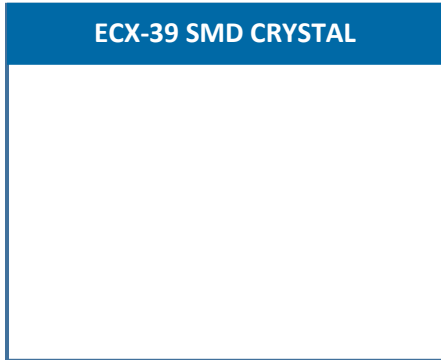


The miniature ECX-39 is a very compact SMD Tuning Fork Crystal. The 4.9 x 1.8 x 1.0 mm ceramic package is ideal for today's SMD manufacturing environment.

[Request a Sample](#)



- Low Profile
- 4.9 x 1.8 mm Footprint
- Extended Temp. Range
- RoHS Compliant

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS                   | CONDITIONS     | ECX-39 |        |        | UNITS               |
|------------------------------|----------------|--------|--------|--------|---------------------|
|                              |                | MIN    | TYP    | MAX    |                     |
| Frequency                    | Fo             |        | 32.768 |        | KHz                 |
| Frequency Tolerance          | @ +25°C        |        |        | ± 20 * | ppm                 |
| Load Capacitance             | Specify in P/N |        | 12.5   |        | pF                  |
| Drive Level                  | DL             |        | 0.1    | 1.0    | μW                  |
| Equivalent Series Resistance | R1             |        |        | 70K    | Ω                   |
| Turnover Temperature         |                | +20    | +25    | +30    | °C                  |
| Temperature Coefficient      |                | -0.028 | -0.034 | -0.040 | ppm/°C <sup>2</sup> |
| Shunt Capacitance            | Co             |        | 1.33   |        | pF                  |
| Aging (First Year)           | @ +25°C ±3°C   |        |        | ±3     | ppm                 |
| Operating Temperature        | Topr           | -40    |        | +85    | °C                  |
| Storage Temperature          | Tstg           | -55    |        | +125   | °C                  |
| Insulation Resistance        | @ 100V DC      | 500M   |        |        | Ω                   |

## DIMENSIONS (mm)

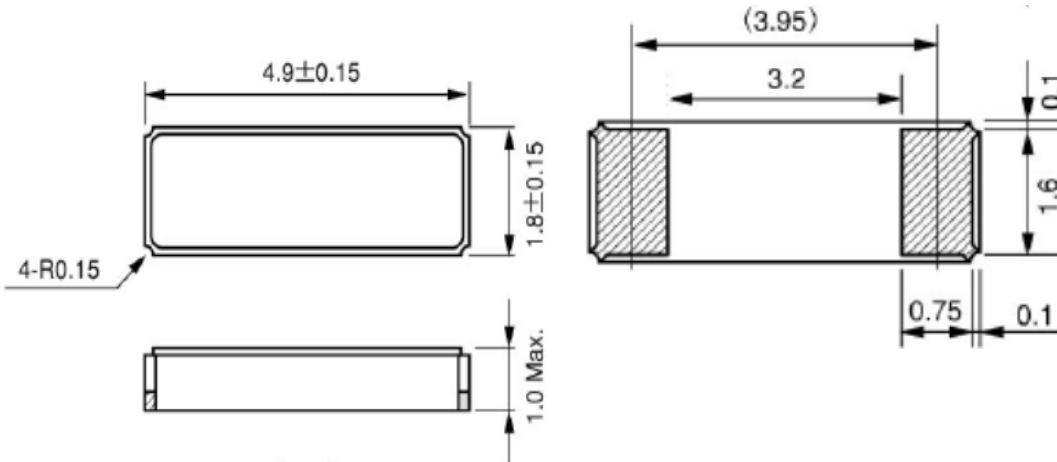


Figure 1) Top, Side, and Bottom views

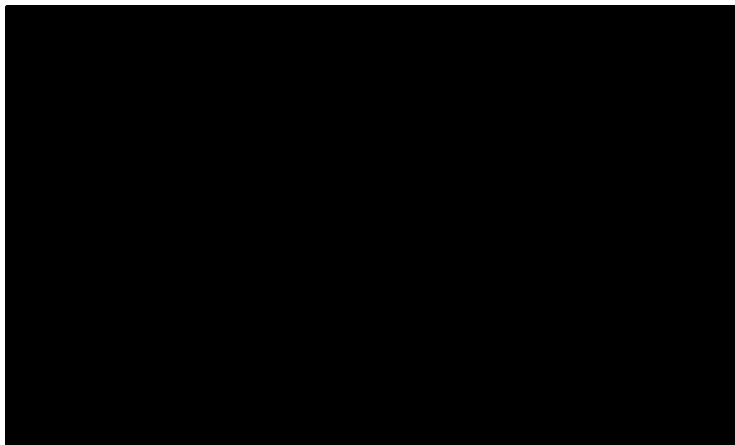
Figure 2) Suggested Land Pattern

## PART NUMBERING GUIDE: Example ECS-.327-12.5-39-TR

| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE  | PACKAGE     | CUSTOM OPTIONS Tolerance          | PACKAGING                   |
|------------------------------|---|-------------|-----------------------------------|-----------------------------|
| ECS                          | .327 = 32.768 KHz<br>12.5 = 12.5 pF<br>9 = 9 pF<br>7 = 7 pF<br>6 = 6 pF | 39 = ECX-39 | Blank = ±20 ppm<br>* C = ± 10 ppm | TR = Tape & Reel<br>3K/Reel |

**POCKET TAPE DIMENSIONS (mm)**

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



*Figure 1) Suggested Reflow Profile*