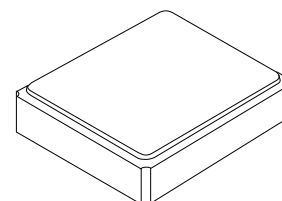


- **High Performance Crystal for Wireless Communications Devices**
- **Excellent Frequency Stability and Reliability**
- **Miniature Surface Mount Seam Weld Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

The XTL1020P is a high stability 12.8000 MHz crystal suitable for a wide range of communications applications where small size is important.

XTL1020P

**12.8000 MHz
Crystal Unit**

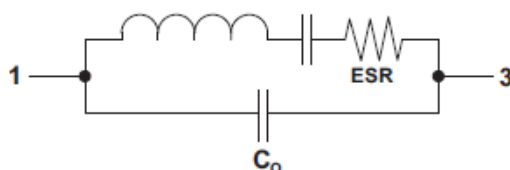


SM3225-4 Case

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Nominal Frequency	f_o			12.8000		MHz
Mode of Oscillation			Fundamental			
Storage Temperature Range in Tape and Reel			-40		+85	°C
Operating Temperature Range			-40		+85	°C
Frequency Make Tolerance	f_L		± 15 ppm @ 25 °C ± 3 °C			
Frequency Stability over Operating Temperature Range			± 20 ppm (referenced to the value at 25 °C)			
Equivalent Series Resistance	ESR				100	Ω
Shunt Capacitance	C_o			3		pF
Nominal Drive Level					10	μ W
Load Capacitance	C_L			15		pF
Aging at 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)	1020P YWWS					

Crystal Equivalent Circuit



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

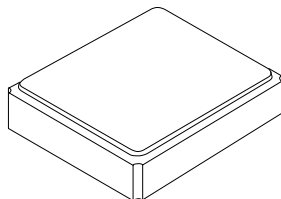
NOTES:

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

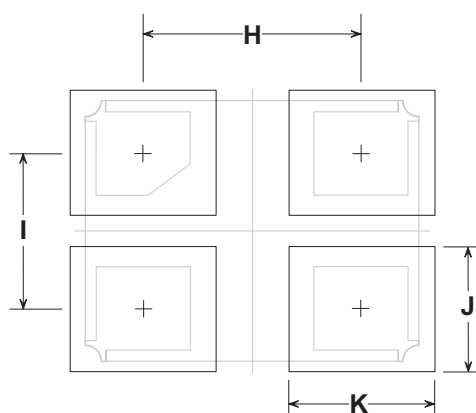
4 Terminal Surface Mount Seam Weld Case

3.2 x 2.5 mm Nominal Footprint



Electrical Connections

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

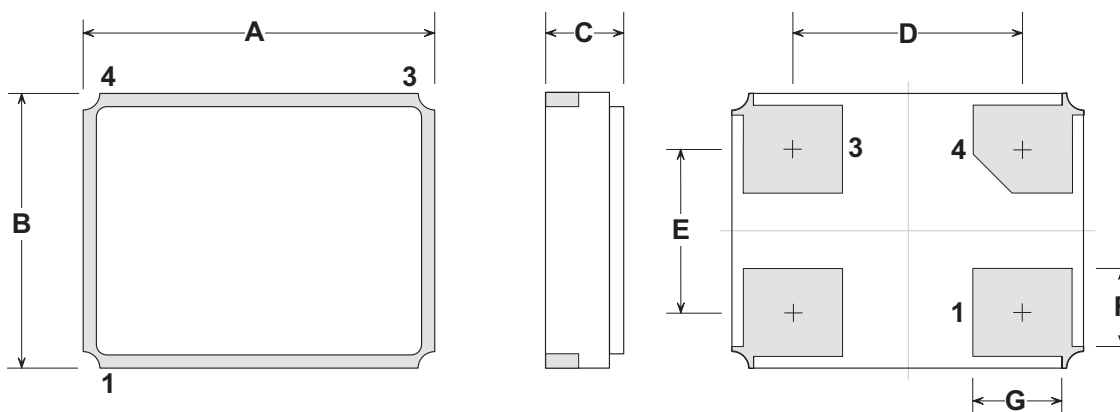


Typical PCB Land Footprint
(Top View)

