



汇隆电子(金华)有限公司
HUILONG ELECTRONIC (JINHUA) CO.,LTD

SPECIFICATION FOR APPROVAL

CUSTOMER

NOMINAL FREQUENCY

20.000000 MHz

HOLDER TYPE

3225

SPEC. NO. (P/N)

HL20000091

CUSTOMER P/N

ISSUE DATE

Feb.27,2020

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

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RoHS Compliant (Pb- Free)



TYPE HL SEAM SEALED X'TAL

ELECTRICAL SPECIFICATIONS

HLC Parts Number : HL20000091

Item	Symbol	Specifications				Notes
		Min	Type	Max	Units	
Nominal frequency	FO	20.000000			MHz	
Mode of Oscillation	OT	Fundamental				
Load Capacitance	LC	12			pF	
Frequency Tolerance	FT	± 10			ppm	at 25°C $\pm 3^{\circ}\text{C}$
Frequency Stability		± 15			ppm	with working temperature Reference to 25°C
Working temperature range	TR	0~100			°C	
Drive Level	DL	100			μW	Max.
Series Resonant Resistance RF	CI/RR	45			Ω	Max.
Insulation Resistance	IR	>500			M Ω	
Shunt Capacitance C0	C0	3			pF	
Aging		2			ppm/yr.	
Storage temperature range		-40 ~ 125			°C	
Unit Weight					g	

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H0-R-4-014



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MARKING

HLC

* 20.0xx

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		
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-17	N	Jan-18	A
Feb-17	P	Feb-18	B
Mar-17	Q	Mar-18	C
Apr-17	R	Apr-18	D
May-17	S	May-18	E
Jun-17	T	Jun-18	F
Jul-17	U	Jul-18	G
Aug-17	V	Aug-18	H
Sep-17	W	Sep-18	J
Oct-17	X	Oct-18	K
Nov-17	Y	Nov-18	L
Dec-17	Z	Dec-18	M

