



## CUSTOMER

NOMINAL FREQUENCY 20.000000 MHz

**HOLDER TYPE** **2520**

**SPEC. NO. ( P/N )** HH20000016

**CUSTOMER P/N** 1.043.0355-01

ISSUE DATE Apr.3,2020

| APPROVED                                                                            | PREPARED                                                                            | QA                                                                                    |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| APPROVED BY CUSTOMER :                                                              |                                                                                     | AVL Status                                                                            |
| <p>Please return one copy with approval toHLC</p>                                   |                                                                                     |                                                                                       |

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RoHS Compliant ( Pb- Free )



# TYPE HH SEAM SEALED X'TAL

## ELECTRICAL SPECIFICATIONS

HLC Parts Number : HH20000016

| Item                       | Symbol | Specifications |      |     |               | Notes                                         |
|----------------------------|--------|----------------|------|-----|---------------|-----------------------------------------------|
|                            |        | Min            | Type | Max | Units         |                                               |
| Nominal frequency          | FO     | 20.000000      |      |     | MHz           |                                               |
| Mode of Oscillation        | OT     | Fundamental    |      |     |               |                                               |
| Load Capacitance           | LC     | 16             |      |     | pF            |                                               |
| Frequency Tolerance        | FT     | $\pm 10$       |      |     | ppm           | at 25°C $\pm 3^\circ\text{C}$                 |
| Frequency Stability        |        | $\pm 20$       |      |     | ppm           | with working temperature<br>Reference to 25°C |
| Working temperature rang   | TR     | -40~105        |      |     | °C            |                                               |
| Drive Level                | DL     | 100            |      |     | $\mu\text{W}$ |                                               |
| Series Resonant Resistance | CI/RR  | 50             |      |     | $\Omega$      | Max.                                          |
| Insulation Resistance      | IR     | >500           |      |     | M $\Omega$    |                                               |
| Shunt Capacitance C0       | C0     | 5              |      |     | pF            |                                               |
| Aging                      |        | 3              |      |     | ppm/yr.       |                                               |
| Storage temperature range  |        | -40 ~ 105      |      |     | °C            |                                               |
| Unit Weight                |        |                |      |     | g             |                                               |

Circuit : Measured by SAUNDERS & ASSOCIATES 250B-1  
NETWORK ANALYZER

Insulation Resistance : More Than 500 M $\Omega$  at DC 100V

Hermetically (1)Fine Leak : Helium Bombing 4kg /cm<sup>2</sup> for 1 Hours

(2)Gross Leak : Leak Rate Less Than 1\*10<sup>-9</sup> Pa · m<sup>3</sup>/sec

By Heliot 701W1 M/C

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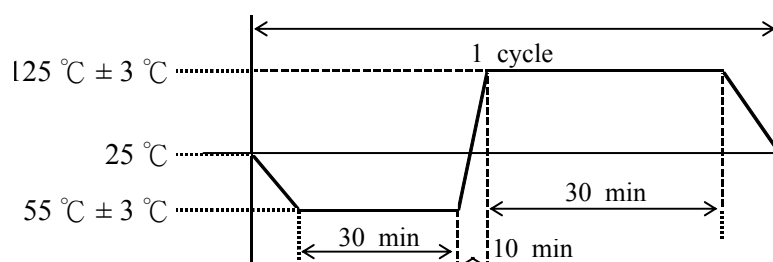
H0-R-4-014



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## RELIABILITY SPECIFICATIONS

| NO. | TEST ITEM                    | TEST METHODS                                                                                                                                                                                                                                          |
|-----|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | DROP TEST                    | Device are dropped from a height of 75 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<br>Amplitude 1.5 mm<br>Sweep Time 20 minute<br>Test Time 2 hours                                                                                                                                                         |
| 4   | SOLDERABILITY                | MIL - STD - 20E Method 208C<br>Temperature $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$<br>Material H63A (Silver 2 ~ 3 %)<br>Immersion depth 0.5 mm minimum<br>Immersion time $3 \pm 0.5$ seconds<br>Flux Rosin resin methyl alcohol solvent ( 1 : 4 ) |
| 5   | RESISTANCE TO SOLDERING HEAT | MIL - SLD -202, Method 210, Condition I or J<br>10 sec immersion into $260 \pm 5^{\circ}\text{C}$ solder pot, above $180^{\circ}\text{C}$ is 90 ~ 120 sec.                                                                                            |
| 6   | LOW TEMP. STORAGE            | Leave at $-55^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $1000 \pm 12$ hours                                                                                                                                                                          |
| 7   | HIGH TEMP. STORAGE           | Leave at $125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $1000 \pm 12$ hours                                                                                                                                                                          |
| 8   | THERMAL SHOCK                | Total 100 cycles of the following temperature cycle                                                                                                                                                                                                   |





