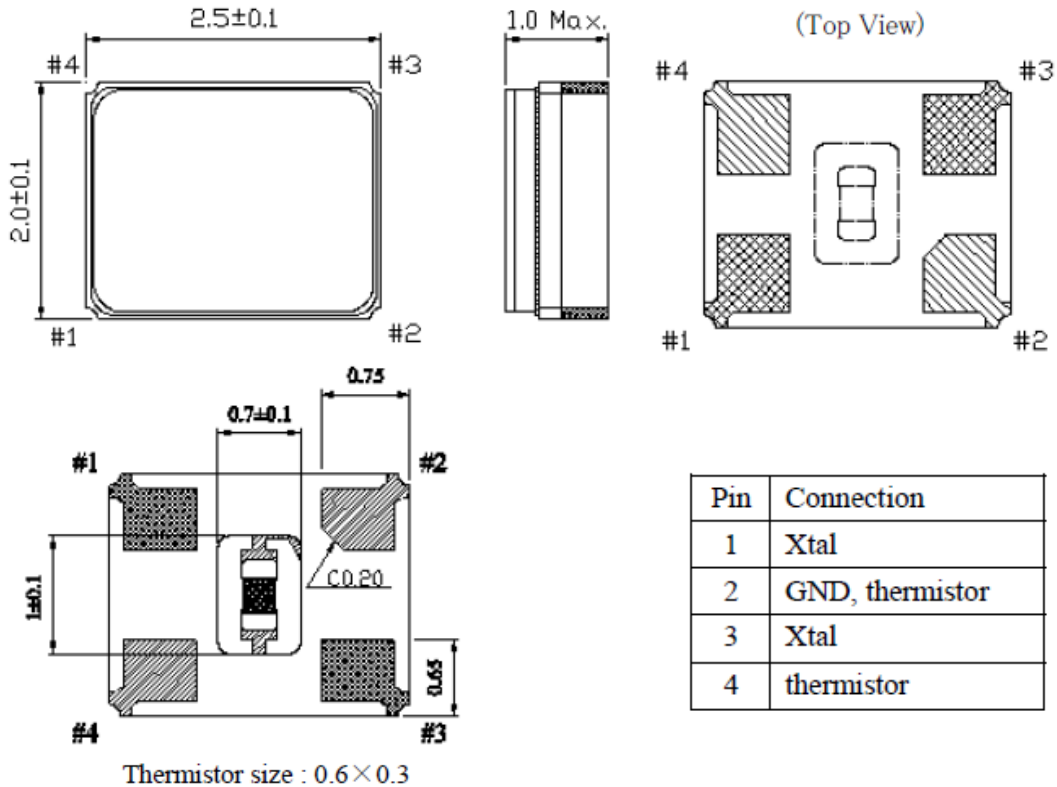
Surface mount 2.5mmx2.0mm crystal unit for use in wireless communications devices, especially for a need of ultra miniature package for mobility.

### Electrical Specifications:

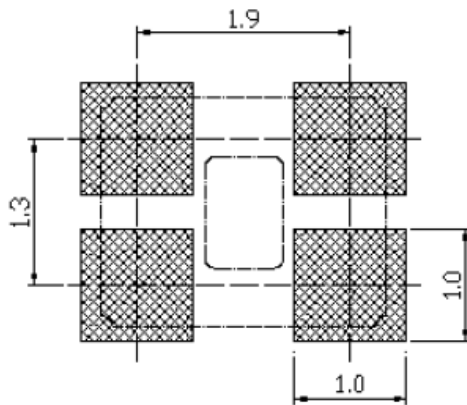
<b>XTS4200</b>	<b>Specification(Crystal)</b>
Nominal Frequency	26.000000 MHz
Mode of Oscillation	Fundamental
Storage Temperature Range	-40°C to +125°C
Operating Temperature Range	-30°C to +105°C
Frequency Make Tolerance (FL)	+/-10 ppm @ 25°C +/- 3°C
<sup>1</sup> Frequency Stability over Operating Temperature Range	-12 to +/-10 ppm(-30°C to +85°C)
Equivalent Series Resistance (ESR)	50 Ω max
Nominal Drive Level	100 uW max
Load Capacitance (CL)	7 pF
Spurious modes resistance within +/- 500KHz	500 Ohm min
Tuning sensitivity (TS)	15+/-10% ppm/pF
Insulation Resistance at DC 100V	500 MΩ min
Quality Factor	75000 Min.
Full cycle temperature hysteresis	+/- 0.5 ppm (From -30°C to 85°C)
Small cycle temperature hysteresis	+/- 0.05 ppm (From -30°C to 85°C)

