

## ACT HC49/U ( Custom Packages )

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 now has improved aging characteristics.

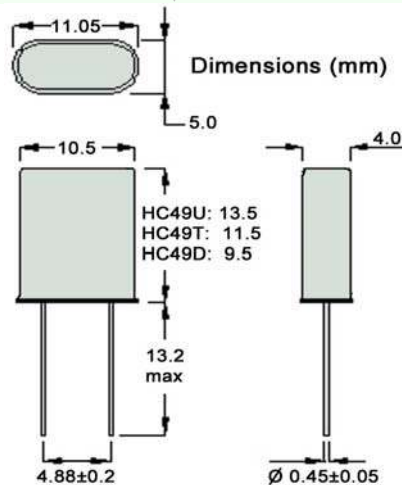
Various options - Third Leg, Insulating Washers etc - are available on request



### Specification

| Parameter                    | Symbol        | Specification  | Condition                            |
|------------------------------|---------------|--|--------------------------------------|
| Frequency Range              | fo            | 1.00MHz ~ 200MHZ                                     | Please specify                       |
| Frequency Tolerance @25°C    | $\Delta f/fo$ | $\pm 5\text{ppm} \sim 100\text{ppm}$ (30ppm Std )    | Please specify                       |
| Temp Operating Range         | Topr          | -10 ~ +60°C Std                                      | Others available - Please specify    |
| Stability over Temp Range °C | $\Delta f/Fo$ | $\pm 5\text{ppm} \sim 100\text{ppm}$ (50 ppm Std )   | $\pm 5\text{ppm} \sim 100\text{ppm}$ |
| Temp Storage Range           | Tstg          | -40°C to +85°C                                       |                                      |
| Equivalent Series Resistance | ESR           | See table below                                      | Dependent on cut & frequency         |
| Shunt Capacitance            | CO            | 7pF max  |                                      |
| Load Capacitance             | CL            | 8 ~ 55pF or SR                                       | Please specify                       |
| Drive Level                  | DL max        | 50 $\mu$ W typ                                       | Others available - Please specify    |
| Insulation Resistance        | IR            | 500M $\Omega$ Min @ DC 100V $\pm 15\text{V}$         | @ DC 100V $\pm 15\text{V}$           |
| Aging                        | Fa            | $\pm 5\text{ppm} / \text{year max@25}^\circ\text{C}$ | Others available - Please specify    |

| Frequency (MHz) | ESR ( $\Omega$ ) max | Mode    | Frequency (MHz) | ESR ( $\Omega$ ) | Mode    |
|-----------------|----------------------|---------|-----------------|------------------|---------|
| 1.000           | 3000                 | SL Fund | 12.000 ~ 13.999 | 40               | AT Fund |
| 1.8432 ~ 1.999  | 650                  | AT Fund | 14.000 ~ 16.999 | 30               | AT Fund |
| 2.000 ~ 2.999   | 550                  | AT Fund | 17.000 ~ 24.999 | 30               | AT Fund |
| 3.000 ~ 3.199   | 300                  | AT Fund | 25.000 ~ 35.999 | 30               | AT Fund |
| 3.200 ~ 3.499   | 300                  | AT Fund | 36.000 ~ 45.000 | 25               | AT Fund |
| 3.500 ~ 4.999   | 120                  | AT Fund | 20.000 ~ 45.000 | 40               | BT Fund |
| 5.000 ~ 5.999   | 70                   | AT Fund | 20.000 ~ 59.999 | 60               | 3rd OT  |
| 6.000 ~ 7.999   | 60                   | AT Fund | 60.000 ~ 100.00 | 80               | 3rd OT  |
| 8.000 ~ 9.999   | 50                   | AT Fund | 60.000 ~ 150.00 | 120              | 5th OT  |
| 10.00 ~ 11.999  | 40                   | AT Fund | 120.00 ~ 200.00 | 150              | 7th OT  |



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 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: 8 C1H3