# TYPE HH SEAM SEALED X'TAL

HLC

\* 20.0xx

HLC: HLC Use Code x: CL Code

x: Date Code

| CL    | Cod | CL     | Cod | 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-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 |
|        |   |        |   |
|        |   |        |   |
|        |   |        |   |
|        |   |        |   |
|        |   |        |   |
|        |   |        |   |

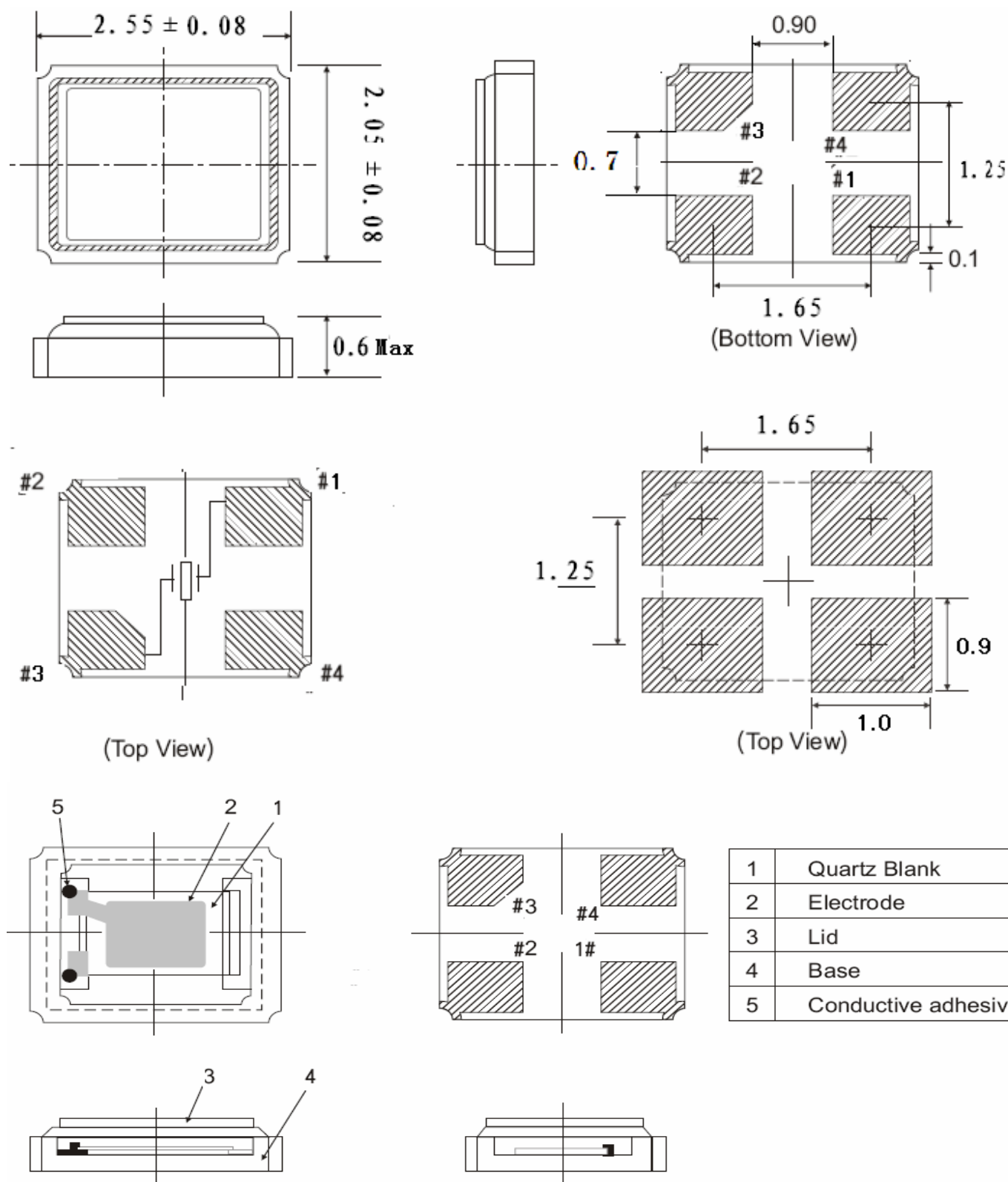
