

- ▶ Cost effective
- ▶ Low 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	HC-49USX			UNITS
		MIN	TYP	MAX	
Frequency Range	f_o	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	C_o			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

EQUIVALENT 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)

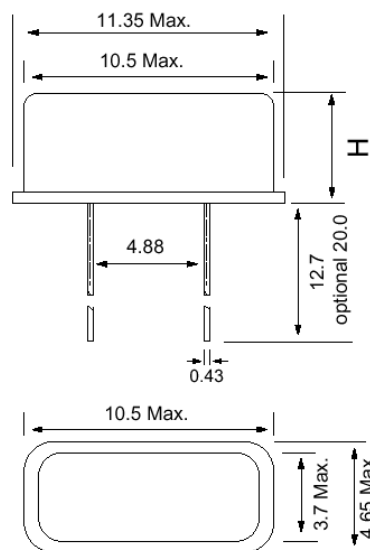


Figure 1) Side and Top views

Height "H" MAX	
-4X	3.5 mm
-4LX	2.5 mm

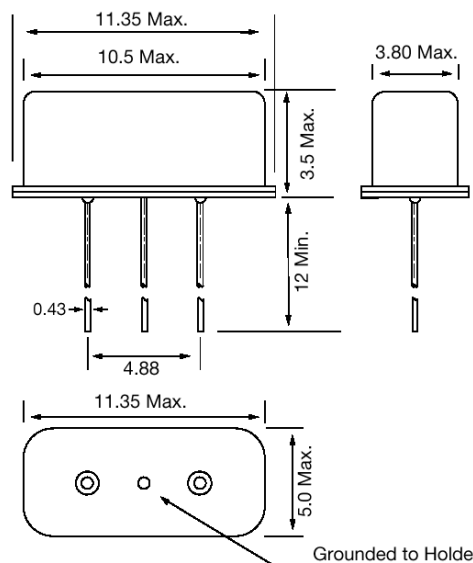


Figure 2) HC-49USX (-4X-3IL) 3rd In Line Lead Base
Side, Bottom and End View.

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

Custom Options

Tolerance

A= ±25 ppm
C= ±10 ppm

Stability

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

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ECS:

[ECS-122.8-20-4 X](#) [ECS-40-20-4X-DN-TR](#) [ECS-035-18-4X-DU](#) [ECS-040-20-4X-DU](#) [ECS-060-20-4X-DU](#) [ECS-080-20-4X-DU](#) [ECS-100-20-4X-DU](#) [ECS-120-18-4X-DU](#) [ECS-160-20-4X-DU](#) [ECS-200-20-4X-DU](#) [ECS-250-18-4X-DU](#) [ECS-250-18-4X-EN](#) [ECS-250-20-4X-F-DN](#) [ECS-180-20-4X](#) [ECS-270-18-4X-F](#) [ECS-143-20-4X](#) [ECS-122.8-20-4X](#) [ECS-129.6-18-4X](#) [ECS-150-20-4X](#) [ECS-221-S-4X](#) [ECS-119.8-S-4X](#) [ECS-184-18-4X](#) [ECS-35-30-4X](#) [ECS-102.4-18-4XEN](#) [ECS-110.5-18-4XEN](#) [ECS-120-18-4XEN](#) [ECS-122.8-18-4XEN](#) [ECS-135-18-4XEN](#) [ECS-143-18-4XEN](#) [ECS-147.4-18-4XEN](#) [ECS-150-18-4XEN](#) [ECS-153.6-18-4XEN](#) [ECS-160-18-4XEN](#) [ECS-163.8-18-4XEN](#) [ECS-177.3-18-4X-EN](#) [ECS-180-18-4XEN](#) [ECS-196.6-18-4XEN](#) [ECS-200-18-4XEN](#) [ECS-221-18-4XEN](#) [ECS-240.001-18-4XEN](#) [ECS-240-18-4XEN](#) [ECS-245.7-18-4XEN](#) [ECS-282.24-18-4X-F-EN](#) [ECS-286.3-18-4X-F-EN](#) [ECS-320-18-4XEN](#) [ECS-400-18-4XEN](#) [ECS-480-18-4XEN](#) [ECS-500-18-4XEN](#) [ECS-61-18-4XEN](#) [ECS-76.8-18-4XEN](#) [ECS-90-18-4XEN](#) [ECS-184-20-4X](#) [ECS-147.4-S-4X](#) [ECS-49-S-4X](#) [ECS-240-20-4X](#) [ECS-204.8-20-4X](#) [ECS-110-S-4X](#) [ECS-184-S-4X](#) [ECS-40-20-4X](#) [ECS-110.5-32-4X](#) [ECS-110.5-20-4X](#) [ECS-60-32-4X](#) [ECS-40.3-S-4X](#) [ECS-41-20-4X](#) [ECS-153-20-4X](#) [ECS-92.1-20-4X](#) [ECS-35-17-4X](#) [ECS-76.8-20-4X](#) [ECS-44-20-4X](#) [ECS-40.3-20-4X](#) [ECS-80-32-4X](#) [ECS-122.8-S-4X](#) [ECS-250-18-4X-F](#) [ECS-196.6-S-4X](#) [ECS-200-20-4X](#) [ECS-120-32-4X](#) [ECS-98.3-S-4X](#) [ECS-143-S-4X](#) [ECS-73-S-4X](#) [ECS-50-S-4X](#) [ECS-36-S-4X](#) [ECS-115.2-S-4X](#) [ECS-80-S-4X](#) [ECS-80-18-4X](#) [ECS-245.7-20-4X](#) [ECS-35-S-4X](#) [ECS-240-12-4X](#) [ECS-42-12-4X](#) [ECS-61-32-4X](#) [ECS-51-20-4X](#) [ECS-160-S-4X](#) [ECS-120-20-4X](#) [ECS-100-S-4X](#) [ECS-36-18-4X](#) [ECS-180-S-4X](#) [ECS-40-S-4X](#) [ECS-107.3-S-4X](#) [ECS-110.5-S-4X](#) [ECS-120-S-4X](#) [ECS-42-16-4X](#)