

# **Quartz Crystal Ceramic SMD**





7.0 x 5.0mm Ceramic SMD

#### **Product Features**

- Rugged AT-cut crystal construction
- Extremely compact SMD package
- Available on tape & reel; 16mm tape, 1000 units per reel
- FP: Lead-free and RoHS / Green compliant

## **Product Description**

The 4-pad FP Series seam seal devices incorporate a sub-miniature AT-cut strip crystal resonator housed in a 7.0 x 5.0mm ceramic package. These compact crystals are ideal for surface mounting in densely-populated PCB applications.

### **Applications**

Ideally suited for disc drives, PCMCIA, PCs and hand-held products.

#### **Frequency Range:**

- •6.0000 MHz to 56.0000 MHz (Fundamental)
- •30.0000 MHz to 125.0000 MHz (3rd Overtone)

#### Characteristics at 25°C ±2°C:

- Frequency Calibration Tolerance: ±10ppm, ±20ppm, or ±30ppm
- •Load Capacitance: 8 to 32pF or Series Resonance
- Effective Series Resistance (ESR):

Fundamental: 20 to  $120\Omega$  max depending on frequency 3rd Overtone: 50 to  $80\Omega$  max depending on frequency

- Drive Level: 10µW typ. (500µW max)
- •Shunt Capacitance: 7pF max

#### **Temperature Range:**

- $\bullet$  Operating: -20 to +70 °C or -40 to +85 °C
- •Storage: -55 to +125°C

#### **Temperature Stability:**

- $\pm 10$ ppm,  $\pm 20$ ppm,  $\pm 30$ ppm, or  $\pm 50$ ppm (-20 to +70°C)
- $\pm 30$ ppm, or  $\pm 50$ ppm (-40 to +85°C)

#### Aging at 25°C, First Year:

• ±3ppm Max

#### **Reflow Temperature:**

•260°C Max, 10 seconds Max

#### **Mechanical:**

- •Shock: ±5ppm max after 3 drops from 75cm onto a hard wooden board
- Solderability: JESD22-B102-D Method 2 (Preconditioning E)
- •Vibration: ±5ppm max sine vibration 10~55Hz, sweep period 1-2 minutes, amplitude 1.5mm, 3 mutually perpendicular planes each 1 hour
- Solvent Resistance: MIL-STD-202, Method 215
- Resistance to Soldering Heat: J-STD-020C Table 5-2 Pb-free devices (3 cycles max)











# Quartz Crystal Ceramic SMD

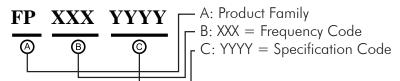
FP

FP Series Quartz Crystal Legacy NKS7 Series | 7.0 x 5.0mm

#### **Environmental:**

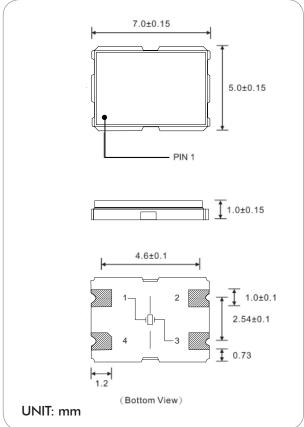
- Gross Test Leak: MIL-STD-883, Method 1014, Condition C
- Fine Test Leak: MIL-STD-883, Method 1014, Condition A2
- •Thermal Shock: MIL-STD-883, Method 1011, Condition A
- Moisture Resistance: MIL-STD-883, Method 1004

# Part Ordering Information:

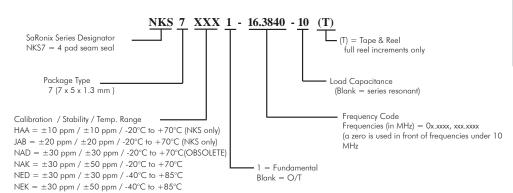


Following the above format, Saronix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

### **Mechanical Drawings:**



### **Legacy Ordering Information - For Reference Only:**



### Part Number Example:

Spec: Freq 8.1234MHz,  $\pm 30$ ppm calib,  $\pm 30$ ppm stab, -20 to +70°C, 16pF, T&R = NKS7NAD1-08.1234-16(T)









