

Quartz Crystal Series	
HC-49/U (49U) HC-49/T (49T)	Features ◆RoHS Compliant



Electrical Specifications

Item	Specifications	Remarks
Nominal Frequency Range	1.800MHz to 30.000MHz	Fund.; AT-Cut
	20.000MHz to 50.000MHz	Fund.; BT-Cut
	24.000MHz to 250.000MHz	3 rd O.T&5 rd O.T;AT-Cut
Frequency Tolerance	±20ppm(Standard) at 25°C±3°C	Others are offered
Load Capacitance	Fund.:10pF to ∞,O.T.:5pF to ∞	Please specify
Series Resistance	As ESR table	
Shunt Capacitance	7pF Max	
Drive Level	10μW to 100μW	1000μW Max
Operating Temperature	-20°C to +70°C(Standard)	Others are offered
Storage Temperature	-55°C to +125°C	
Stability vs. Temperature	±20ppm(Standard)	Others are offered
Insulated Resistance	500MΩ	Minimum at 100Vdc
Aging	±2ppm/year	Maximum

ESR(Series Resistance)

Frequency(MHz)	Mode	Ohm Max	Frequency(MHz)	Mode	Ohm Max
1.8~2.199	Fund.	500	9.0~9.999	Fund.	30
2.2~3.199	Fund.	300	10.0~19.999	Fund.	25
3.2~3.999	Fund.	90	20.0~30.0	Fund.	20
4.0~4.999	Fund.	70	20.0~50.0(BT)	Fund.	20
5.0~5.999	Fund.	60	24.0~29.999	3 rd O.T.	50
6.0~7.999	Fund.	40	30.0~149.999	3 rd O.T.	30~80
8.0~8.999	Fund.	35	150.0~250.0	5 rd O.T.	80~150

Stability vs. Temperature

◆ Standard ◇ Please specify		1	2	3	5	6	7	Remarks
		±10ppm	±20ppm	±30ppm	±50ppm	±15ppm	±25ppm	
B	-10°C to +60°C	◇				◇		
C	-20°C to +70°C	◇	◆	◇	◇	◇	◇	Standard
D	-40°C to +85°C	◇	◇	◇	◆	◇	◇	

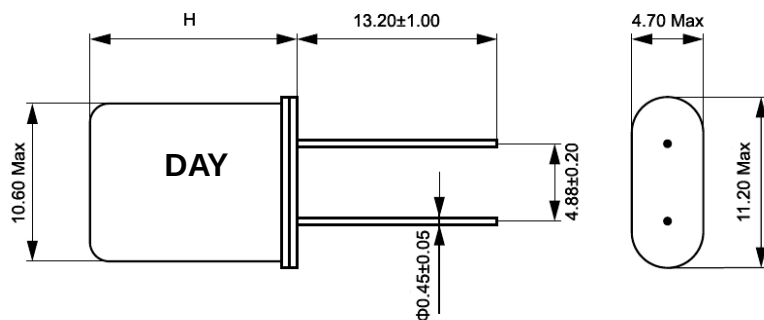
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Ordering Information

Q	R	Type	Pin	XX.XXXX	M	Mode	CL pF	Freq.Tolerance at 25°C	Operating Temp.	Stability Vs.Temp.	Option
F:Lead Free T:T&R Blank:Bulk											
Q:Quartz R:Resonator	49U 49T	Blank:2	Center frequency 1.8 to 250.0MHz	M: MHz	F:Fund.;AT O: 3 rd O.T.;AT	See Table	±10 ppm to ±50ppm	See Table	See Table		
Example:QR49U12.0000MFK2C2F (Crystal,HC-49/U, 2pins,12.0000MHz,Fund AT, 20pF, ±20ppm,-20 to +70deg.±20ppm, Lead free,Bulk)											

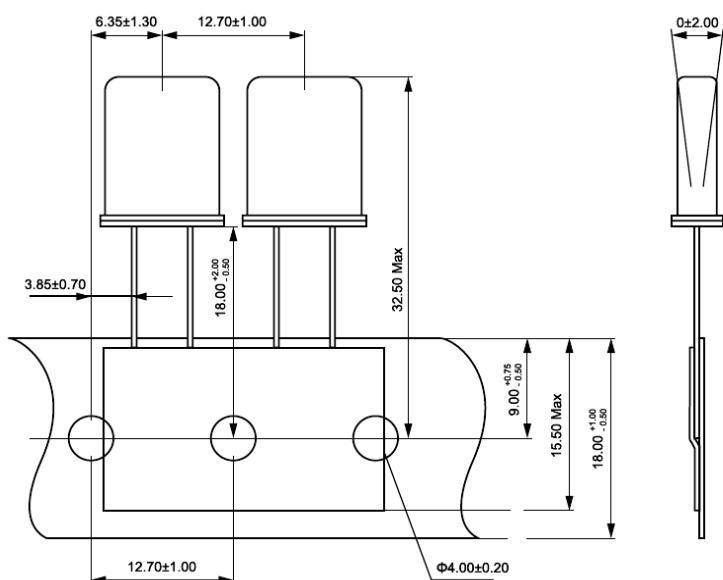
Dimensions



TYPE		H
49U	HC-49/U	13.58 Max.
49T	HC-49/T	10.58 Max.

Unit:mm

Taping Specification



1000pcs/Reel

Load Capacitance Codes

7pF:	E	8pF:	F	9pF:	B	10pF:	R
12pF:	T	15pF:	H	16pF:	I	18pF:	J
20pF:	K	22pF:	L	25pF:	G	27pF:	M
30pF:	N	32pF:	P	33pF:	W	Series:	S

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Reflow Soldering Profile

