



福建省长兴电子有限公司

CHANGXING ELECTRONICS CO., LTD.

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石英晶体谐振器产品确认书

Quartz Crystal Resonator Specification For Approval

产品型号:	SMD8038 32.768000KHz
Model	
客户名称:	
Customer	
客户编号:	
Customer's Part No.	
长兴编号:	6HSC327C0312L
Product No.	
发行日期:	
Issue Date	

承办: 吴丽萍

审核: 杨启付

批准: 吕锡昌

内容:

- 1、Features 特点
- 2、Electrical Specifications 电气参数
- 3、Dimensions 外型尺寸
- 4、Marking 印码
- 5、Reflow Condition 回流焊条件
- 6、Packing 包装 (EIA-481-2)
- 7、Reliability Specifications 可靠性规范

客户 Conclusion:

☐ Conditional Approval ☐ Full Approval ☐ Reject

会 签 意 见	
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APPROVED BY :

ISSUED DATE :

8.0x3.8x2.4mm SMD kHz Crystals / 6H Series

- Features 特点
- . 4 pads surface mount package.
 - . Application for variety of automotive products reference clocks.
 - . High reliable environmental performance.
 - . RoHS compliant /Pb Free.

■ Electrical Specifications电气参数

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperatu: $22\pm5^{\circ}\text{C}$

Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperatu: $22\pm1^{\circ}\text{C}$

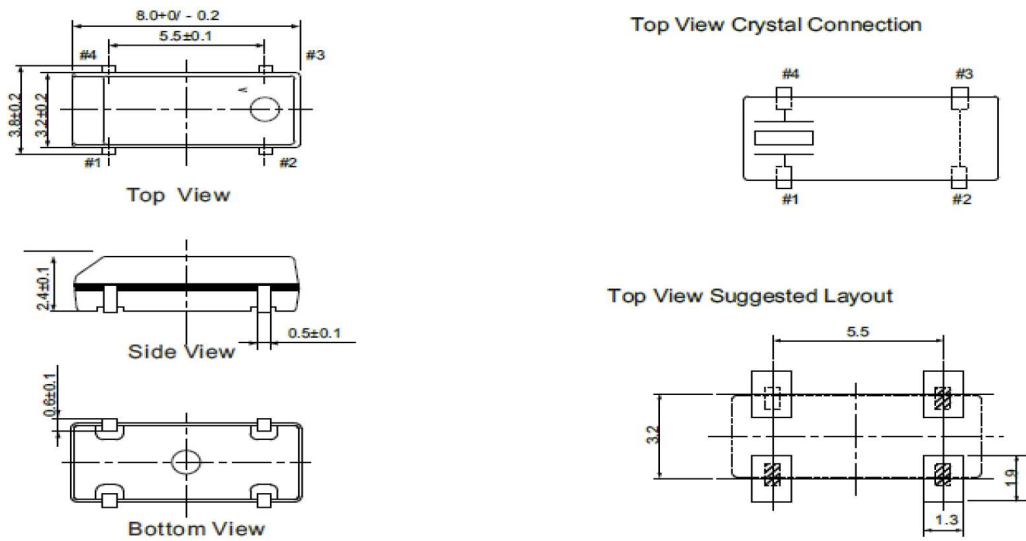
Relative humidity : 40%~70%

Measure equipment

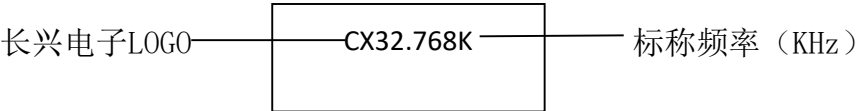
Electrical characteristics measured by HP E5100A or equivalent.

