



浙江汇隆晶片技术有限公司

Zhejiang Huilong Crystals Technology Co.,Ltd

SPECIFICATION FOR APPROVAL

CUSTOMER

NOMINAL FREQUENCY

24.000000 MHz

HOLDER TYPE

3225

SPEC. NO. (P/N)

HL24000015-A

CUSTOMER P/N

ISSUE DATE

Nov.27,2025

APPROVED	PREPARED	QA
		
APPROVED BY CUSTOMER:		AVL Status
Please return one copy with approval to HLC		

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ISO9001
ISO14001



RoHS Compliant (Pb- Free)



TYPE HL SEAM SEALED X'TAL

ELECTRICAL SPECIFICATIONS

HLC Parts Number : HL24000015-A

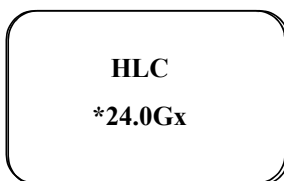
Item	Symbol	Specifications				Notes
		Min	Type	Max	Units	
Nominal frequency	FO	24.000000			MHz	
Mode of Oscillation	OT	Fundamental				
Load Capacitance	CL	9			pF	
Frequency Tolerance	FT	± 10			ppm	at 25°C $\pm 3^\circ\text{C}$
Frequency Stability		± 10			ppm	with working temperature Reference to 25°C frequency
Working temperature range	TR	-20~70			°C	
Drive Level	DL	100			μW	
Series Resonant Resistance RR	CI/RR	40			Ω	Max.
Insulation Resistance	IR	>500			M Ω	
Shunt Capacitance C0	C0	3			pF	Max.
Aging		± 3			ppm/yr.	
Storage temperature range		-55 ~ 125			°C	

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TYPE HL SEAM SEALED X'TAL

MARKING



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

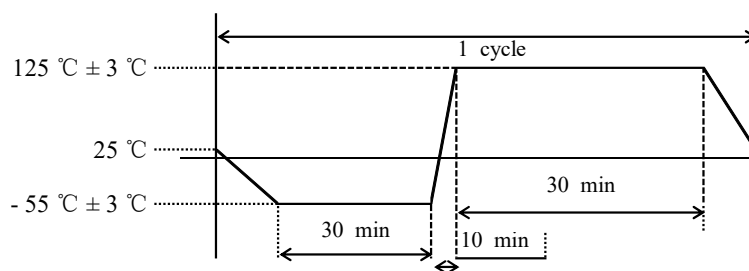
CL	Code	CL	Code	CL	Code
0pf	0	7.5pf	H	11.2pf	a
6pf	1	11pf	I	11.4pf	b
8pf	2	8.5pf	J	13.5pf	d
10pf	3	7.1pf	K	20.5pf	e
12pf	5	19pf	L	8.8pf	f
15pf	6	12.5pf	M	17pf	g
16pf	7	27pf	N	4.3pf	h
18pf	8	7.3pf	O	9.9pf	i
20pf	9	13pf	P	24pf	j
22pf	A	11.5pf	Q	9.4pf	m
25pf	B	7pf	R	8.2pf	n
28pf	C	14pf	S	6.8pf	q
30pf	D	23pf	T	90pf	r
32pf	E	11.1pf	U	5.6pf	t
9.5pf	F	33pf	V	5pf	u
9pf	G	10.5pf	W	10.7pf	v
		9.2pf	Y	7.2pf	y
		50pf	Z		

Jan-25	N	Jan-26	A
Feb-25	P	Feb-26	B
Mar-25	Q	Mar-26	C
Apr-25	R	Apr-26	D
May-25	S	May-26	E
Jun-25	T	Jun-26	F
Jul-25	U	Jul-26	G
Aug-25	V	Aug-26	H
Sep-25	W	Sep-26	J
Oct-25	X	Oct-26	K
Nov-25	Y	Nov-26	L
Dec-25	Z	Dec-26	M

