



- Cost effectiveLow profile
- ▶ Pb Free/RoHS Compliant

# HC-49USX Quartz Crystal

The HC-49USX is the low profile resistance weld type Thru Hole quartz crystal.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	F	IC-49US	X	UNITS	
PARAMETERS	CONDITIONS	MIN	TYP	MAX		
Frequency Range	fo	3.57		70.000	MHz	
Frequency Tolerance	at +25°C			± 30	ppm	
Frequency Stability ref @ 25°C	Standard -10 to +70°C			± 50	ppm	
Shunt Capacitance	Со			7	pF	
Load Capacitance (CL)	Specify in P/N	10	20	Series	pF	
Drive Level				500	μW	
Operating Temperature	Standard	-10		+70	°C	
Storage Temperature		-55		+125	°C	
Aging (First Year)	@ +25°C ±3°C			±5	ppm	

#### **EOUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION**

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
3.57 ~ 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	120	20.000 ~ 30.000	Fundamental	30
6.000 ~ 6.999	Fundamental	100	27.000 ~ 70.000	3rd Overtone	100
7.000 ~ 8.999	Fundamental	80			

# PACKAGE DIMENSIONS (mm)

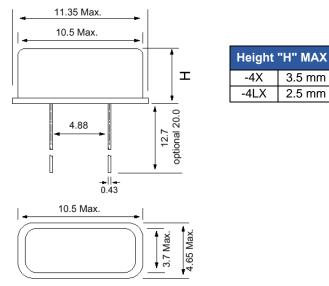


Figure 1) Side and Top views

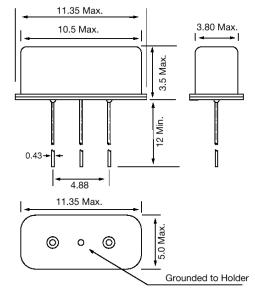


Figure 2) HC-49USX (-4X-3IL) 3rd In Line Lead Base Side, Bottom and End View.

## PART NUMBERING GUIDE: Example ECS-200-20-4X

# ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz See P/N Guide 20 =20 pF S=Series 4X = 3.5 mm 4LX = 2.5 mm 4X-3IL =3rd In Line Lead Base A= ±25 ppm C= ±10 ppm

**Tolerance** 

D= ±100 ppm E= ±50 ppm G= ±30 ppm H= ±25 ppm K= ±10 ppm

**Custom Options** 

Temp Range

L= -10 ~ +70°C

M= -20 ~ +70°C

N= -40 ~ +85°C

P= -40 ~ +105°C

S= -40 ~ +125°C

U= -55 ~ +125°C