



浙江汇隆晶片技术有限公司

Zhejiang Huilong Crystals Technology Co.,Ltd

SPECIFICATION FOR APPROVAL

CUSTOMER

NOMINAL FREQUENCY

20.000000 MHz

HOLDER TYPE

HC-49S-SMD

SPEC. NO. (P/N)

HB20000F014

CUSTOMER P/N

ISSUE DATE

Apr.17,2023

APPROVED	PREPARED	QA
彭达梅	金文波	陈全根
APPROVED BY CUSTOMER:		AVL Status
Please return one copy with approval to HLC		

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<http://www.cn-hlc.com>



ISO9001
ISO14001



RoHS Compliant (Pb- Free)



TYPE HB SEAM SEALED X'TAL

ELECTRICAL SPECIFICATIONS

Item	Symbol	Specifications				Notes
		Min	Type	Max	Units	
Nominal frequency	FO	20.000000			MHz	
Mode of Oscillation	OT	Fundamental				
Load Capacitance	CL	20			pF	
Frequency Tolerance	FT	± 20			ppm	at 25°C $\pm 3^\circ\text{C}$
Frequency Stability		± 30			ppm	with working temperature Reference to 25°C frequency
Working temperature range	TR	-40 ~ 85			°C	
Drive Level	DL	100			μW	
Series Resonant Resistance RR	CI/RR	40			Ω	Max.
Shunt Capacitance C0	C0	3			pF	Max.
Aging		± 3			ppm/yr.	
Storage temperature range		-40 ~ 125			°C	

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TYPE HB SEAM SEALED X'TAL

MARKING



HLC: HLC Use Code x: CL Code x: Date Code

CL	Code	CL	Code	CL	Code
0pf	0	7.5pf	H	11.2pf	a
6pf	1	11pf	I	11.4pf	b
8pf	2	8.5pf	J	13.5pf	d
10pf	3	7.1pf	K	20.5pf	e
12pf	5	19pf	L		
15pf	6	12.5pf	M		
16pf	7	27pf	N		
18pf	8	7.3pf	O		
20pf	9	13pf	P		
22pf	A	11.5pf	Q		
25pf	B	7pf	R		
28pf	C	14pf	S		
30pf	D	23pf	T		
32pf	E	11.1pf	U		
9.5pf	F	33pf	V		
9pf	G	10.5pf	W		
		9.2pf	Y		
		50pf	Z		

Jan-23	N	Jan-24	A
Feb-23	P	Feb-24	B
Mar-23	Q	Mar-24	C
Apr-23	R	Apr-24	D
May-23	S	May-24	E
Jun-23	T	Jun-24	F
Jul-23	U	Jul-24	G
Aug-23	V	Aug-24	H
Sep-23	W	Sep-24	J
Oct-23	X	Oct-24	K
Nov-23	Y	Nov-24	L
Dec-23	Z	Dec-24	M

备注：年份印字代码原则按奇偶年两年一个循环

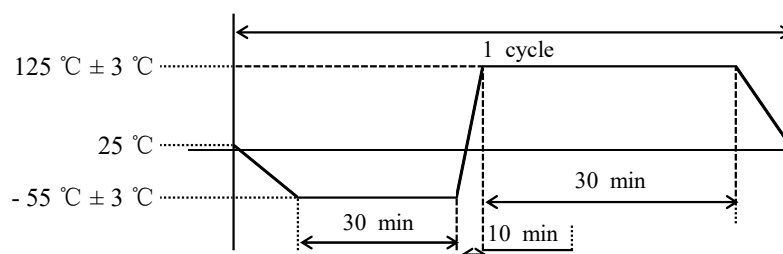
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TYPE HB SEAM SEALED X'TAL