	Parameters	Electrical Spec.	UNITS	Notes
1	Nominal Frequency	32.768000	KHz	-
2	Oscillation Mode	Fund	-	-
3	Load Capacitance	12.5	pF	-
4	Frequency Tolerance	± 20	ppm	at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$
5	Turnover Temperature	25 ± 3	$^{\circ}\text{C}$	转换温度
6	Temperature Coefficient	$[-0.03\pm0.01]\text{ppm}/^{\circ}\text{C}$		二次温度系数
7	Operating Temperature	$-40\sim+85$	$^{\circ}\text{C}$	-
8	Aging	± 3	ppm	1st Year
9	Drive Level	0.1	uW	-
10	Effective Resistance Rr	70 Max.	K Ω	-
11	Shunt Capacitance C0	2 Max.	pF	-
12	Motional Capacitance C1	-	fF	-
13	Pulling Sensitivity TS	-	ppm/pF	-
14	Spurious Response	-	dB	-
15	Insulation Resistance	500 Min.	M Ω	at DC 100V
16	Storage Temperature Range	$-55\sim+125$	$^{\circ}\text{C}$	-
17	RLD2	- Max.	K Ω	-
18	FDLD	- Max.	ppm	
19	DLD2	- Max.	Ω	
20	FDLDH	-	ppm	
21	DLDH2	-	Ω	
22	DLDF	-	Ω	
23	DLD2 (低)	-	Ω	-
24	MSL	Level 1	-	IPC/JEDEC J-STD-033C
25	Others	-	-	-

