



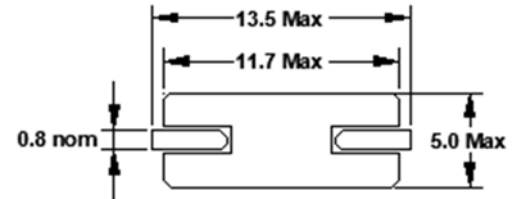
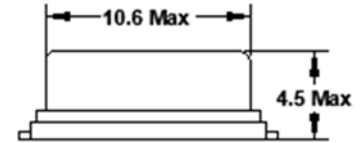
Resistance Weld SMD Crystal C4SD

(former HC49SDF)

DATASHEET

- Tolerances down to ± 10 ppm
- Stabilities down to ± 5 ppm
- Temperature Ranges as wide as -55°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 | ± 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 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 |

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 | ± 5 PPM | ± 10 PPM | ± 15 PPM | ± 20 PPM | ± 25 PPM | ± 30 PPM | ± 50 PPM | ± 100 PPM |
|---------------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| -10 to $+60^{\circ}\text{C}$ | O | O | O | O | O | O | O | O |
| -20 to $+70^{\circ}\text{C}$ | Δ | 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 | Δ | O | O |
| -40 to $+125^{\circ}\text{C}$ | X | X | X | X | X | X | Δ | O |
| -55 to $+125^{\circ}\text{C}$ | 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

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



Resistance Weld SMD Crystal C4SD

(former HC49SDLF)

DATASHEET



Available Options & Part Identification for Crystal Model C4SD¹

F C4SD C B M F 25.0

| F | C4SD | C | B | M | F | 25.0 |
|------------|---------------------|---|---|--|--|------------------------|
| <u>FOX</u> | <u>Model Number</u> | <u>Tolerance</u> B = ±50ppm C = ±30ppm D = ±25ppm E = ±20ppm F = ±15ppm H = ±10ppm | <u>Stability</u> A = ±100ppm B = ±50ppm C = ±30ppm D = ±25ppm E = ±20ppm F = ±15ppm H = ±10ppm L = ±5ppm | <u>Load Capacitance²</u> A = Series E = 10pF G = 12pF J = 15pF K = 16pF L = 18pF M = 20pF | <u>Operating Temperature</u> D = -10 to +60°C F = -20 to +70°C M = -40 to +85°C P = -40 to +105°C I = -40 to +125°C T = -55 to +125°C | <u>Frequency (MHz)</u> |

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 Fox Technical Support for assistance



Corporate
Headquarters
5570 Enterprise Parkway
Fort Myers, FL 33905
<http://www.FOXONLINE.com>

Sales
1-888-GET-2-FOX (1-888-438-2369) or
1-239-693-0099
<http://www.FOXONLINE.com/repdisty>

Tech Support
<http://www.FOXONLINE.com/email>

PRODUCT USE: Fox Electronics reserves the right to modify the products and/or specifications described herein at any time and at Fox Electronics' sole discretion. All information in this document, including descriptions of product features and performance, is subject to change without notice. Performance specifications and the operating parameters of the described products are determined in the independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of Fox Electronics' products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of Fox Electronics or any third parties.

Fox Electronics' products are not intended for use in applications involving extreme environmental conditions or in life support systems or similar devices where the failure or malfunction of a Fox Electronics product can be reasonably expected to significantly affect the health or safety of users. Anyone using a Fox Electronics product in such a manner does so at their own risk, absent an express, written agreement by Fox Electronics.

Fox Electronics and the Fox logo are registered trademarks of Fox Electronics. Product specification is subject to change without notice. Other trademarks and service marks used herein, including protected names, logos and designs, are the property of Fox Electronics or their respective third-party owners. For datasheet type definitions and a glossary of common terms, visit <http://www.foxonline.com/tgcrystals.html>.

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