Full Cycle Frequency stability slope	+/- 0.05 ppm/°C (From -30°C to 85°C)
Small Cycle Frequency stability slope	+/- 0.05 ppm/°C (5°C small cycle)
Frequency Drift After Reflow	+/- 2.0 ppm after two reflow
Aging: First year After 2 year After 5 years After 10 years	+/- 0.7 ppm max +/- 1.4 ppm max +/- 2.5 ppm max +/- 5.0 ppm max
1st order coefficient (C1)	-0.40 to -0.10 ppm/°C
2nd order coefficient (C2)	+4.5 to +4.5 x10 <sup>-4</sup> ppm/°C <sup>2</sup>
3rd order coefficient (C3)	+8.7 to +11.0 x10 <sup>5</sup> ppm/°C <sup>3</sup>
Inflection point (Ti)	+29 to +32 °C
DLD spec: DLD2 DLDH2 FDLD FDLDH	0.01 uW to 100 uW 2.5 Ω max 1.5 Ω max 3.5 ppm max 0.7 ppm max
Resistance (25°C)	100K +/- 1% Ω
B-constant	4250 +/- 1% k (Evaluated from 25°C to 50°C, 1% tolerance)
Marking	Laser Marking

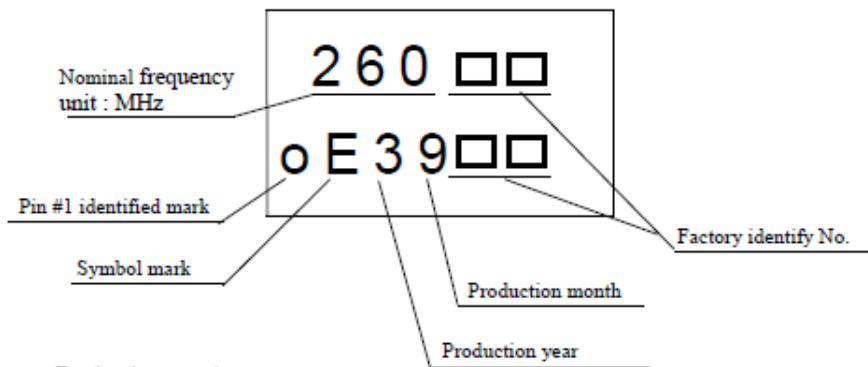
### Mechanical Dimensions (unit: mm):



