



CRYSTAL UNIT SPECIFICATIONS

● ELECTRICAL PARAMETERS

No.	Characteristic	Limits	Remark
1	Nominal Frequency	32.0000MHZ	
2	Mode of Vibration	Fundamental	
3	Frequency Tolerance	±10ppm	Measure at 25°C±3°C
4	Operating Temperature Range	-40°C~+85°C	
5	Frequency Stability	±20ppm	Over Operating Temperature Range
6	Storage Temperature Range	-40°C~+105°C	
7	Load capacitance	8PF	
8	Recommended matching capacitance range		
9	Equivalent Series Resistance	120Ω max	
10	Drive Level	100μW max	
11	Insulation Resistance	500MΩ	At 100V _{DC}
12	Shunt Capacitance	3pF	
13	Motional Capacitance		
14	Aging Per Year	±3ppm	First Year
15	Resistance Variation vs. Drive Level		
16	Frequenc Variation vs. Drive Level		
17	Package Type	32.0000M	See Page 4
18	Remark		Remark



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Reliability Specifications

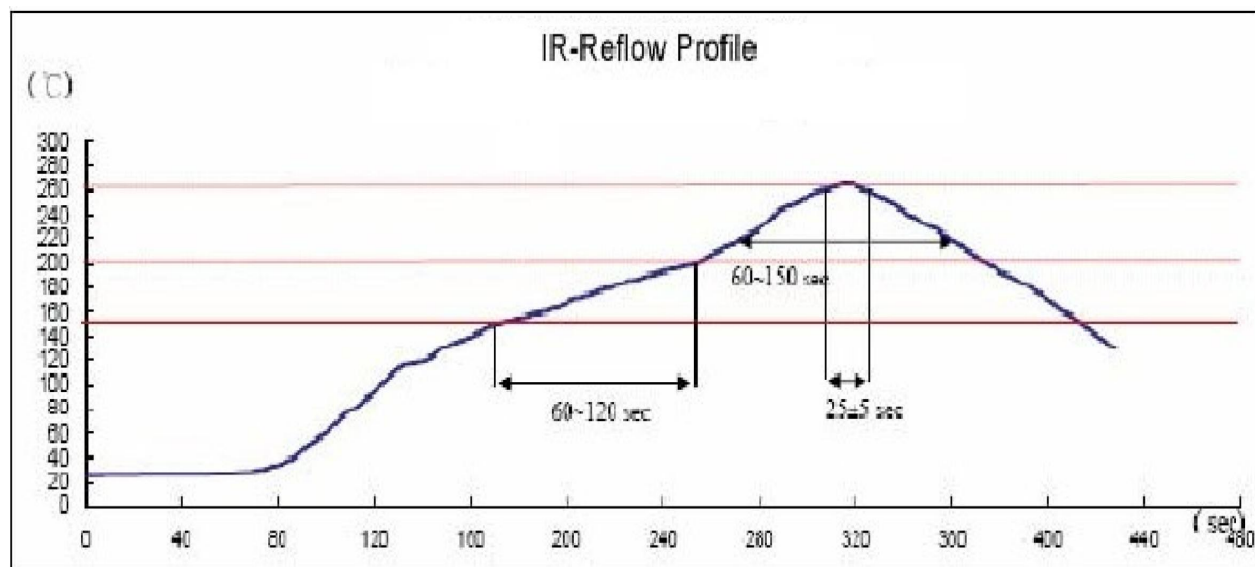
No.	Test Item	Test Conditions	Reference
1	High Temperature Storage	Temperature: $125^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Time: 1000 ± 24 Hours	MIL-STD-883E-1016
2	Temperature Cycle	Temperature 1: $-55^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Temperature 2: $125^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Temperature change between T1 and T2 at soonest Run 15 cycles, maintain T1 and T2 30minutes each in one cycle	MIL-STD-883E-1010.7B
3	Solder Heat Resistance	Pre-heat: 125°C 60~120 Seconds Solder Temperature: $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Time: 5 Seconds	MIL-STD-202F 210 E
4	Drop Test	3 Times Free Fall from 75cm height table to 3cm thickness hard wood board	MIL-STD-202F-203B
5	High Temperature, High Humidity Storage	Temperature: $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Relative Humidity: 90%~95% Time: 1344 Hours ± 24 Hours	MIL-STD-202 F-103B
6	Steam Aging	Temperature: 97°C Time: 8 Hours 230°C solder pot to check solderability	MIL-STD-883 C-1008.2B
7	Solderability	Dip in flux 5~10 seconds Temperature: $230^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Time: 5 Seconds	MIL-STD-883E 2003
8	Aging	Temperature: $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 250 ± 12 Hours	MIL-STD-202 F-108A B
9	Thermal Shock	Temperature 1: $-55^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Temperature 2: $125^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Temperature change between T1 and T2: 5 seconds 10 cycles, maintain T1 and T2 for 30 minutes each in one cycle	MIL-STD-883E-1011.9B
10	Vibration	Frequency Range: 10Hz~1000Hz Amplitude: 1.5mm 40mins in each direction, total 120mins	MIL-STD-202F-201A