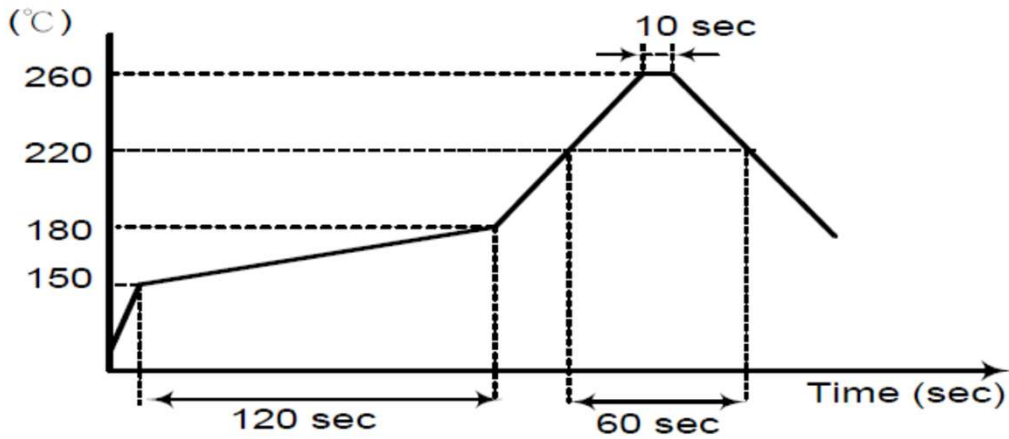
■ Dimensions外型尺寸



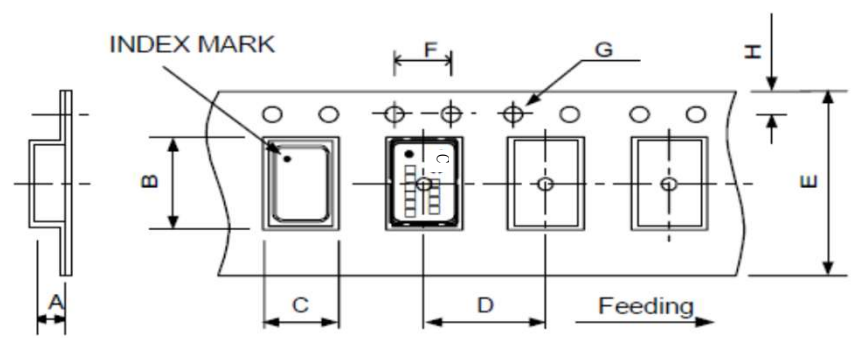
■ Marking印码



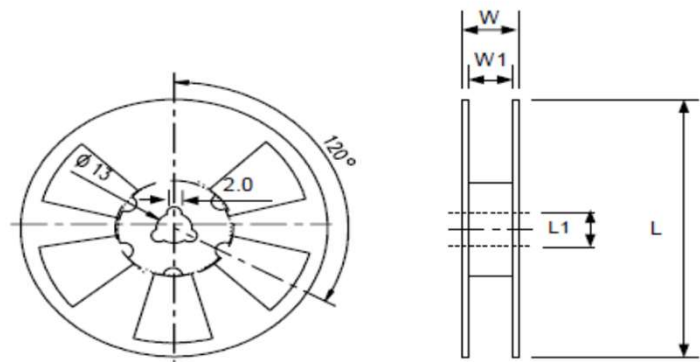
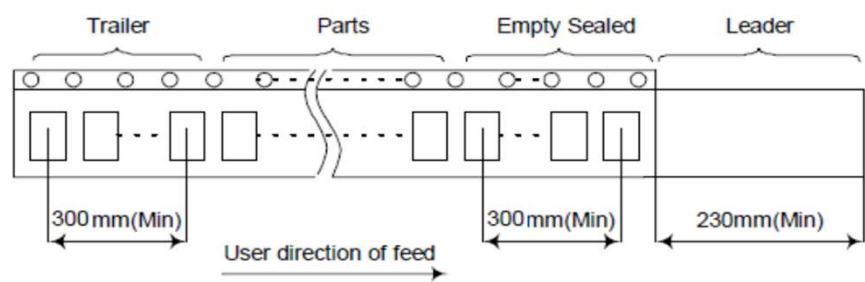
■ Reflow Condition回流焊条件



■ Packing包装 (EIA-481-2) 3KPCS/REEL



DIMENSIONS	A	B	C	D	E	F	G	H
UNIT : mm	2.60±0.1	8.20±0.1	4.00±0.1	8.00±0.1	16.0±0.2	4.00±0.1	1.55±0.05	1.75±0.1



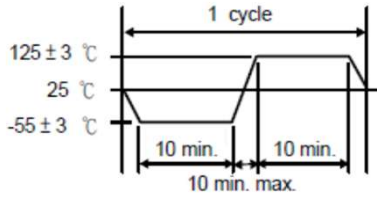
DIMENSIONS	L	L1	W	W1	Standard Reel Quantity
UNIT : mm	330±1.0	14±0.5	20.5±0.2	16.5±1.0	3,000 pcs per reel(WHITE)

■ Reliability Specifications (可靠性规范)

1. Mechanical Endurance (机械耐久性)

No.	Test Item	Test Methods	REF. DOC
1.1	Drop Test	150 cm height, 3 times on concrete floor .	JIS C6701
1.2	Shock Test	150g/150cm Height, 3 times in the direction of $\pm X$, $\pm Y$, $\pm Z$ on concrete floor	IEC-68-02-27
1.3	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202F
1.4	Vibration	Frequency range 10 ~2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute Perpendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
1.5	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm ²	MIL-STD-883E
1.6	Fine Leak	Helium Bombing 4.5 Kgf / cm ² for 2 hr	
1.7	Solderability	Temperature 260 °C $\pm$ 5°C Immersing depth 0.5 mm minimum Immersion time 5 $\pm$ 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883E

2. Environmental Endurance (环境耐久性)

No.	Test Item	Test Methods	REF. DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 $\pm$ 5 °C Test time 10 $\pm$ 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 °C $\pm$ 3 °C for 500 $\pm$ 12 hours	MIL-STD-883E
2.3	Low Temp. Storage	- 40 °C $\pm$ 3 °C for 500 $\pm$ 12 hours	
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle  The diagram shows a temperature cycle with three levels: 125 $\pm$ 3 °C, 25 °C, and -55 $\pm$ 3 °C. The cycle consists of a 10 min. ramp down from 125 °C to -55 °C, a 10 min. dwell at -55 °C, a 10 min. ramp up to 125 °C, and a 10 min. dwell at 125 °C. The total duration of one cycle is 10 min. max.	MIL-STD-883E
2.5	High Temp&Humidity	85°C $\pm$ 3°C , RH 85% , 500Hrs	JIS C5023
2.6	Pressure Cooker Storage	125°C $\pm$ 3°C , RH100% , 2 bar , 240Hrs	JIS C6701