



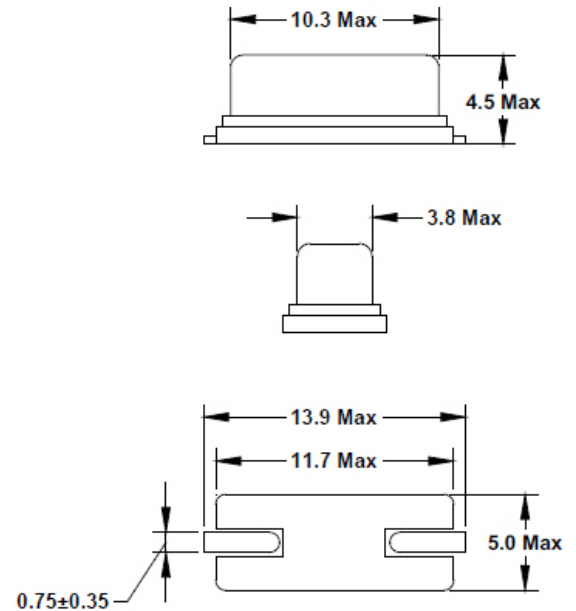
# 13.9x5mm SMD Crystal

**C4SD**  
(former HC49SDLF)  
**DATASHEET**

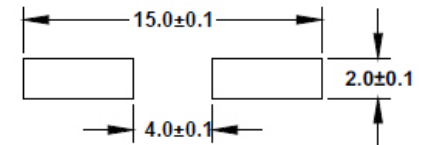
- Tolerances down to 10ppm
- Stabilities down to 5ppm
- Temperature Ranges as wide as -55°C to +125°C

• 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°C ~ +125°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°C / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish:	Sn/3.0Ag/0.5Cu
Seal Method	Resistance Weld
Lead (Pb) Free	Yes
RoHS Compliant	No Exemptions

Crystal has a ±30ppm tolerance specification for all standard part numbers.



### Recommended HC49SD 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.

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

### •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°C	O	O	O	O	O	O	O	O
-20 to +70°C	Δ	O	O	O	O	O	O	O
-40 to +85°C	X	X	O	O	O	O	O	O
-40 to +105°C	X	X	X	X	X	Δ	O	O
-40 to +125°C	X	X	X	X	X	X	Δ	O
-55 to +125°C	X	X	X	X	X	X	Δ	O

Key: O=Available, X=Not Available, Δ=Consult Fox Technical Support

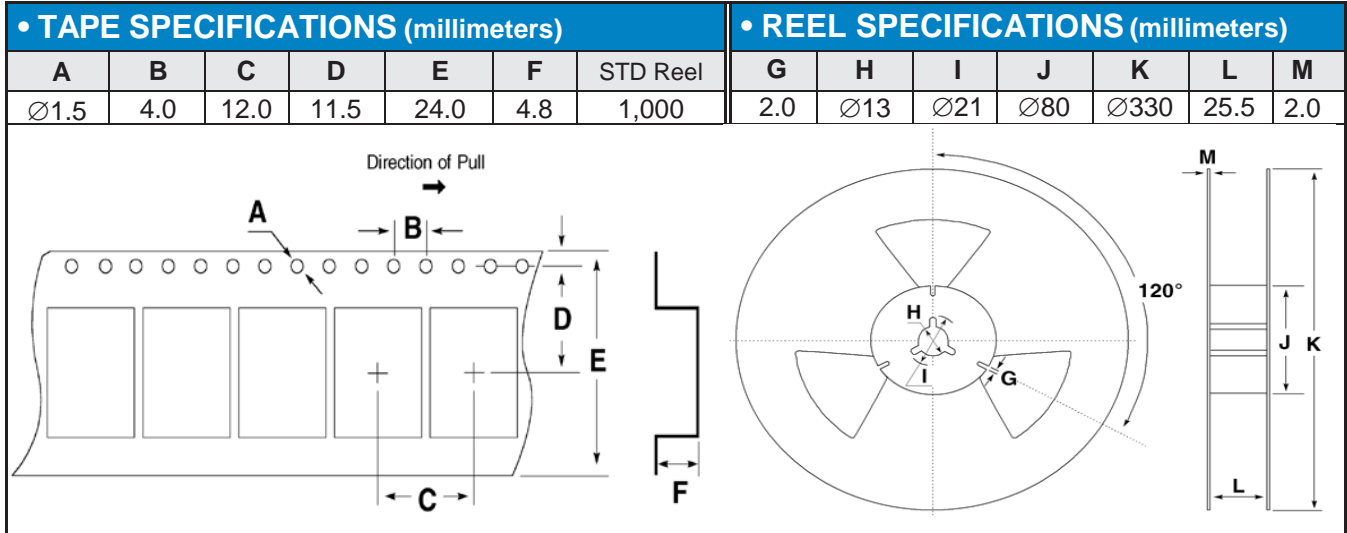
\* Does Not imply a stocked part

<p>© Copyright 2017 Fox Electronics. All rights reserved</p>	<b>Title / Description:</b> C4SD SERIES STANDARD SPECIFICATIONS		
	<b>Drawing Number:</b> 100954		<b>Size:</b> A
	<b>Part Number:</b>		<b>Cage:</b> 61429
	<b>Draftsperson:</b> CMR	<b>Approved:</b> RB	<b>Revision Date:</b> 08/23/2017



# 13.9x5mm SMD Crystal

**C4SD**  
(former HC49SDF)  
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**Available Options & Part Identification for Crystal Model C4SD\***  
**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> B=50ppm <b>C=30ppm</b> D=25ppm E=20ppm F=15ppm H=10ppm	<b>Stability</b> A=100ppm <b>B=50ppm</b> C=30ppm D=25ppm E=20ppm F=15ppm H=10ppm L=5ppm	<b>Load Capacitance</b> A=Series E=10pF G=12pF J=15pF K=16pF L=18pF <b>M=20pF</b> N=22pF Q=30pF R=32pF	<b>Operating Temperature</b> D=-10 to +60C <b>F=-20 to +70C</b> M=-40 to +85C P=-40 to +105C I=-40 to +125C T=-55 to +125C	<b>Frequency (MHz)</b>

\*Not all frequency, tolerance, stability, load, and operating temperature combinations may be available.

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# 13.9x5mm SMD Crystal

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## • HC49SDFL Standard Crystals

Part Number	Frequency	Tolerance	Stability	Temp Range	CL
FOXSDLF/036S	3.579545	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	18pF
FOXSDLF/0368-20	3.686400	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/040	4.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/041	4.194304	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/049-20	4.915200	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/060-20	6.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/073-20	7.372800	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/080-20	8.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/081-20	8.192000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/100-20	10.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/115-20	11.059200	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/120-20	12.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/128-20	12.288000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/143-20	14.318180	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/147-20	14.745600	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/160-20	16.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/200-20	20.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/221-20	22.118400	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/240F-20	24.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/245F-20	24.576000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/250F-20	25.000000	+/- 30 ppm	+/- 50 ppm	-20 to +70 C	20pF
FOXSDLF/0368R-20	3.686400	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/040R	4.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/060R-20	6.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/073R-20	7.372800	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/080R-20	8.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/100R-20	10.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/115R-20	11.059200	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/120R-20	12.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/143R-20	14.318180	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/160R-20	16.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/200R-20	20.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/240FR-20	24.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/245FR-20	24.576000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF
FOXSDLF/250FR-20	25.000000	+/- 30 ppm	+/- 50 ppm	-40 to +85 C	20pF

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