

Shoulder 好达

SHOULDER ELECTRONICS LIMITED

CRYSTAL RESONATOR Data Sheet

PRODUCT 产品: CRYSTAL RESONATOR

MODEL NO 型号: SMD3225

PREPARED 编制: Fengyu

CHECKED 审核: York

APPROVED 批准: Lijiating

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1. Feature

- RoHS Compliant(Lead Free)
- Surface Mount Package
- High precision characteristic covering up to high frequency range
- Higher frequency stability and reliability
- Tape and Reel available

2. Specification

Type	SMD3225
Frequency Range	12.00~ 50.00 MHz
Overtone	See table
Frequency Tolerance (25±3° C)	±10/±15/±20/± 30 ppm
Temperature Characteristics (in reference to +25° C)	±10/±15/±20/± 30 ppm
Operating Temperature Range	-10 ~ +60° C
Equivalent Series Resistance	See table
Drive Level	10 μW (100 μW max)
Standard Load Capacitance	10 /20 /30 pF
Storage Temperature Range	-40 ~ +85° C

Table equivalent series resistance(Ω)

Overtone	Frequency Range(MHz)	Equivalent Series Resistance (Ω)
Fundamental	12.00~ 50.00	60 max

3. Dimensions

Top view	Side view
Bottom view	Recommended soldering pattern
<p>Marking #2 and #4 are connected to metal cap on top.</p>	