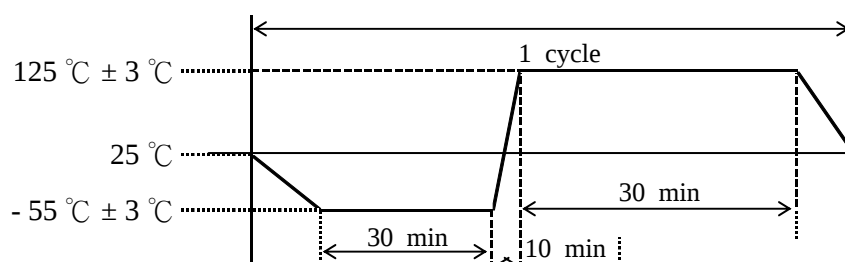
备注：年份印字代码原则按奇偶年两年一个循环



TYPE HL SEAM SEALED X'TAL

RELIABILITY SPECIFICATIONS

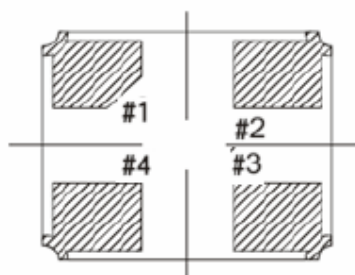
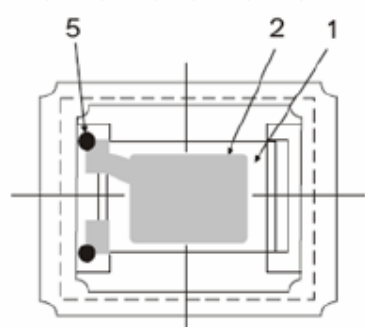
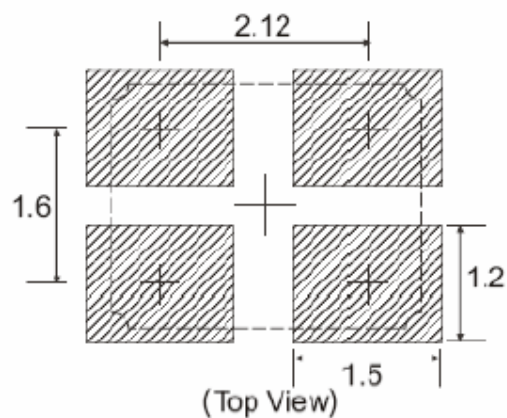
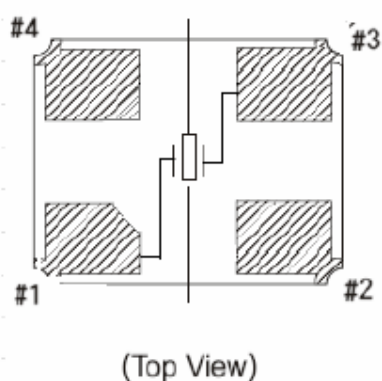
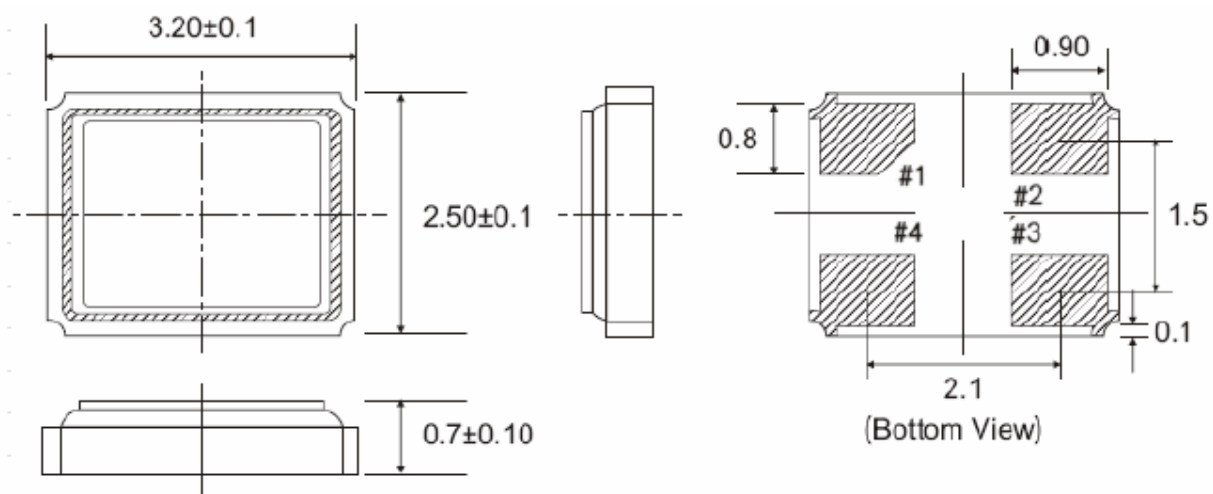
NO.	TEST ITEM	TEST METHODS
1	DROP TEST	Device are dropped from a height of 150 cm onto 2 mm thickness stainless plate executing 3 times of random drops.
2	MECHANICAL SHOCK	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times.
3	VIBRATION	Frequency range 10 ~ 2000 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



1	Quartz Blank
2	Electrode
3	Lid
4	Base
5	Conductive adhesive





Temperature-time graph showing the heat treatment cycle:

- Temperature (°C) vs. Time.
- Heating to $150 \pm 5^\circ\text{C}$.
- Isothermal hold at $150 \pm 5^\circ\text{C}$ for 120 sec.
- Heating to $260 \pm 5^\circ\text{C}$.
- Isothermal hold at $260 \pm 5^\circ\text{C}$ for 10 sec.
- Cooling.

