Quartz Crystal HC-49US — L Series

Resistance Weld Low Profile *(HC-49US)*

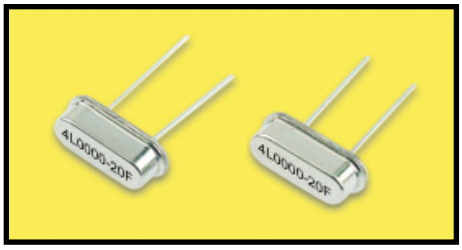
MEC Crystals

Features:

- Wide frequency range
- Industry standard
- AT-cut
- 3.5mm Height (max) (standard)
- Same pin layout as HC-49U
- Lead length 12.7mm (min) (standard)
- **RoHs Compliant (Pb Free)**

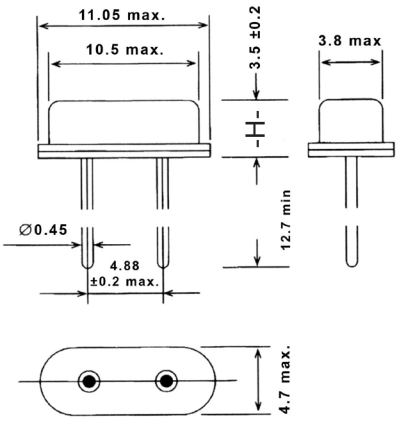
Options:

- Mylar spacer (plastic)
- Plastic sleeve
- Extended temp. range
- 2.5mm Height Available



HC49/S Standard Specifications:

Frequency Range	**3.000MHz - 100MHz**
Frequency Tolerance	±30ppm @ 25°C ± 2°C (Typical), or specify (±5ppm - ±50ppm available)
Frequency Stability over Temperature	±50ppm over -20°C ~ +70°C (Typical), or specify (±10ppm - ±100ppm available)
Operating Temperature Range	-20°C to +70°C Standard -40°C to +85°C Extended or specify
Storage Temperature Range	-40°C to +85°C
Load Capacitance (CL)	Parallel: 10pF to 50pF or Series ∞
Aging	±5ppm per year maximum
Insulation Resistance	500 Meg Ohms min. at 100 VDC
Shunt Capacitance	7pF maximum
Drive Level	0.1mW Typical (1mW maximum)
Equivalent Series Resistance	see chart



Part Numbering System:

Example:
Frequency = 11.0592MHz, Holder = HC-49US, CL = 18pF
Frequency Tolerance = ± 30ppm, Frequency Stability = ± 50ppm
Mode = Fundamental, Oper. Temp. = -40°C to +85°C
Height = 3.5mm (Code: ——), Bulk Packaging

11L0592	—	18	F	X					
①	②	③	④	⑤	⑥	⑦	⑧	⑨	

①
- First five digits of the frequency or all significant digit if frequency contains more than 5 digits.
- Holder code represented by letter "L" for HC-49US holder type & indicating decimal point.

② Crystal Height

Code	Crystal Height
——	H = 3.5mm (Standard)
M	H = 2.5mm (Special)

③ Load Capacitance CL

Code	Load Capacitance
S	Series
18	18pF
20	20pF

④ Mode of Vibration

Code	Cut-Mode
F	AT Fund
3	AT 3rd OT

⑤ Operating Temperature

Code	Ranges
Nil	-20°C ~ +70°C
X	-40°C ~ +85°C

⑥ Mechanical Options

Code	Description
Nil	Standard
3A	3-pin base: H=3.5 ± 0.2mm
3B	3-pin base: H=2.5 ± 0.2mm
S	Spacer
P	Plastic sleeve

⑦ Package

Code	Packaging
Nil	Bulk
T	Tape & reel
C	Crimped leads T&R

Optional

⑧ Frequency Tolerance

Code	Tolerance
10	± 10 ppm
15	± 15 ppm
20	± 20 ppm
25	± 25 ppm
Nil	± 30 ppm (Standard)
40	± 40 ppm
50	± 50 ppm

⑨ Frequency Stability

Code	Stability
10	± 10 ppm
15	± 15 ppm
20	± 20 ppm
25	± 25 ppm
30	± 30 ppm
40	± 40 ppm
Nil	± 50 ppm (Standard)

** If any option is not applicable (ex. Code=Nil) simply continue building the part number omitting spaces.*
Examples: 11L0592-20FT or 12L288-SFXP

Remark: Specifications are subject to change without prior notice. Please confirm with our sales engineer.

