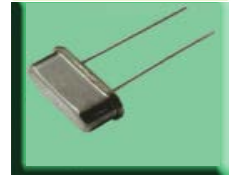


## ACT HC49/US ( Standard Devices )

Compatible with Eu Directive  
2002/EC - RoHS



The ACT HC49/US is a family of competitively priced, resistance welded, through hole crystals featuring high reliability, good stability and a practical range of operating temperatures. Applications include Computers, Modems, Networking, Telecomms, Industrial, Consumer Electronics, Instrumentation and many more.

### Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	3.00 ~ 100.00MHz Fundamental & 3rd Overtone	Please specify
Frequency Tol. @25°C	$\Delta f/fo$	$\pm 5 \sim \pm 100$ ppm	Please specify
Stability over Temp Range	Tc	See table 2	Dependent upon operating temperature
Temp Operating Range	Topr	-10~+60°C, -20~+70°C & -40~+85°C	Please specify
Temp Storage Range	Tstg	-40 ~ +85°C	
Equivalent Series Resistance	ESR	See table 1	Dependent upon frequency / mode
Shunt Capacitance	C0	7pFmax	
Load Capacitance	CL	8 ~ 55pF or Series Resonance	Please specify
Drive Level	DL	100 $\mu$ W Typ	Some options available - Please specify
Drive Level Dependency	DLD	$\Delta$ Freq & ESR	0.01, 0.1, 1, 10, 50, 100 uW steps
Insulation Resistance	IR	500M $\Omega$ min	@100Vdc
Aging	Fa	$\pm 5$ ppm per year max	@25°C

TABLE 1

Frequency (MHz)	ESR ( $\Omega$ ) max	Crystal cut / Mode	Frequency (MHz)	ESR ( $\Omega$ ) max	Crystal cut / Mode
3.000 ~ 3.500	300	AT Fundamental	24.000 ~ 40.320	30	BT Fundamental
3.579545 ~ 5.999	150	AT Fundamental	24.000 ~ 29.999	100	AT 3rd Overtone
6.000 ~ 7.999	60	AT Fundamental	30.000 ~ 49.999	80	AT 3rd Overtone
8.000 ~ 15.999	50	AT Fundamental	50.000 ~ 100.000	60	AT 3rd Overtone
16.000 ~ 30.000	30	AT Fundamental			

Standard Frequencies				
3.579545	7.3728	11.2896	22.1184	33.868
3.686400	7.680	12.000	24.000	35.2512
4.000	8.000	12.288	24.576	36.000
4.032	8.192	12.800	25.000	40.000
4.096	8.604	14.31818	26.800	40.320
4.194304	8.6436	14.7456	27.000	40.960
4.433619	9.600	15.000	28.000	42.000
4.9152	9.8304	16.000	28.63636	42.500
5.000	10.000	#####	29.000	45.000
5.0688	10.240	16.384	29.4912	46.000
6.000	10.244	16.660	30.000	50.000
6.144	10.245	18.000	32.256	52.416
6.176	10.592	18.432	32.768	56.448
6.5539	10.752	19.6608	33.000	60.000
6.750	11.000	20.0000	33.333	66.666667
7.15909	11.0592	20.00014	33.868	

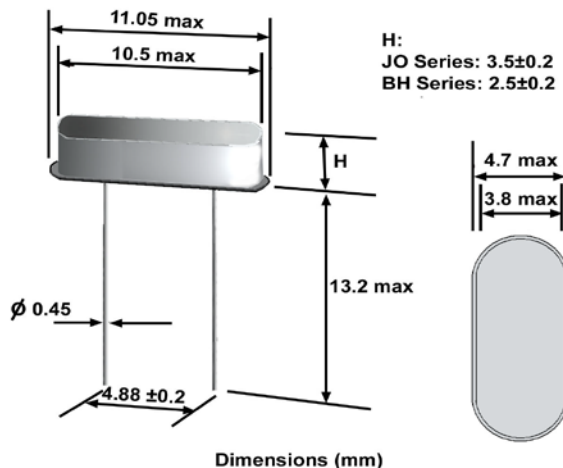


TABLE 2

Frequency Stabilities VS Operating Temperatures

Stability	$\pm 10$ ppm	$\pm 15$ ppm	$\pm 20$ ppm	$\pm 25$ ppm	$\pm 30$ ppm	$\pm 50$ ppm
Temp						
-10 ~ + 60°C	★	★	★	★	★	★
-20 ~ + 70°C	★	★	★	★	★	★
-40 ~ + 85°C		★	★	★	★	★

Lead Finish  
Sn/Ag

Please note that all parameters can not necessarily be specified in the same device

Customer to specify : Frequency, Frequency Tolerance, Temperature Stability, Operating Temperature Range, Load Capacitance

