



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

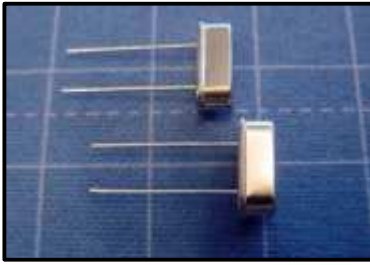
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HC-49US-DN Extended Temp Range Crystal



The HC-49US-DN is the extended temp range version of our standard HC-49US crystal. The DN version has an operating temperature of -40 to +85°C and a frequency stability of ± 100 ppm. The HC-49US-DN is a low cost option for today's industrial applications.

FEATURES

- Cost effective
- Resistance-weld sealing
- Extended Temp range

PART NUMBERING GUIDE "EXAMPLE"

ECS	-	FREQUENCY (4.000 MHz)	-	LOAD CAPACITANCE*	-	PACKAGE TYPE **	-	Suffix
ECS	-	40	-	20	-	4	-	DN

* Load Capacitance (xx=xx pF, S=series resonance) ** Package Type examples (-4=3.5 mm max. height, -4L = 2.5 mm max. height)
 DN Suffix, D= ± 100 ppm frequency stability, N = -40 to +85°C temp range

OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
FREQUENCY RANGE		3.579545		70.000	MHz
CALIBRATION TOLERANCE	@ +25°C			± 30	PPM
FREQUENCY STABILITY, ref @25°C	-40 ~ +85°C			± 100	PPM
SHUNT CAPACITANCE				7	pF
LOAD CAPACITANCE	C _L (Customer Specified)	10	20.0 std	Series	pF
DRIVE LEVEL	DL			500	μ W
OPERATING TEMPERATURE	T _{OPR}	-40		+85	°C
STORAGE TEMPERATURE	T _{STG}	-40		+105	°C
AGING CHARACTERISTICS (Per Year)	@ +25°C $\pm 3^\circ$ C per year			± 5	PPM

EQUIVALENT SERIES RESISTANCE / MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC.	MAX. ESR (W)	FREQUENCY RANGE (MHz)	MODE OF OSC.	MAX. ESR (W)
3.579545 - 3.999	Fundamental	200	9.000 - 12.999	Fundamental	60
4.000 - 4.999	Fundamental	150	13.000 - 19.999	Fundamental	40
5.000 - 5.999	Fundamental	100	20.000 - 30.000	Fundamental	30
6.000 - 6.999	Fundamental	80	27.000 - 70.000	3rd O/T	100
7.000 - 8.999	Fundamental	80			

PACKAGE DIMENSIONS (mm)

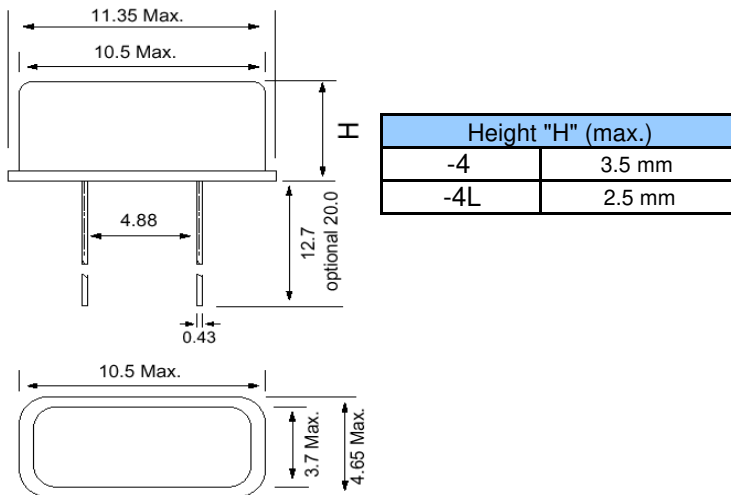


Figure 1) HC-49US-DN - Top and Side Views