

Order code	Manufacturer code	Description
90-1274	SK00003GIHL-PF	ACTST-4115A WATCH CRYSTAL 32.768KHZ SMT

	Page 1 of 3
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

ACT4115 SMX

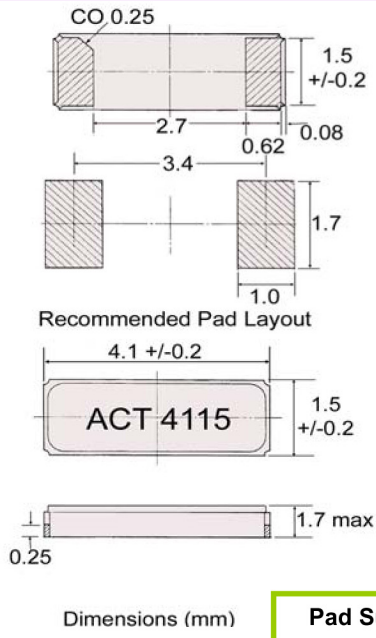
Compatible with Eu Directive 2002/EC - RoHS



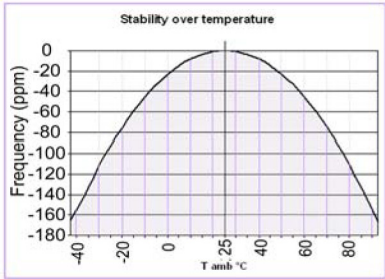
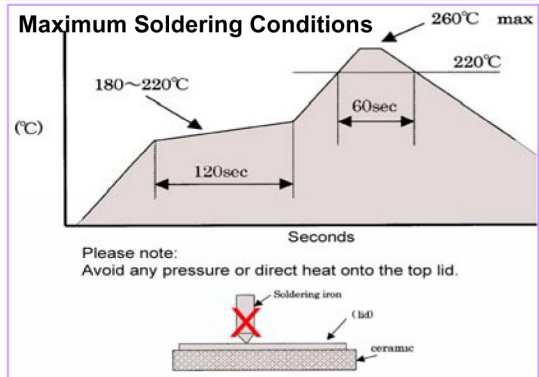
The ACT4115 is a miniature surface mount, high density Watch Crystal in a metal lid, ceramic base low height and weight package. High stability is assured with a vacuum within a seam sealed package. It is very suitable for portable equipment and close component packing density requirements. The product is available taped and reeled on 3,000 piece reels and is fully RoHS compatible.

Specification

Parameter	Symbol	Specification	condition
Nominal Frequency	fo	32.768KHz	
Frequency Tolerance @25°C	$\Delta f/fo$	± 20 ppm	DL 0.1 μ W
Frequency v Temperature	$\Delta f/fo$	See Drawing	
Turnover Temperature	Tm	25°C $\pm 5^\circ$ C	
Temperature Coefficient	β	-0.035+/-0.008ppm / °C Typical	
Temp Operating Range	Topr	-40 ~ +85°C	
Temp Storage Range	Tstg	-55 ~ +125°C	
Equivalent Series Resistance	ESR	65K Ω max	
Load Capacitance	CL	12.5pF	
Shunt Capacitance	C0	1.3pF Typical	
Motional Capacitance	C1	2.3fF Typical	
Drive Level	DL	0.1 μ W typical, 0.5 μ W max	
Insulation Resistance	IR	500M Ω @ 100VDC min	
Aging	Fa	± 3 ppm max	First year, 25°C $\pm 3^\circ$ C
Re-flow		Please refer to page 2	
Leakage		$< 1 \times 10^{-8}$ hpa · 1/s	Helium leakage