In line with our ongoing policy of product evolution and improvement, the above specification may be subject to change without notice

ISO9001:2000 Registered

For quotations or further information please contact us at:

3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

<http://www.actcrystals.com>

Issue :9 SCB

Date: 20-03-2013

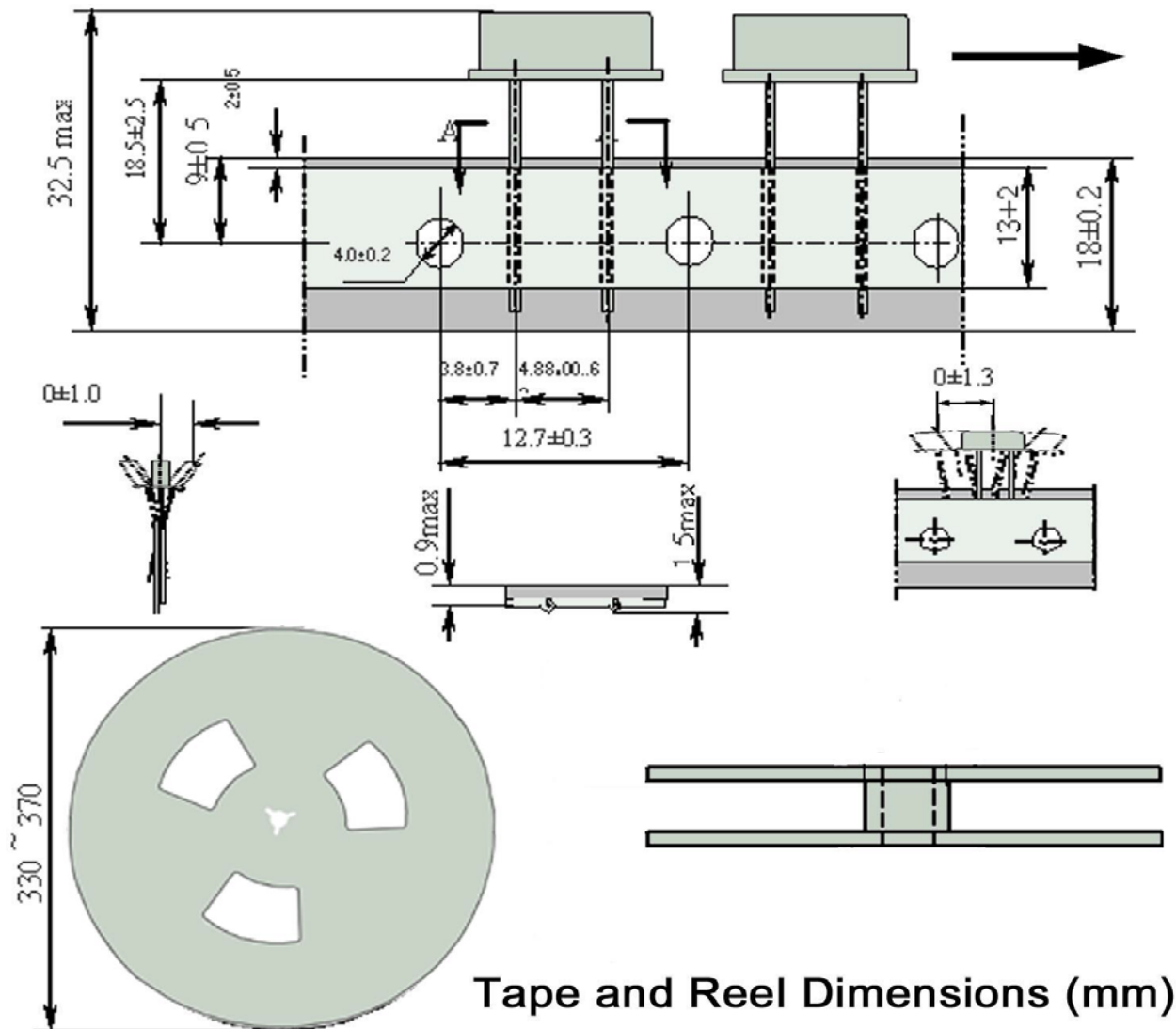
**PACKAGE / PACKAGING OPTIONS AVAILABLE**

- With insulating washer.
- Cropped leads.
- Three leads
- Ammo packaging \*
- Taped & taped & reeled.\*

\* Not recommended for new builds

**TAPE / TAPE & REELING SPECIFICATION FOR HC49/US**

Tape and Reel option (not supplied as standard)



**Tape and Reel Dimensions (mm)**

Please note that all parameters can not necessarily be specified in the same device