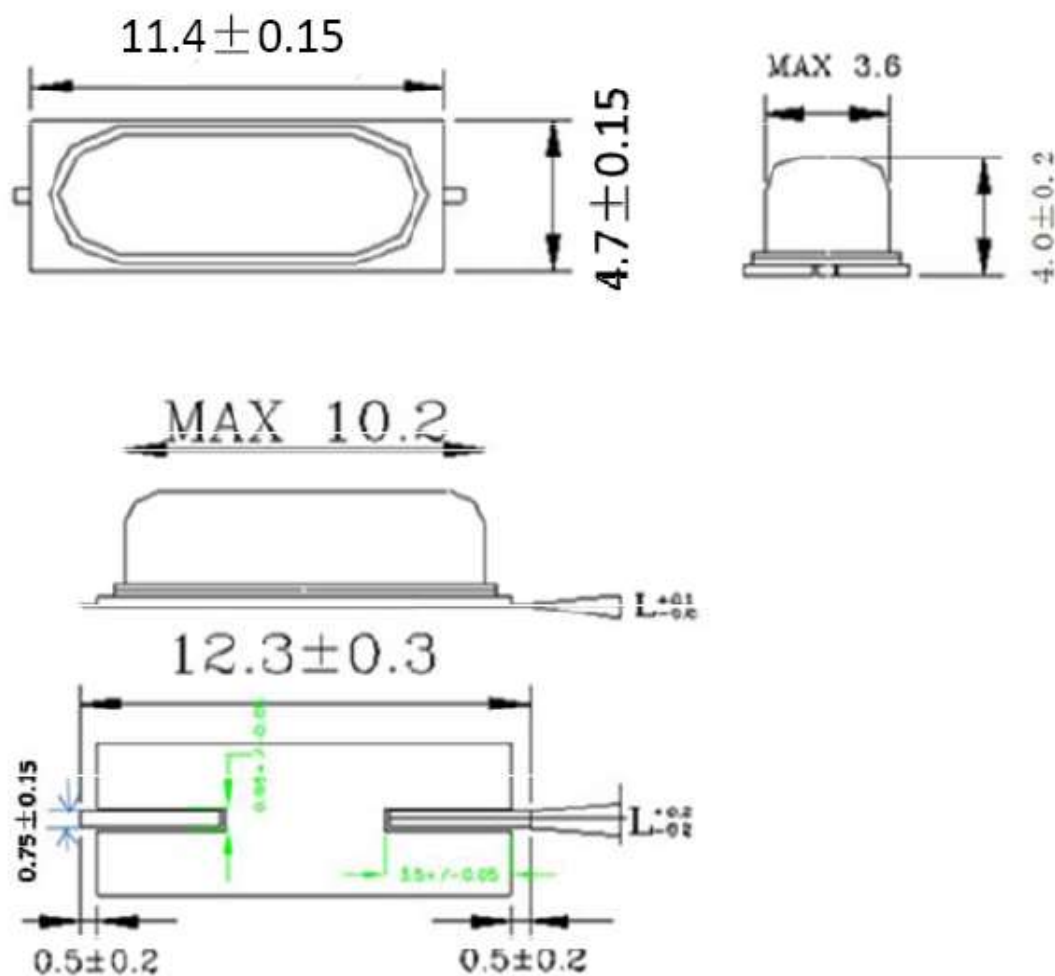
RELIABILITY SPECIFICATIONS

NO.	TEST ITEM	TEST METHODS
1	DROP TEST	Device are dropped from a height of 75 cm onto 3 mm thick wood to perform 3 times of random drops.
2	MECHANICAL SHOCK	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times.
3	VIBRATION	Frequency range 10 ~ 2000 Hz Amplitude 1.5 mm Sweep Time 20 minute Test Time 2 hours
4	SOLDERABILITY	MIL - STD - 20E Method 208C Temperature 245°C±5°C Material H63A (Silver 2 ~ 3 %) Immersion depth 0.5 mm minimum Immersion time 3 ± 0.5 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)
5	RESISTANCE TO SOLDERING HEAT	MIL - SLD - 202, Method 210, Condition I or J 10 sec immersion into 260 ± 5°C solder pot, above 180°C is 90 ~ 120 sec.
6	LOW TEMP. STORAGE	Leave at - 55 °C ± 2°C for 1000 ± 12 hours
7	HIGH TEMP. STORAGE	Leave at 125 °C ± 2°C for 1000 ± 12 hours
8	THERMAL SHOCK	Total 100 cycles of the following temperature cycle

