

## 4SMX CRYSTALS

### ISSUE 8; 21 NOVEMBER 2011 – RoHS 2011/65/EU

Not recommended for new designs

For alternative see model CFPX-225

#### Description

- 5 x 3.2mm SMD crystal
- Ceramic package with a resin sealed ceramic lid, hermetically sealed

#### General Specifications

- Load Capacitance (CL): 10pF to 75pF or Series
- Drive Level: 100µW max
- Ageing: ±5ppm max per year at 25°C
- Shunt Capacitance (C<sub>0</sub>): 7pF max

#### Standard Frequency Tolerance and Stabilities

- ±50ppm, ±100ppm

#### Operating Temperature Range

- 10 to 60°C

#### Storage Temperature Range

- 40 to 85°C

#### Environmental

- Shock: MIL-STD-202F, Method 213B: 1000G, 0.5ms
- Vibration: MIL-STD-202F, Method 204D, Test Condition D: 20G (10Hz-2000Hz), 4hrs in 3 mutually perpendicular planes (total 12hrs)

#### Packaging

- Loose in bulk pack, 100pcs per bag
- Tape and reel in accordance with EIA-481-D, 1kpcs per reel (please see Application Notes)

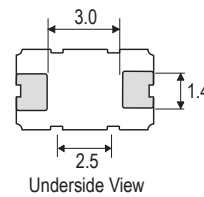
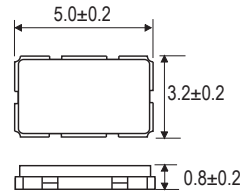
#### Ordering Information (\*minimum required)

- Frequency\*
- Model\*
- Frequency Tolerance (@25°C)
- Frequency Stability (over operating temperature range)
- Operating Temperature Range
- Load Capacitance\*
- Fundamental AT or BT cut, or Overtone AT\*

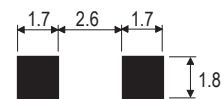
#### Example

- 20.0MHz 4SMX  
50/50/-10 to 60C/10 FUND AT

#### Outline (mm)



#### Solder Pad Layout





**Electrical Specifications – maximum limiting values**

Frequency Range	Frequency Tolerance @25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature Range	ESR Max	Vibration Mode
8.0 to <9.0MHz	±50ppm	-10 to 60°C	±50ppm	300Ω	Fundamental AT cut
9.0 to <10.0MHz				200Ω	
10.0 to <12.0MHz				80Ω	
12.0 to <16.0MHz				60Ω	
16.0 to 67.0MHz				40Ω	
60.0 to 150.0MHz				80Ω	3rd Overtone AT cut
40.0 to 67.0MHz	Inclusive		±100ppm	40Ω	Fundamental BT cut

Note: For other frequency / specification combinations, please contact our sales offices

