

- ▶ Compact and low profile
- ▶ Industry Std. Footprint
- ▶ Extended Temp Range Option
- ▶ RoHS Compliant
- ▶ 6 x 3.5 mm (4 Pad)

# ECX-64

## SMD QUARTZ CRYSTAL

The ECX-64 is a miniature SMD Crystal with a 3.5 x 6 mm 4 pad footprint. This cost effective with a height of 1.1 mm which is ideal for densely populated PCB applications.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS              | CONDITIONS     | ECX-64 |     |         | UNITS |
|-------------------------|----------------|--------|-----|---------|-------|
|                         |                | MIN    | TYP | MAX     |       |
| Frequency Range         |                | 8.000  |     | 100.000 | MHz   |
| Frequency Tolerance     | at +25°C       |        |     | ± 30 *  | ppm   |
| Frequency Stability     | -10 to +70°C   |        |     | ± 50 *  | ppm   |
| Shunt Capacitance       |                |        |     | 7       | pF    |
| Load Capacitance        | Specify in P/N | 10     | 20  | Series  | pF    |
| Drive Level             |                |        |     | 100     | µW    |
| Operating Temperature * |                | -10    |     | +70     | °C    |
| Storage Temperature     |                | -55    |     | +125    | °C    |
| Aging (Per Year)        | @ +25°C ±3°C   |        |     | ±5      | ppm   |

### EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

| FREQUENCY RANGE (MHz) | MODE OF OSC | MAX ESR Ω | FREQUENCY RANGE (MHz) | MODE OF OSC  | MAX ESR Ω |
|-----------------------|-------------|-----------|-----------------------|--------------|-----------|
| 8.000 ~ 9.999         | Fundamental | 60        | 20.000 ~ 49.999       | Fundamental  | 30        |
| 10.000 ~ 13.999       | Fundamental | 50        | 50.000 ~ 100.000      | 3rd Overtone | 80        |
| 14.000 ~ 19.999       | Fundamental | 40        |                       |              |           |

### DIMENSIONS (mm)

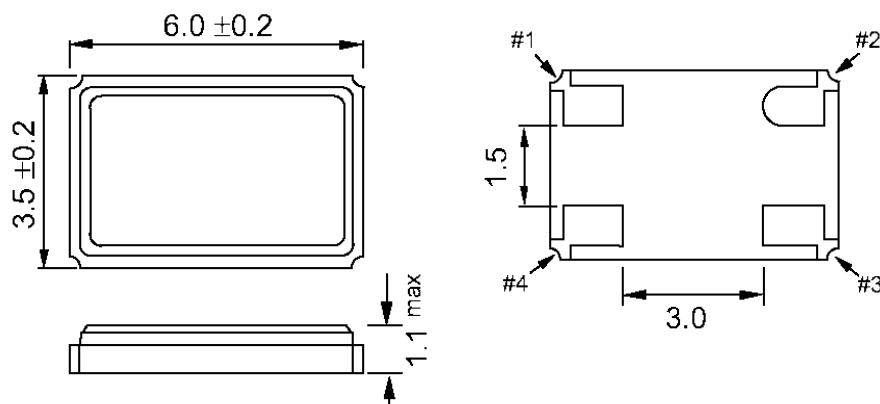


Figure 1) Top, Side, and Bottom views

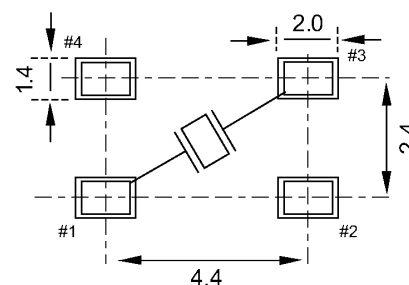


Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-200-20-23B-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz  
See P/N Guide

20 = 20 pF  
S=Series

23B =  
ECX-64

#### Custom Options

Tolerance

Stability

Temp Range

- Packaging

Blank = Std  
A = ± 25 ppm  
J = ± 20 ppm  
R = ± 15 ppm  
C = ± 10 ppm

Blank = Std  
D = ± 100 ppm  
E = ± 50 ppm  
G = ± 30 ppm  
H = ± 25 ppm  
T = ± 20 ppm  
W = ± 15 ppm  
K = ± 10 ppm

Blank = Std  
M = -20 ~ +70°C  
N = -40 ~ +85°C  
P = -40 ~ +105°C  
S = -40 ~ +125°C  
U = -55 ~ +125°C

TR= Tape & Reel  
1K/Reel

\*Consult Factory for available stability options over extended temp range