SHENZHEN CRYSTAL POWER SOURCE TECHNOLOGY CO., LTD

CRYSTAL UNIT SPECIFICATIONS

- **RECOMMENDED IR REFLOW PROFILE**
- **IR REFLOW PROFILE OF CERAMIC SMD PRODUCTS FOR Pb FREE PROCESS**



IR-Reflow Test

Reference Standard :JEDEC-STD 020

Test Conditions:Pre-heating:150° C to 200° C, 60 -120 sec

Heating :217° C, 60-150 sec

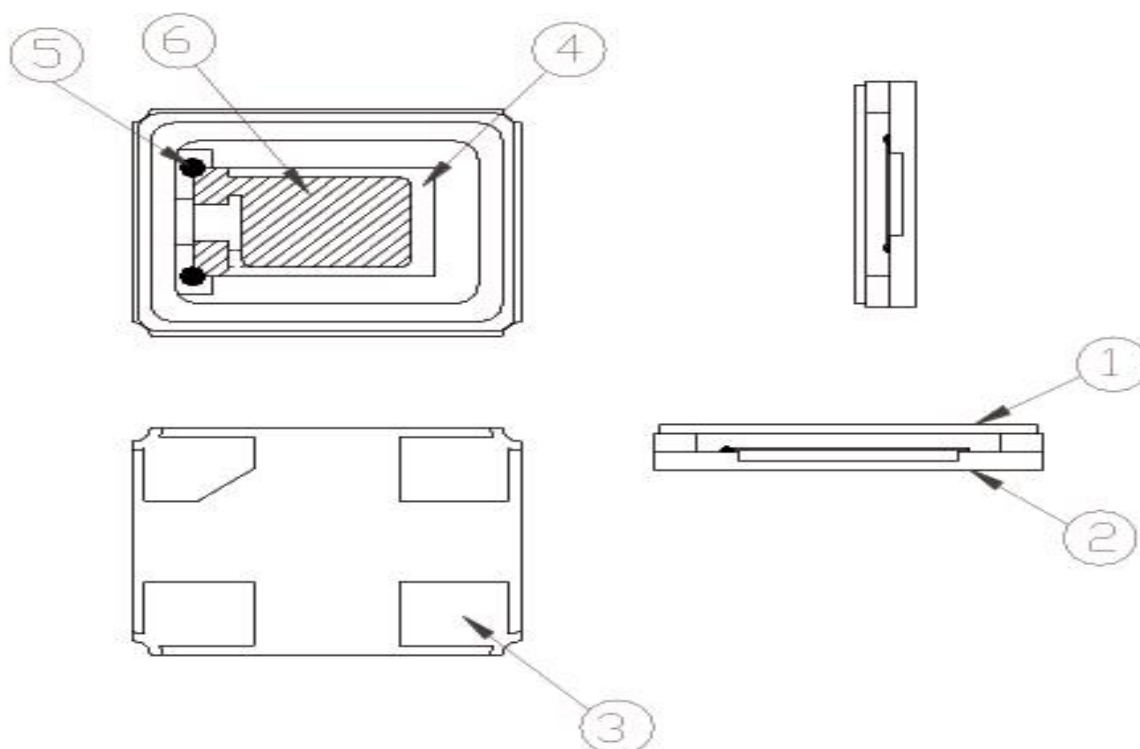
Peak Temperature : $260 \pm 5^{\circ} \text{C}$, $25 \pm 5 \text{ sec}$



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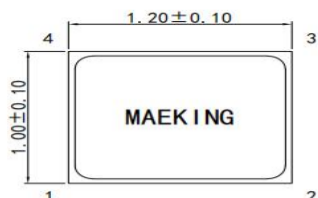


NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Cap(Lid)	Metal(Fe)	1	
2	Base (Package)	Ceramic(Al ₂ O ₃)	1	Alumina ceramics
3	Pad (Package)	Au	4	Tungsten metalize +Ni plating + Au plating
4	Crystal blank	Sio ₂	1	-
5	Conductive adhesive	Ag	4	Silicone resin
6	Electrode	Ag + Cr	2	-



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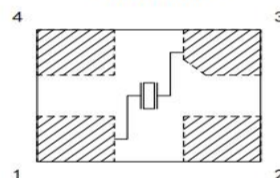
- Outline Dimensions (unit: mm)



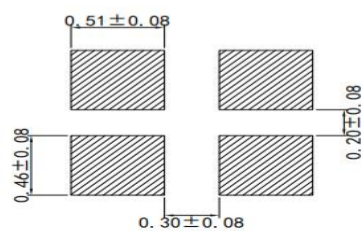
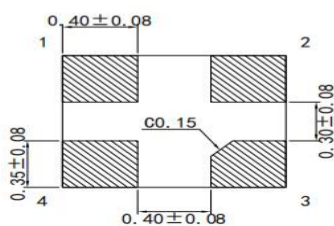
Pin Connect	
1, 3	Crystal
2	GND
4	NC



