RFMi
A BRAND OF AKOUSTIS

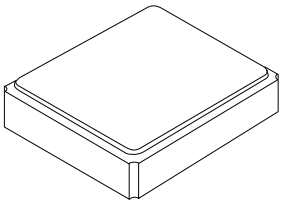
RoHS compliant

# XTL1020P

## 12.8000 MHz Crystal Unit

- ***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.

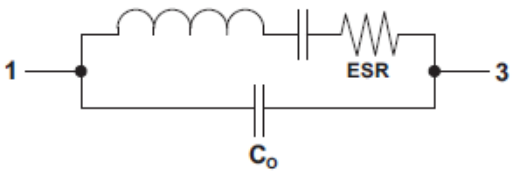


**SM3225-4 Case**

**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 | µW |
| Load Capacitance | $C_L$ | | | 15 | | pF |
| Aging at 25 °C | | | | | ±1.0 | ppm/yr |
| Insulation Resistance, 100 VDC | | | 500 | | | MΩ |
| 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:**

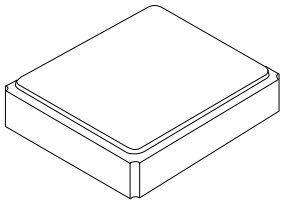
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

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# SM3225-4 Case

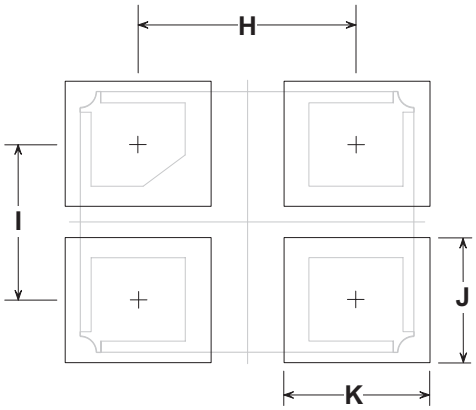
## 4 Terminal Surface Mount Seam Weld Case

3.2 x 2.5 mm Nominal Footprint



**Electrical Connections**

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

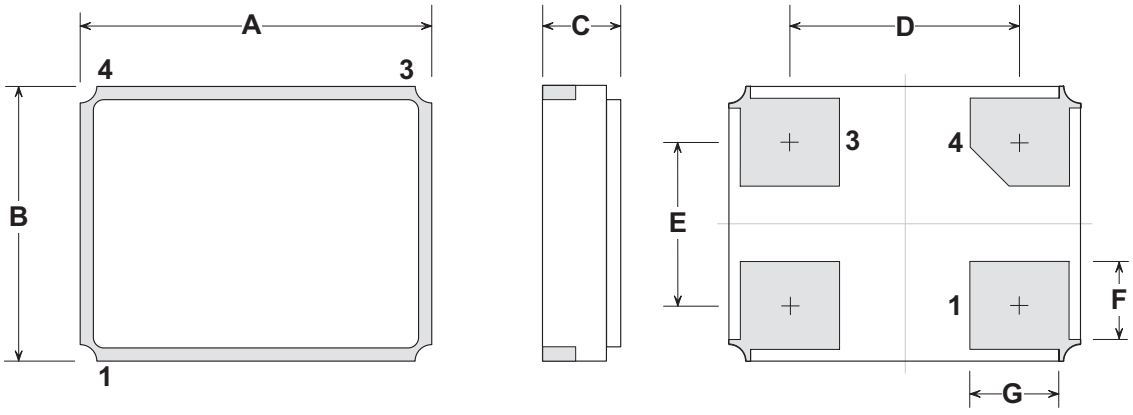



**Typical PCB Land Footprint**
**(Top View)**

**Case and PCB Land Dimensions**

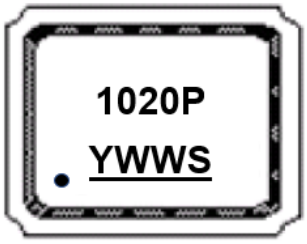
| Dimensions | Millimeters | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 3.10 | 3.20 | 3.30 | 0.122 | 0.126 | 0.130 |
| B | 2.40 | 2.50 | 2.60 | 0.094 | 0.098 | 0.102 |
| C | | | 0.70 | | | 0.028 |
| D | | 2.10 | | | 0.083 | |
| E | | 1.50 | | | 0.059 | |
| 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 | |

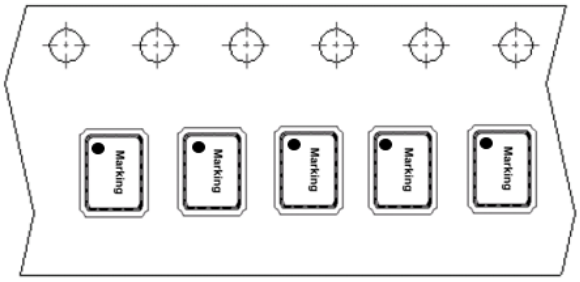
### Case Outline Drawing




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## Marking:

