



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

SPECIFICATION FOR APPROVAL

CUSTOMER

NOMINAL FREQUENCY

12.000000 MHz

HOLDER TYPE

3225

SPEC. NO. (P/N)

HL12000235

CUSTOMER P/N

ISSUE DATE

Oct.8,2021

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 : HL12000235

Item	Symbol	Specifications				Notes
		Min	Type	Max	Units	
Nominal frequency	FO	12.000000			MHz	
Mode of Oscillation	OT	Fundamental				
Load Capacitance	LC	10			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
Working temperature range	TR	-20~70			°C	
Drive Level	DL		10	250	μW	
Series Resonant Resistance RR	CI/RR	100			Ω	Max.
Insulation Resistance	IR	>500			M Ω	
Shunt Capacitance C0	C0	5			pF	Max.
Aging		± 2			ppm/yr.	
Storage temperature range		-40 ~ 85			°C	

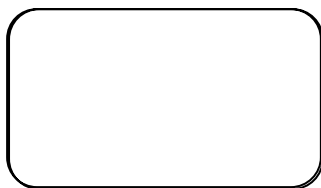
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H0-R-4-014



TYPE HL SEAM SEALED X'TAL

MARKING



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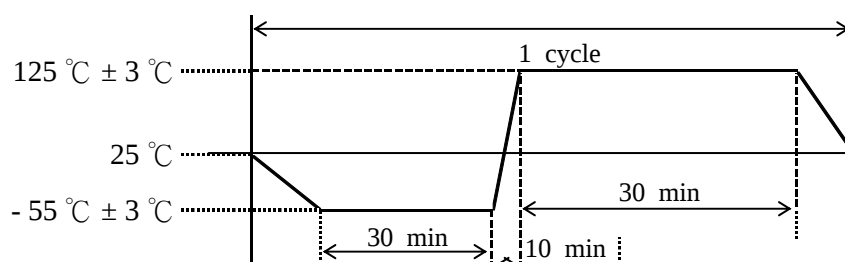
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TYPE HL SEAM SEALED X'TAL

RELIABILITY SPECIFICATIONS

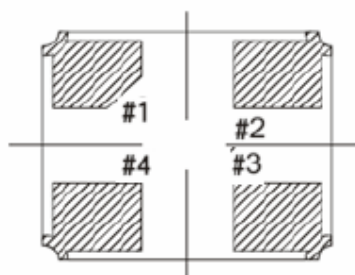
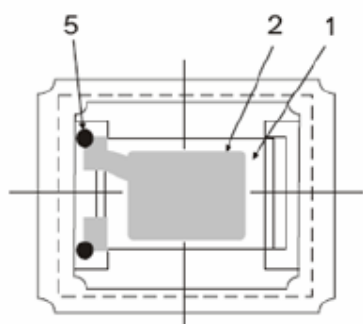
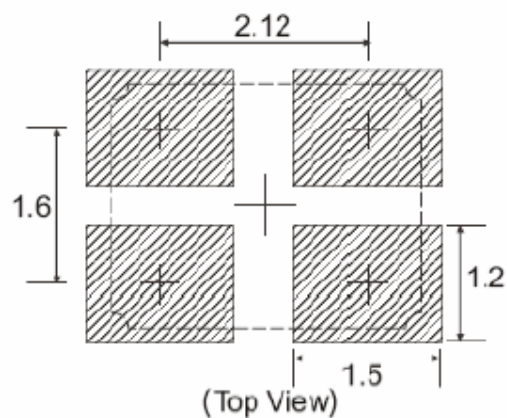
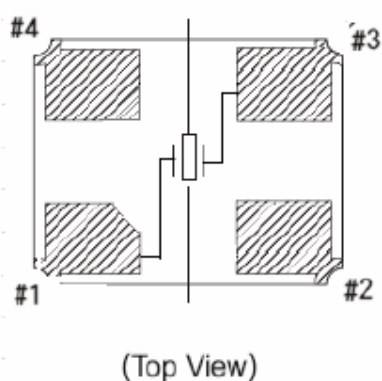
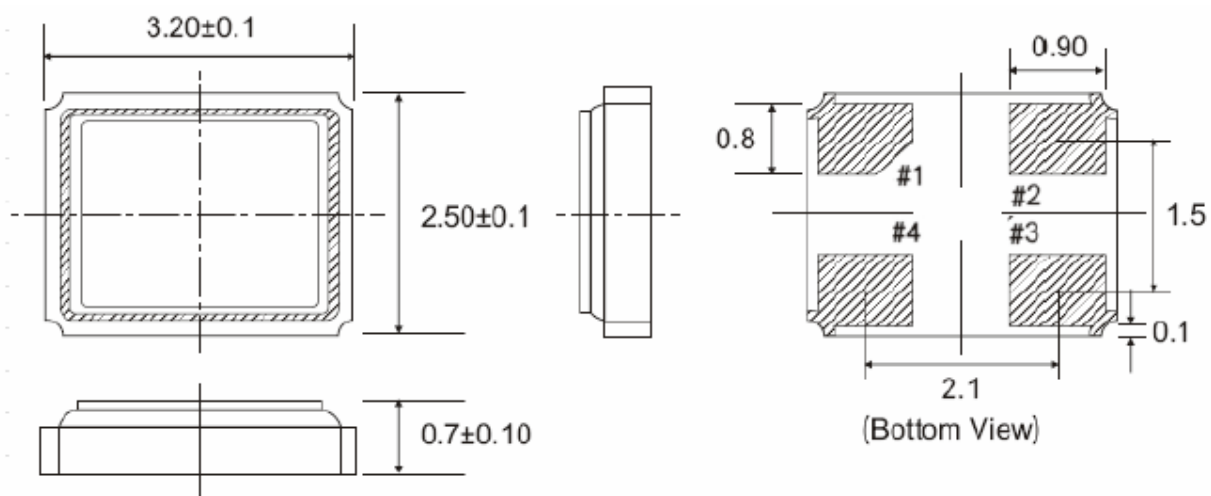
NO.	TEST ITEM	TEST METHODS
1	DROP TEST	Device are dropped from a height of 150 cm onto 2 mm thickness stainless plate executing 3 times of random drops.
2	MECHANICAL SHOCK	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times.
3	VIBRATION	Frequency range 10 ~ 2000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