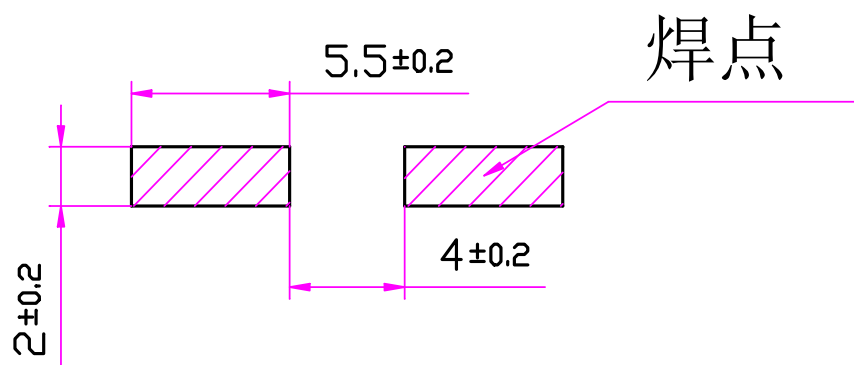


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DIMENSIONS



推荐焊点设计尺寸（单位：MM）

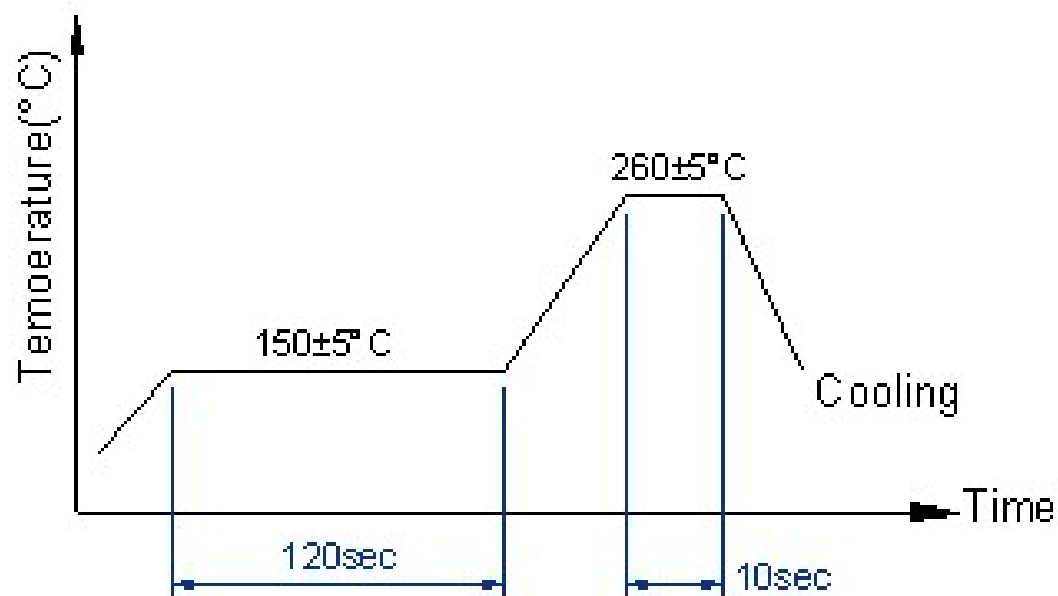


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TYPE HB SEAM SEALED X'TAL

SUGGESTED IR REFLOW PROFILE



