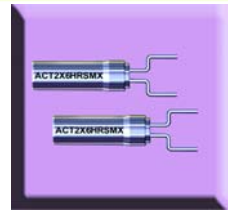


Compatible with Eu Directive  
 2002/EC - RoHS

# ACT2x6HRSMX

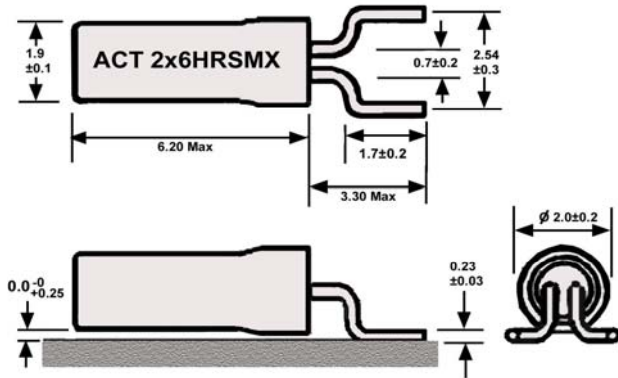
The **ACT2x6HRSMX** is a miniature surface mount Watch Crystal in a cylindrical package offering high vibration and shock resistance together with high stability. This device is very suitable for many real time applications including portable equipment/hand held units and applications that require close packing density of components, it can also be re-flow soldered to 260°C.



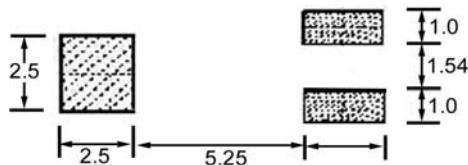
## Specification

Parameter	Symbol	Specification	Options
Nominal Frequency	fo	32.768KHz	
Frequency Tolerance @25°C	$\Delta f/fo$	$\pm 10\text{ppm} \sim \pm 100\text{ppm}$	Please specify
Frequency v Temperature	$\Delta f/fo$	Please refer to plot on page 2	
Temp Operating Range	Topr	-40 ~ +85°C	
Turnover Temperature	Tm	25°C $\pm 5^\circ\text{C}$	
Temperature Coefficient	$\beta$	-0.037ppm / °C <sup>2</sup> Typical	
Temp Storage Range	Tstg	-55 ~ +125°C	
Equivalent Series Resistance	ESR	40K $\Omega$ max	
Quality Factor	Q	60K Typical	
Load Capacitance	CL	12.5pF standard ( 6pF to 12.5pF available )	Please specify
Shunt Capacitance	C0	1.4pf Typical	
Capacitance Ratio	C0/1	450 Typical	
Motional Capacitance	C1	0.003pF Typical	
Drive Level	DL	1 $\mu$ W max	
Insulation Resistance	IR	500M $\Omega$ @ 100VDC min	
Aging	Fa	$\pm 5\text{ppm}$ max First year, 25 $\pm 3^\circ\text{C}$	3ppm max available
Max Reflow temperature	Tmax	260°C 10 seconds	Refer to page 2