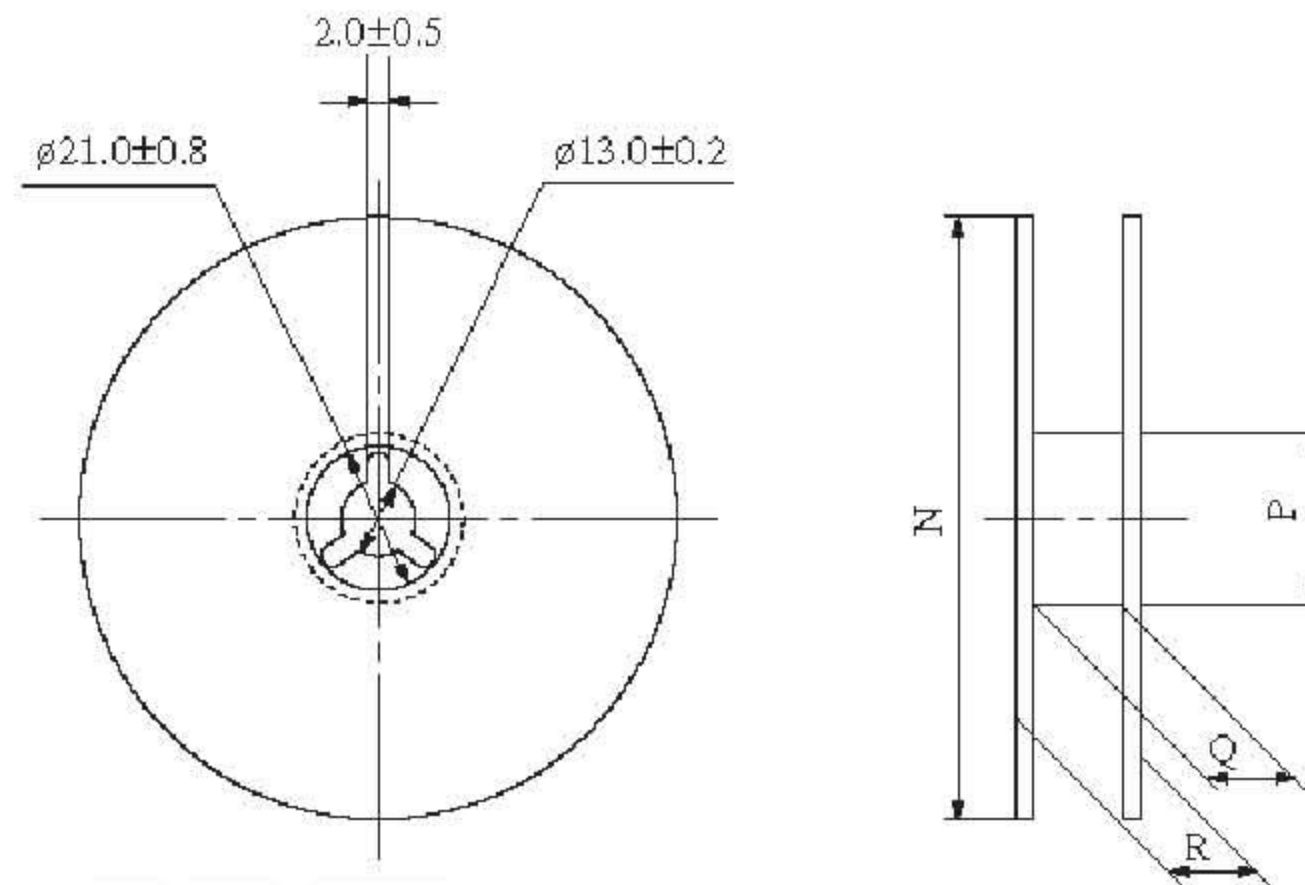
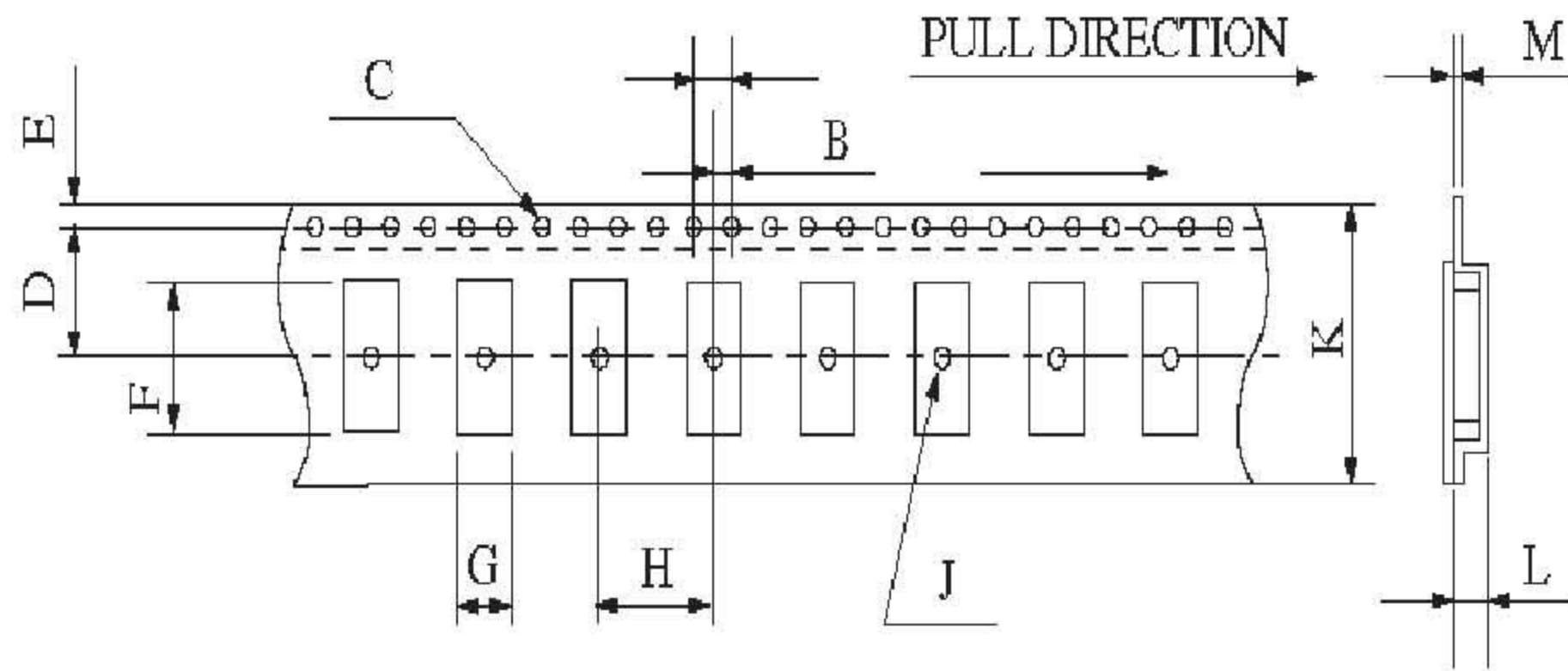
Unit: mm

