



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!



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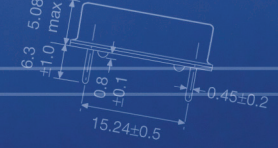


- ▶ Cost effective
- ▶ Low profile
- ▶ Pb Free/RoHS Compliant



HC-46X Quartz Crystal

The HC-46X is the miniature low profile resistance weld type Thru Hole quartz crystal. Reduces footprint of HC-49USX by 50%.



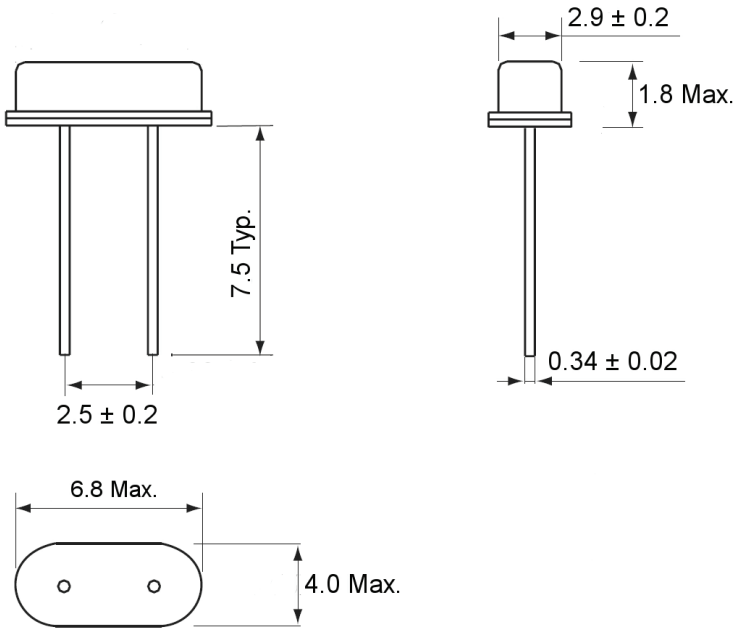
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	HC-46X			UNITS
		MIN	TYP	MAX	
Frequency Range	f_0	12.000		40.000	MHz
Frequency Tolerance	at +25°C			± 30	ppm
Frequency Stability ref @ 25°C	Standard -10 to +70°C			± 50	ppm
Shunt Capacitance	C_0			7	pF
Load Capacitance (CL)	Specify in P/N	10	20	Series	pF
Drive Level				100	µW
Operating Temperature	Standard	-10		+70	°C
Storage Temperature		-40		+85	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

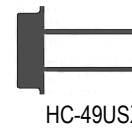
EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
12.000 ~ 15.999	Fundamental	60	30.000 ~ 40.000	Fundamental	40
16.000 ~ 29.999	Fundamental	50			

PACKAGE DIMENSIONS (mm)



Actual Size



HC-49USX



HC-46X

Figure 2) Size Comparison

Figure 1) Side, Bottom and End views

PART NUMBERING GUIDE: Example ECS-200-20-46X

ECS - Frequency Abbreviation - Load Capacitance - Package

200 = 20.000 MHz
See P/N Guide

20 = 20 pF
S=Series

46X = HC-46X

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