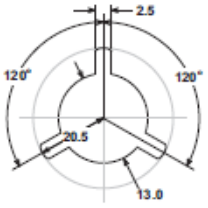


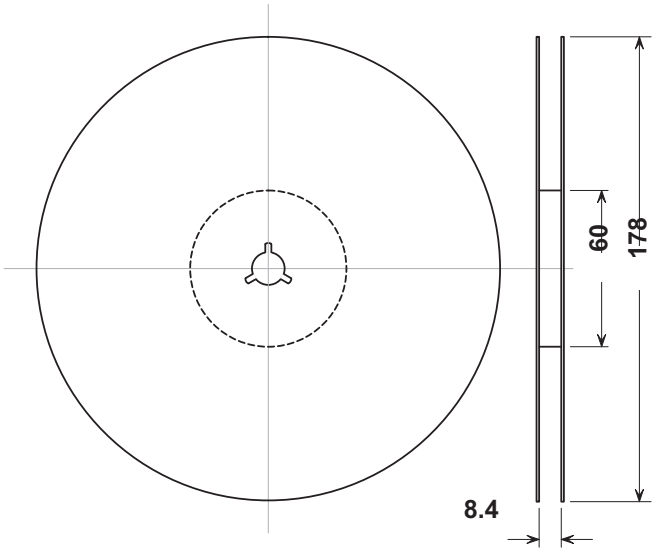

## Reel Dimensions

Reel Count"
7" = 1000
13" = 3000

Tape and Reel Standard per ANSI/EIA-481

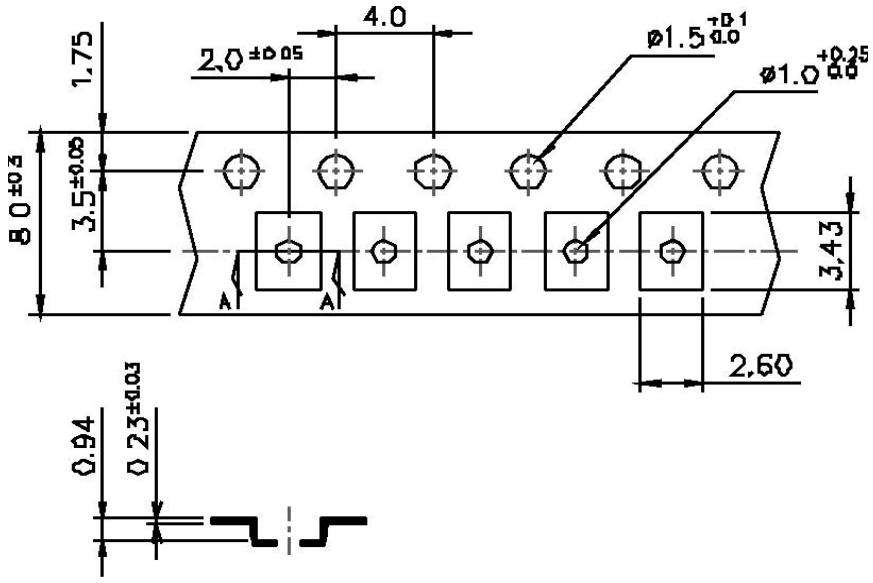



Reel Hub Detail




Dimensions in mm

## Tape Dimensions

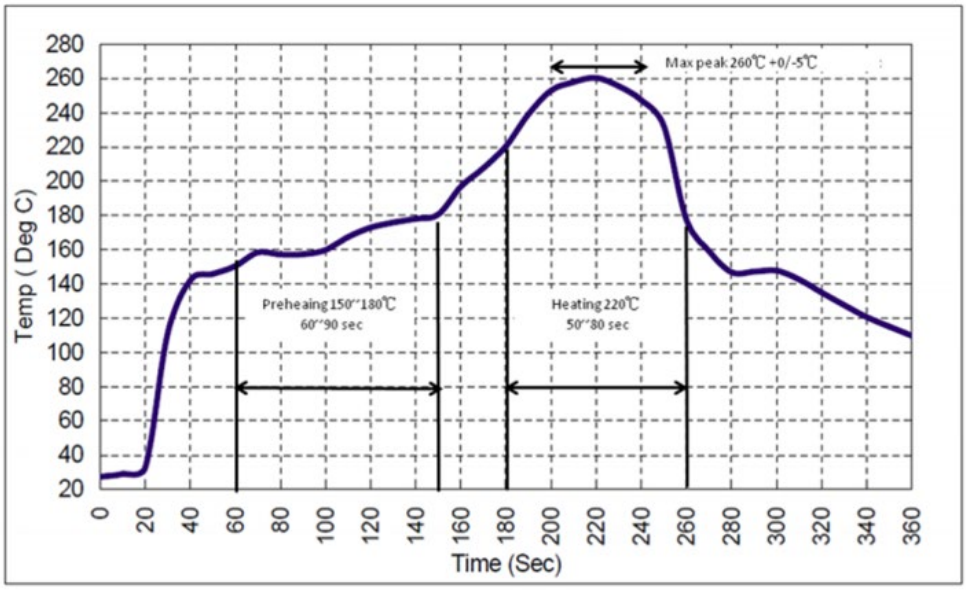



SECTION "A–A"

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## Recommended Reflow Profile

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




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RFMi:

XTL1020P