Date:21/12/10

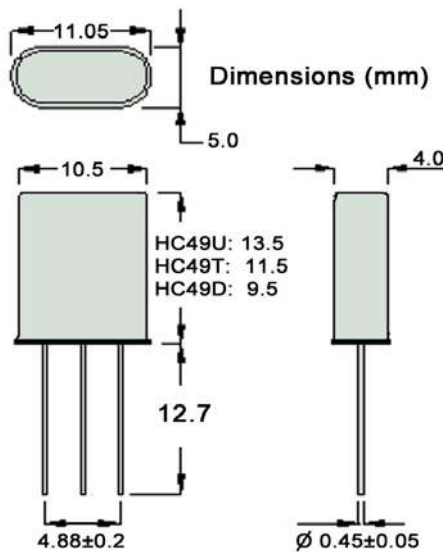
**ACT HC49/U ( Custom Packages )**

| Standard Frequencies (MHz) |          |         |          |          |        |
|----------------------------|----------|---------|----------|----------|--------|
| 1.000                      | 4.096    | 7.000   | 11.0592  | 18.432   | 40.000 |
| 1.8432                     | 4.194304 | 7.15909 | 11.2896  | 19.6608  | 48.000 |
| 2.000                      | 4.433619 | 7.3728  | 12.000   | 20.000   | 50.000 |
| 2.097425                   | 4.9152   | 7.3728  | 12.288   | 22.1184  | 56.448 |
| 2.4576                     | 5.000    | 7.680   | 13.000   | 24.00014 | 60.000 |
| 2.8224                     | 5.0688   | 8.000   | 13.875   | 24.576   | 64.000 |
| 3.000                      | 5.120    | 8.192   | 14.000   | 25.000   |        |
| 3.2768                     | 5.185    | 8.67237 | 14.31818 | 27.000   |        |
| 3.579545                   | 5.7143   | 9.000   | 14.7456  | 28.224   |        |
| 3.600                      | 6.000    | 9.216   | 15.000   | 28.63636 |        |
| 3.6864                     | 6.144    | 9.8304  | 16.000   | 29.4912  |        |
| 3.93216                    | 6.176    | 10.000  | 16.384   | 30.000   |        |
| 4.000                      | 6.400    | 10.245  | 16.9344  | 32.000   |        |
| 4.032                      | 6.5536   | 10.752  | 17.73447 | 32.768   |        |
| 4.096                      | 6.5539   | 11.000  | 18.000   | 36.000   |        |

**PACKAGE OPTIONS AVAILABLE**

- With insulating washer.
- Cropped leads.
- With centre ground lead.
- With ground lead to top of can.

**THREE LEAD VERSION DIMENSIONS (mm)**



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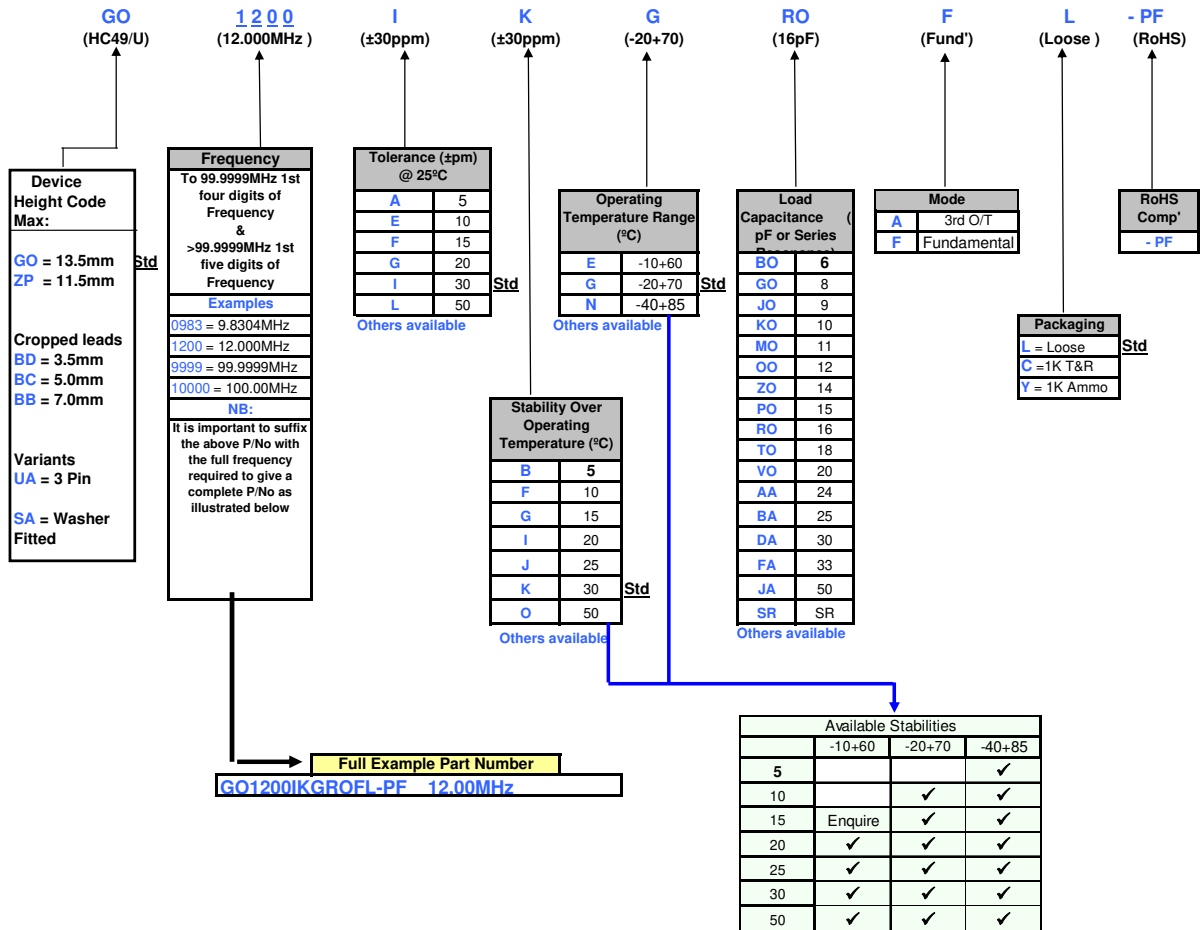
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**SERIES : ACTHC49/U ( Custom ) Device series code GO**

Example :



**NOTES :**

- 1) Tighter Tolerances and Stabilities, other Operating Temperature Ranges and CL's may be available on 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 )