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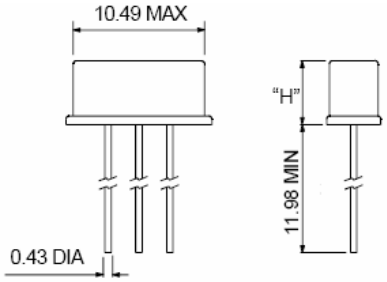
Typical Frequencies, ESR & Operating Modes:

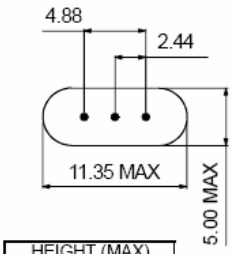
Frequency	E.S.R. (ohm)	Mode
3.000MHz ~ 5.999MHz	150 Max.	Fundamental / AT
6.000MHz ~ 7.999MHz	60 Max.	Fundamental / AT
8.000MHz ~ 15.999MHz	50 Max.	Fundamental / AT
16.000MHz ~ 30.000MHz	30 Max.	Fundamental / AT
24.000MHz ~ 40.320MHz	30 Max.	Fundamental / AT
24.000MHz ~ 29.999MHz	100 Max.	3rd OT / AT
30.000MHz ~ 49.999MHz	80 Max.	3rd OT / AT
50.000MHz ~ 100.000MHz	60 Max.	3rd OT / AT

In addition to the standard MEC HC-49US crystals, various custom-designed units are available to meet your requirements.

Mechanical Options:

3A	3-pin base: H = 3.5 ± 0.2mm
3B	3-pin base: H = 2.5 ± 0.2mm





HEIGHT (MAX)	
H	3. 5+/−0. 2
h	2. 5+/−0. 2

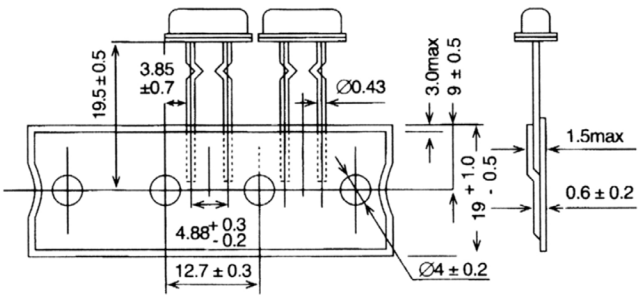
Mechanical Characteristics:

Resistance to shock	± 3 ppm max. ±3Ohms max., naturally drop it 3 times on a hard wood plate from 100cm height.
Resistance to vibration	± 3 ppm max. ±3Ohms max.

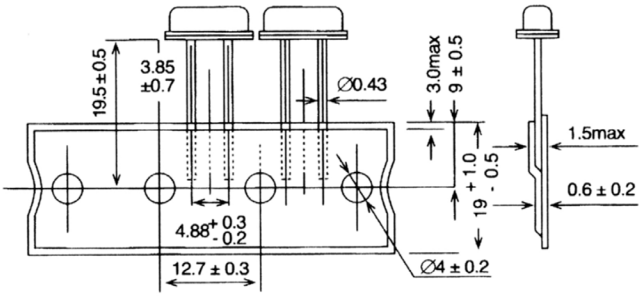
Reliability:

Aging		± 3 ppm max. / year
Air tightness		
	(1) Gross leak	should be immerged in hot water (90 ± 5°C) for 5 minutes
	(2) Fine leak	should be less than 5 x 10^{-8} atmcc/sec by helium leak detector
Low drive characteristics		Measured Δ1, C1, 3 point at 1.0, 10, 100μW

Crystal With Crimped Leads



Crystal With Straight Leads



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