备注：年份印字代码原则按奇偶年两年一个循环

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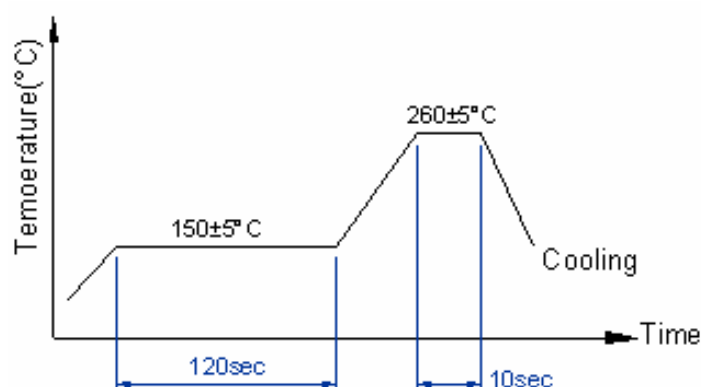
## DIMENSIONS





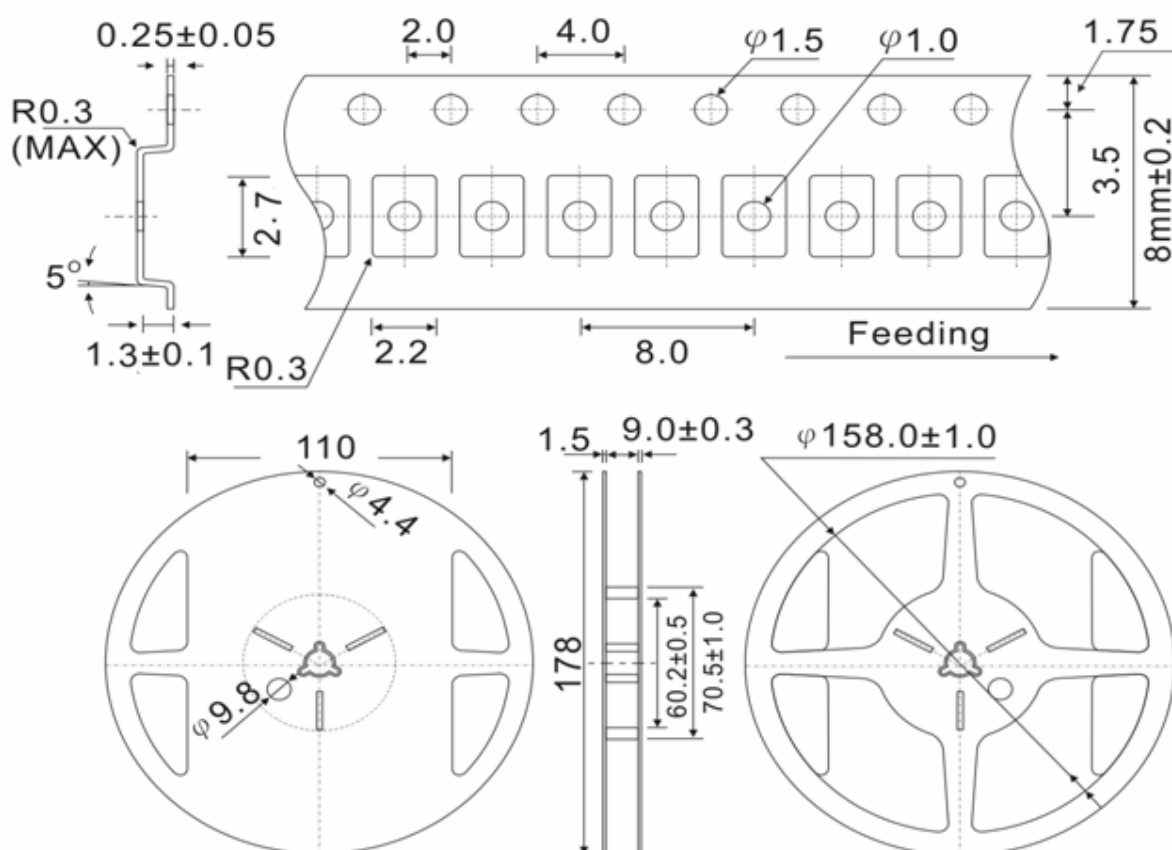
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## SUGGESTED IR REFLOW PROFILE



Total Time : 200 Sec.Max  
Solder melting point : 185°C

## PACKING



1. 230mm minimum leader 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.