## Recommended Land Pattern: (unit: mm)



## Marking:



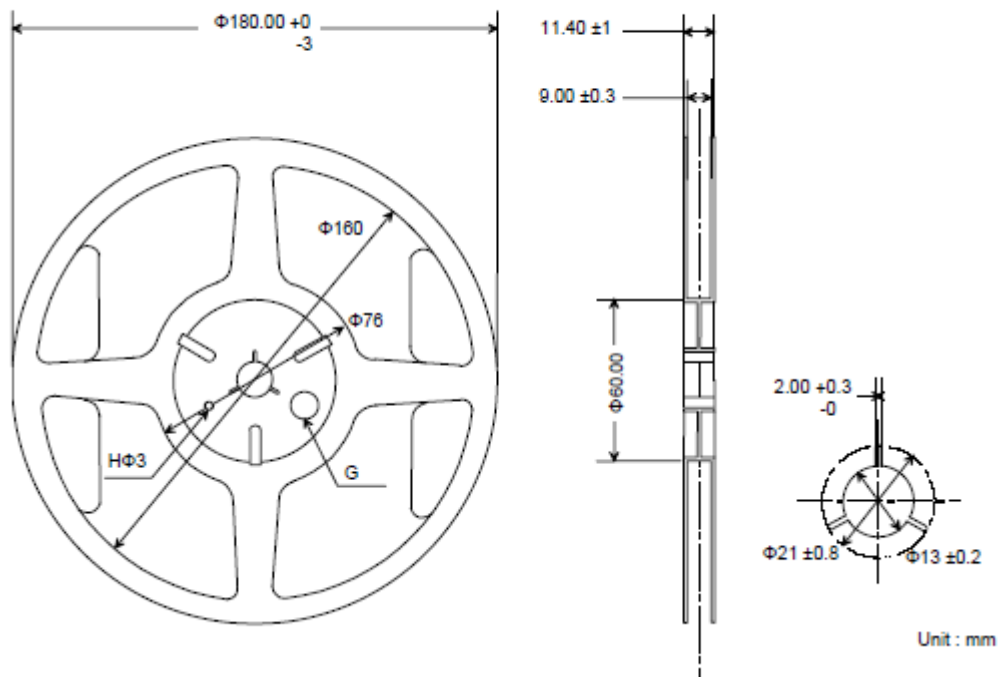
### Production month

January	February	.....	October	November	December
1	2	.....	X	Y	Z

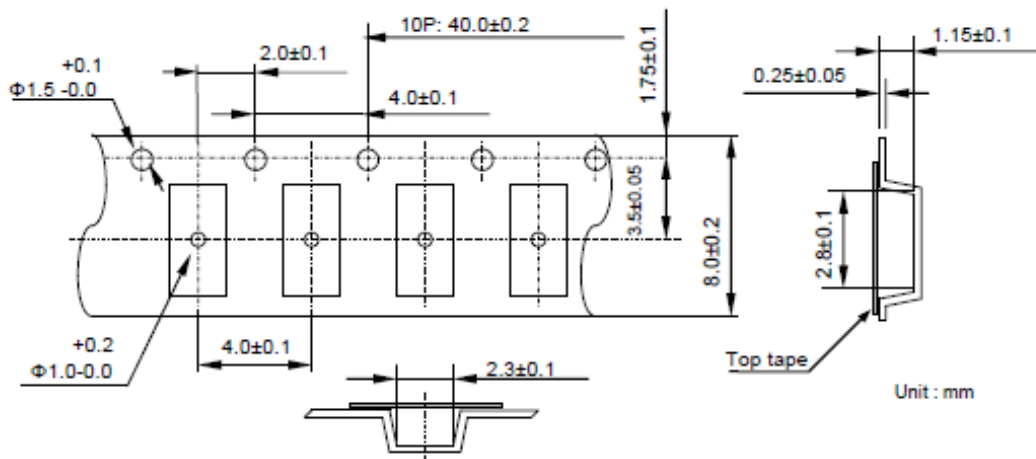
- Nominal frequency is only one example.
- Nominal frequency omits the figure below the first place of decimals.  
Ex)26.0 MHz..... [260]
- The above marking layout shows only marking contents and their approximate position and it is not for font, size and exact position.

## Reel Dimensions (mm):

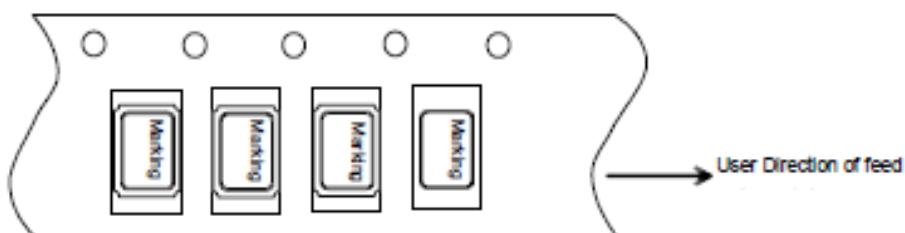
- (a) Center material : PS
- (b) Material of the Reel : PS



## Tape Dimensions (mm):

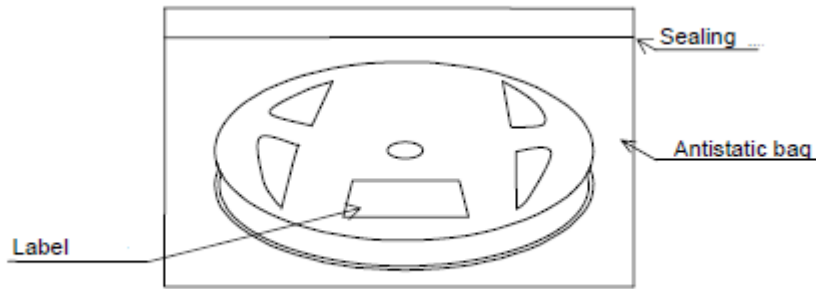


\* Inner curve of each corner 0.25 mm Max.



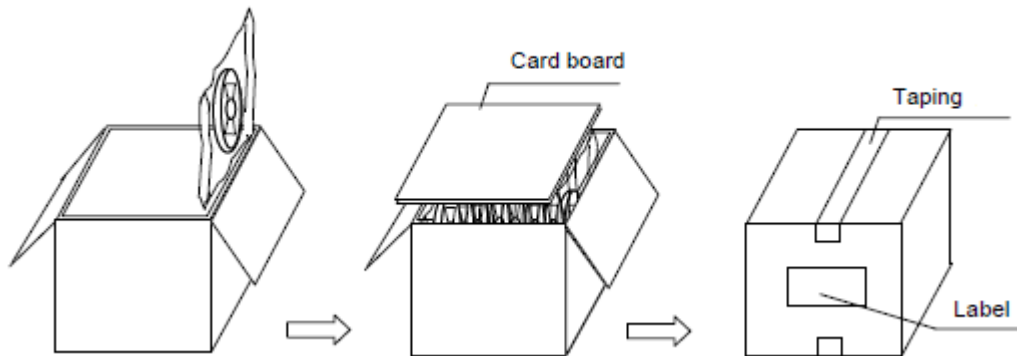
# Packing Quantity/Packing:

3K pcs maximum per reel

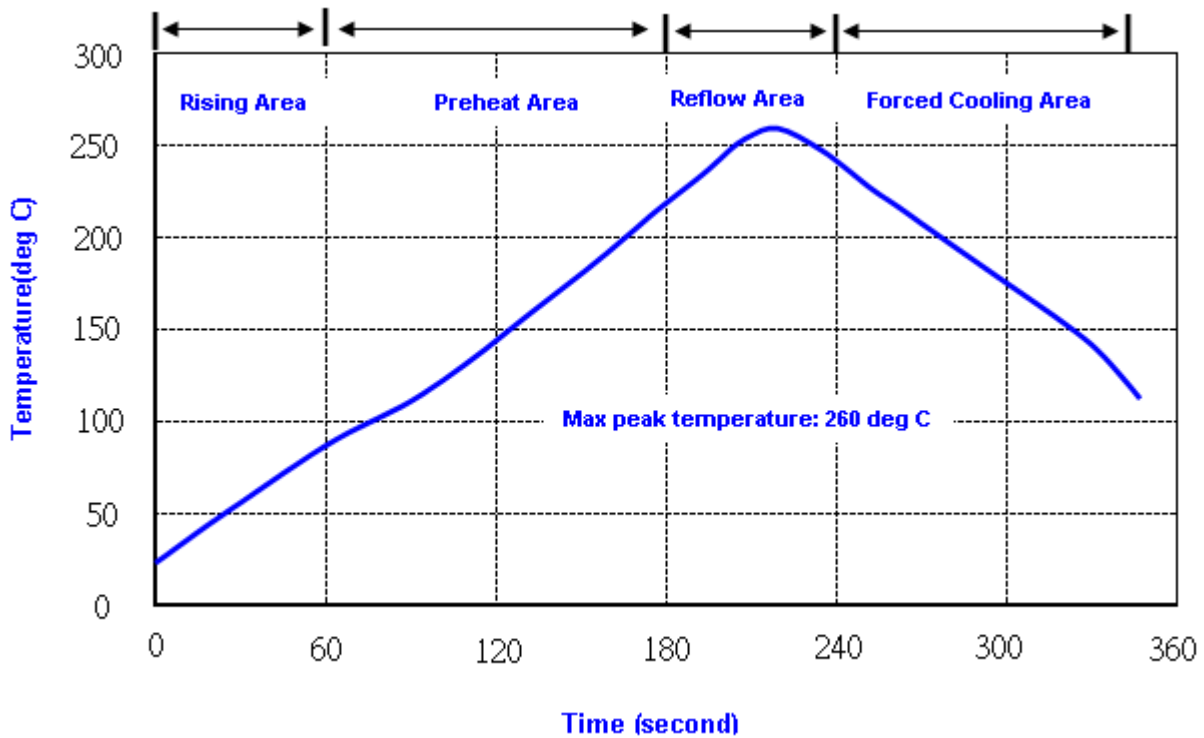


## b) Packing to shipping carton

If there is space in the outer box, material is put in a shock absorbing together.



## 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
<b>Mechanical characteristics</b>		
resistance to Soldering heat (IR reflow)	Temp./ Duration : 260°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 55 Hz Sweep period : 1.0 minute Vibration directions : 3 mutually perpendicular Duration : 2 hr / direc.	MIL-STD 202F method 201A
Mechanical Shock	directions : 3 impacts per axis Acceleration : 3000g's, +20/-0 % Duration : 0.3 ms (total 18 shocks) Waveform : Half-sine	MIL-STD 202F method 213C
Solderability	Solder Temperature:265±5°C Duration time: 5±0.5 seconds.	MIL-STD 883G method 2003
<b>Environmental characteristics</b>		
Thermal Shock	Heat cycle conditions -55 °C (30min) ←→ 125 °C (30min) * cycle time : 10 times	MIL-STD 883G method 1010.7
Humidity test	Temperature : 70 ± 2 °C Relative humidity : 90~95% Duration : 96 hours	MIL-STD 202F method 103B
Dry heat ( Aging test )	Temperature : 125 ± 2 °C Duration : 168 hours	MIL-STD 883G method 1008.2 condition C
PCT test	Pressure: 2.06kg/cm <sup>2</sup> (2.03*10 <sup>5</sup> pa) Temperature : 121 ± 2 °C Relative humidity : 100% Duration : 24 hours	EIAJED-4701-3 B-123A