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Compatible with Eu Directive 2002/EC - RoHS

ACT HC49/U (Standard Devices)

The ACT HC49U family is available in industry standard package and specifications. This series offers a broad range of frequencies and tolerances in both standard and industrial temperature ranges. Housed in resistance welded cases the HC49U offers excellent aging characteristics. Cost / performance ratios are extremely good for this family of devices and they offer reasonably high density mounting capability, where height isn't a restriction. Low frequencies are also more readily available in this type of package. Various optional packages and custom specifications are available - PLEASE SEE SEPARATE DATA SHEET FOR ACT HC49/U (CUSTOM OPTIONS)

Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	1.8432MHz ~ 150MHZ Fundamental & 3rd to 7th O/T	Please specify
Frequency Tolerance @25°C	Δf/fo	±5ppm ~ 100ppm (30ppm Std)	Please specify
Temp Operating Range	Topr	-10~+60°C,-20~+70°C & -40~+8	Please specify
Stability over Temp Range °C	Δf/Fo	Please see table 2	Please specify
Temp Storage Range	Tstg	-40°C to +85°C	
Equivalent Series Resistance	ESR	Please see table 1	Dependent on cut & frequency
Shunt Capacitance	CO	7pF max	
Load Capacitance	CL	8 ~ 55pF or SR	Please specify
Drive Level	DL max	100µW typ	Options available - please enquire
Drive Level Dependency	DLD	Δ Freq & ESR	0.01, 0.1, 1, 10, 50, 100 mW steps
Insulation Resistance	IR	500MΩ Min	@ DC 100V ±15V
Aging	Fa	±3ppm / year max@25°C	

Table 1 **ESR and mode of oscillation**

Frequency (MHz)	ESR (Ω) max	Mode	Frequency (MHz)	ESR (Ω)	Mode
1.8432 ~ 1.999	350	AT Fund	7.000 ~ 9.999	30	AT Fund
2.000 ~ 2.399	300	AT Fund	10.000 ~ 12.999	20	AT Fund
2.400 ~ 2.999	200	AT Fund	13.000 ~ 30.000	20	AT Fund
3.000 ~ 3.199	150	AT Fund	24.000 ~ 29.999	50	3rd Overtone
3.200 ~ 3.499	100	AT Fund	30.000 ~ 65.000	40	3rd Overtone
3.500 ~ 3.899	90	AT Fund	60.000 ~ 99.999	90	3rd Overtone
3.900 ~ 4.099	70	AT Fund	90.000 ~ 120.000	90	5th Overtone
4.100 ~ 5.999	60	AT Fund	120.000 ~ 150.000	90	7th Overtone
6.000 ~ 6.999	50	AT Fund			

Table 2 **Frequency stability Vs operating temperature range**

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

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 & Mode

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

ISO9001:2000 Registered

For quotations or further information please contact us at:
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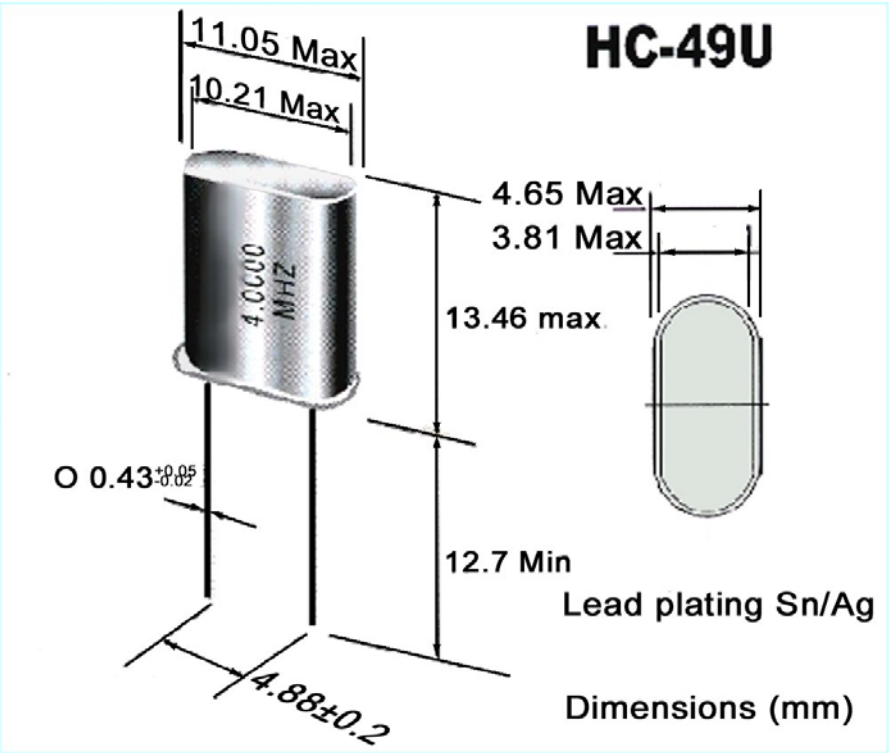
ACT HC49/U (Standard Devices)

