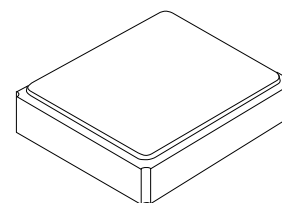


XTL1029

**13.52915 MHz
Crystal Unit**



SM3225-4 Case

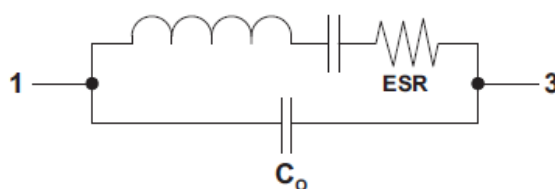
- **High Performance Crystal for Wireless Communications Devices**
- **Good Frequency Stability and Reliability**
- **Miniature Surface Mount Seam Weld Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

The XTL1029 is a high performance 13.52915 MHz crystal suitable for a wide range of communications applications, especially where small size is important.

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Nominal Frequency	f_o			13.52915		MHz
Mode of Oscillation			Fundamental			
Storage Temperature Range in Tape and Reel			-40		+85	°C
Operating Temperature Range			-40		+85	°C
Frequency Manufacturing Tolerance	f_L		± 30 ppm @ 25 °C ± 3 °C			
Frequency Stability over Operating Temperature Range			± 100 ppm (referenced to the value at 25 °C)			
Equivalent Series Resistance	ESR				70	Ω
Shunt Capacitance	C_o				7	pF
Nominal Drive Level					100	μ W
Load Capacitance	C_L			16		pF
Aging, 25 °C					± 1.0	ppm/yr
Insulation Resistance, 100 VDC			500			M Ω
Standard Shipping Quantity on 178 mm (7") Reel				3000		units
Lid Symbolization (Y = year, WW = week, S = shift)	1029 YWWS					

Crystal Equivalent Circuit



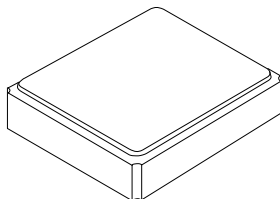
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

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.

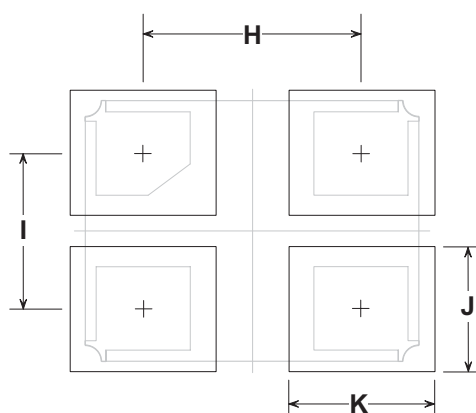
SM3225-4 Case

4 Terminal Surface Mount Seam Weld Case 3.2 x 2.5 mm Nominal Footprint



Electrical Connections

Connection	Terminals
Input / Output	1
Ground	2
Input / Output	3
Ground	4

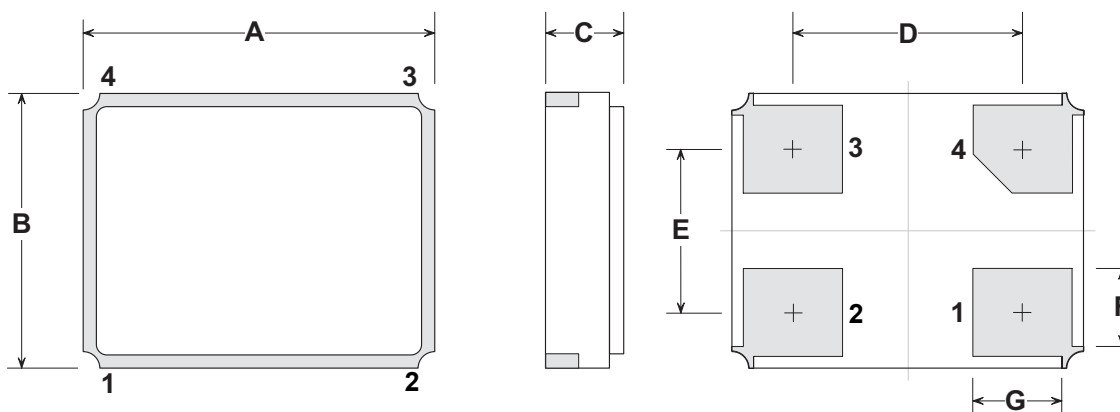


Typical PCB Land Footprint
(Top View)

