

SMD3225
24.000MHz/TOL: ±10ppm/CL:12PF

SPECIFICATION REQUIREMENTS FOR CRYSTAL

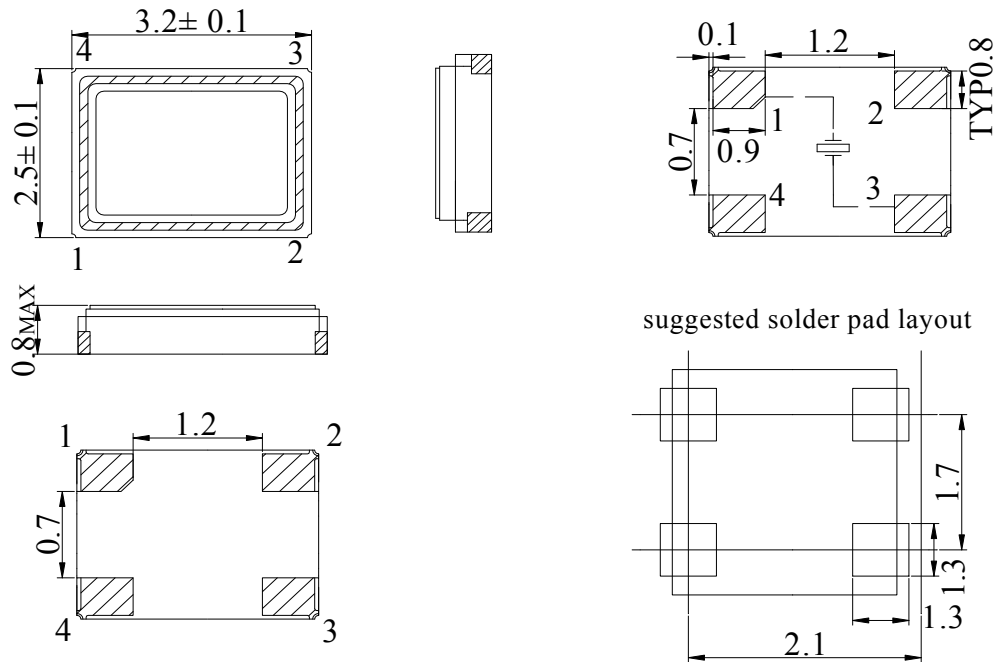
Electrical Characteristic:

1. Model No.	SMD3225 (4pin)
2. Nominal Frequency(FN)	24.000MHz
3. Oscillation Mode	<input checked="" type="checkbox"/> Fundamental <input type="checkbox"/> 3RD overtone <input type="checkbox"/> 5th overtone
4. Frequency Tolerance (ΔF)	± 10ppm (ref. at 25°C)
5. Operation Temperature	-20°C to +70°C
6. Storage Temperature	-40°C to +85°C
7. Frequency stability(Tol)	± 20ppm
8. Load Capacitance(CL)	12PF
9. Series Resistance(ESR)	≤40 Ω
10. Drive Level	100uW
11. Shunt Capacitance (Co)	3.0PF
12. Aging Rate Per Year	± 3ppm/year
13. Insulation Resistance	500MΩ min. at DC 100V±10V
14. Test Circuit.	Measured by S&A 250B

