

ACT200A

The ACT200A is a miniature SMD Watch Crystal with excellent low power consumption, making it ideal for portable applications. Its small footprint makes it suitable for high density circuit boards and applications where PCB space is limited. The tape and reel packaging means that it is ideal for automatic placement machines (loose product is also available).

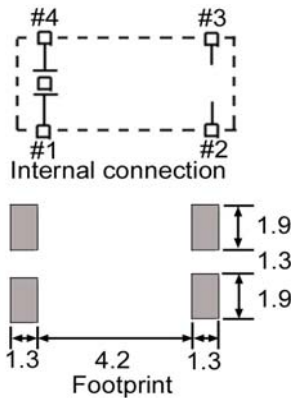
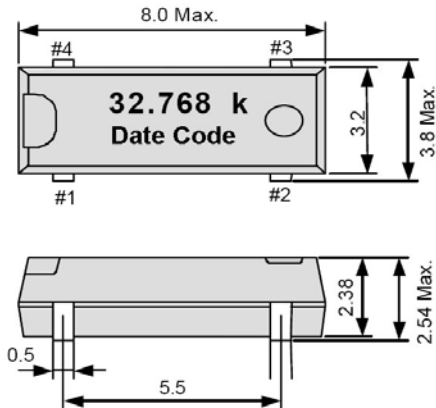
The heart of the device is a heat resistant precision tuning fork, cylinder type, crystal which provides for good stability characteristics, sufficient to allow reflow soldering.

Applications include: Clock, Sub Clock, Small Communications Devices, Microcomputer etc.



Specification

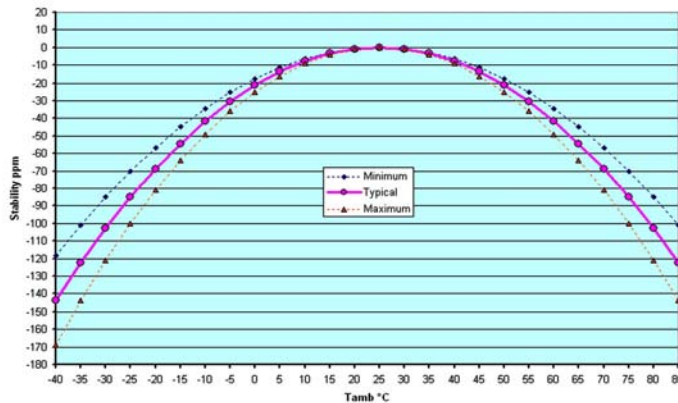
| Parameter | Symbol | Specification | Condition |
|----------------------------------|---------------|--|----------------------------|
| Nominal Frequency | fo | 32.768KHz | |
| Frequency Tolerance | $\Delta f/fo$ | $\pm 20\text{ppm}$ ($\pm 5\text{ppm}$ option) | @25°C |
| Frequency v Temp Characteristics | $\Delta f/fo$ | See drawing | -10 ~ +60°C |
| Turnover Temperature | Tm | 25°C $\pm 5^\circ\text{C}$ | |
| Freq. Temp. coefficient | β | -0.04 ppm/°C ² | |
| Temp Operating Range | Topr | -40 ~ +85°C | |
| Temp Storage Range | Tstg | -55 ~ +125°C | |
| Equivalent Series Resistance | ESR | 50K Ω max | @25°C |
| Shunt Capacitance | Co | 0.9pF Typical | |
| Load Capacitance | CL | 12.5pF & 6.0pF | Please specify |
| Motional Capacitance | C1 | 1.8fF Typical | |
| Capacitance Ratio | γ | 450 Typical | |
| Drive Level | DL | 1 μW max | |
| Insulation Resistance | IR | 500M Ω min | @ DC 100V $\pm 15\text{V}$ |
| Aging (first year) | Fa | $\pm 3\text{ppm}$ max | 25°C $\pm 3^\circ\text{C}$ |



Do not connect ~2 and ~3 to external device.