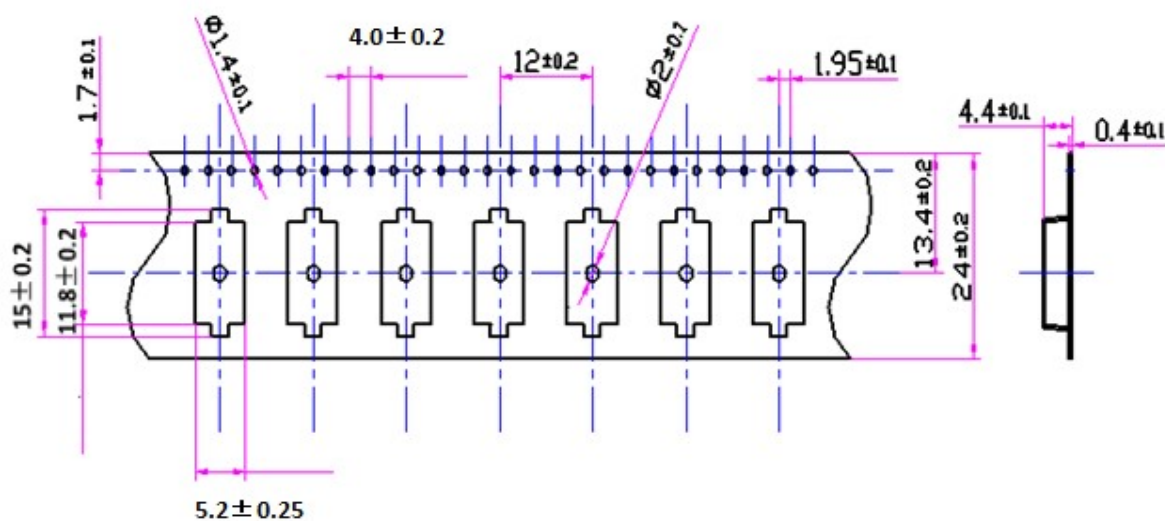
Total Time: 200 Sec.Max

Solder melting point : 185°C

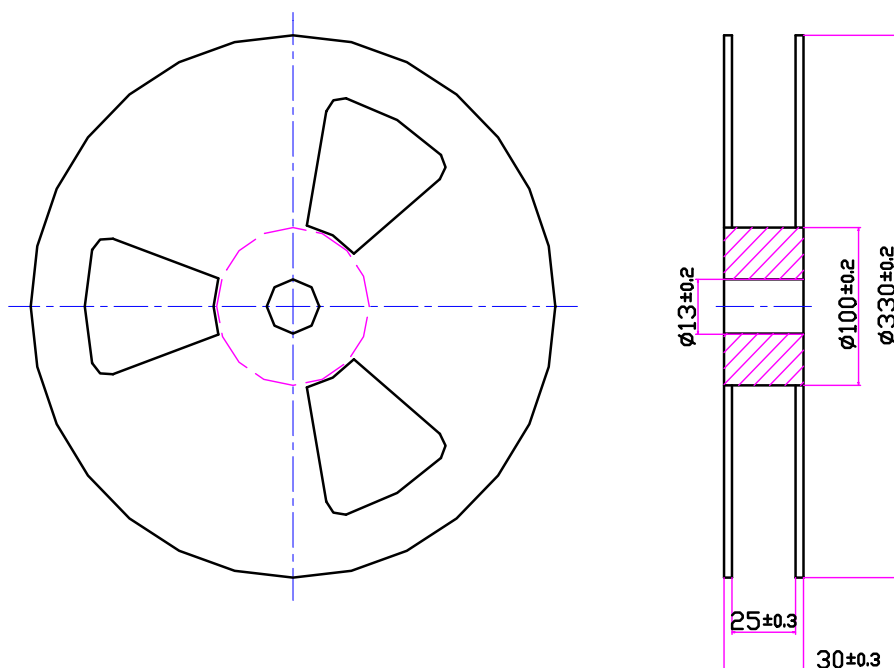
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TYPE HB SEAM SEALED X'TAL

Taping



Reel



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