

# Quartz Crystal Ceramic SMD

**F9** | **FY**



5.0 x 3.2mm Ceramic SMD

## Product Features

- Rugged AT-cut crystal construction
- Miniature 5.0 x 3.2mm ceramic package
- Available on tape & reel; 12mm tape, 1000 units per reel
- FY: Pb-free and RoHS/Green compliant
- F9: RoHS compliant\*  
(\* per #5, Annex of Directive 2002/05/EC)

## Product Description

The 2-pad F9 Series glass seal and the 4-pad FY Series seam seal devices incorporate a sub-miniature AT-cut crystal resonator housed in a standard 5.0 x 3.2mm ceramic package. These compact crystals are ideal for surface mounting in densely populated PCB applications.

## Applications

- PCMCIA Cards
- Portable / hand-held PCs
- Notebook PC
- Wireless LAN
- Portable Multimedia Devices
- GPS
- HDD
- Bluetooth
- USB Dongle

## Frequency Range:

- 8.0000 MHz to 50.0000 MHz (Fundamental)
- 40.000 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: 40 to 100Ω max depending on frequency  
Overtone: 60 to 80Ω max depending on frequency
- Drive Level: 10μW typ. (100μW max)
- Shunt Capacitance: 5pF 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)

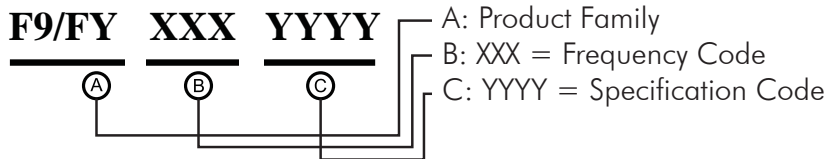
## Aging at 25°C, First Year:

- ±3ppm Max

## Reflow Temperature:

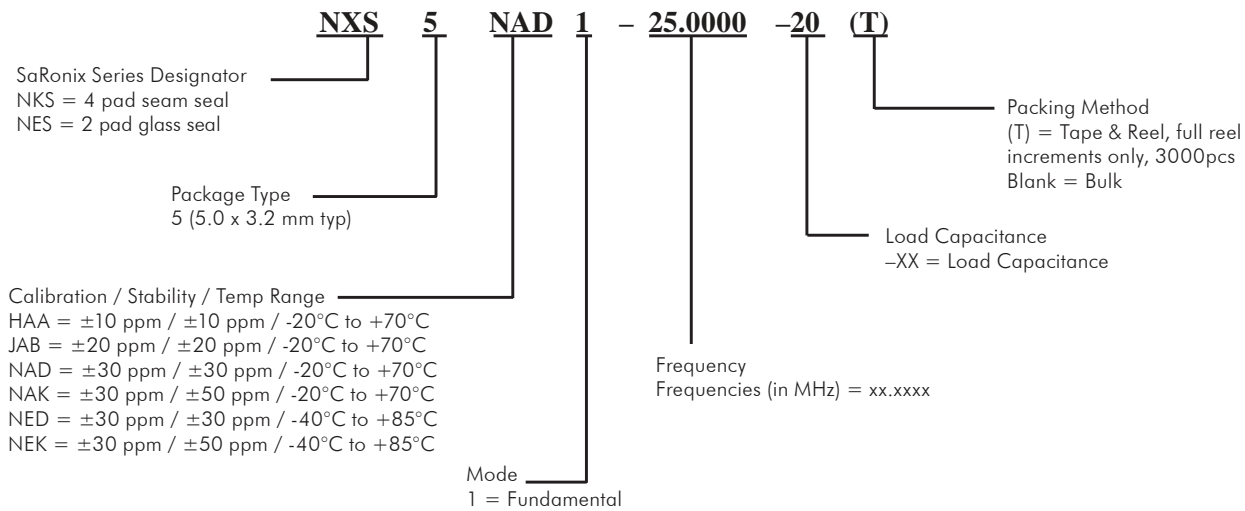
- 260°C Max, 10 seconds Max

### 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 18.1234MHz, ±30ppm calib, ±30ppm stab, -20 to +70°C, 16pF, T&R = NKS5NAD1-18.1234-16(T)