备注：年份印字代码原则按奇偶年两年一个循环

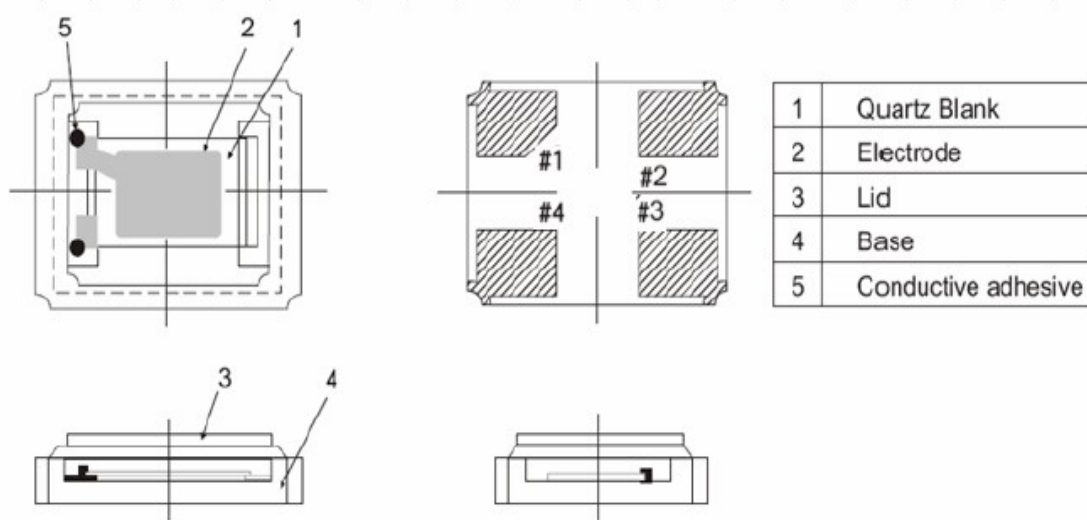
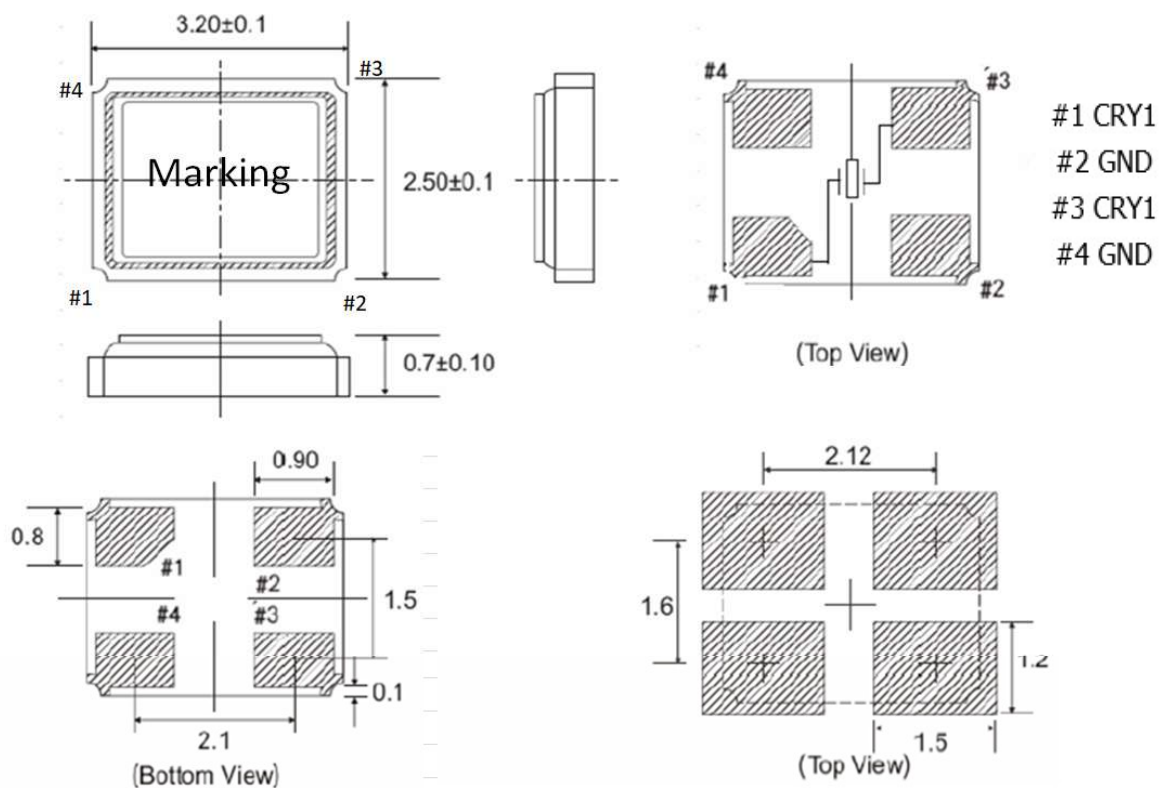
RELIABILITY SPECIFICATIONS

