

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.

## ECX-3SX SMD CRYSTAL



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

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS             | CONDITIONS     | ECX-3SX |     |        | UNITS |
|------------------------|----------------|---------|-----|--------|-------|
|                        |                | MIN     | TYP | MAX    |       |
| Frequency              |                | 3.570   |     | 70.000 | MHz   |
| Frequency Tolerance*   | @ +25°C        |         |     | ± 30   | ppm   |
| Frequency Stability*   | -10 ~ +70°C    |         |     | ± 50   | ppm   |
| Shunt Capacitance      | Co             |         |     | 7.0    | pF    |
| Load Capacitance       | Specify in P/N |         | 20  |        | pF    |
| Drive Level            | DL             |         |     | 100    | μW    |
| Operating Temperature* | Topr           | -10     |     | +70    | °C    |
| Storage Temperature    | Tstg           | -40     |     | +85    | °C    |
| Aging (First Year)     | @ +25°C ±3°C   |         |     | ±5     | ppm   |

## DIMENSIONS (mm)

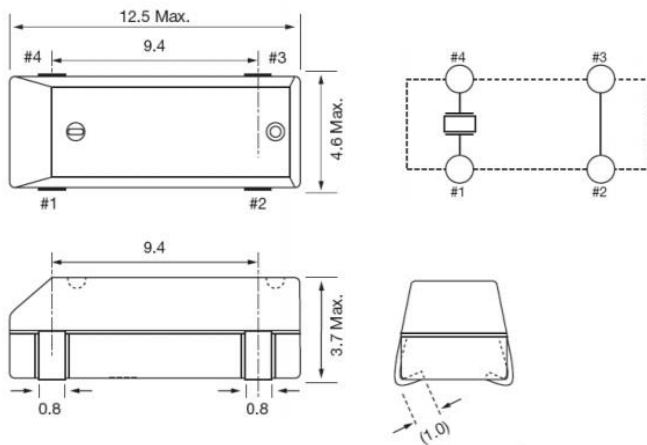


Figure 1) Top, Side, and End

| Frequency (MHz) | ESR Ω Max. | Mode of Osc.             |
|-----------------|------------|--------------------------|
| 3.57 ~ 3.999    | 200        | Fundamental              |
| 4.000 ~ 5.999   | 150        | Fundamental              |
| 6.000 ~ 9.999   | 100        | Fundamental              |
| 10.000 ~ 35.999 | 50         | Fundamental              |
| 27.000 ~ 70.000 | 100        | 3 <sup>rd</sup> Overtone |

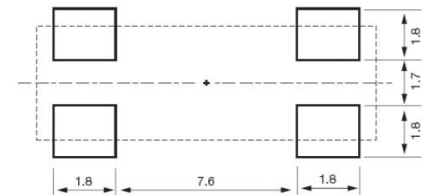


Figure 2) Suggested land

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

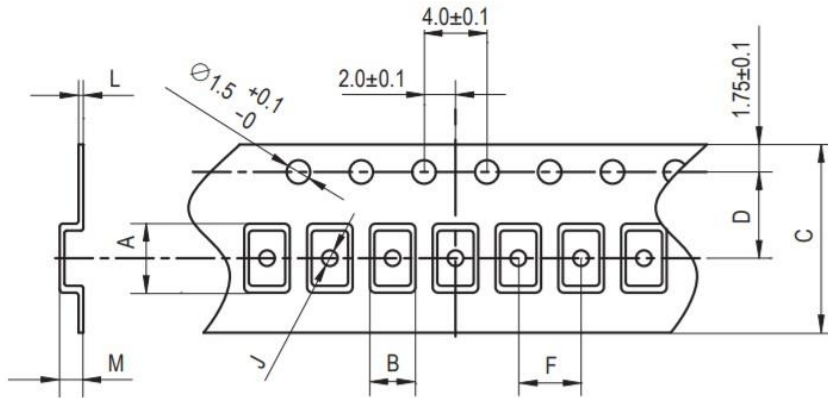
| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE                  | PACKAGE                  | AVAILABLE OPTIONS |   |  | PACKAGING   |                                   |
|------------------------------|-----------------------------------|--------------------------|-------------------|---|--|---|-----------------------------------|
|                              |                                   |                          | Tolerance         | Stability   | Temp Range   |   |                                   |
| ECS                          | 160 = 16.000 MHz<br>See P/N Guide | 20 = 20 pF<br>S = Series | 7SX =<br>ECX-3SX  | 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>L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>Y = -30 ~ +85°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C<br>S = -40 ~ +125°C<br>U = -55 ~ +125°C | TR =<br>Tape<br>& Reel<br>1K/Reel |

\* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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**POCKET TAPE DIMENSIONS (mm)**



| A    | B   | C    | D    | F    | J   | L   | M   | Reel Dia. | Qty/Reel |
|------|-----|------|------|------|-----|-----|-----|-----------|----------|
| 12.8 | 4.8 | 24.0 | 11.5 | 12.0 | 2.2 | 0.4 | 3.9 | 330       | 1000pcs  |

**SOLDER PROFILE**

Peak solder Temp +260°C Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Sn/Cu

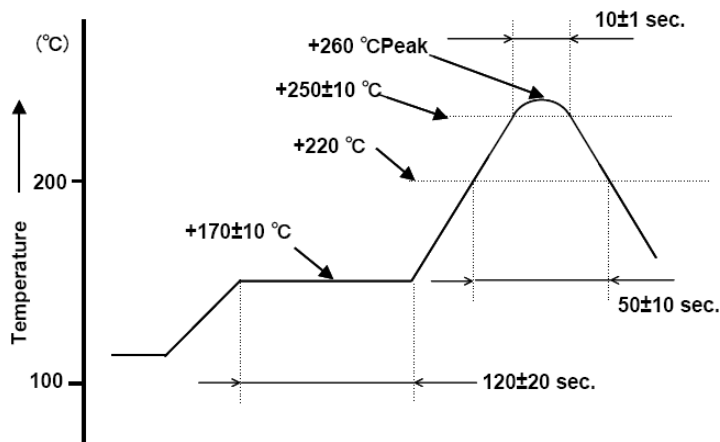


Figure 1) Suggested Reflow Profile