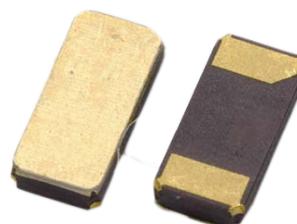


SMD3215-2 Crystal Resonator

7N032768HW2

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.



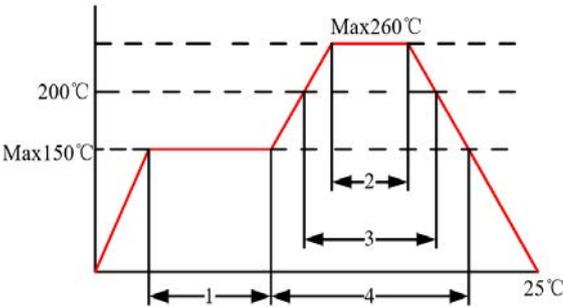
2. Construction:

- 2.1 Type of Quartz Resonator: SMD3215-2pads

3. Electrical Characteristics

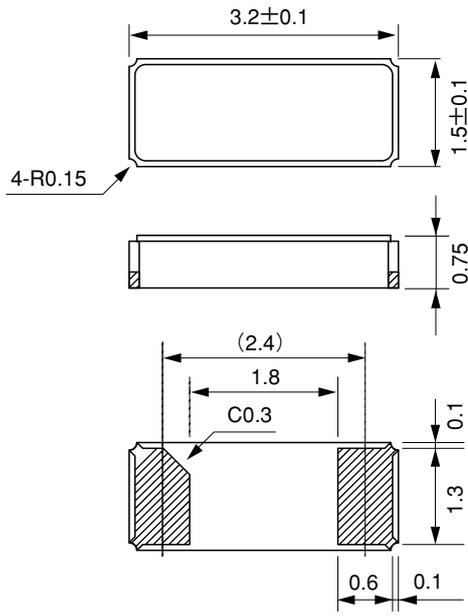
| | |
|--|---|
| 3.1 Mode of Vibration : | +2°X-cut , Fundamental |
| 3.2 Nominal frequency(F): | 32.768KHz |
| 3.3 Load Capacitance(CL): | 9PF |
| 3.4 Frequency Tolerance at 25℃ | ±20ppm |
| 3.5 Frequency Temperature Stability: | -0.04* 10 ⁻⁶ /℃ ² Max |
| 3.6 Series Resistance(Rr): | 70 KΩ Max |
| 3.7 Quality Factor(Q): | 60K TYP |
| 3.8 Turnover Temperature(To): | 25 ℃± 5℃ |
| 3.9 Operation Temperature: | -40℃~ +85℃ |
| 3.10 Preservation Temperature: | -55℃~ +125℃ |
| 3.11 Shunt Capacitance(C ₀): | 0.8PF 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

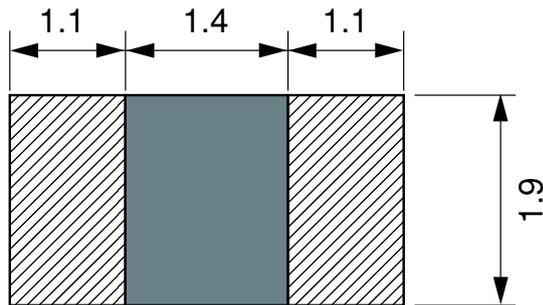
Units:mm



Connection



Suggested Pad Layout



Packing Specification

