# FC4SD

(Former HC49SDLF)

## 11.7mm x 5.0mm
## Resistance Weld SMD Crystal

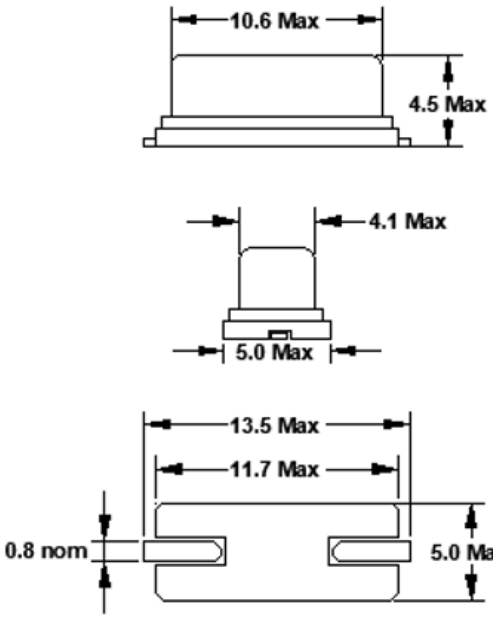
**Features**

- Tolerances down to ±10 ppm
- Stabilities down to ±5 ppm
- Operating Temperature Range to -55°C ~ +125°C

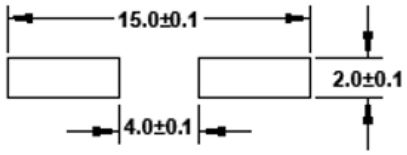
| STANDARD SPECIFICATIONS | |
|---|---|
| **PARAMETERS** | **MAX (Unless otherwise noted)** |
| Frequency Range | 3.200 ~ 80.000 MHz |
| Frequency Tolerance @ 25°C | (See options below) |
| Frequency Stability, ref 25°C<br>Over Operating Temp Range | (See options below) |
| Temperature Range<br>Operating ($T_{OPR}$)<br>Storage ($T_{STG}$) | (See options below)<br>-55°C ~ +125°C |
| Shunt Capacitance ($C_O$) | 7 pF |
| Load Capacitance ($C_L$) | (See options below) |
| Drive Level | 0.5mW (100µW Typical) |
| Aging per year (@ 25°C) | ±3 PPM |
| Maximum Soldering Temp / Time | 260°C / 10 Seconds x 2 |
| Moisture Sensitivity Level (MSL) per J-STD-033 | 1 |
| Termination Finish | Sn/Ag3.0/Cu0.5 |
| Seal Method | Resistance Weld |
| Lead (Pb) Free | Yes |
| RoHS Compliant | Yes-No Exemptions |

| Frequency Range (MHz) | Operating Mode | Max ESR Ω |
|---|---|---|
| 3.200 ~ 3.500 | Fundamental | 300 |
| >3.500 ~ 4.000 | Fundamental | 200 |
| >4.000 ~ 5.000 | Fundamental | 150 |
| >5.000 ~ 6.000 | Fundamental | 120 |
| >6.000 ~ 7.000 | Fundamental | 100 |
| >7.000 ~ 9.000 | Fundamental | 80 |
| >9.000 ~ 13.000 | Fundamental | 60 |
| >13.000 ~ 20.000 | Fundamental | 40 |
| >20.000 ~ 40.000 | Fundamental | 30 |
| 24.000 ~ 70.000 | 3rd OT | 100 |
| >70.000 ~ 80.000 | 3rd OT | 70 |

## DIMENSIONS / MECHANICAL SPECIFICATIONS




**Recommended Solder Pad Layout**




Dimensions are in millimeters.

Note: Dimensional drawing is for reference to critical specifications defined by size measurements. Certain non-critical visual attributes, such as side castellations, etc. may vary.