4. Reliability Characteristics

Item	Condition	Specifications
4.1 Solderability	Solder bath temperature: 260 °C , duration: 5 seconds, Solder: 100% tin	A new uniform coating of solder shall cover a minimum of 95% of the end surface .
4.2 Resistance to soldering heat	Solder temperature 260 +/- 3 °C , Immersion time: 10 S Solder bath composition: 100% tin	No electrical and mechanical damage. Electrical characteristics shall be satisfied.
4.3 Vibration	The frequency range :from 10Hz to 55Hz and return to 10Hz Amplitude: 1.5mm This motion shall be applied for a period of 2 h in each of 3 mutually perpendicular axes (total of 6h)	No electrical and mechanical damage. Electrical characteristics shall be satisfied.
4.4 Drop test	Drop from 75cm height on 3cm hard wooden board for 6 times	No electrical and mechanical damage Electrical characteristics shall be satisfied.

4.5	Cold Storage	The unit shall be stored at a temperature of $-40\pm 3^{\circ}\text{C}$ for 500h. then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.	Electrical characteristics shall be satisfied.		
4.6	High temperature high humidity storage (steady state)	The unit shall be stored at a temperature of $40\pm 2^{\circ}\text{C}$ with relative humidity of 95% for 500h, then it shall be subjected to standard atmospheric conditions for 2h after which measurement shall be made.	Electrical characteristics shall be satisfied.		
4.7	Thermal shock	The unit shall be subjected to 50 successive Change of temperature cycles. Each as shown in table below , then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.	Electrical characteristics shall be satisfied.		
				Temperature	Duration
		1		$-40\pm 3^{\circ}\text{C}$	15minutes
		2.		$100\pm 2^{\circ}\text{C}$	15minutes
3.	Transition time	Within 10 seconds			
4.8	Sealing	Helium leakage detector shall used to measure the leakage rate of gas through any faulty seal. Pressure: 500Kpa, duration:120 minutes	Leakage rate $\leq 1\cdot 10^{-9}\text{ Pa}\cdot\text{m}^3/\text{S}$		
4.9	High temperature Life test	The unit shall be stored at a temperature of $85\pm 3^{\circ}\text{C}$ for 720h ,then it shall be subjected to standard atmospheric condition for 1h after which measurement shall be made.	Electrical characteristics shall be satisfied.		
4.10	Salt Mist	Temperature $+35^{\circ}\text{C}\pm 2^{\circ}\text{C}$ Duration 48 hours NaCl % 5%	No rust. Electrical characteristics shall be satisfied.		
4.11	Soldering Profile	<p>The graph shows a temperature profile for soldering. The y-axis is labeled 'TEMPERATURE' with values 25°C, 150°C, and 260°C. The x-axis is labeled 'TIME(S)' with values 60 and 200. The profile starts at 25°C, rises to 150°C at 60s with a slope of 1 to 9°C/s. It then rises to 260°C with a slope of 1 to 5°C/s. It holds at 260°C for 10s (labeled 'REFLOW'). Finally, it cools down with a slope of 1 to 5°C/s (labeled 'COOLING').</p>	Reflow temperature: Solder with lead: $240^{\circ}\text{C}\pm 5$ Solder without lead: $260^{\circ}\text{C}\pm 5$		

5.Package



SMD3225	A	B	C	D	E	F	G	H	J
	4.0±0.1	2.0±0.1	ø1.5 +0.1 -0	5.5±0.1	1.75±0.1	5.4±0.1	3.5±0.1	8.0±0.1	ø1.5 +0.1 -0
	K	L	M	N	P	Q	R	Quantity	
	12.0±0.2	1.4±0.1	0.3±0.05	ø180 +0 -3	ø60 +1 -0	13.0±0.3	16.5 max	1000	