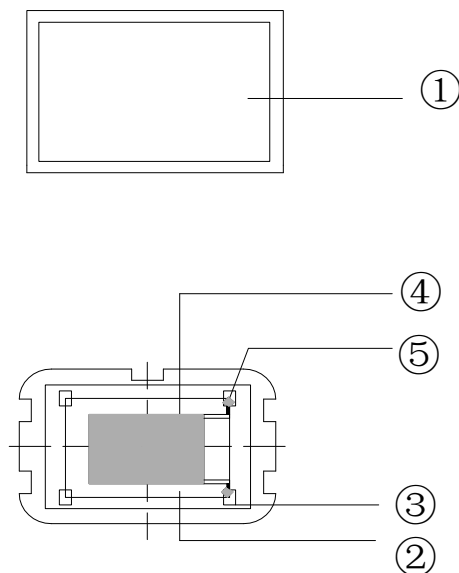
Product structure and dimensions

• Mechanical Dimensions

UNIT: mm

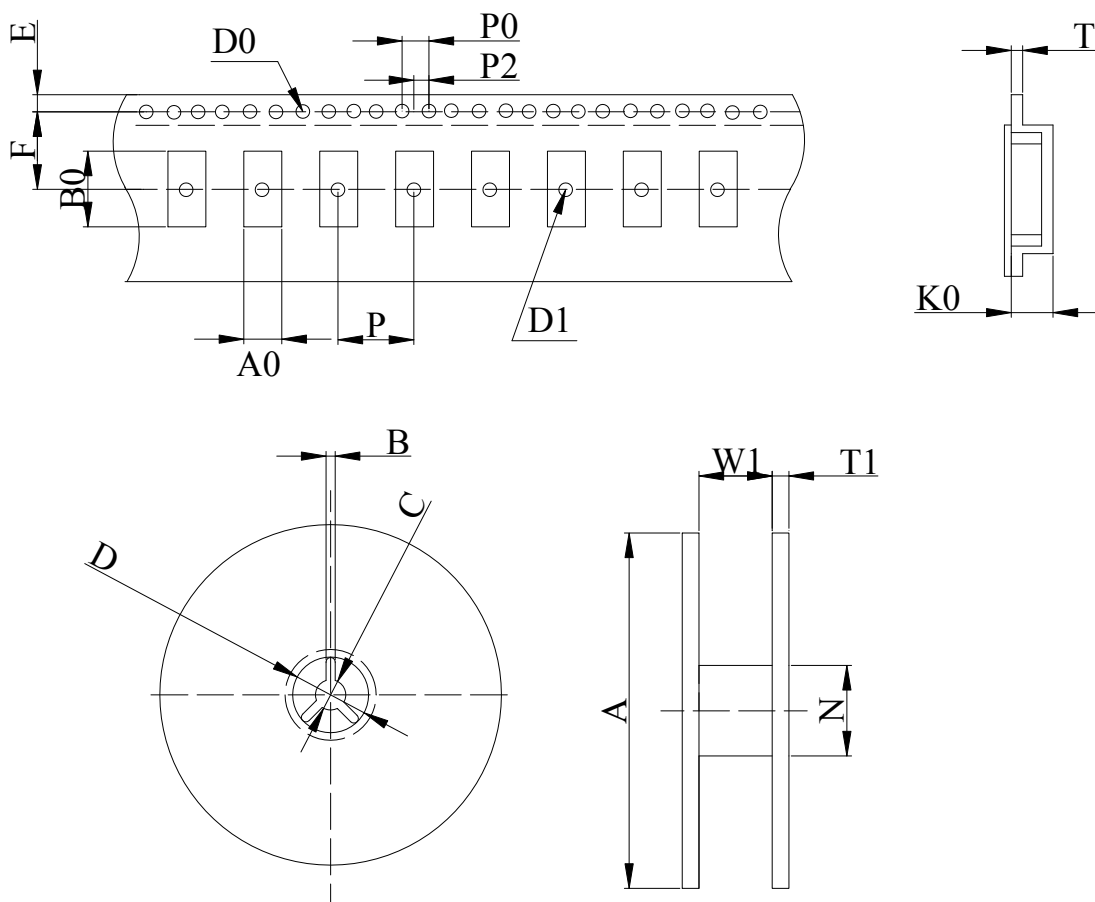


Note) #2,#4 is connected with a cover
(Please connect with a GND or a power supply)



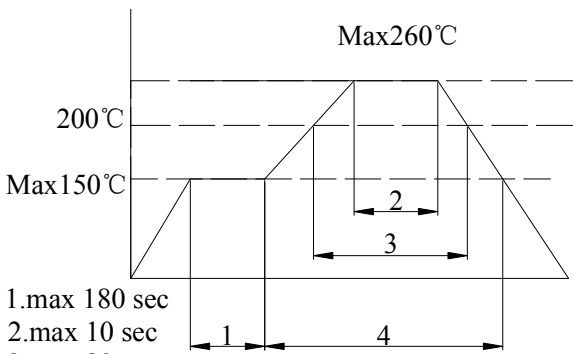
NO.	NAME	名称
①	CAN	外壳
②	BASE	基座
③	LEAD	焊点
④	BLANK	晶片
⑤	RESIN	导电胶