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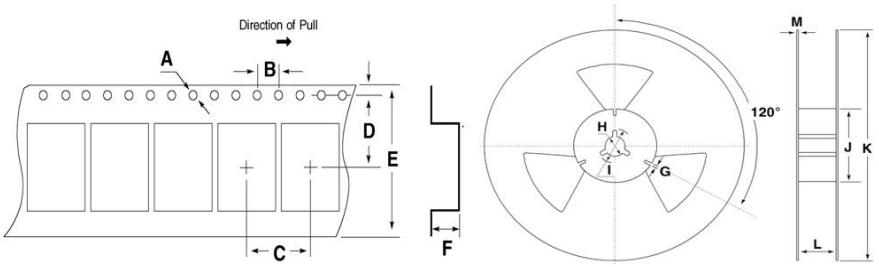
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| AVAILABLE OPERATING TEMPERATURES AND STABILITIES* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Operating Temperature** | **±5 PPM** | **±10 PPM** | **±15 PPM** | **±20 PPM** | **±25 PPM** | **±30 PPM** | **±50 PPM** | **±100 PPM** |
| -10°C to+60°C | O | O | O | O | O | O | O | O |
| -20°C to +70°C | Δ | O | O | O | O | O | O | O |
| -40°C to +85°C | X | X | O | O | O | O | O | O |
| -40°C to+105°C | X | X | X | X | X | Δ | O | O |
| -40°C to+125°C | X | X | X | X | X | X | Δ | O |
| -55°C to+125°C | X | X | X | X | X | X | Δ | O |
| Key: O = Available, X = Not Available, Δ = Consult Fox Technical Support *Does not imply a stocked part. | | | | | | | | |

| TAPE SPECIFICATIONS (mm) | | | | | | | REEL SPECIFICATIONS (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **B** | **C** | **D** | **E** | **F** | **REEL QTY** | **G** | **H** | **I** | **J** | **K** | **L** | **M** |
| ø1.55 | 4.0 | 12.0 | 11.5 | 24.0 | 4.8 | -T1 = 1,000 | 2.0 | Ø13 | Ø21 | Ø80 | Ø330 | 25.5 | 2.0 |




### Available Options & Part Identification for Crystal Model FC4SD[1]

**Sample PN: FC4SDCBMF25.0-T1**

| F | C4SD | C | B | M | F | 25.0 | -T1 |
|---|---|---|---|---|---|---|---|
| **Fox** | **Model Number** | **Tolerance** | **Stability** | **Load Capacitance[2]** | **Operating Temperature** | **Frequency (MHz)** | **Values Added Options** |
| | | B = ±50ppm<br>**C = ±30ppm**<br>D = ±25ppm<br>E = ±20ppm<br>F = ±15ppm<br>H = ±10ppm | A = ±100 ppm<br>**B = ±50 ppm**<br>C = ±30 ppm<br>D = ±25 ppm<br>E = ±20 ppm<br>F = ±15 ppm<br>H = ±10 ppm<br>L = ±5 ppm | A = Series<br>E = 10pF<br>G = 12pF<br>J = 15pF<br>K = 16pF<br>L = 18pF<br>**M = 20pF**<br>R = 32pF | D = -10 to +60°C<br>**F = -20 to +70°C**<br>M = -40 to +85°C<br>P = -40 to +105°C<br>I = -40 to +125°C<br>T = -55 to +125°C | | Blank = Bulk<br>T1 = 1,000 pcs |

1 Not all frequency, tolerance, stability, load, and operating temperature combinations may be available.
2 Listed load capacitances represent the most commonly used. Other load capacitances are available. Contact us for assistance

| Line | Marking |
|---|---|
| 1 | **FSXXXXXP**<br>F =Fox<br>S = Product Code (HC49SLF).<br>XXXXX = Frequency: 5 digits including decimal point. (8.000, 10.00, etc.)<br>P = parallel resonance. (Blank=series.) |

| Reliability Test Conditions |
|---|
| Please contact Abracon Quality Assurance department |



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