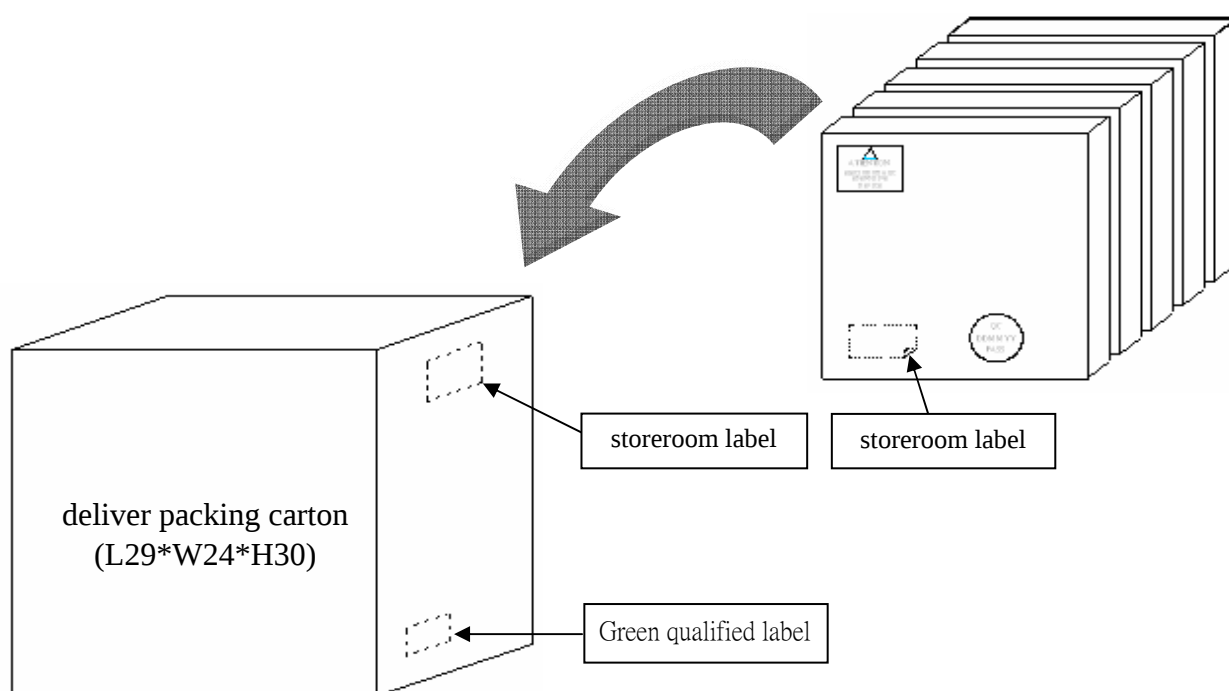
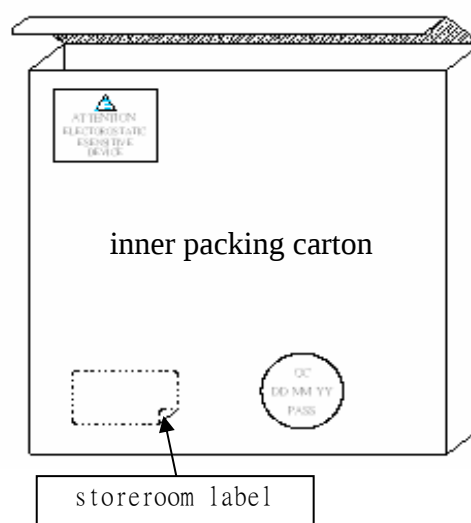
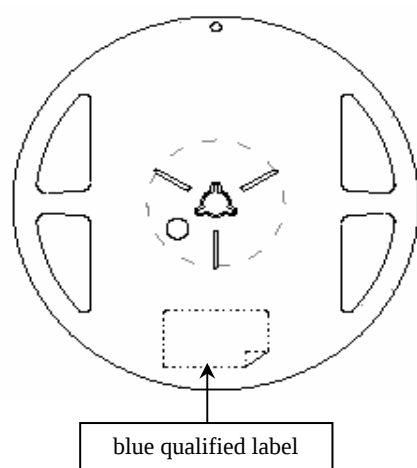
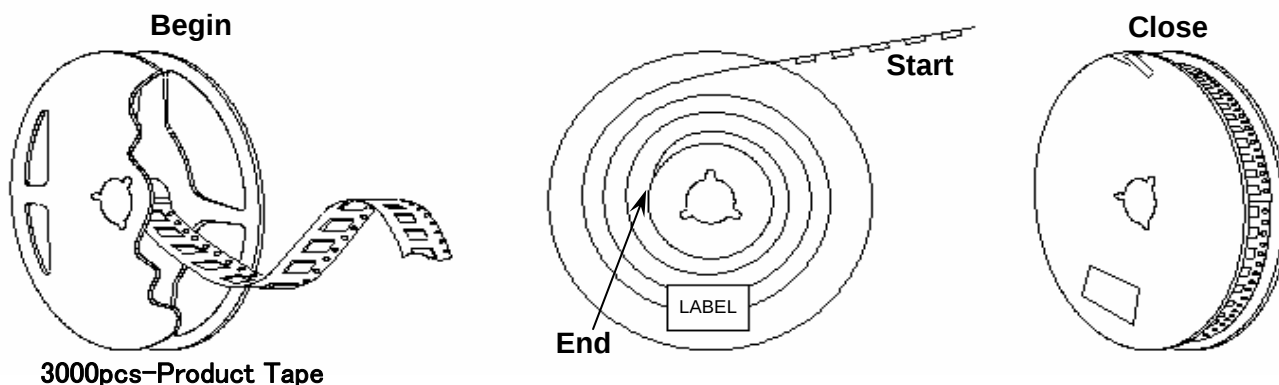
Technical drawings of the 3D-printed part, including a side view, a top view, and a cross-section view. The side view shows a long, thin part with a central feeding channel, a series of holes, and a curved end. Dimensions include 0.25±0.05, 2.0, 4.0, φ1.5, φ1.0, 1.75, 3.4, 8mm±0.2, 2.7, 8.0, and Feeding. The top view shows a circular part with a central hole and four slots. Dimensions include 110, φ4.4, φ9.8, 1.5, 9.0±0.3, φ158.0±1.0, 178, 60.2±0.5, and 70.5±1.0.

1. 230mm minimum leafer which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.



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PACKING



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