< Connection >



< Suggested Layout >



- MARKING JLY / 32.000
32.000 / MHZ

First Line: Frequency in MHz (6 digitals include dot)

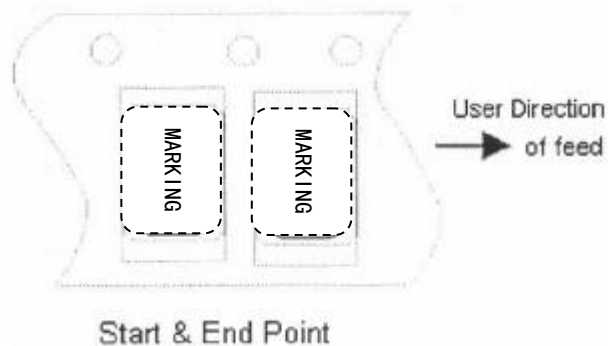
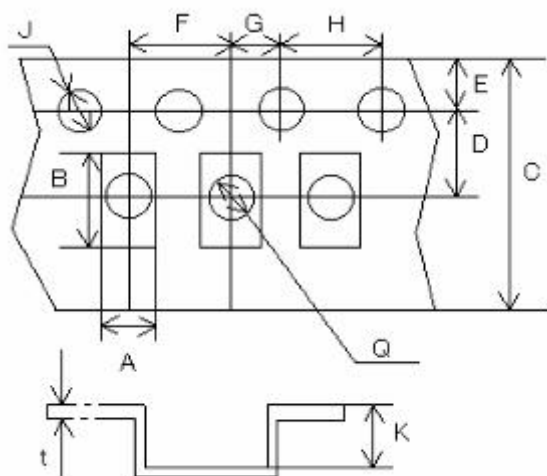
Second Line:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aut	Sept	Oct	Nov	Dec
A	B	C	D	E	F	G	H	J	K	L	M

FOR EXAMPLE: 32.000MHZ

● **PACKING(Units:mm**

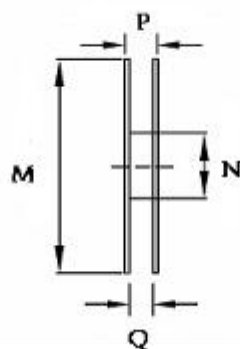
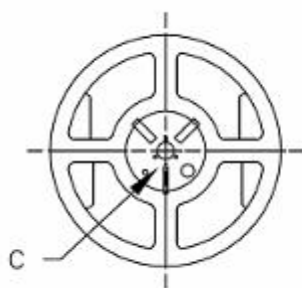
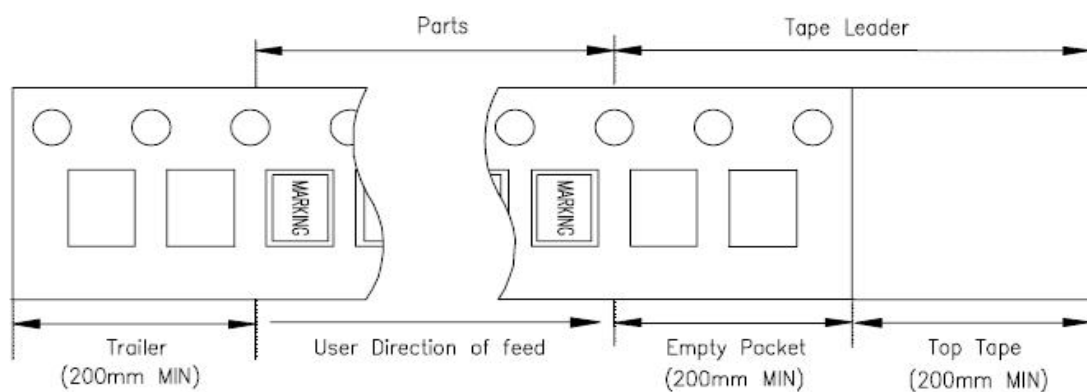
※CARRIER TYPE



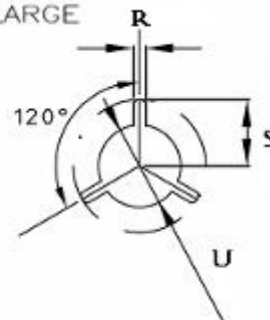
A	B	C	D	E	F	G	H	J	K	t
1.14	1.32	8.0	3.5	1.75	4.0	2.0	4.0	1.55	0.36	0.2

REMARK:

REEL: 3000 PCS/Reel



C.ENLARGE



M	N	P	Q	R	S	U
178.0	60.2	11.5	8.0	2.5	11.0	13.0