



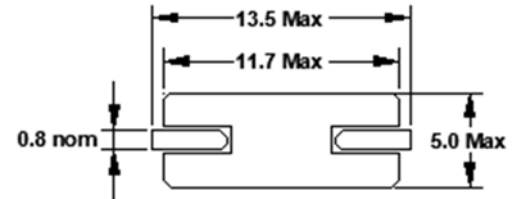
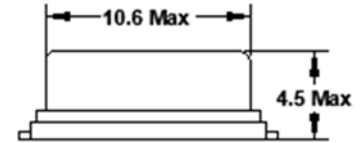
# Resistance Weld SMD Crystal C4SD

(former HC49SDF)

## DATASHEET

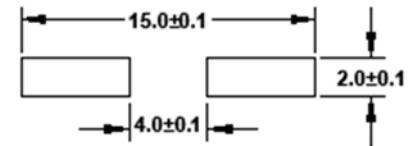
- Tolerances down to  $\pm 10$ ppm
- Stabilities down to  $\pm 5$ ppm
- Temperature Ranges as wide as  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

| • SPECIFICATIONS                 |   |
|----------------------------------|---|
| PARAMETERS                       | MAX (unless otherwise noted)                    |
| Frequency Range                  | 3.200 ~ 80.000 MHz                              |
| Frequency Tolerance @ 25°C       | (see options on page 2)                         |
| Frequency Stability, ref @ 25°C  | (see options below)                             |
| Temperature Range                |   |
| Operating (TOPR)                 | (see options below)                             |
| Storage (TSTG)                   | $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ |
| Shunt Capacitance (Co)           | 7pF   |
| Load Capacitance (CL)            | (see options on page 2)                         |
| Drive Level                      | 0.5 mW (0.1 mW typical)                         |
| Aging per year                   | $\pm 3$ PPM                                     |
| Maximum Soldering Temp / Time    | $260^{\circ}\text{C} / 10$ Seconds x 2          |
| Moisture Sensitivity Level (MSL) | 1   |
| Termination Finish:              | Sn/Ag3/Cu0.5                                    |
| Seal Method                      | Resistance Weld                                 |
| Lead (Pb) Free                   | Yes   |
| RoHS Compliant                   | Yes - No Exemptions                             |



| Frequency Range (MHz) | Operating Mode | Max ESR $\Omega$ |
|-----------------------|----------------|------------------|
| 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               |

### 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.

### •Available Operating Temperatures and Stabilities\*

| Stability Temperature           | $\pm 5$ PPM | $\pm 10$ PPM | $\pm 15$ PPM | $\pm 20$ PPM | $\pm 25$ PPM | $\pm 30$ PPM | $\pm 50$ PPM | $\pm 100$ PPM |
|---------------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| -10 to $+60^{\circ}\text{C}$    | O           | O            | O            | O            | O            | O            | O            | O             |
| -20 to $+70^{\circ}\text{C}$    | $\Delta$    | O            | O            | O            | O            | O            | O            | O             |
| -40 to $+85^{\circ}\text{C}$    | X           | X            | O            | O            | O            | O            | O            | O             |
| -40 to $+105^{\circ}\text{C}$   | X           | X            | X            | X            | X            | $\Delta$     | O            | O             |
| -40 to $+125^{\circ}\text{C}$   | X           | X            | X            | X            | X            | X            | $\Delta$     | O             |
| $-55$ to $+125^{\circ}\text{C}$ | X           | X            | X            | X            | X            | X            | $\Delta$     | O             |

Key: O=Available, X=Not Available,  $\Delta$ =Consult Fox Technical Support  
 \* Does Not imply a stocked part

