江苏长晶科技股份有限公司
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

产 品 规 格 书

SPECIFICATIONS FOR PRODUCT

产品类型 TYPE : **Quartz Crystal**

产品规格 SPEC : **32.768KHz/2012/12.5PF/20PPM**

产品型号 P/N : **CJK08-327681220B20**

日期 DATE : **2022/07/26**

核准及签名 R&D APPR. SIGNATURED			部门 DEPT.
拟制 ISSUE	审核 CHECK	批准 APPROVAL	频率器件事业部
Ivan 2022/07/26	Abbey 2022/07/26	Ken 2022/07/26	

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CJK08 Quartz Crystal

CJK08-327681220B20

1. Scope:

This specification applies to the RoHS/SONY compliance quartz crystal unit with a frequency of 32.768KHz which will be used in crystal oscillator applications.

Construction:

2.1 Type of Quartz Resonator: CJK08

3. Electrical Characteristics

3.1 Mode of Vibration:	+2°X-cut , Fundamental
3.2 Nominal frequency(F):	32.768KHz
3.3 Load Capacitance(C_L):	12.5PF
3.4 Frequency Tolerance at 25℃	±20ppm
3.5 Series Resistance(Rr):	80 KΩ Max
3.6 Quality Factor(Q):	13 KΩ Min
3.7 Turnover Temperature(To):	25 ℃± 5℃
3.8 Temperature Coefficient(K):	-0.035±0.005 ppm/℃²
3.9 Operation Temperature:	-40 ℃~ +85℃
3.10 Preservation Temperature:	-55 ℃~ +125℃
3.11 Shunt Capacitance(C_O):	1.15PF Typical
3.12 Aging 1st Year(△f/f):	±3 ppm Max.
3.13 Shock Resistance:	±5 ppm Max.
3.14 Motional Capacitance(C_1):	4.6fF Typical
3.15 Insulation Resistance:	500MΩ at DC 100V±15V
3.16 Drive Level:	0.5μW Max

4. Reliability Specifications

This is the quality control and quality assurance and reliability tests performance data for the RoHS/SONY compliance 32.768KHz SMD2012 Quartz Crystal.

related to the specification and approval sheet provided by JSCJ .

Standard test condition (TEMP.: 20±5°C. Relative humidity: 65±20%)

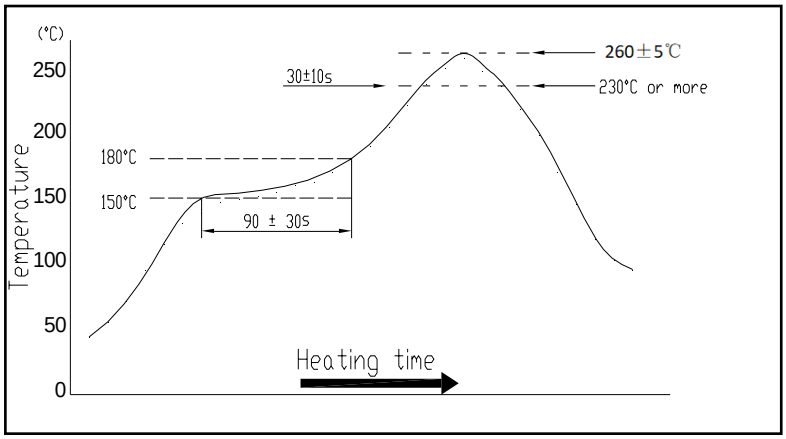
For any discrepancy in GO/NG, test will be done at TEMP.25±2°C, R.H. 65±5%.

NO.	PROCESS	SPECIFICATION	TEST METHOD
4.1	Temperature Cycle (GB/T 2423.22-2002, Method Nb)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	10 cycles from -55°C to 125°C. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.2	Low Temperature Storage (GB/T 2423.1-2001, Method Aa)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 72 hrs at -55°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.3	High Temperature Storage (GB/T 2423.2-2001, Method Ba)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 72 hrs at 125°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.4	Humidity (GB/T 2423.3-2006, Method Cab)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 96 hrs at 40 °C ± 3 °C, with 93 %R.H, Then keep the DUT in dry oven at 40 ± 5 °C for 24 hour. Measurement taken after DUT being left at room temperature for 1 to 2 hours.
4.5	Vibration (GB/T 2423.10-1995, Method Fc)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Apply 0.75mm vibration at sweep frequency 10～500 Hz, 10 cycles in each direction of 3 axis. Measurement taken after 1 hour.
4.6	Shock (GB/T 2423.5-1995, Method Ea)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.and exhibit no visible damage.	Peak 1000m/s2, normal width 6ms half sine wave form, 3.7m/s, 3 perpendicular axis of samples, 3 cycles / direction, total 18 cycles. Measurement taken after 1 hour.
4.7	Drop (GB/T 2423.8-1995, Method Ed)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.and exhibit no visible damage.	Free drop to the steel plate with thickness of 3 mm from 0.75 m heights for 3 times.
4.8	Solderability (IEC60068-2-58,Test Td:)	Terminals shall be covered more then 95% with solder.	Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and soldering time for 20s ± 5s at 235°C, peak soldering time for 10s ± 1s betweein 240 and 250°C. There is no need to do functional test. 8-12X magnifier.
4.9	Terminal Strength (JIS-C-6429 Method 1 & 2)	No visible damage	Mount on a glass-epoxy board (100x50x1.6mm), then bend to 2mm displacement (velocity 1mm/sec) and keep for 5 seconds. or pulling force 0.5kg for at least 60 seconds.
4.10	Resistance to Soldering Heat (IEC60068-2-58,Test Td: Table 4)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and sodering time for 60s max at 235°C, peak soldering time for 20s max at 265°C max. Measurement taken after DUT being left at room temperature for at least 2 hours.
4.11	OTHERS		

