Distributor Stocking Part Fox Part Number: FOXSDLF/245FR-20



5.0 Max

LEAD-FREE, RESISTANCE WELD, SMD, CRYSTAL MODEL: HC49SDLF Series (please use FOXSDLF/245FR-20/TR for full, 1k, reels)

RoHS / REACH Compliant / Pb Free

ParametersFrequency 24.576 MHz Resonance ModeFundamentalFrequency Tolerance @ 25°C $\pm 30 \text{ PPM Max}$ Frequency Stability, ref @ 25°C $\pm 50 \text{ PPM Max}$ Over Operating Temp. Range $\pm 50 \text{ PPM Max}$ Temperature Range $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ Operating (ToPR) $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ Storage (TsTG) $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ Equivalent Series Resistance (ESR) 30 Ohms Max Shunt Capacitance (Co) 30 Ohms Max Absolute Maximum 7.0 pF Load Capacitance (Cl) 20 pF Drive Level 0.1 mW Max Aging per year $\pm 3 \text{ PPM Max}$ Maximum Soldering Temp / Time $260^{\circ}\text{C} / 10 \text{ Seconds}$ Termination Finish (96.5%-3%-0.5%) $\text{Sn} - \text{Ag} - \text{Cu}$ Moisture Sensitivity Level (MSL)1Weight (TYP) 649 mg	A. Specifications			
Resonance ModeFundamentalFrequency Tolerance @ 25°C ± 30 PPM MaxFrequency Stability, ref @ 25°C ± 50 PPM MaxOver Operating Temp. Range ± 50 PPM MaxTemperature Range $-40°C \sim +85°C$ Storage (T _{STG}) $-40°C \sim +125°C$ Equivalent Series Resistance (ESR)30 Ohms MaxShunt Capacitance (C ₀) 7.0 pF Load Capacitance (C _L)20 pFDrive Level 0.1 mW Max Aging per year ± 3 PPM MaxMaximum Soldering Temp / Time $260°C / 10$ SecondsTermination Finish (96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Parameters			
Frequency Tolerance @ 25°C ± 30 PPM MaxFrequency Stability, ref @ 25°C ± 50 PPM MaxOver Operating Temp. Range ± 50 PPM MaxTemperature Range $-40°C \sim +85°C$ Operating (T_{OPR}) $-40°C \sim +125°C$ Storage (T_{STG}) $-40°C \sim +125°C$ Equivalent Series Resistance (ESR)30 Ohms MaxShunt Capacitance (C_0) 20 pFLoad Capacitance (C_L) 20 pFDrive Level 0.1 mW MaxAging per year ± 3 PPM MaxMaximum Soldering Temp / Time $260°C / 10$ SecondsTermination Finish (96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Frequency	24.576 MHz		
Frequency Stability, ref @ 25°C Over Operating Temp. Range ± 50 PPM MaxTemperature Range Operating (T_{OPR}) Storage (T_{STG}) $-40°C \sim +85°C$ $-40°C \sim +125°CEquivalent Series Resistance (ESR)30 Ohms MaxShunt Capacitance (C_0)Absolute Maximum7.0 pFLoad Capacitance (C_L)20 pFDrive Level0.1 mW MaxAging per year\pm 3 PPM MaxMaximum Soldering Temp / Time260°C / 10 SecondsTermination Finish (96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1$	Resonance Mode	Fundamental		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Frequency Tolerance @ 25°C	±30 PPM Max		
$\begin{array}{c c} Operating (T_{OPR}) & -40^{\circ}C \sim +85^{\circ}C \\ Storage (T_{STG}) & -40^{\circ}C \sim +125^{\circ}C \\ \hline Equivalent Series Resistance (ESR) & 30 Ohms Max \\ \hline Shunt Capacitance (C_0) & & \\ Absolute Maximum & 7.0 pF \\ \hline Load Capacitance (C_L) & 20 pF \\ \hline Drive Level & 0.1 mW Max \\ \hline Aging per year & \pm 3 PPM Max \\ \hline Maximum Soldering Temp / Time & 260^{\circ}C / 10 Seconds \\ \hline Termination Finish (96.5\%-3\%-0.5\%) & Sn - Ag - Cu \\ \hline Moisture Sensitivity Level (MSL) & 1 \\ \hline \end{array}$		±50 PPM Max		
Shunt Capacitance (Co) Absolute Maximum7.0 pFLoad Capacitance (CL)20 pFDrive Level0.1 mW MaxAging per year±3 PPM MaxMaximum Soldering Temp / Time260°C / 10 SecondsTermination Finish (96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Operating (T _{OPR})			
$\begin{tabular}{ c c c c c } \hline Absolute Maximum & 7.0 pF \\ \hline Load Capacitance (C_L) & 20 pF \\ \hline Drive Level & 0.1 mW Max \\ \hline Aging per year & \pm 3 PPM Max \\ \hline Maximum Soldering Temp / Time & 260°C / 10 Seconds \\ \hline Termination Finish (96.5%-3%-0.5\%) & Sn - Ag - Cu \\ \hline Moisture Sensitivity Level (MSL) & 1 \\ \hline \end{tabular}$	Equivalent Series Resistance (ESR)	30 Ohms Max		
Drive Level0.1 mW MaxAging per year±3 PPM MaxMaximum Soldering Temp / Time260°C / 10 SecondsTermination Finish(96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1		7.0 pF		
Aging per year±3 PPM MaxMaximum Soldering Temp / Time260°C / 10 SecondsTermination Finish (96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Load Capacitance (CL)	20 pF		
Maximum Soldering Temp / Time260°C / 10 SecondsTermination Finish(96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Drive Level	0.1 mW Max		
Termination Finish(96.5%-3%-0.5%)Sn – Ag – CuMoisture Sensitivity Level (MSL)1	Aging per year	±3 PPM Max		
Moisture Sensitivity Level (MSL) 1	Maximum Soldering Temp / Time	260°C / 10 Seconds		
	Termination Finish (96.5%-3%-0.5%)	Sn – Ag – Cu		
Weight (TYP) 649 mg	Moisture Sensitivity Level (MSL)	1		
	Weight (TYP)	649 mg		

Marking Format Frequency (Mhz)

FS24.57P

P = Parallel Resonance

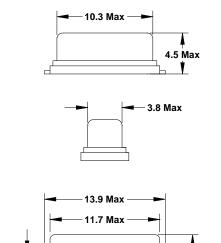
(Blank = Series)

HC49SLF

or HC49SDLF

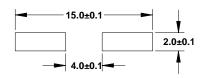
Fox

B. Mechanical / Dimensions (millimeters):

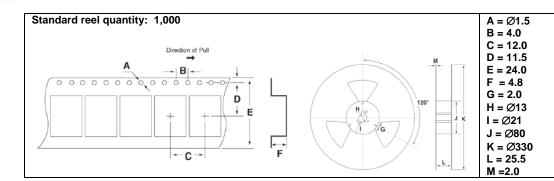




Recommended HC49SD Solder Pad Layout



Tape and Reel Specification (mm)



<u>NOTE</u>: The above specifications, having been carefully prepared and checked, is believed to be accurate at the time of publication; however, no responsibility is assumed by Fox Electronics for inaccuracies.

Reference / Comments	Title / Description: Product Specifications			
Initial release	Drawing Number: DOC101002 Rev: 1		Size: A	
	Part Number: FOXSDLF/245FR-20		Cage: 61429	
	Draftsperson: AR	Approved:	GB	Date: 05-20-2014
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