

# Quartz Crystal Ceramic SMD

**FP**



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 120Ω max depending on frequency
  - 3rd Overtone: 50 to 80Ω max depending on frequency
- Drive Level: 10μW typ. (500μW max)
- Shunt Capacitance: 7pF max

## Temperature Range:

- Operating: -20 to +70°C or -40 to +85°C
- Storage: -55 to +125°C

## Temperature Stability:

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

## Aging at 25°C, First Year:

- ±3ppm Max

## Reflow Temperature:

- 260°C Max, 10 seconds Max

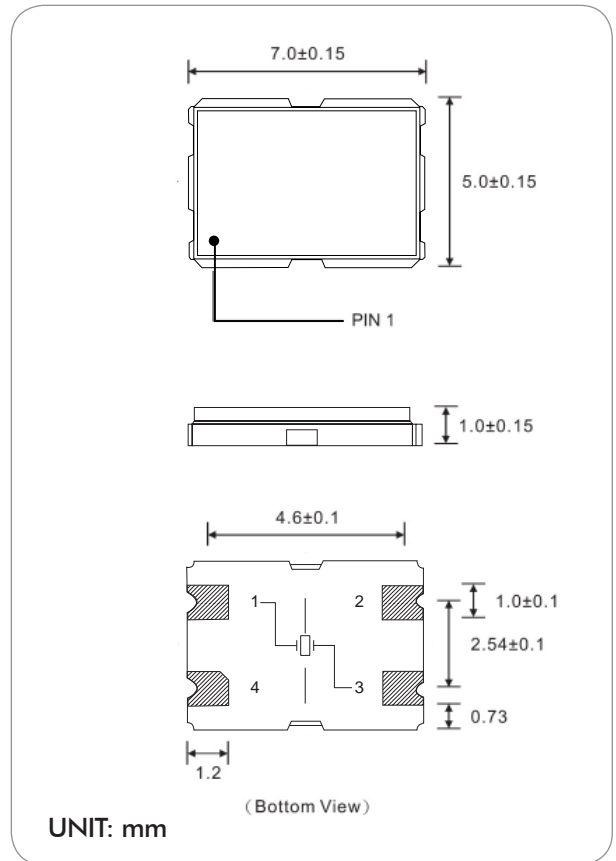
## Mechanical:

- 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)

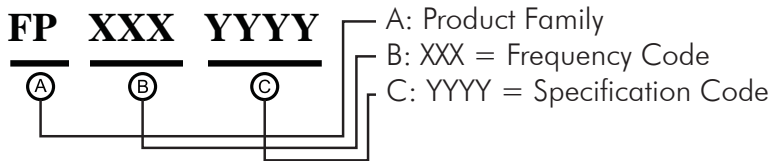
### Environmental:

- 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

### Mechanical Drawings:

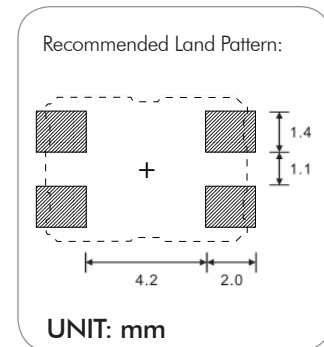
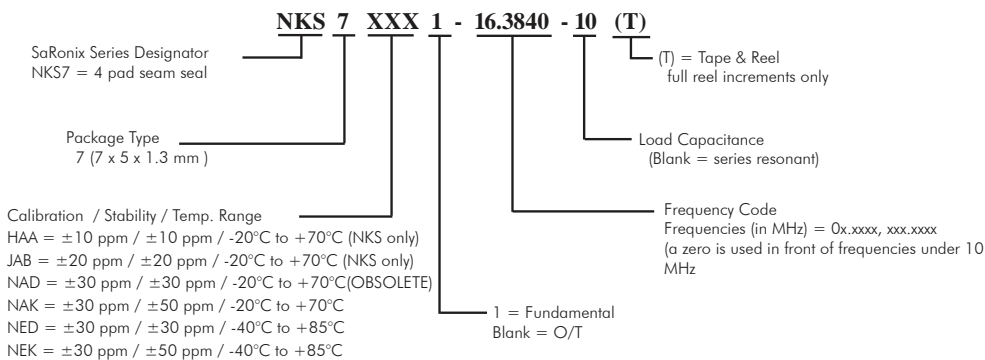


### Part Ordering Information:



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

### Legacy Ordering Information - For Reference Only:



### Part Number Example:

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

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