5. Recommended Reflow soldering condition (SMD)

Solder profile

Peak: 260±5℃ Soldering zone: 230℃ or more, 30±10s. Pre-heating zone 1: 150～180℃, 90±30s



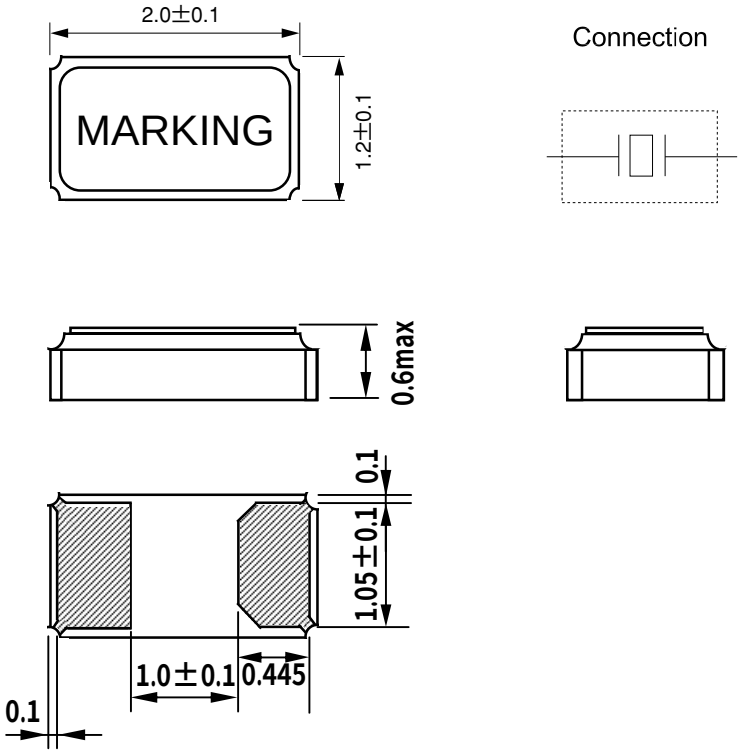
Temperature profile for reflow soldering

6. Soldering iron method

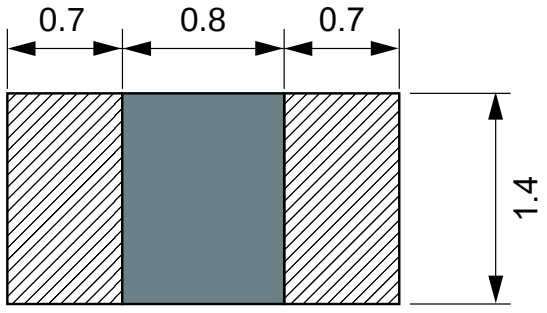
Bit temperature: 350±10℃ Application time of soldering iron:3+1 s. For other procedures, refer to IEC 60068-2-20.

Package Outline Dimensions

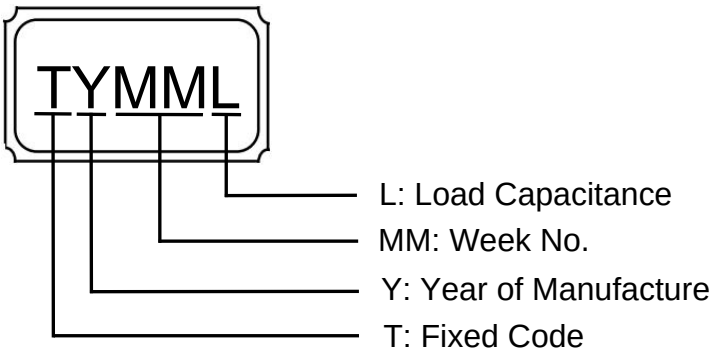
Units:mm



Suggested Pad Layout



Marking



L: A 12.5PF、B 9PF、C 7PF、D 6PF
MM: International cycle week
Y: 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
1 2 3 4 5 6 7 8 9 0
（The Year code will be cycled every ten years.）