NO.	TEST ITEM	TEST METHODS
1	DROP TEST	Device are dropped from a height of 150 cm onto 2 mm thickness stainless plate executing 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 range10 ~ 2000 Hz Amplitude1.5 mm Sweep Time20 minute Test Time2 hours
4	SOLDERABILITY	MIL - STD - 20E Method 208C Temperature245℃±5℃ MaterialH63A (Silver 2 ~ 3 %) Immersion depth0.5 mm minimum Immersion time3 ± 0.5 seconds FluxRosin 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℃ solder pot, above 180℃ is 90 ~ 120 sec.
6	LOW TEMP. STORAGE	Leave at - 40 °C ± 2℃ for 16 hours
7	HIGH TEMP. STORAGE	Leave at 125 °C ± 3℃ for 72 hours
8	THERMAL SHOCK	Total 100 cycles of the following temperature cycle

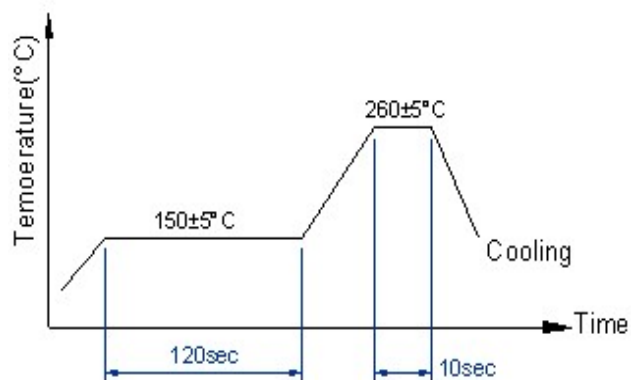