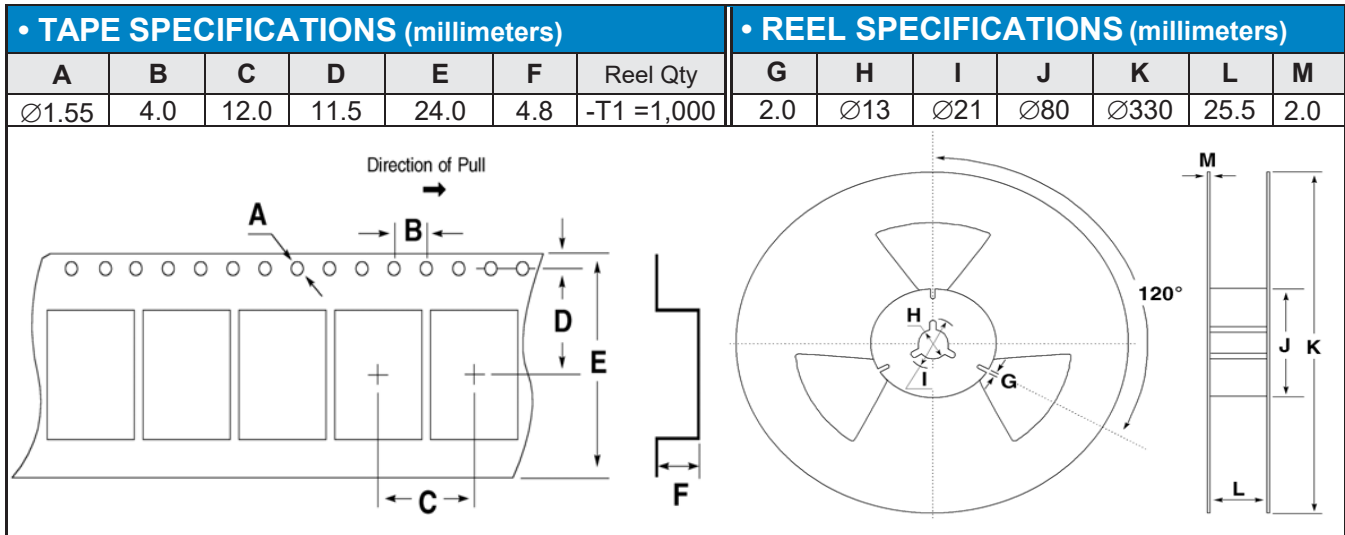
|  |   |                                  |
|--|---|----------------------------------|
| <p>© Copyright 2019 Fox Electronics. All rights reserved</p> | <b>Title / Description:</b> C4SD SERIES STANDARD SPECIFICATIONS |                                  |
|  | <b>Drawing Number:</b> C4SD-DOC-1                               | <b>Size:</b> A                   |
|  | <b>Part Number:</b>   | <b>Case:</b> 61429               |
|  | <b>Draftsperson:</b> MAJ  | <b>Approved:</b> BEC             |
|  |   | <b>Revision Date:</b> 06/10/2019 |



# Resistance Weld SMD Crystal C4SD

(former HC49SDLF)

## DATASHEET



### Available Options & Part Identification for Crystal Model C4SD<sup>1</sup>

#### F C4SD C B M F 25.0

| F          | C4SD                | C   | B   | M  | F  | 25.0                   |
|------------|---------------------|---|---|--|--|------------------------|
| <b>FOX</b> | <b>Model Number</b> | <b>Tolerance</b><br>B = ±50ppm<br><b>C = ±30ppm</b><br>D = ±25ppm<br>E = ±20ppm<br>F = ±15ppm<br>H = ±10ppm | <b>Stability</b><br>A = ±100ppm<br><b>B = ±50ppm</b><br>C = ±30ppm<br>D = ±25ppm<br>E = ±20ppm<br>F = ±15ppm<br>H = ±10ppm<br>L = ±5ppm | <b>Load Capacitance<sup>2</sup></b><br>A = Series<br>E = 10pF<br>G = 12pF<br>J = 15pF<br>K = 16pF<br>L = 18pF<br><b>M = 20pF</b> | <b>Operating Temperature</b><br>D = -10 to +60°C<br><b>F = -20 to +70°C</b><br>M = -40 to +85°C<br>P = -40 to +105°C<br>I = -40 to +125°C<br>T = -55 to +125°C | <b>Frequency (MHz)</b> |

<sup>1</sup> Not all frequency, tolerance, stability, load, and operating temperature combinations may be available.

<sup>2</sup> Listed load capacitances represent the most commonly used. Other load capacitances are available. Contact Fox Technical Support for assistance



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|  |   |                                  |
|--|---|----------------------------------|
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|  | <b>Drawing Number:</b> C4SD-DOC-1                               | <b>Size:</b> A                   |
|  | <b>Part Number:</b>   | <b>Cage:</b> 61429               |
|  | <b>Draftsperson:</b> MAJ  | <b>Approved:</b> BEC             |
|  |   | <b>Revision Date:</b> 06/10/2019 |

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