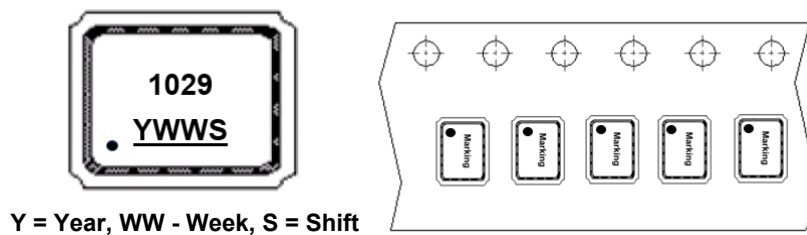
Case and PCB Land Dimensions

Dimensions	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.10	3.20	3.30	0.122	0.126	0.130
B	2.40	2.50	2.60	0.094	0.098	0.102
C			0.70			0.028
D		2.10			0.083	
E		1.50			0.059	
F		0.80			0.031	
G		0.90			0.035	
H		2.10			0.083	
I		1.50			0.059	
J		1.20			0.047	
K		1.40			0.055	

Case Outline Drawing

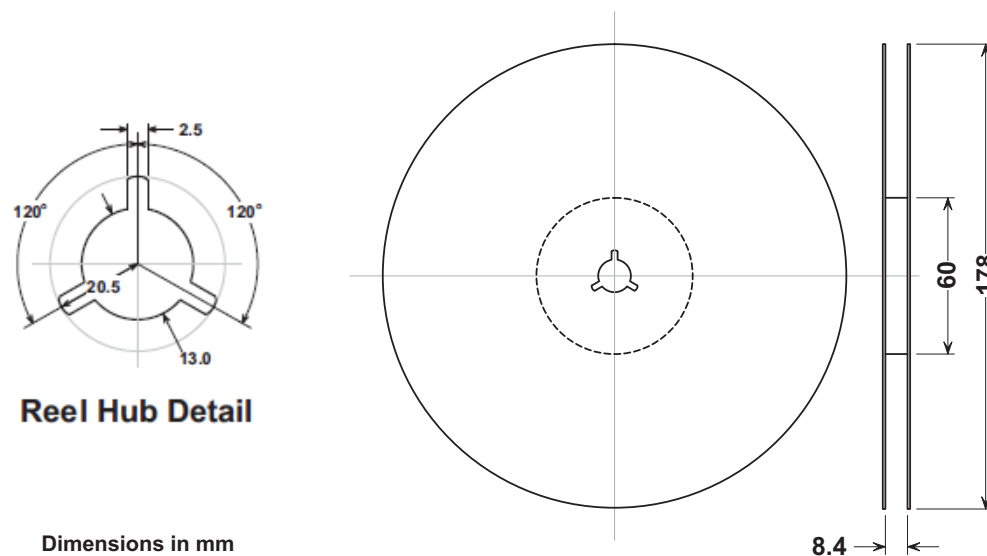


Marking:

