A product Line of
Diodes Incorporated

AEC-Q200 Qualified, High Temperature Crystal 3.2 x 2.5mm

Miniature Quartz Crystal Ceramic SMD

FLQ



3.2 x 2.5mm Ceramic SMD

Product Features

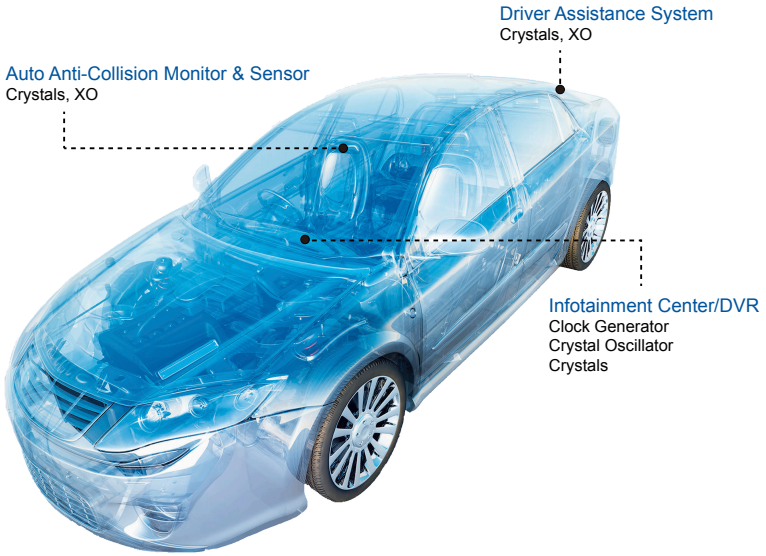
- Rugged AT-cut crystal construction
- Miniature 3.2 x 2.5mm ceramic package
- Available on tape & reel; 8mm tape, 3000 units per reel
- Pb-free and RoHS/Green compliant
- Support high temperature up to 125°C
- Wide frequency range -8~66MHz
- AEC-Q200 compliant
  -Grade 3, Grade 2, Grade 1

Product Description

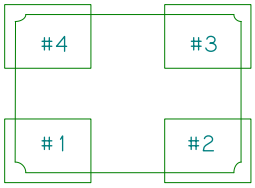
The 4-pad FLQ Series seam seal devices incorporate a sub-miniature AT-cut crystal resonator housed in a standard 3.2 x 2.5mm ceramic package. These compact crystals are ideal for surface mounting in densely populated or small form-factor PCB applications. The FLQ series is designed to meet the requirements of AEC-Q200 Grade 3, Grade 2 and Grade 1 for automotive applications, and supports operating temperature range of -40 up to +125°C.

Applications

- Automotive



Top view pin location



Pin Functions:

Pin	Function
1	Xtal
2	Case
3	Xtal
4	Case

Part Ordering Information:

FL XXX YYYY Q

(A) Product Family
(B) XXX = Frequency Code
(C) YYYY = Specification Code
(D) Q = Automotive Grade

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

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Frequency Range:

- 8 MHz to 66.0000 MHz (Fundamental)

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):

  500Ω max (8 to 11.9 MHz)
  80Ω max (12 to 19.9 MHz)
  60Ω max (20 to 29.9 MHz)
  40Ω max (30 to 66 MHz)
- Drive Level: 10μW typ. (100μW max)
- Shunt Capacitance: 5pF Max

Temperature Range:

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

Temperature Stability:

- ±10ppm, ±20ppm, ±30ppm, or ±50ppm (–20 to +70°C)
- ±30ppm, or ±50ppm (–40 to +85°C)
- ±50ppm, or ±70ppm (–40 to 125°C)

Aging at 25°C, First Year:

- ±3ppm Max

Reflow Temperature:

- 260°C Max, 10 seconds Max

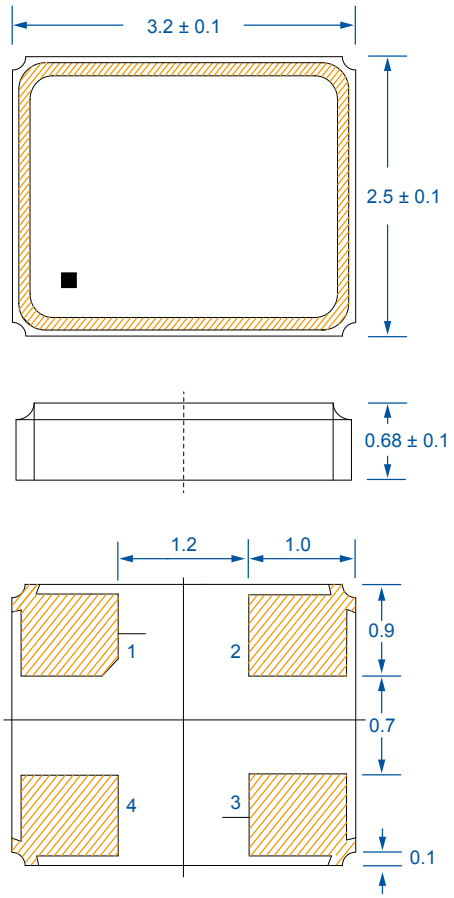
Mechanical

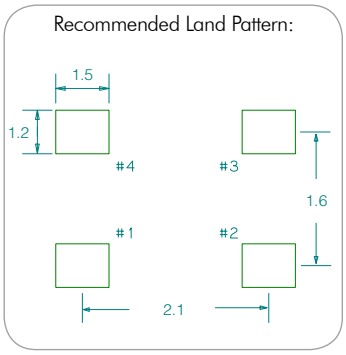
- Shock: JESD22-B104 Condition B
- Solderability: J-STD-002
- Terminal Strength: MIL-STD-883 Method 2004
- Vibration: JESD22-B103
- Solvent Resistance: JESD22-B107
- Resistance to Soldering Heat: J-STD-020C Table 5-2 Pb-free devices (3 cycles max)

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)

Package: (Scale: none; dimensions are in mm)





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