

actual size

# Quartz Crystal · HC49/U

Pin Type Crystal · 10.8 x 4.5 mm

- high frequency stability
- wave soldering temperature: 260 °C max.
- customized versions available, please ask



## General Data

type	S (HC49/U)
frequency range	1.8432 ~ 40.0 MHz (fund. AT-cut)
	20.0 ~ 105.0 MHz (3rd OT AT-cut)
	50.0 ~ 175.0 MHz (5th OT AT-cut)
	70.0 ~ 250.0 MHz (7th OT AT-cut)
frequency tolerance at 25 °C	± 3 ppm ~ ± 50 ppm
load capacitance $C_L$	8 pF ~ 32 pF or series
shunt capacitance $C_0$	< 7 pF
storage temperature	-55 °C ~ +125 °C
drive level max.	1.0 mW (100 µW recommended)
aging	< ± 5 ppm first year

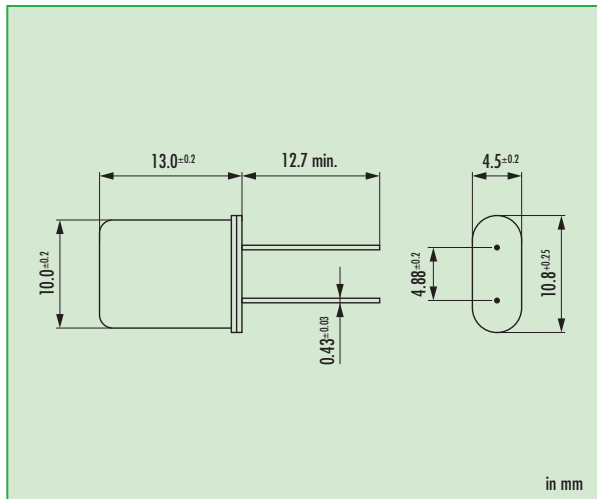
\* other frequency upon request

## Frequency Stability vs. Temperature

		± 3 ppm	± 5 ppm	± 10 ppm	± 30 ppm	± 50 ppm	± 100 ppm
0 °C ~ +60 °C		○	○	○			
-20 °C ~ +70 °C	STD.		○	○	●		
-40 °C ~ +85 °C	T1			○	○	●	
-40 °C ~ +90 °C	T4				○	○	○
-40 °C ~ +105 °C	T2				○	○	○
-40 °C ~ +125 °C	T3					○	○

● standard  
○ available

## Dimensions



## ESR (series resistance $R_s$ )

frequency in MHz	vibration mode	ESR max. in $\Omega$	ESR typ. in $\Omega$
1.8432	fund.- AT	800	400
2.00 ~ 2.999	fund.- AT	400	150
3.00 ~ 3.4999	fund.- AT	150	50
3.57 ~ 6.9999	fund.- AT	60	20
7.00 ~ 12.999	fund.- AT	30	15
13.0 ~ 40.000	fund.- AT	20	10
20.0 ~ 29.999	3rd OT - AT	80	35
30.0 ~ 105.00	3rd OT - AT	60	30
50.0 ~ 175.00	5th OT - AT	150	60
70.0 ~ 250.00	7th OT - AT	180	80

## Marking

frequency
company code / load capacitance
data code / internal code

## Option Table

TP	= top pin
MP	= middle pin
TR	= tape and reel
TA	= taped, ammo pack
KIS	= spacer
IS	= isolation spacer
LL	= lead length in mm
PT	= plastic tray

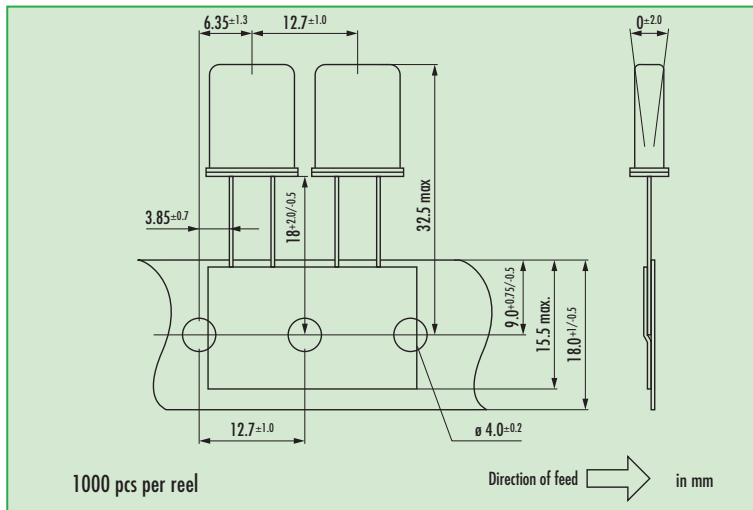
## Order Information

Q	frequency	type	load capacitance in pF	tolerance at 25 °C	stability vs. temp. range	option
Quartz	0.9216 ~ 250.0 MHz	S	30 pF standard 12 pF ~ 32 pF S for series	± 30 ppm std. > 1.8 MHz ± 3 ppm ~ ± 50 ppm on requ.	> 3.5 MHz: stability see table, on request < 3.5 MHz: ± 50 ppm	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C T4 = -40 °C ~ +90 °C FU = for fund. frequ. ≥ 20 MHz 30T = 3rd overtone 50T = 5th overtone 70T = 7th overtone

Example: Q 28.0-S-30-30/30-T1-FU-LF (Suffix LF = RoHS compliant / Pb free pins) other see option table

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## Taping Specification Through Hole Version



## Wave Soldering Profile

