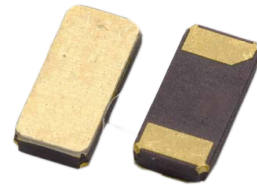


SMD2012-2 Quartz Crystal

7Y032768NW2

1. Scope:

- 1.1 This specification applies to the RoHS compliance quartz crystal unit with a frequency of 32.768KHz which will be used in crystal oscillator applications.



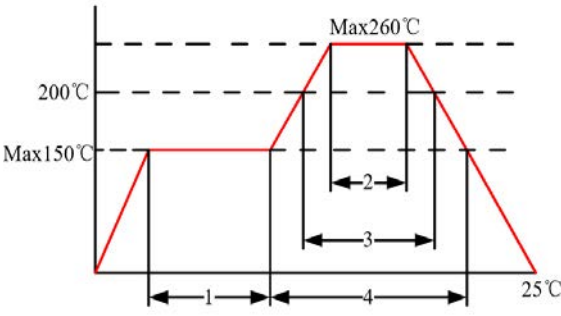
2. Construction:

- 2.1 Type of Quartz Resonator: SMD2012-2pads

3. Electrical Characteristics

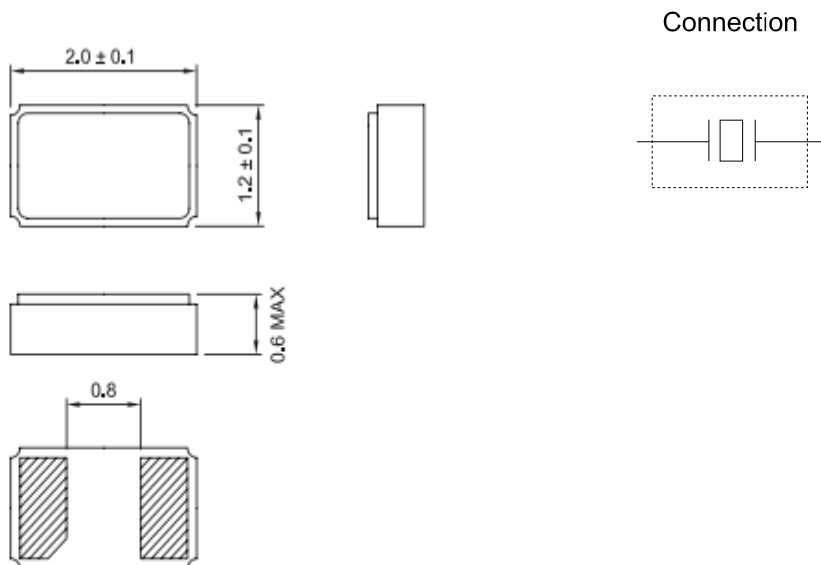
3.1 Mode of Vibration:	+2°X-cut , Fundamental
3.2 Nominal frequency(F):	32.768KHz
3.3 Load Capacitance(C _L):	12.5PF
3.4 Frequency Tolerance at 25℃	±20ppm
3.5 Frequency Temperature Stability:	-0.04* 10 ⁻⁶ /℃ ² Max
3.6 Series Resistance(R _r):	70 KΩ Max
3.7 Quality Factor(Q):	60K TYP
3.8 Turnover Temperature(T _o):	25 ℃ ± 5 ℃
3.9 Operation Temperature:	-40 ℃ ~ +85 ℃
3.10 Preservation Temperature:	-55 ℃ ~ +125℃
3.11 Shunt Capacitance(C ₀):	1.3PF Typical
3.12 Capacitance Ratio(C ₀ /C ₁):	500 Typical
3.13 Insulation Resistance:	500MΩ at DC 100V±10V
3.14 Drive Level:	1μW Max

Reliability Specification

	Item	Condition	Standard
1.	Drop characteristics	Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
2.	Mechanical shock	Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
3.	Shake characteristics	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
4.	Humidity characteristics	$+40 \pm 2^\circ\text{C}$ & 90%~95% R.H. 250 hours	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
5.	Low temperature characteristics	$-40 \pm 2^\circ\text{C}$, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
6.	High temperature characteristics	$+85 \pm 2^\circ\text{C}$, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
7.	Temperature cycling	$-30 \pm 3^\circ\text{C}/30 \pm 3 \text{ min} \sim +85 \pm 2^\circ\text{C}/30 \pm 3\text{min}$, 5 cycles	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
8.	Refluence examination	 <p style="text-align: center;">1. Max 180sec 2. Max 10 sec 3. Max 80 sec 4. Max 90 sec</p>	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification

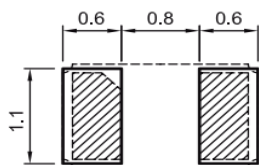
Package Outline Dimensions

Units:mm



Suggested Pad Layout

Units:mm



Packing Specificatio

