

- ▶ Low Profile
- ▶ Industry Standard Footprint
- ▶ Extended Temp. Range Option
- ▶ RoHS Compliant

# ECX-3SX

## SMD QUARTZ CRYSTAL

The wide frequency range SMD quartz crystal is an excellent choice for surface mount applications. The ruggedized moulded package is made from the same thermoplastic that is an industry standard for integrated circuits.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS                                           | CONDITIONS                 | ECX-3SX |     |        | UNITS |
|------------------------------------------------------|----------------------------|---------|-----|--------|-------|
|                                                      |                            | MIN     | TYP | MAX    |       |
| Frequency                                            | Fo                         | 3.570   |     | 70.000 | MHz   |
| Frequency Tolerance                                  | @ +25°C                    |         |     | ± 30 * | ppm   |
| Frequency Stability (ref @ 25°C)                     | -10 ~ +70°C                |         |     | ± 50 * | ppm   |
| Shunt Capacitance                                    |                            |         |     | 7.0    | pF    |
| Load Capacitance                                     | Specify in P/N             |         | 20  |        | pF    |
| Drive Level                                          |                            |         |     | 100    | μW    |
| Operating Temperature                                | Topr                       | -10     |     | +70    | °C    |
| Storage Temperature                                  | Tstg                       | -40     |     | +85    | °C    |
| Aging Characteristics (Per Year)                     | @ +25°C ± 3°C              |         |     | ± 5    | ppm   |
| Equivalent Series Resistance/<br>Mode of Oscillation | 3.57 ~ 3.999 MHz (Fund)    |         |     | 200    | Ω     |
|                                                      | 4.00 ~ 5.999 MHz (Fund)    |         |     | 150    | Ω     |
|                                                      | 6.00 ~ 9.999 MHz (Fund)    |         |     | 100    | Ω     |
|                                                      | 10.00 ~ 35.999 MHz (Fund)  |         |     | 50     | Ω     |
|                                                      | 27.00 ~ 70.00 MHz (3rd OT) |         |     | 100    | Ω     |

### PACKAGE DIMENSIONS (mm)

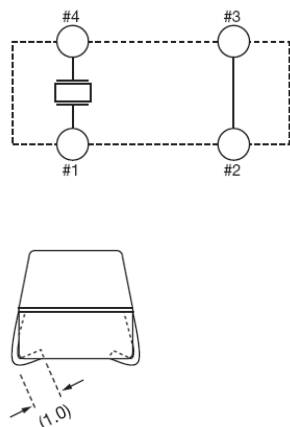
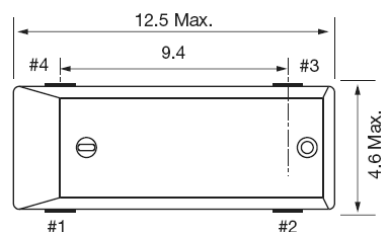


Figure 1) Top, Side and End Views

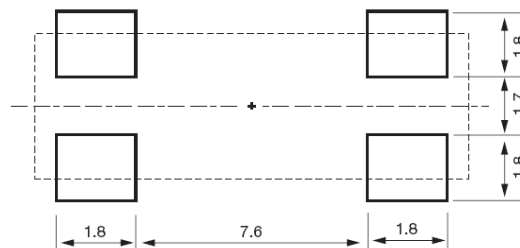


Figure 2) Suggested Land Pattern

### PART NUMBERING GUIDE: Example ECS-160-20-7SX-TR

| ECS | - Frequency Abbreviation                              | - Load                     | - Package Type    | - Tolerance                  | - Stability                                                                   | - Temp Range                                                              | - Packaging                     |
|-----|-------------------------------------------------------|----------------------------|-------------------|------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------|
|     | 160 = 16.000 MHz<br>See P/N Guide for Std Frequencies | 20 = 20.0 pF<br>S = Series | -7SX =<br>ECX-3SX | A = ± 25 ppm<br>C = ± 10 ppm | D = ± 100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm<br>H = ± 25 ppm<br>K = ± 10 ppm | L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C | -TR =<br>Tape & Reel<br>1K/Reel |

\* Tighter Tolerance/Stability Options Available (see custom options)  
Not all stabilities are available at all temp ranges, consult ECS.