



江苏浩都频率科技有限公司
JIANGSU HD-CRYSTAL TECHNOLOGY CO., LTD

Specifications For Product

TYPE : Quartz Crystal
SPEC : 1610/32.768KHZ/12.5PF
P/N : 7M032768NW2
VER : A/1

R&D APPR. SIGNATURED			DEPT. 
ISSUE	CHECK	APPROVAL	
吴佳斌	程心婷	王秋贞	

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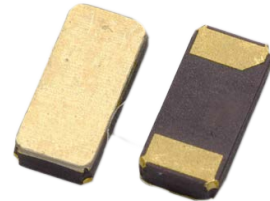
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7M032768NW2

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.



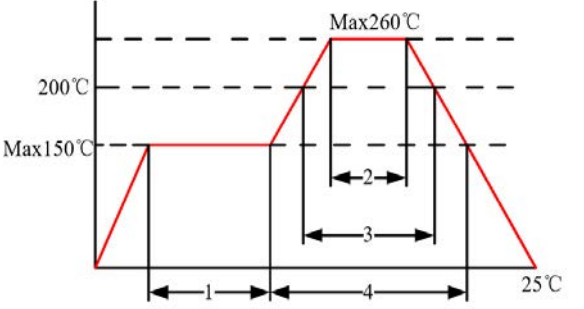
2. Construction:

- 2.1 Type of Quartz Resonator: SMD1610-2pads

3. Electrical Characteristics

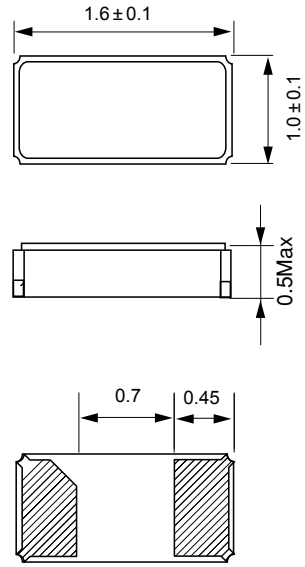
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| 3.1 Mode of Vibration: | +2°X-cut , Fundamental |
| 3.2 Nominal frequency(F): | 32.768KHz |
| 3.3 Load Capacitance(C _L): | 12.5PF |
| 3.4 Frequency Tolerance at 25 °C | ±20ppm |
| 3.5 Frequency Temperature Stability: | -0.04* 10 ⁻⁶ /°C ² Max |
| 3.6 Series Resistance(R _r): | 90 KΩ Max |
| 3.7 Quality Factor(Q): | 60K TYP |
| 3.8 Turnover Temperature(T _o): | 25 °C ± 5 °C |
| 3.9 Operation Temperature: | -40 °C ~ + 85 °C |
| 3.10 Preservation Temperature: | -55 °C ~ +125°C |
| 3.11 Shunt Capacitance(C ₀): | 1.1PF Typical |
| 3.12 Capacitance Ratio(C ₀ /C ₁): | 500 Typical |
| 3.13 Insulation Resistance: | 500MΩ at DC 100V±10V |
| 3.14 Drive Level: | 0.5μW 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

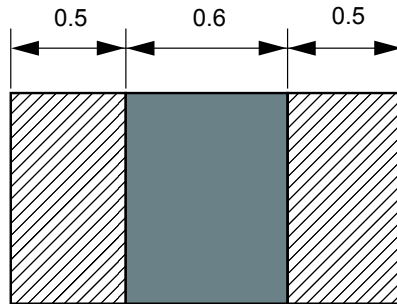
Units:mm



Connection



Suggested Pad Layout



Packing Specification