Pad Surface Material
Au



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

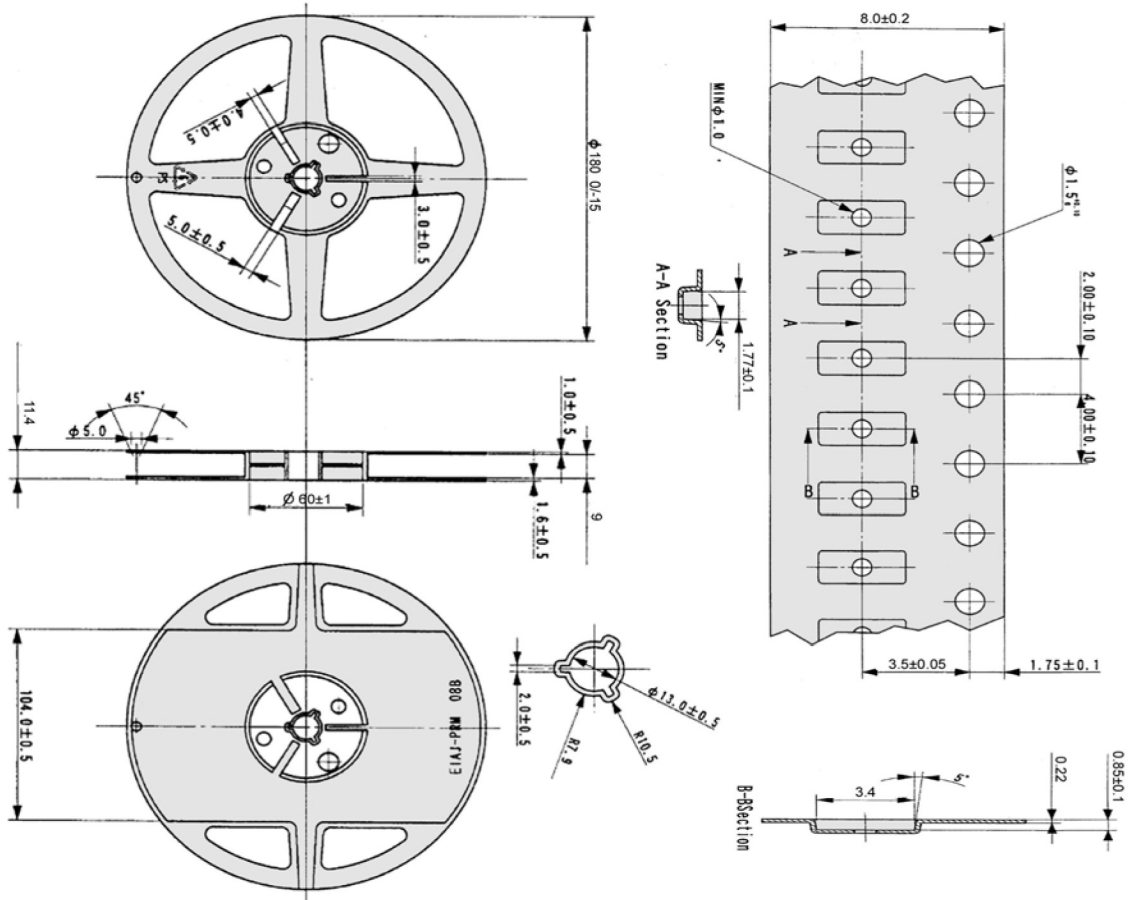
ACT4115 SMX

Reliability

Test	Condition	Δ Fo Limit
Shock	Load mass 100g Dropped 150cm onto concrete, 3 drops 6 directions XX,YY,ZZ	+/-10ppm
Vibration	Frequency 10~60hz 1.5mm Amplitude. Period2~3 min. 2 hr each of X,Y & Z	+/-5ppm
Solder Heat Resistance	Profile as above 2 times	+/-5ppm
Dry Heat	85°C, 500 hrs	+/-7ppm
Cold	-40°C, 500hrs	+/-10ppm
Damp Heat	60°C, 90~95 RH, 500hrs	+/-10ppm
Heat Cycle	-40 «-»+85°C Period 30 min, 100Cycles	+/-10ppm

Tape Dimensions (mm)

Standard reel size 3K per reel



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