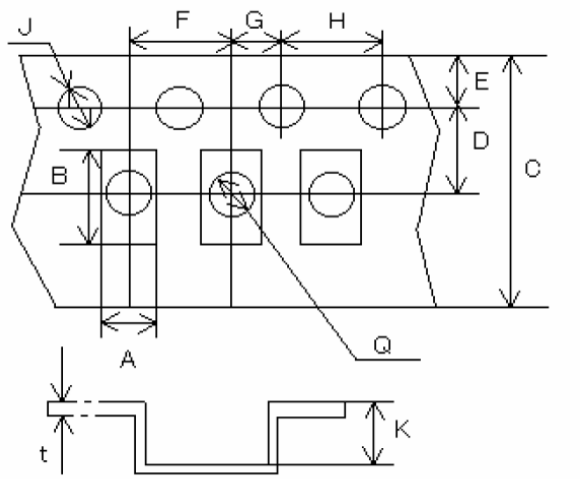
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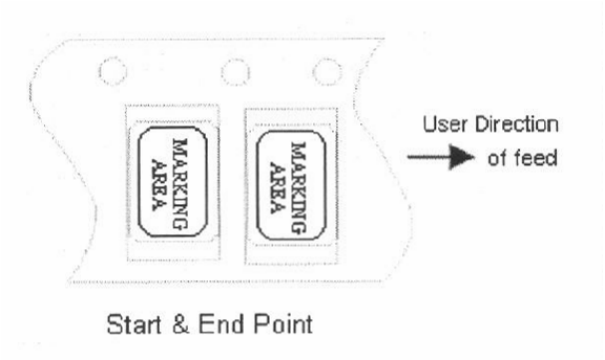


12.5PF
Made in Week 12, 2022

Tape and Reel

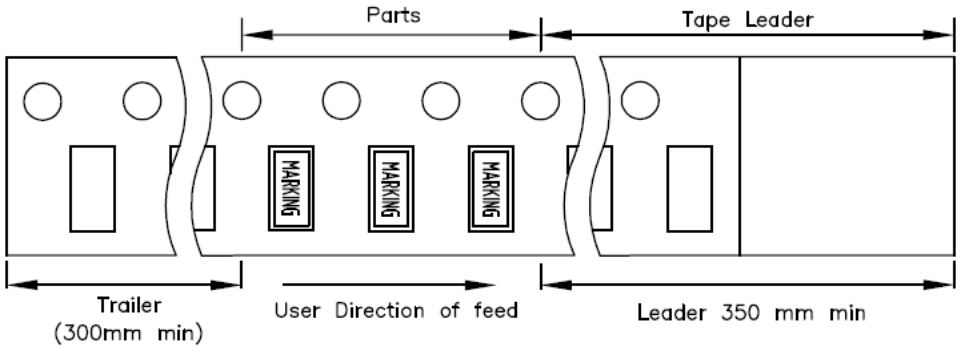
CARRIER TYPE



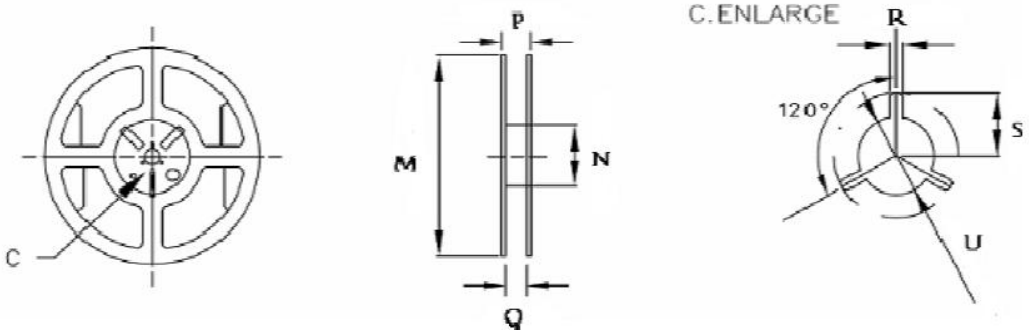


A	B	C	D	E	F	G	H	J	K	t
1.4	2.3	8.0	3.5	1.75	4.0	2.0	4.0	1.5	0.75	0.25

REMARK



REEL：3000 PCS/Reel



M	N	P	Q	R	S	U
178	60.2	11.5	8.0	2.5	11.0	13.0

NOTICE

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