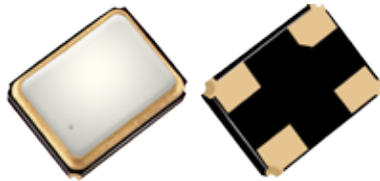


# Miniature Quartz Crystal Ceramic SMD

**FW**


2.0 x 1.6mm Ceramic SMD

## Product Description

The 4-pad FW Series seam seal devices incorporate an ultra-miniature AT-cut crystal resonator housed in a standard 2.0 x 1.6mm ceramic package. These compact crystals are ideal for surface mounting in densely populated or small form-factor PCB applications.

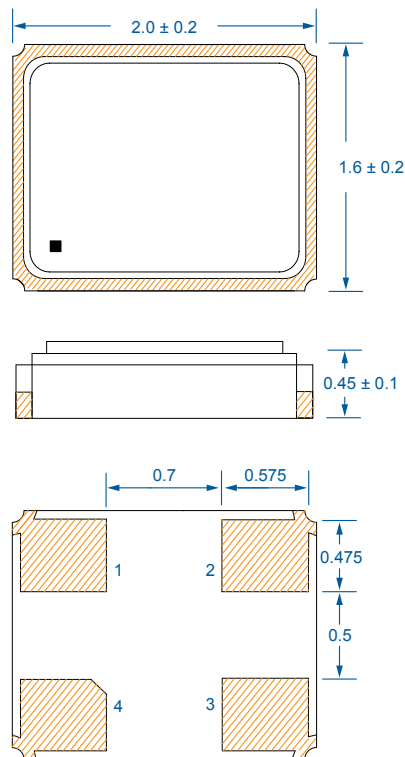
## Product Features

- Rugged AT-cut crystal construction
- Miniature 2.0 x 1.6mm ceramic package
- Available on tape & reel; 8mm tape, 3000 units per reel
- Pb-free and RoHS/Green compliant

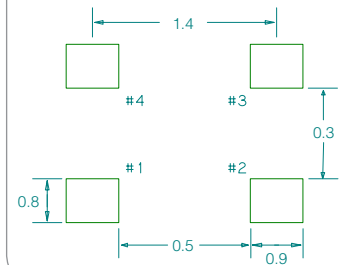
## Typical Applications

- Portable / Hand-held PCs
- PCMCIA Cards
- Notebook PC
- Bluetooth
- Wireless LAN
- UWB
- ZigBee
- USB
- GPS
- HDD
- GSM, CDMA, GPRS

**Package:** (Scale: none; Dimensions are in mm)



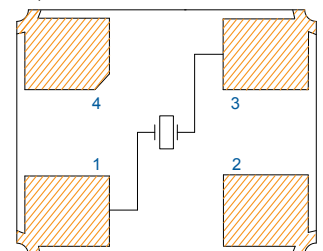
Recommended Land Pattern:



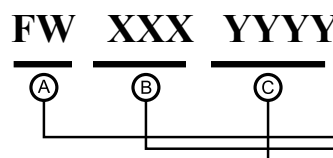
## Pin Functions:

Pin	Function
1	Xtal
2	Case
3	Xtal
4	Case

Top View:



## Part Ordering Information:



A: Product Family  
 B: XXX = Frequency Code  
 C: YYYY = Specification Code

Following the above format, Saronix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

**Frequency Range:**

- 16 MHz to 66.0000 MHz (Fundamental)

**Characteristics at 25°C ±2°C:**

- Frequency Calibration Tolerance: ±10ppm, ±20ppm, or ±30ppm
- Load Capacitance: 8 to 20pF or Series Resonance
- Effective Series Resistance (ESR):
  - 120Ω max (16 to 26.0000 MHz)
  - 100Ω max (26 to 32.0000 MHz)
  - 80Ω max (32 to 66.0000 MHz)
- Drive Level: 10μW typ. (100μW max)
- Shunt Capacitance: 3pF Max

**Temperature Range:**

- Operating: -20 to +70°C or -30 to +85°C or -40 to +125°C
- Storage: -40 to +125°C

**Frequency Stability (Reference to the Frequency at 25°C):**

- -20 to +70°C: ±10ppm to ±50ppm
- -30 to +85°C: ±20ppm to ±50ppm
- -40 to +125°C: ±50ppm to ±70ppm

**Aging at 25°C, First Year:**

- ±3ppm Max
- ±5ppm Max

**Reflow Temperature:**

- 260°C Max, 10 seconds Max

**Mechanical**

- Shock: JESD22-B104 Condition B
- Solderability: J-STD-002
- Terminal Strength: MIL-STD-883 Method 2004
- Vibration: JESD22-B103
- Solvent Resistance: JESD22-B107
- Resistance to Soldering Heat: J-STD-020C Table 5-2 Pb-free devices (3 cycles max)

**Environmental**

- Gross Test Leak: JESD22-A109, Condition C
- Fine Test Leak: JESD22-A109, Condition A1
- Moisture Resistance: JESD22-A113
- Insulation Resistance: 500 MΩ min (100 VDC)