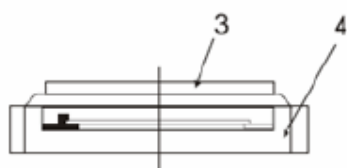


TYPE HL SEAM SEALED X'TAL

DIMENSIONS



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





Temperature-time graph showing the heat treatment cycle:

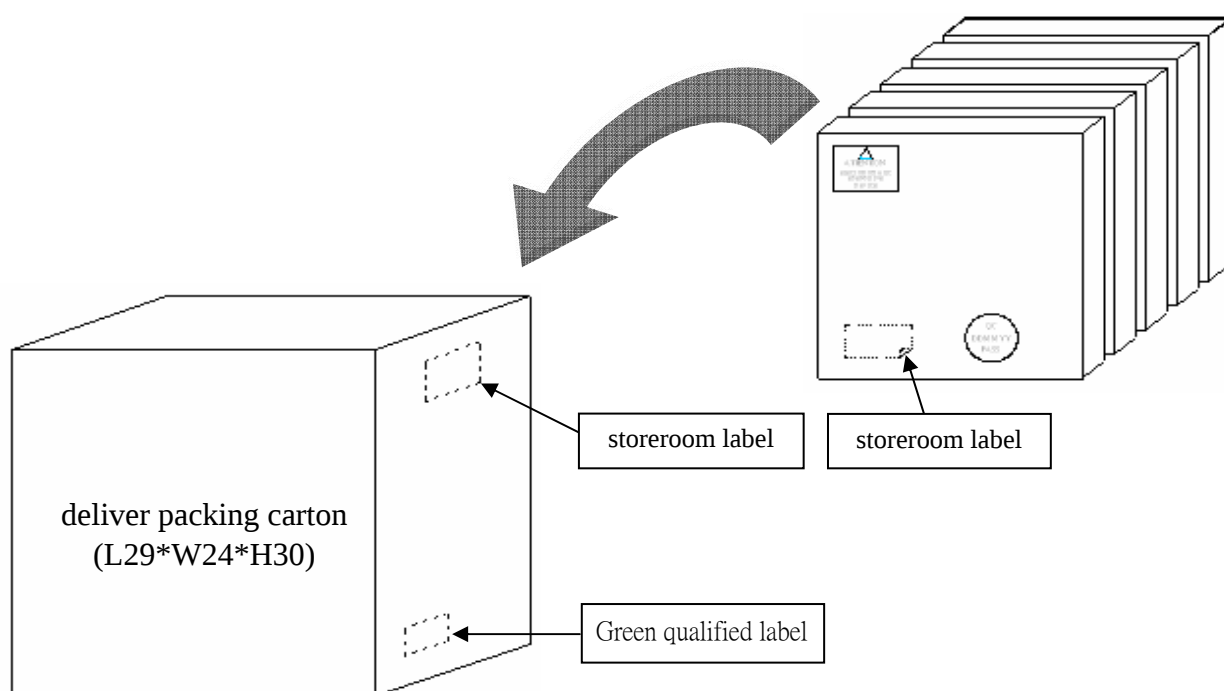
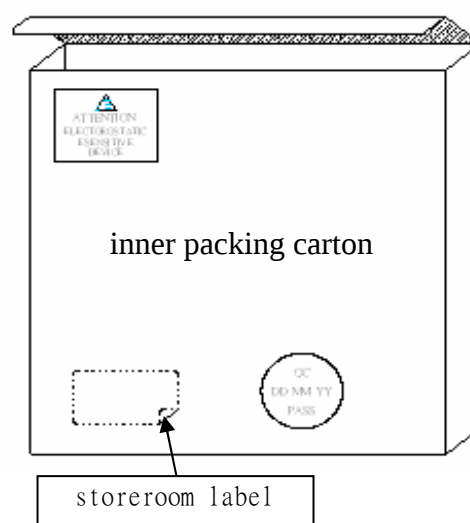
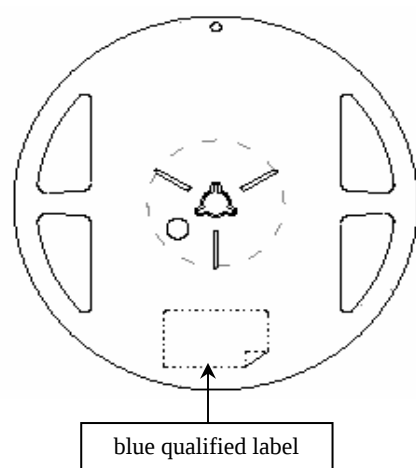
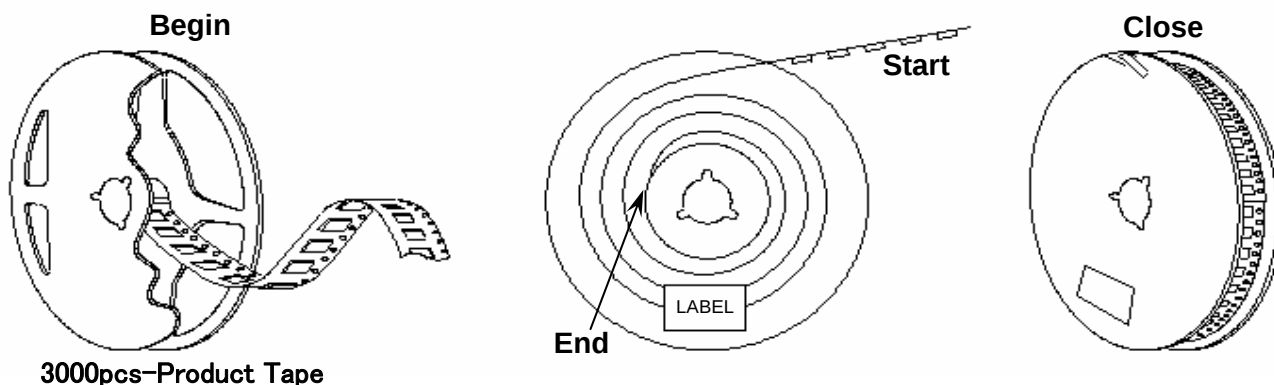
- Temperature (°C) vs. Time.
- Heating to $150 \pm 5^\circ\text{C}$.
- Isothermal hold at $150 \pm 5^\circ\text{C}$ for 120 sec.
- Heating to $260 \pm 5^\circ\text{C}$.
- Isothermal hold at $260 \pm 5^\circ\text{C}$ for 10 sec.
- Cooling.

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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