## Dimensions (mm)

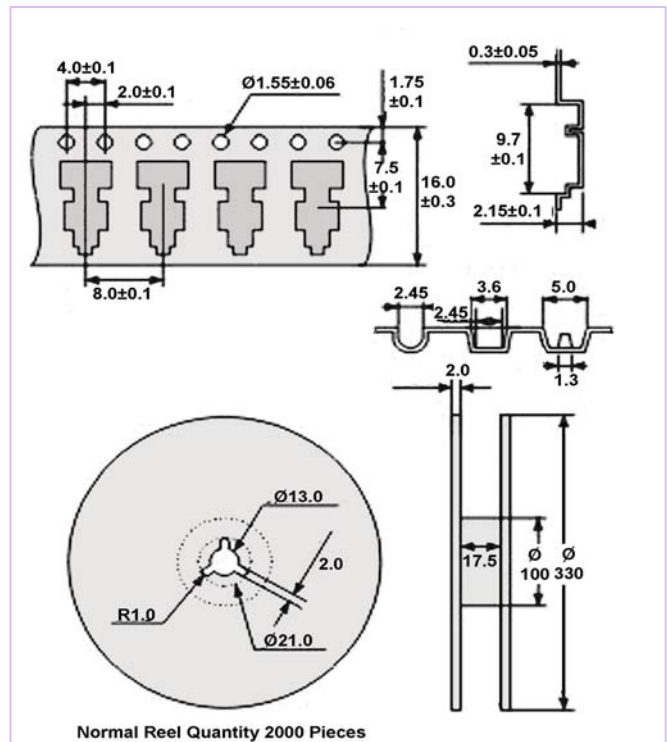


## Solder Footprint



Lead finish SnCu

## Tape & Reel Dimensions



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

Customer to specify : Frequency Tolerance, Load Capacitance

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

ISO9001:2000 Registered

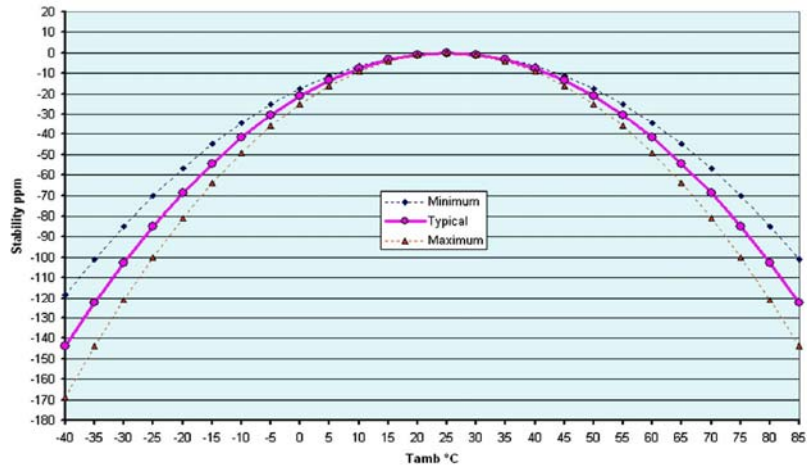
For quotations or further information please contact us at:  
 3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

Issue: 2 C1b  
 Date: 10/10/06

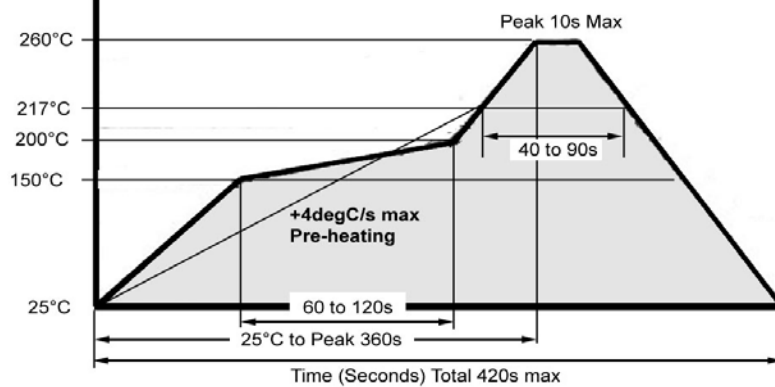
<http://www.actcrystals.com>

## ACT2x6HRSMX

Watch Crystal Temperature Stability



Maximum Reflow Conditions



### Soldering of the ACT2X6HRSMX

Reflow oven should be set up to emulate the maximum reflow profiles temperatures and times shown in the diagram below. Note it is just as important to conform to the times specified as the temperatures.

Pre-heat should not exceed 217°C and rate of heating from 25°C to 217°C should be limited to 4deg C/sec

Peak soldering temperature should not exceed 260°C.

Time at peak temperature should not exceed 10 seconds.

Total reflow time should not exceed 7 minutes.

Should it be required to solder the can to the PCB, then the area and volume of solder should be kept to an absolute minimum, and trials should be conducted to determine if the re-flow process in use is satisfactory.

### Wash Processes for Watch Crystals

Ultrasonic cleaning should be avoided.

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