

JIANGSU HD-CRYSTAL TECHNOLOGY CO., LTD

# SMD3225-4 Crystal Resonator

#### 7B024000M01

- Scope: 1.
  - 1.1 This specification applies to the RoHS compliance quartz crystal unit with a frequency of 24.000MHz which will be used in crystal oscillator applications.



2. Construction:

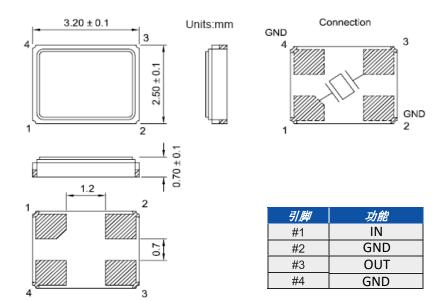
2.1 Type of Quartz Resonator: SMD3225-4pads

3.	Electrical Characteristics	
3.1	Nominal Frequency(f):	24.000MHz
3.2	Load Capacitance(C <sub>L</sub> ):	12pF
3.3	Frequency Tolerance( $\triangle$ f/f):	±10ppm
3.4	Frequency Temperature Stability:	±20ppm
3.5	Resonance Resistance(ohm):	25 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
3.12	Aging( $ riangle f_A$ ):	±3ppm/Year Max

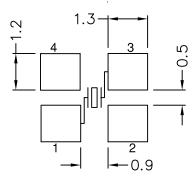
## **Reliability Specification**

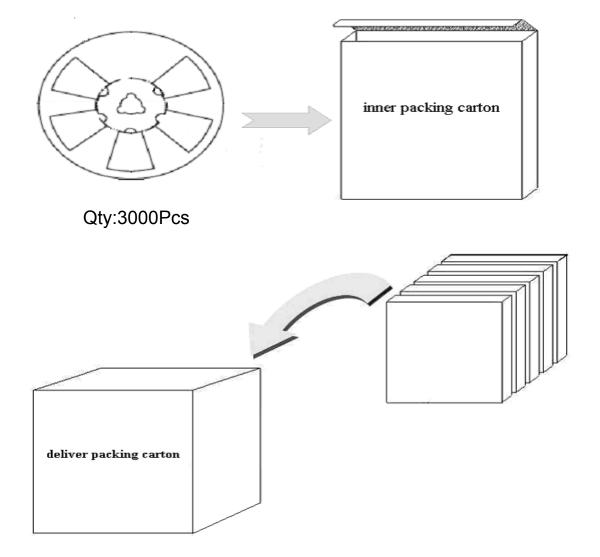
	Item	Condition	Standard
1.	Drop characteristics	Free drop from 75cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)	Frequency change:≤±5ppm Rr as specification
2	Mechanical shock	Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times	Frequency change:≤±5ppm 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 Rr as specification
4.	Humidity 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 characteristics	+85±2°C, 250 hours, put in room temperature, test after 1 hours.	Frequency change:≤±5ppm Rr as specification
7.	Temperature cycling	-30±3°C/30±3 min~+85±2°C/30±3min, 5 cycles	Frequency change:≤±5ppm Rr as specification
8.	<b>Refluence</b> examination	Max150°C 1.Max 180sec 2. Max 10 sec 3.Max 80 sec 4.Max 90 sec	Frequency change:≤±5ppm Rr as specification

#### Package Outline Dimensions



#### Suggested Pad Layout





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