

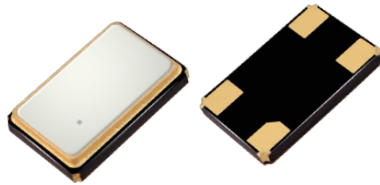


**THE DATASHEET OF  
FY1200089**



# Quartz Crystal Ceramic SMD

**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
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- An automotive-compliant part is available under separate datasheet (The DIODES™ FYQ)

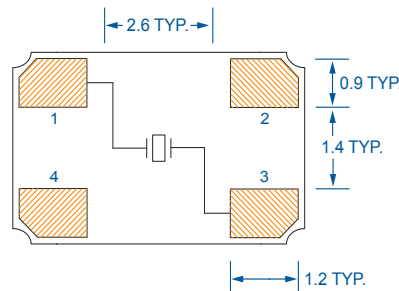
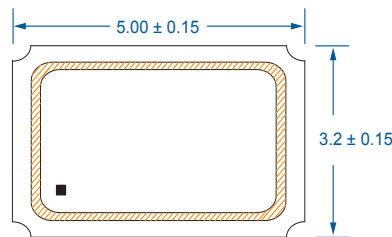
## Product Description

The DIODES™ 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 crystal are ideal for surface mounting in densely populated PCB applications.

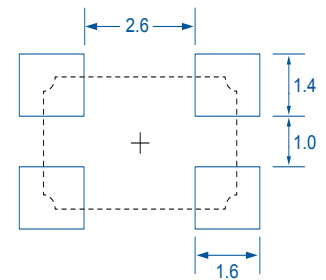
## Application(s)

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

## Package: (Dimensions are in mm)



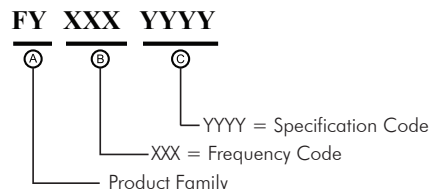
## Recommended Land Pattern:



## Pin Functions:

Pin	Function
1	Crystal
2	GND
3	Crystal
4	GND

## Part Ordering Information:



## Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Frequency Range:

- 8.0000 MHz to 59.9999 MHz (Fundamental)
- 60.0000 MHz to 125.0000 MHz (3rd Overtone)

## Characteristics at 25°C ±3°C:

- Frequency Calibration Tolerance: ±10ppm to ±50ppm
- Load Capacitance: 8 to 32pF or Series Resonance
- Effective Series Resistance (ESR):
  - Fundamental:
    - 8.0000MHz to 11.9999MHz: 100Ω max
    - 12.0000MHz to 15.9999MHz: 60Ω max
    - 16.0000MHz to 31.9999MHz: 50Ω max
    - 32.0000MHz to 59.9999MHz: 40Ω max
  - 3 Overtone:
    - 60.0000MHz to 79.9999MHz: 100Ω max
    - 80.0000MHz to 99.9999MHz: 80Ω max
    - 100.0000MHz to 125.0000MHz: 60Ω max
- Drive Level: 10μW typ. 100μW max
- Shunt Capacitance: 5pF Max.

## Temperature Range:

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

## Temperature Stability:

- ±10ppm to ±50ppm (-20 to +70°C )
- ±15ppm to ±50ppm (-40 to +85°C)

## Aging at 25°C, First Year:

- ±3ppm Max

## Reflow Temperature:

- 260°C Max, 10 seconds max

For the latest product information visit: <https://www.diodes.com/part/FY/>

For soldering reflow profile and reliability test ratings go to: <https://www.diodes.com/assets/sre/reflow.pdf>

For tape and reel information go to: [https://www.diodes.com/assets/sre/tr\\_5032.pdf](https://www.diodes.com/assets/sre/tr_5032.pdf)

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