

- **Miniature ceramic package for SMD mounting**
- **100% RoHS Compliant and lead free**
- **Low ageing**
- **Excellent environmental performance**
- **Suitable for real-time clocks and battery operated devices**

DESCRIPTION

X4115 crystals provide 32.768kHz in an ultra-miniature 4.1 x 1.5 x 0.7mm package. The part is designed to provide the smallest possible component size for real-time clock applications. Their size and rugged construction makes them ideal for battery powered equipment.

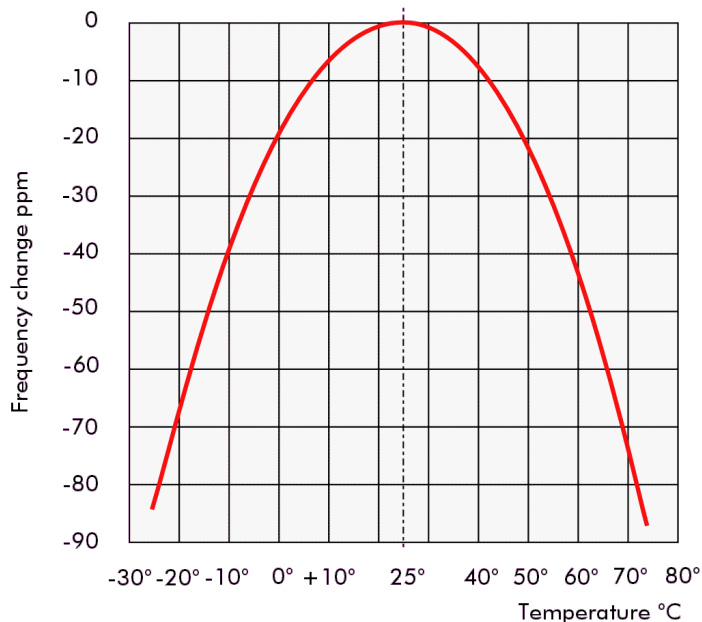
SPECIFICATION

Mercury Part Number:	X4115-32.768K-12.5P or X4115-32.768K-9P
Nominal Frequency:	32.7680kHz
Crystal Cut:	X-Cut
Mode of Oscillation:	Fundamental
Turnover Temperature:	+25°±5°C
Frequency Tolerance at 25°C:	±20ppm max. *
Temperature Coefficient:	-0.035±0.008ppm/°C ²
Operable Temp. Range:	-40° to +85°C
Storage Temp. Range:	-55° to +125°C
Equivalent Series Resistance (ESR):	50kΩ typical, 65kΩ max.*
Shunt Capacitance:	1.2pF typical, 2.0pF max.
Motional Capacitance (C1):	2.0fF typical
Load Capacitance (CL):	12.5pF (standard) or 9.0pF
Drive level:	0.1μW typical 0.5μW max.
Ageing:	±3ppm /year max. *
Insulation Resistance:	500MΩ min. @100 ±15VDC
Shock Resistance:	±10ppm max: free drop 3 times onto hard wooden surface
Vibration:	±5ppm max: 10 to 60Hz, amplitude: 1.5mm, period 2~3 min., duration: 2 hours in each direction
Packaging:	12mm tape, 4mm pitch, 177.4mm reel, 3000 pieces/reel

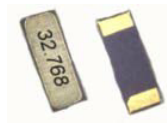
* Parameter stated at T amb. = 25°C and drive level = 0.1μW

STABILITY OVER TEMPERATURE

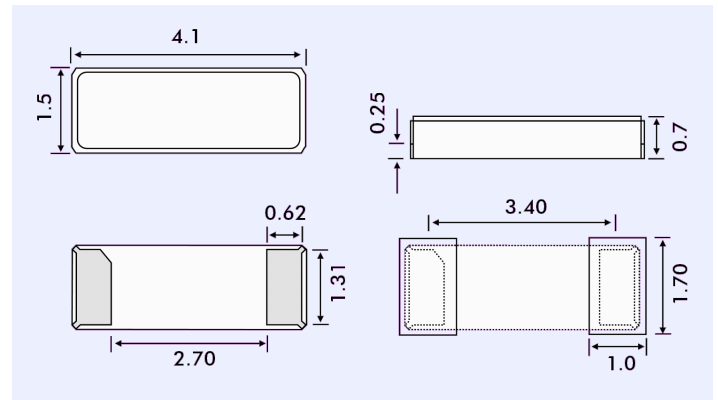
X-Cut Crystal (Parabolic function = $-0.035 \pm 0.008 \text{ ppm}/^\circ\text{C}^2$)



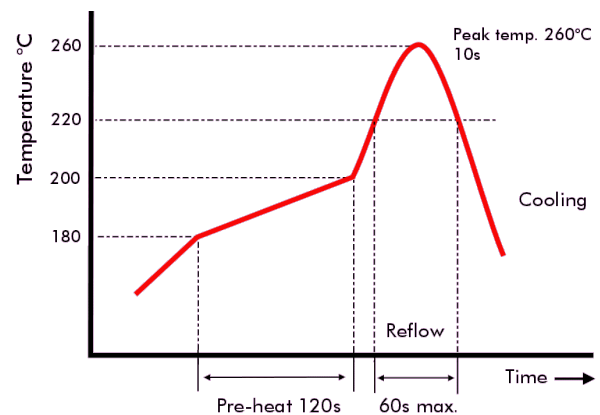
Tuning Fork SMD Watch Crystal



OUTLINE & DIMENSIONS



RECOMMENDED REFLOW SOLDERING PROFILE



PART NUMBER AND SPECIFICATION

Please order either X4115-32.768K-12.5P or X4115-32.768K-9P

Part number format = package-frequency-load capacitance (CL)