

# JIANGSU HD-CRYSTAL TECHNOLOGY CO., LTD SMD3225-4 Crystal Resonator

### 7B012000R01

#### Scope: 1.

1.1 This specification applies to the RoHS compliance quartz crystal unit with a frequency of 12.000MHz which will be used in crystal oscillator applications.



±3ppm/Year Max

#### 2. Construction:

3.12 Aging( $\triangle f_A$ ):

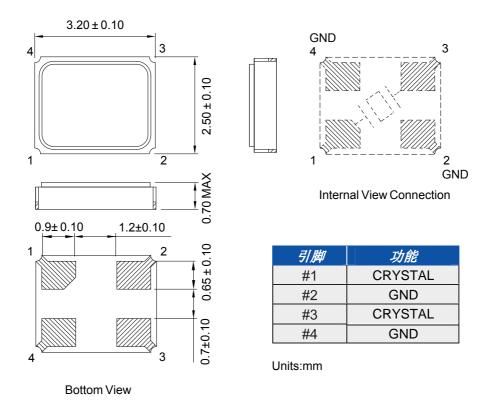
2.1 Type of Quartz Resonator: SMD3225-4pads

#### 3. **Electrical Characteristics**

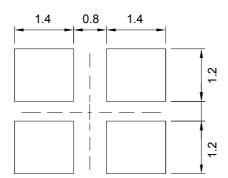
| 3.1  | Nominal Frequency(f):                           | 12.000MHz        |
|------|---|------------------|
| 3.2  | Load Capacitance(C <sub>L</sub> ):              | 20pF             |
| 3.3  | Frequency Tolerance(△f/f):                      | ±10ppm           |
| 3.4  | Frequency Temperature Stability:                | ±20ppm           |
| 3.5  | Resonance Resistance(ohm):                      | 70 ohms Max      |
| 3.6  | Osc mode:                                       | Fundamental mode |
| 3.7  | Shunt Capacitance(C <sub>0</sub> ):             | 2pF Max          |
| 3.8  | Drive Level(D <sub>L</sub> ):                   | 100μW Max        |
| 3.9  | Operating Temperature Range(T <sub>OPR</sub> ): | -20 to + 70°C    |
| 3.10 | Storage Temperature Range(T <sub>STG</sub> ):   | -55 to + 125°C   |
| 3.11 | Insulation Resistance(IR):                      | >500M ohms       |
|      |   |                  |

|    | 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:≤±5ppm Rr as specification    |
| 2  | Mechanical shock                    | Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times                | Frequency change:≤±5ppm<br>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:≤±5ppm<br>Rr as specification |
| 4. | Humidity<br>characteristics         | +40±2°C & 90%~95% R.H. 250 hours   | Frequency change:≤±5ppm Rr as specification    |
| 5. | Low temperature characteristics     | -40±2°C, 250 hours, put in room temperature, test after 1 hours.   | Frequency change:≤±5ppm Rr as specification    |
| 6. | High temperature<br>characteristics | +85±2°C, 250 hours, put in room temperature, test after 1 hours.   | Frequency change:≤±5ppm<br>Rr as specification |
| 7. | Temperature cycling                 | -30±3℃/30±3 min~+85±2℃/30±3min,<br>5 cycles  | Frequency change:≤±5ppm Rr as specification    |
| 8. | Refluence<br>examination            | 200°C  Max150°C  1.Max 180sec 2. Max 10 sec 3.Max 80 sec 4.Max 90 sec                                      | Frequency change:≤±5ppm<br>Rr as specification |

### **Package Outline Dimensions**



### **Suggested Pad Layout**



Units:mm

## **Packing Specification**