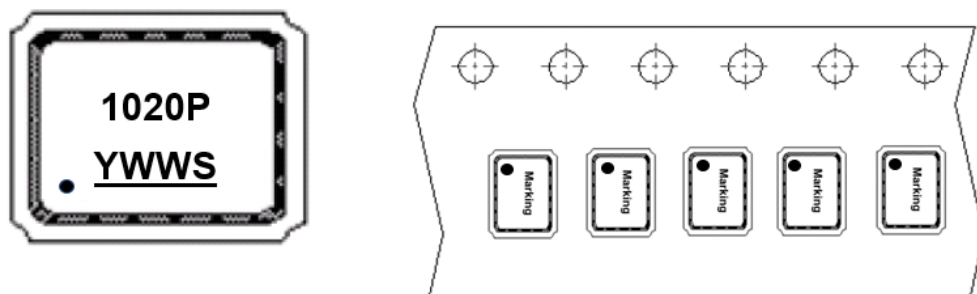
Case and PCB Land Dimensions

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



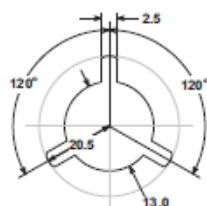
Marking:



Reel Dimensions

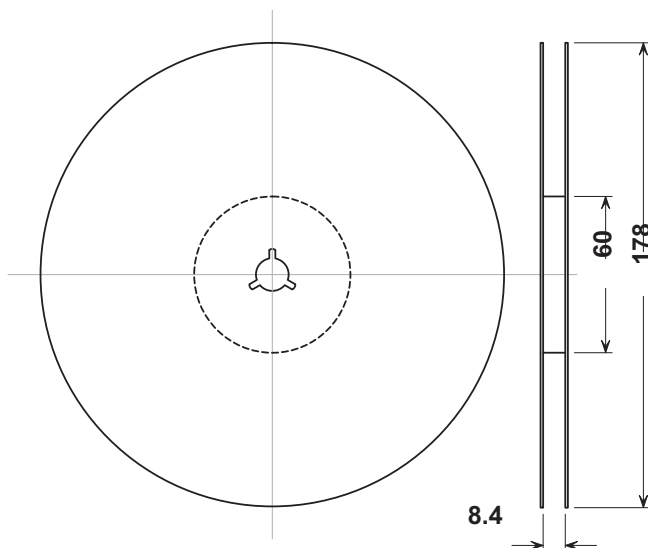
Reel Count"
7" = 1000
13" = 3000

Tape and Reel Standard per ANSI/EIA-481

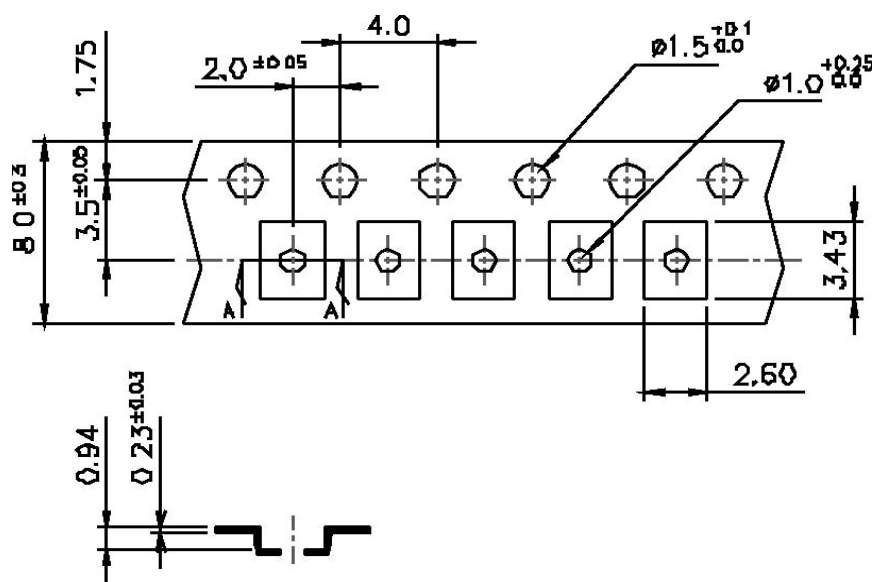


Reel Hub Detail

Dimensions in mm



Tape Dimensions



SECTION "A-A"

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.

