

- ▶ Compact and low profile
- ▶ Industry Std. Footprint
- ▶ Extended Temp Range Option
- ▶ RoHS Compliant

# ECX-53B

## SMD QUARTZ CRYSTAL

The ECX-53B is a miniature SMD Crystal with a 3.2 x 5 mm footprint. This package is ideal for todays compact wireless applications where board space is critical.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS            | CONDITIONS     | ECX-53B |     |         | UNITS |
|-----------------------|----------------|---------|-----|---------|-------|
|                       |                | MIN     | TYP | MAX     |       |
| Frequency Range       |                | 8.000   |     | 150.000 | MHz   |
| Frequency Tolerance   | at +25°C       |         |     | ± 30 *  | ppm   |
| Frequency Stability   | -20 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 |                | -20     |     | +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 |
|-----------------------|-------------|-----------|-----------------------|--------------|-----------|
| 8.00 ~ 9.999          | Fundamental | 100       | 20.000 ~ 23.999       | Fundamental  | 40        |
| 10.000 ~ 15.999       | Fundamental | 80        | 24.000 ~ 50.000       | Fundamental  | 30        |
| 16.000 ~ 19.999       | Fundamental | 50        | 50.100 ~ 150.000      | 3rd Overtone | 80        |

### DIMENSIONS (mm)

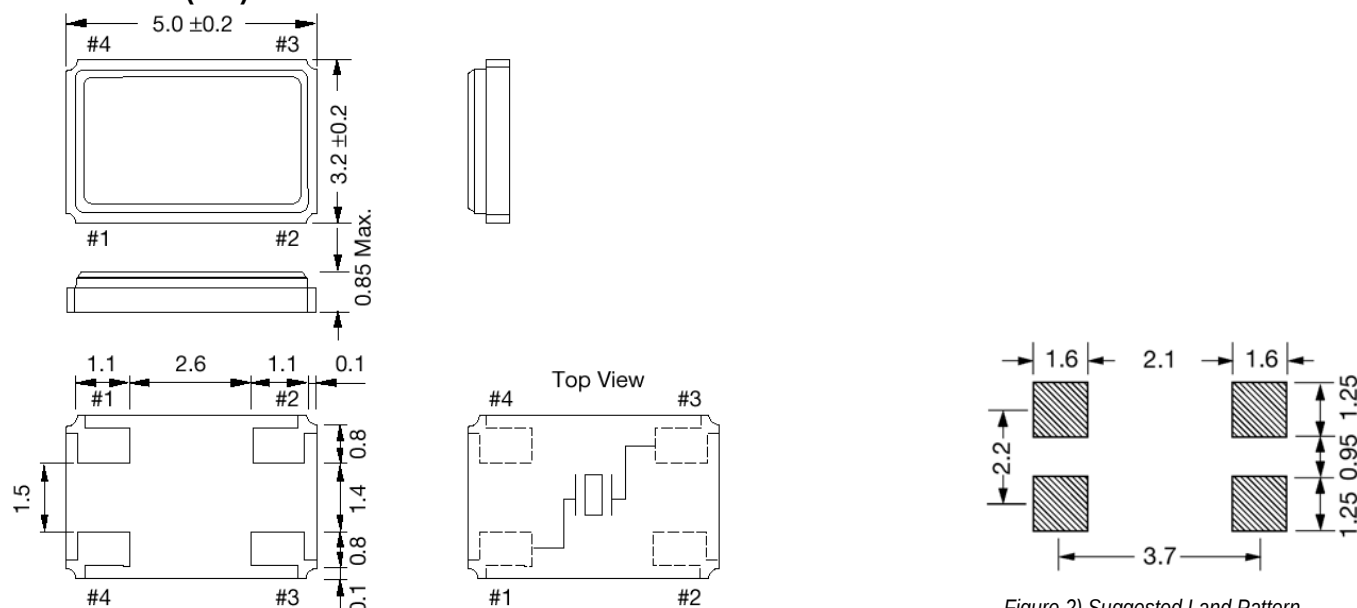


Figure 1) Top, Side, Bottom and End views

Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-200-20-30B-TR

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz  
See P/N Guide

20 = 20 pF  
S=Series

30B =  
ECX-53B

#### Custom Options

| Tolerance                                                                   | * Stability                                                                                                                  | Temp Range                                                                                                    | Packaging                     |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------|
| Blank = Std<br>A = ± 25 ppm<br>J = ± 20 ppm<br>R = ± 15 ppm<br>C = ± 10 ppm | Blank = Std<br>D = ± 100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm<br>H = ± 25 ppm<br>T = ± 20 ppm<br>W = ± 15 ppm<br>K = ± 10 ppm | Blank = Std<br>M = -20 ~ +70°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C<br>S = -40 ~ +125°C<br>U = -55 ~ +125°C | TR= Tape<br>& Reel<br>1K/Reel |

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

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