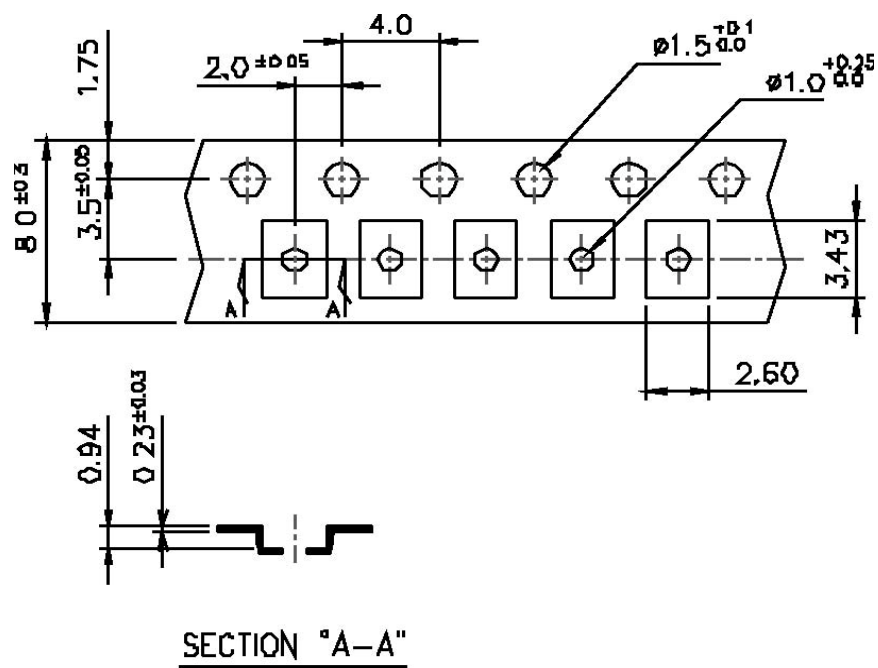


Tape and Reel Standard per ANSI/EIA-481

Reel Dime

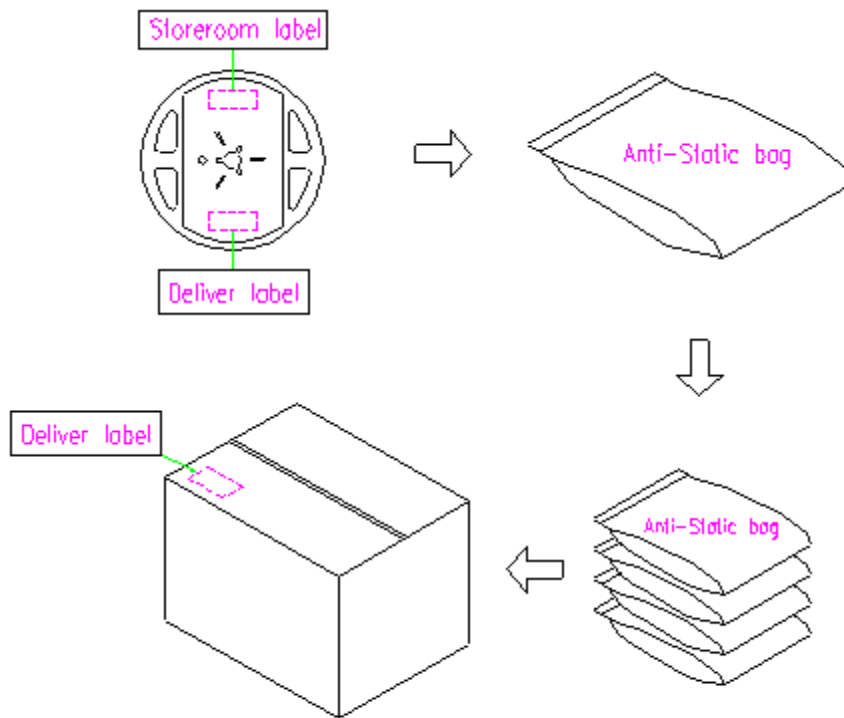


Tape Dimensions



Packing Details

3K pcs maximum per reel



Reliability Specifications

Test name	Test process / method	Reference standard
Mechanical characteristics		
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
Environmental characteristics		
Thermal Shock	Heat cycle conditions -55 (30min) 125 (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 ² (2.03*10 ⁵ pa) Temperature : 121 ± 2 °C Relative humidity: 100% Duration : 24 hours	EIAJED-4701-3 B-123A

Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

