

The ultra-miniature ECX-12 is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.6 mm ceramic package is ideal for today's SMD manufacturing environment.

ECX-12

32.768 KHz

SMD Tuning Fork Crystal

[Request a Sample](#)



- Low Profile
- 2.0 x 1.2 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Applications: Automotive, COTS, Industrial, IOT

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECX-12 | | | UNITS |
|------------------------------|----------------|--------|--------|--------|---------------------|
| | | MIN | TYP | MAX | |
| Frequency | | | 32.768 | | KHz |
| Frequency Tolerance | @ +25°C | | | ± 20 * | ppm |
| Load Capacitance | Specify in P/N | | 12.5 | | pF |
| Drive Level | DL | | 0.1 | 0.5 | µW |
| Equivalent Series Resistance | R1 | | | 90K | Ω |
| Motional Capacitance | | | 7.0 | | fF |
| Turnover Temperature | | +20 | +25 | +30 | °C |
| Temperature Coefficient | | -0.02 | -0.03 | -0.040 | ppm/°C ² |
| Shunt Capacitance | Co | | 1.3 | | pF |
| Aging (First Year) | @ +25°C ±3°C | | | ±3 | ppm |
| Operating Temperature | Topr | -40 | | +85 | °C |
| Storage Temperature | Tstg | -55 | | +125 | °C |

DIMENSIONS (mm)

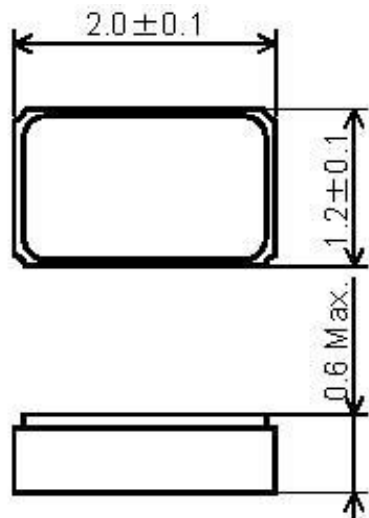
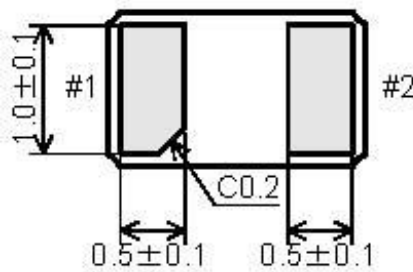


Figure 1) Top, Side, and Bottom views



| PAD CONNECTIONS | |
|-----------------|--------|
| 1 | In/Out |
| 2 | Out/In |

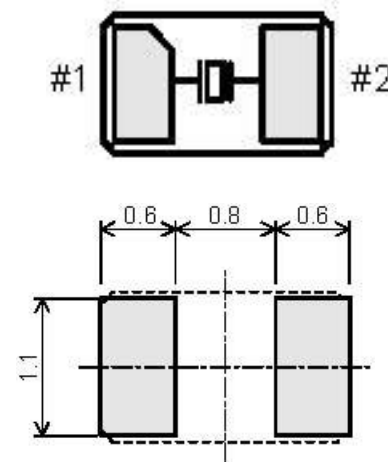


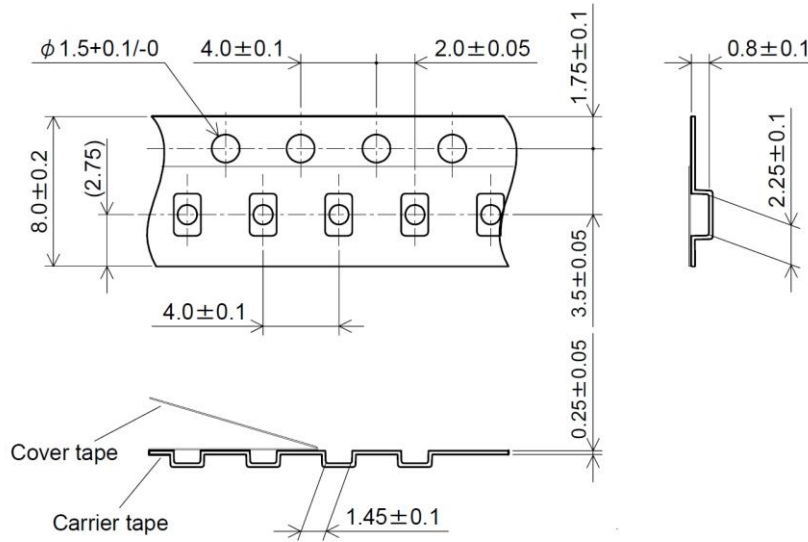
Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-.327-12.5-12-TR

| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE | PACKAGE | CUSTOM OPTIONS Tolerance | PACKAGING |
|------------------------------|---|--------------|-----------------------------------|-----------------------------|
| ECS | .327 = 32.768 KHz 9 = 9 pF 7 = 7 pF 6 = 6 pF | -12 = ECX-12 | Blank = ±20 ppm * C = ± 10 ppm | TR = Tape & Reel 3K/Reel |

*Contact ECS for availability

POCKET TAPE DIMENSIONS (mm)



| SOLDER PROFILE |
|---|
| Peak solder Temp +260°C Max 10 sec Max. |
| 2 Cycles Max. |
| MSL 1, Lead Finish Au |

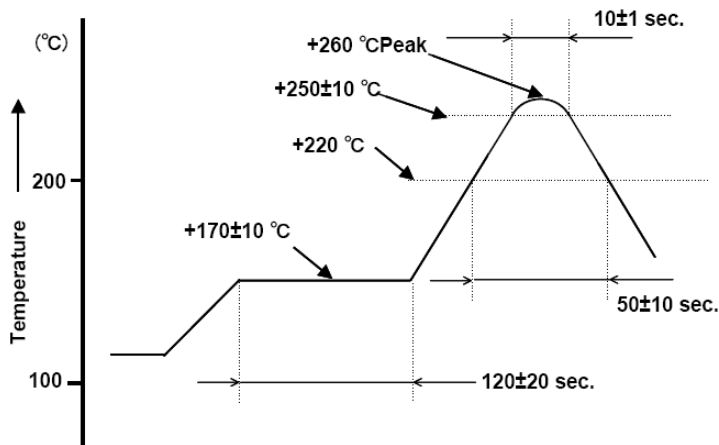


Figure 1) Suggested Reflow Profile