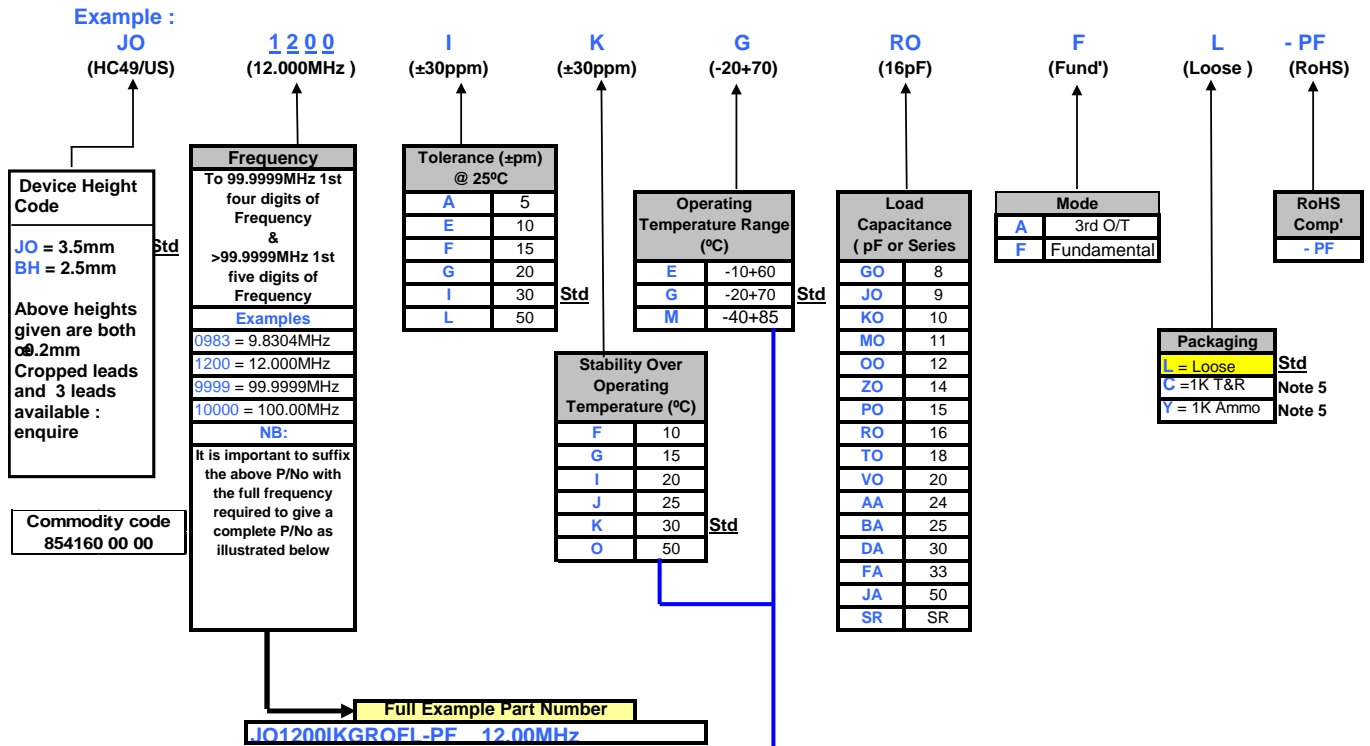
Customer to specify : Frequency, Frequency Tolerance, Temperature Stability, Operating Temperature Range, Load Capacitance

In line with our ongoing policy of product evolution and improvement, the above specification may be subject to change without notice

Issue :9 SCB

Date: 20-03-2013

**SERIES : ACTHC49/US ( Standard ) Device series code JO & BH**



**Table 2 Frequency Stabilities VS Operating Temperatures**

Stability Temp	±10ppm	±15ppm	±20ppm	±25ppm	±30ppm	±50ppm
-10 ~ + 60°C	★	★	★	★	★	★
-20 ~ + 70°C	★	★	★	★	★	★
-40 ~ + 85°C		★	★	★	★	★

**NOTES :**

- 1) Tighter Tolerances and Stabilities, other Operating Temperature Ranges and CL's may be available as semi custom devices.  
 As each of these specification parameters impact on each other, it is not always possible to combine all options in one device. Therefore, if a specification not catered for above is required, please contact us directly for the relevant part number code(s).
- 2) ACT are always happy to consider truly custom specification parts which may require non-standard specification parameters, specific testing, customer requested AQL requirements, non standard packaging or taping and reeling and custom marking. Such devices would normally be allocated a custom specification part number which is wholly customer specific. ( MOQ Dependent )  
 ( EG : A 12.00MHz custom ACTHC49/US device may have a part number such as JO1200C- C1464-PF)
- 3) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0800MHz = 8MHz. Whereas 10.000MHz is 1000 )
- 4) Table 2 above shows the range of available stabilities Vs Operating temperatures.
- 5) Not recommended for new builds

**ISO9001 Registered**

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