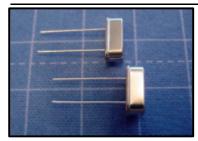
# HC-49US-DN Extended Temp Range Crystal





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"

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

<sup>\*</sup> 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 CL (Customer Specified)		10	20.0 std	Series	pF
DRIVE LEVEL	DL			500	μW
OPERATING TEMPERATURE	Topr	-40		+85	°C
OPERATING TEMPERATURE STORAGE TEMPERATURE	Topr Tstg	-40 -40		+85 +105	°C °C

#### 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)

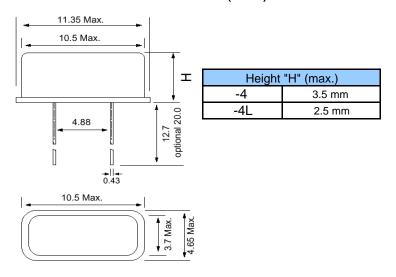


Figure 1) HC-49US-DN - Top and Side Views