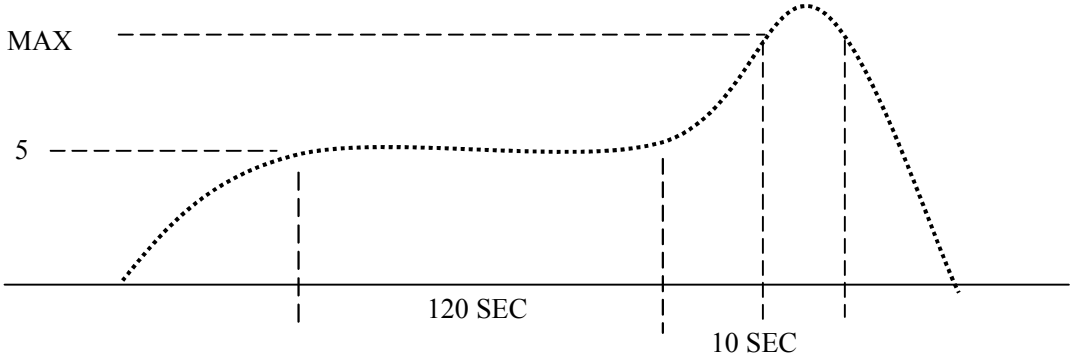
Packaging requirements



	NC-49SMD	8045	7050	6035	5032	4025	3225
W							12.00±0.05
E							1.75±0.10
F							5.5±0.10
T							0.30±0.05
P							8.00±0.10
P0							4.00±0.10
P2							2.00±0.10
D0							Φ1.50±0.10
D1							Φ1.50MIN
A0							2.85±0.10
K0							0.85±0.10
B0							3.55±0.10
A							Φ178±2.00
B							2.00±0.50
C							Φ13.2±0.20
D							Φ20±0.50
N							Φ60.5±1.00
W1							12.5±0.20
T1							1.80±0.20

RELIABILITY SPECIFICATION

NUM	RELIABILITY	RELIABILITY CONDITIONS	SPECIFICATION
1	ELECTRODE TERMINAL PULL	1KG FORCE IN AXES OF ELECTRODE TERMINATION 10±1sec	1.GLASS HERMETICITY & VISUAL. 2. LEAD CRACKED or BROKEN NOT ALLOWED'
2	ELECTRODE WIRE-LEAD BEND	2.5mm FROM ELECTRODE TERMINAL, BEND 90° , '0.45KG MASS APPLIED 3TIMES.	
3	SOLDERABILITY	SOLDER:235 ± 5 °C ,DIPPING:5 ± 0.5sec.	AT LEAST 95% COATING.
4	RESISTANCE TO	SOLDER:260+5 °C ,DIPPING:10 ± 1sec.  <p>1.max 180 sec 2.max 10 sec 3.max 80 sec 4.max 90 sec</p>	1. AT LEAST 95% COATING. 2. $\Delta F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%
5	VIBRATION TEST	10g, 10 ~ 55 ~ 10hz 1MINUTE, X、Y、Z PLANE EACH 2hrs.	$\Delta F/F \leq \pm 5\text{ppm}$ $F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%
6	DROP TEST	75CM HIGH, 3 TIMES ON HARD BOARD	$F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%
7	AGING TEST	85°C Dynamic 1000hrs	$F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%
8	ACCELERATED AGING	125 °C ± 3 °C ,TIME:168 hrs. Dynamic	$F/F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%
9	SALT SPRAY	5%NaCl 35 °C ± 2 °C CHAMBER, 48hrs. PH :6.5~7.2	1.NO CORROSION ON LEAD&CAN $F \leq \pm 5\text{ppm}$ $\Delta F/Rr \leq \pm 10\%$ or 2 Ω BETTER,20%

10	HIGH-LOW TEM. STORAGE(STATIC)	HIGH TEM:125°C ± 2°C,1000hrs LOW TEM:-40°C ± 3°C,1000hrs	F/F ≤ ± 5ppm Δ F/Rr ≤ ± 10% or 2 Ω BETTER,20%
11	HIGH TEM. & HUM. STORAGE TEST	TEM:40°C ± 2°C HUM:83%-88%,96hrs	F/F ≤ ± 5ppm Δ F/Rr ≤ ± 10% or 2 Ω BETTER,20%
12	TEM. & HUM. CYCLING TEST	TEM:-10°C ± 2°C ~ 65°C ± 2°C 24hrs 1 cycle' HUM:93 ± 3% 5 cycles	F/F ≤ ± 5ppm Δ F/Rr ≤ ± 10% or 2 Ω BETTER,20%
13	HIGH-LOW TEM. OPERATING TEST	HIGH TEM:85°C ± 2°C,2hrs LOW TEM:-30°C ± 2°C,2hrs	F/F ≤ ± 5ppm Δ F/Rr ≤ ± 10% or 2 Ω BETTER,20%
14	FREQUENCY/Rr V.S OPERATING TEM..	TEM:-10°C ~ +60°C、-20°C ~ +70°C、0°C ~ 70°C 'MEASURE POINT: EVERY 10°C DEVIATION.	AS SPECIFICATION
15	<p data-bbox="225 1144 507 1178">HIGH LOW SHOCK</p> <div data-bbox="225 1088 1414 1590"> <p data-bbox="1107 1088 1414 1200">1. 150°C 60--120Sec Max 2. 200°C 20--30Sec Max 3. 260°C 10Sec Max</p>  </div> <p data-bbox="225 1644 501 1677">SPECIFICATION</p> <p data-bbox="501 1704 745 1742">ΔF/F ≤ ± 5ppm</p> <p data-bbox="488 1787 1075 1825">ΔF/Rr ≤ ± 10% or 2 Ω BETTER,20%</p>		