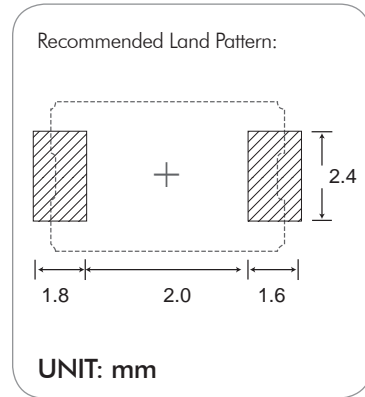
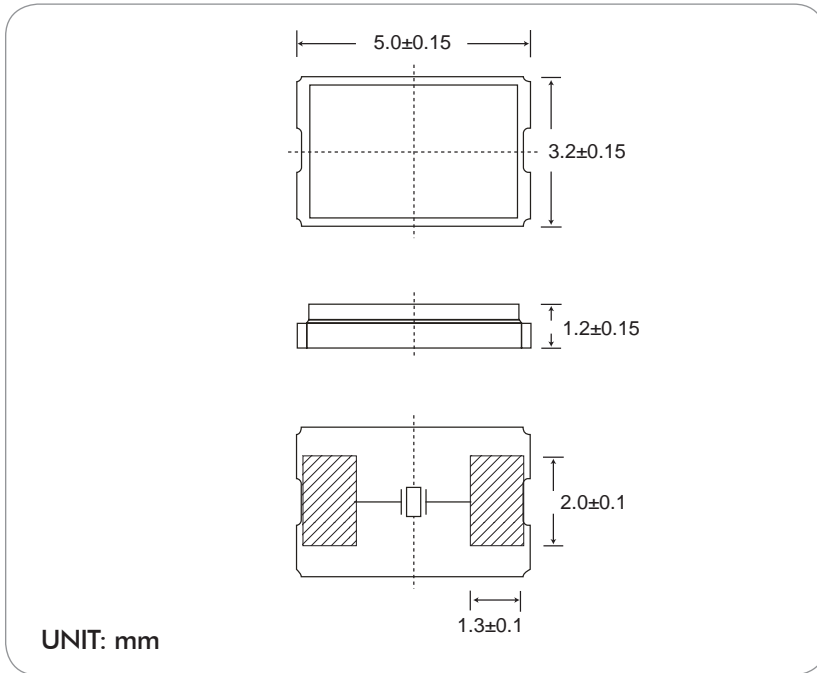
### Mechanical

- 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)

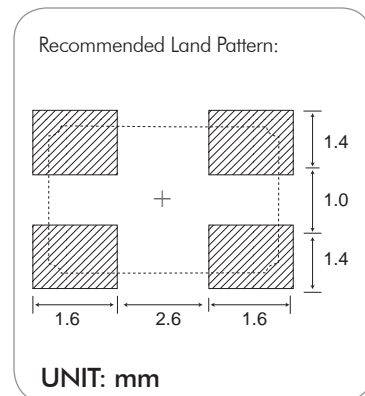
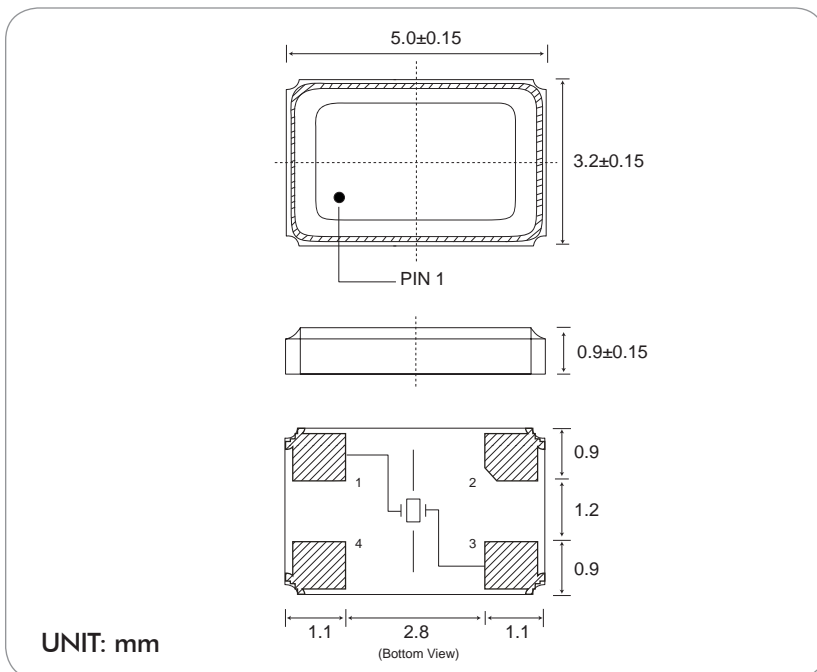
### Environmental

- 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)

### Mechanical Drawings: F9 Series



### Mechanical Drawings: FY Series



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