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DIMENSIONS



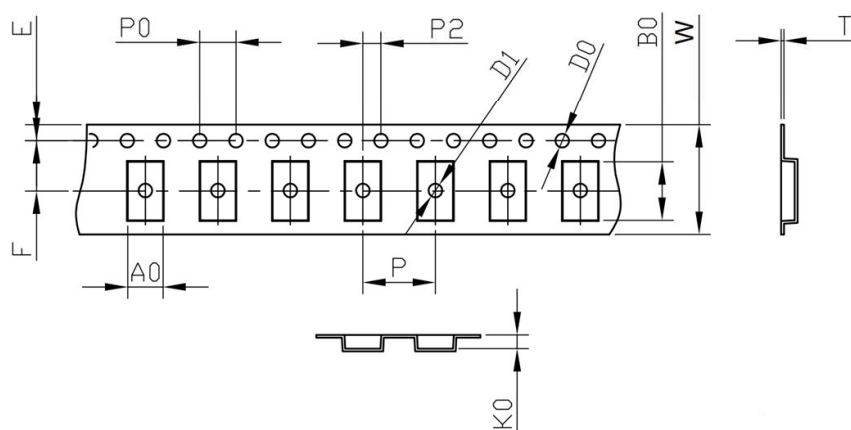
SUGGESTED IR REFLOW PROFILE



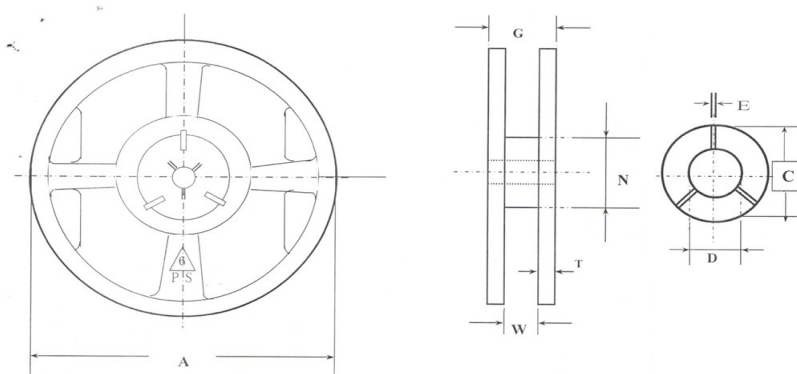
Total Time: 200 Sec.Max

Solder melting point : 185°C

PACKING



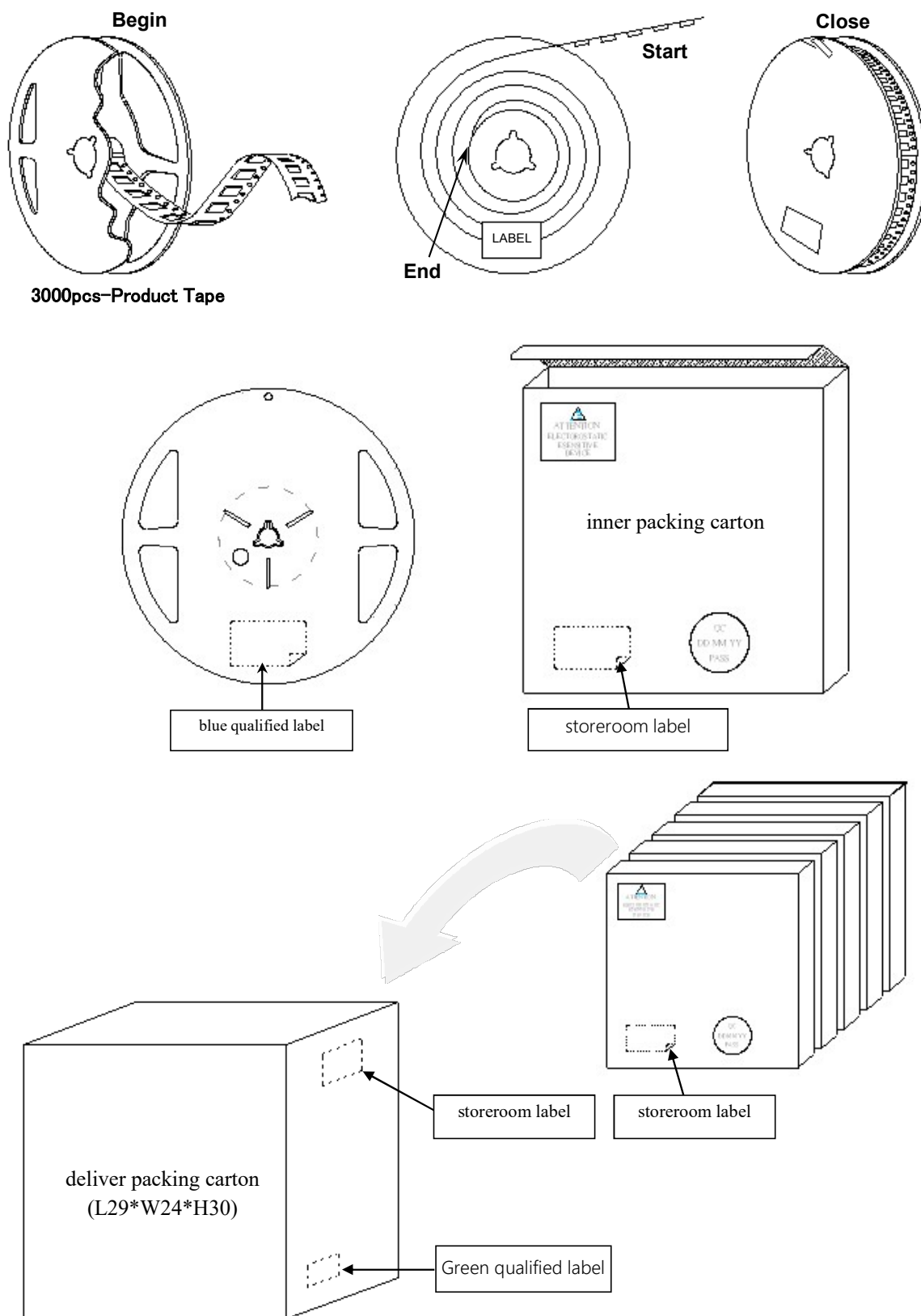
	W	A ₀	B ₀	K ₀	E	F	P	P ₀	P ₂	D ₀	D ₁	T
3225	8.0±0.3	2.70±0.1	3.40±0.1	0.80±0.1	1.75±0.1	3.5±0.1	4.0±0.1	4.0±0.1	2.0±0.1	1.55±0.05	1.0±0.1	0.25±0.05



	A	W	T	N	C	D	E	G
3225	178±2.0	9.5±0.5	1.4±0.2	60.2±0.5	20.2±1.0	13.2±0.5	2.5±0.5	12±1.4

- 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
- 160mm minimum trailer of empty carrier tape sealed with cover tape.

PACKING



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