

FW Series Quartz Crystal
2.0 x 1.6mm

# Miniature Quartz Crystal Ceramic SMD

**FW** 



2.0 x 1.6mm Ceramic SMD

# **Product Description**

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

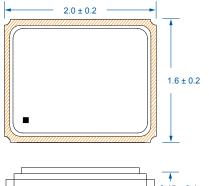
#### **Product Features**

- 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

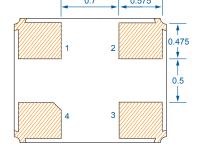
# **Typical Applications**

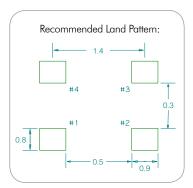
- Portable / Hand-held PCs
- PCMCIA Cards
- Notebook PC
- Bluetooth
- Wireless LAN
- UWB
- ZigBee
- USB
- GPS
- HDD
- GSM, CDMA, GPRS

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





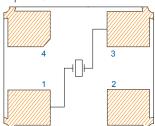




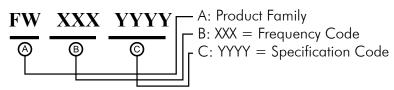
#### **Pin Functions:**

Pin	Function
1	Xtal
2	Case
3	Xtal
4	Case

# Top View:



#### **Part Ordering Information:**



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

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# Miniature Quartz Crystal Ceramic SMD





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#### **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):

 $120\Omega \max (16 \text{ to } 26.0000 \text{ MHz})$ 

 $100\Omega \, \text{max} \, (26 \, \text{to} \, 32.0000 \, \text{MHz})$ 

 $80\Omega$  max (32 to 66.0000 MHz)

- Drive Level:  $10\mu W$  typ.  $(100\mu W \text{ max})$
- Shunt Capacitance: 3pF Max

# **Temperature Range:**

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

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

- •-20 to +70°C:  $\pm$ 10ppm to  $\pm$ 50ppm
- •-30 to  $+85^{\circ}$ C:  $\pm 20$ ppm to  $\pm 50$ ppm
- •-40to +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)

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