Standard Frequencies (MHz)					
1.8432	4.4336	7.3728	12.0000	20.0000	50.0000
2.0000	4.9152	7.3728	12.2880	22.1184	56.4480
2.0974	5.0000	7.6800	13.0000	24.0001	60.0000
2.4576	5.0688	8.0000	13.8750	24.5760	64.0000
2.8224	5.1200	8.1920	14.0000	25.0000	
3.0000	5.1850	8.6724	14.3182	27.0000	
3.2768	5.7143	9.0000	14.7456	28.2240	
3.5795	6.0000	9.2160	15.0000	28.6364	
3.6000	6.1440	9.8304	16.0000	29.4912	
3.6864	6.1760	10.0000	16.3840	30.0000	
3.9322	6.4000	10.2450	16.9344	32.0000	
4.0000	6.5536	10.7520	17.7345	32.7680	
4.0320	6.5539	11.0000	18.0000	36.0000	
4.0960	7.0000	11.0592	18.4320	40.0000	
4.1943	7.1591	11.2896	19.6608	48.0000	



Package / Packaging Options
With insulating washer Cropped leads (3.5mm, 5mm, 7mm) Tape and reel, see page 3

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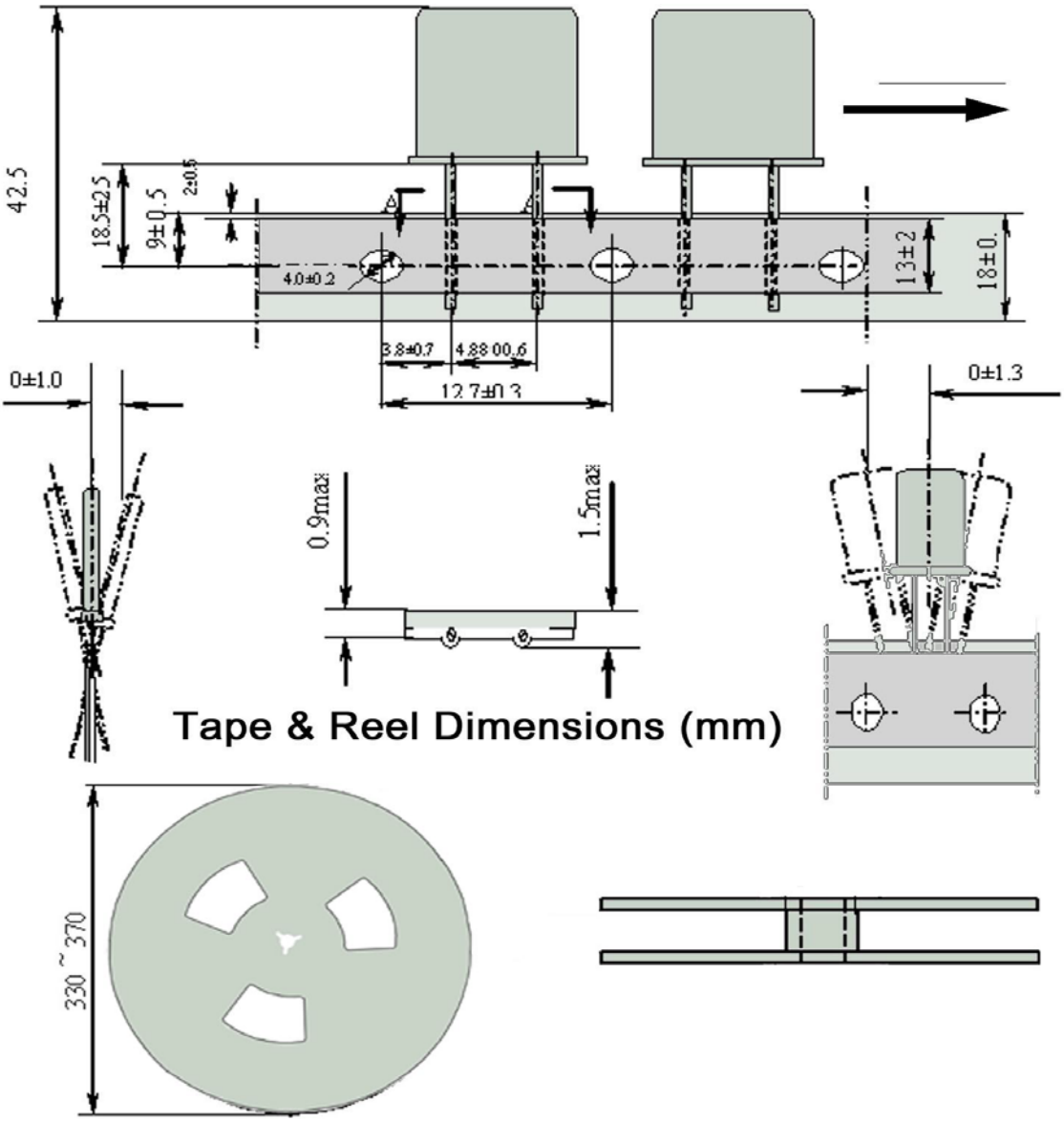

Tape & Reel Dimensions (mm)

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SERIES : ACT HC49/U (Standard) Device series code GO

Example :

GO	1200	I	K	G	RO	F	L	- PF
(HC49/U)	(12.000MHz)	(±30ppm)	(±30ppm)	(-20+70)	(16pF)	(Fund')	(Loose)	(RoHS)

Device Height Code Max:

GO = 13.5mm

Cropped leads
BD = 3.5mm
