

# Miniature Quartz Crystal Ceramic SMD





2.0 x 1.6mm Ceramic SMD

#### **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

# **Product Description**

The 4-pad FW Series seam seal devices incorporate a 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.

# **Typical Applications**

- Smart Phone
- Portable / Hand-held PCs
- PCMCIA Cards
- Notebook PC
- Bluetooth
- Wireless LAN
- SIP
- RF-SIM
- Pen Drive
- SD Module

### **Frequency Range:**

• 20.00000 MHz to 66.00000 MHz (Fundamental)

#### Characteristics at 25°C ±2°C:

- Frequency Calibration Tolerance: ±10ppm to ±50ppm
- Load Capacitance: 8 to 20pF or Series Resonance
- Equivalent Series Resistance (ESR):

120 $\Omega$  max (20.000000 to 26.000000 MHz) 100 $\Omega$  max (26.000001 to 32.000000 MHz) 80 $\Omega$  max (32.000001 to 66.000000 MHz)

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

#### **Temperature Range:**

- Operating: -20°C to +70°C or -30°C to +85°C
- Storage:  $-40^{\circ}$ C to  $+85^{\circ}$ C

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

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

## 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
- •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)

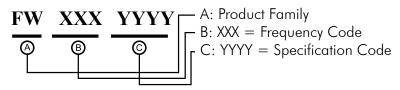


# Miniature Quartz Crystal Ceramic SMD FW



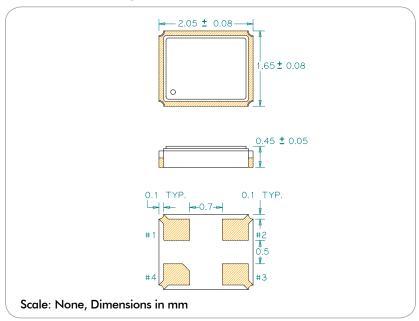
**FW Series Quartz Crystal** 2.0 x 1.6 x 0.45mm

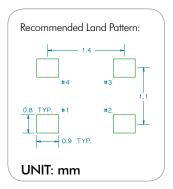
## **Part Ordering Information:**



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

## **Mechanical Drawings:**





## **Pin Functions:**

Pin	Function
1	Xtal
2	Case
3	Xtal
4	Case