Metal may be exposed on the top or bottom surface of this product. This will not effect any quality, reliability or electrical specifications.

Watch Crystal Temperature Stability



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

Customer to specify: 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

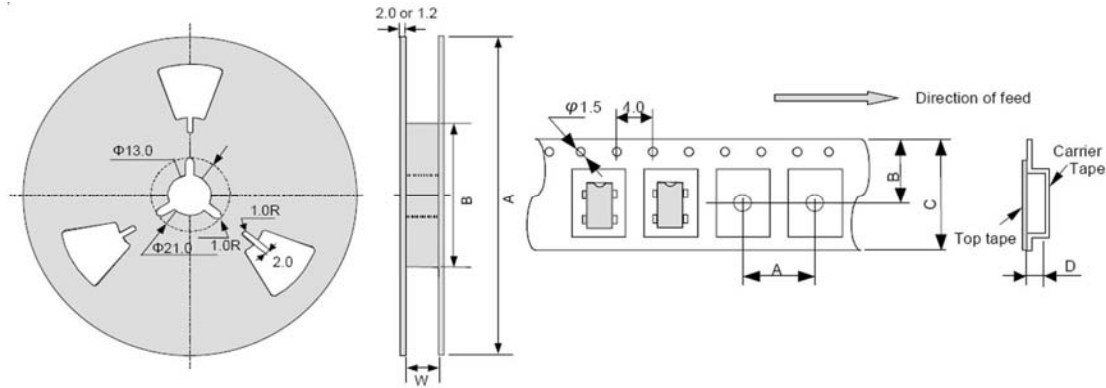
<http://www.actcrystals.com>

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Date 20-12-06

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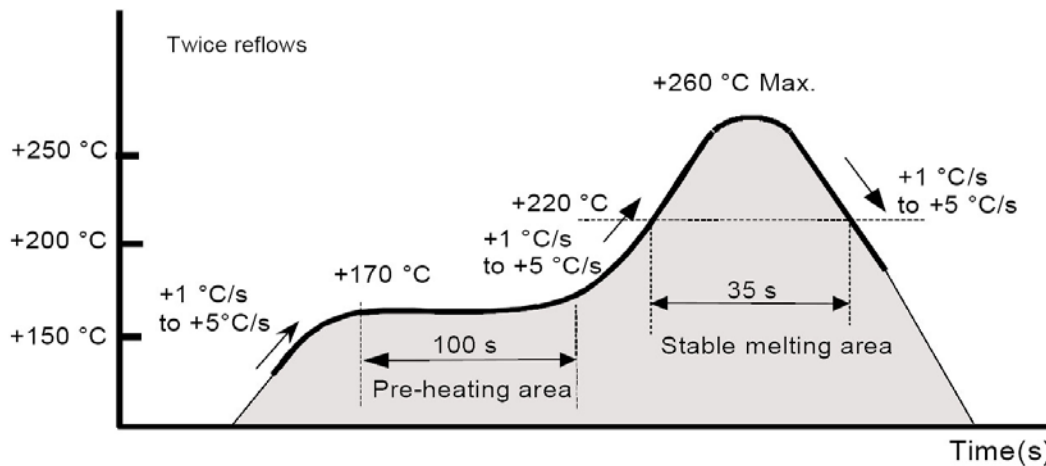
Tape and Reel specification Standard reel quantity 3000 pieces per reel



| DIMENSIONS (mm) | | | | | | |
|-----------------|-----------|------|------|------|----|-----|
| REEL | | | TAPE | | | |
| AØ | BØ | W | A | B | C | D |
| 330 | 80 OR 100 | 17.5 | 8 | 9.25 | 16 | 2.7 |

SOLDERING of SMD WATCH CRYSTALS

Reflow oven should be set up to emulate or better the maximum reflow profile shown in the diagram below. Note it is just as important to conform to the times given as well as the temperatures.



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