BC = 5.0mm
BB = 7.0mm

SA = Washer Fitted

Frequency

To 99.9999MHz 1st four digits of Frequency & >99.9999MHz 1st five digits of Frequency

Examples
0983 = 9.8304MHz
1200 = 12.000MHz
9999 = 99.9999MHz
10000 = 100.00MHz

NB: It is important to suffix the above P/No with the full frequency required to give a complete P/No as illustrated below

Tolerance (±pm) @ 25°C

A	5	
E	10	
F	15	
G	20	
I	30	Std
L	50	

Stability Over Operating Temperature (°C)

F	10	
G	15	
I	20	
J	25	
K	30	Std
O	50	

Operating Temperature Range (°C)

E	-10+60	
G	-20+70	Std
M	-40+85	

Load Capacitance (pF or Series

GO	8
JO	9
KO	10
MO	11
OO	12
ZO	14
PO	15
RO	16
TO	18
VO	20
AA	24
BA	25
DA	30
FA	33
JA	50
SR	SR

Mode

A	3rd O/T
F	Fundamental

Packaging

L = Loose	Std
C =1K T&R	

RoHS Comp'

- PF

Commodity code
854160 00 00

Full Example Part Number

GO1200IKGROFL-PF 12.00MHz

Available Stabilities

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

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/U device may have a part number such as GO1200C- C1246-PF)

3) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0800MHz = 8MHz.Whereas 10.000MHz is 1000 and 100.00MHz is 10000)