

Order code	Manufacturer code	Description
90-1041	n/a	32.768KHZ ACT200A WATCH CRYSTAL SMD (RC)

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The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

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.

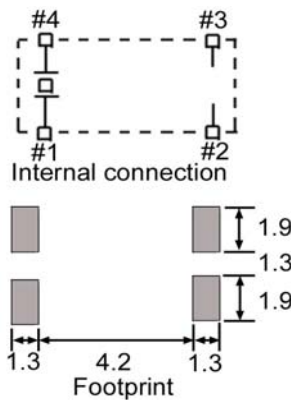
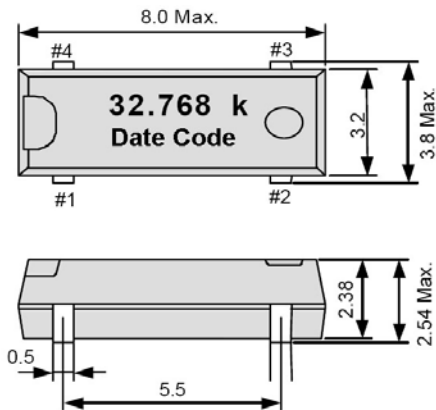
Applications include: Clock, Sub Clock, Small Communications Devices, Microcomputer etc.

Compatible with Eu Directive
 2002/95/EC - RoHS
 Contains Pb>85% high melting
 point solder exempted from
 Article 4(1) of the directive



Specification

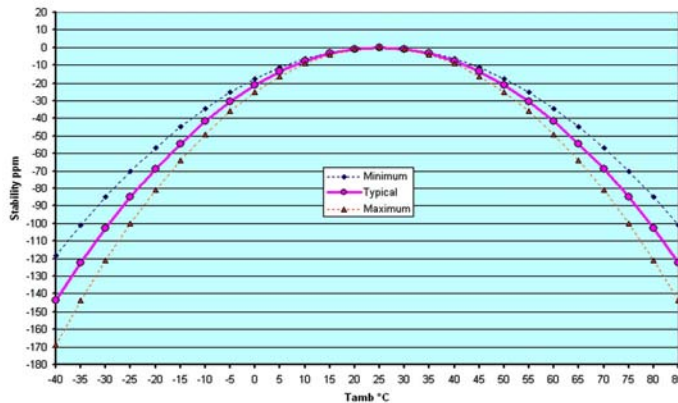
Parameter	Symbol	Specification	Condition
Nominal Frequency	f_0	32.768KHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 20\text{ppm}$ ($\pm 5\text{ppm}$ option)	@25°C
Frequency v Temp Characteristics	$\Delta f/f_0$	See drawing	-10 ~ +60°C
Turnover Temperature	T_m	25°C $\pm 5^\circ\text{C}$	
Freq. Temp. coefficient	β	-0.04 ppm/°C ²	
Temp Operating Range	T_{opr}	-40 ~ +85°C	
Temp Storage Range	T_{stg}	-55 ~ +125°C	
Equivalent Series Resistance	ESR	50K Ω max	@25°C
Shunt Capacitance	C_0	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

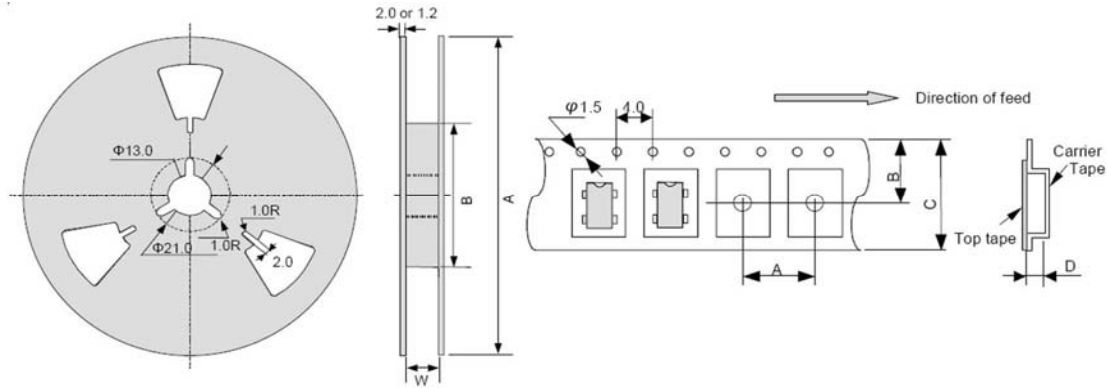
<http://www.actcrystals.com>

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Date 20-12-06

ACT200A

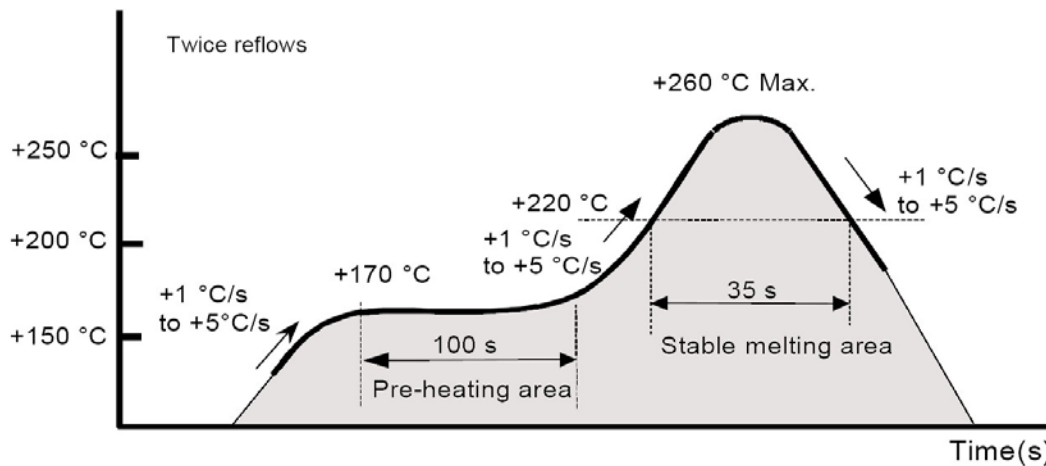
Tape and Reel specification Standard reel quantity 3000 pieces per reel



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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