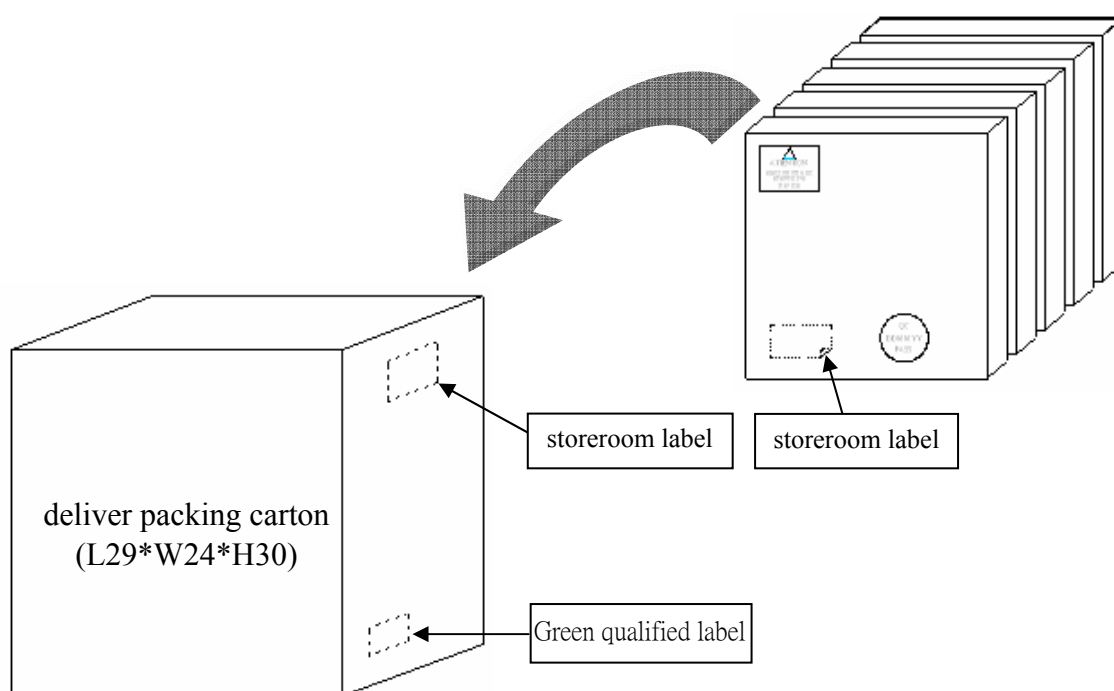
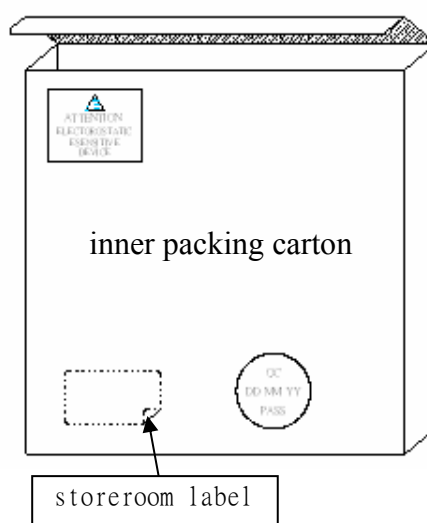
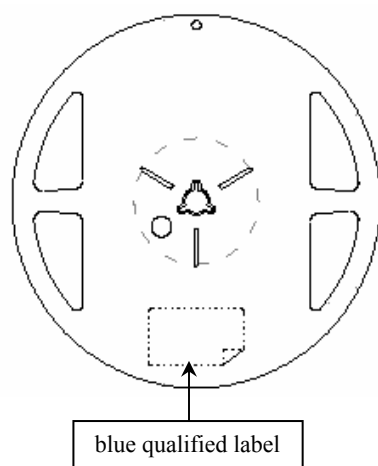
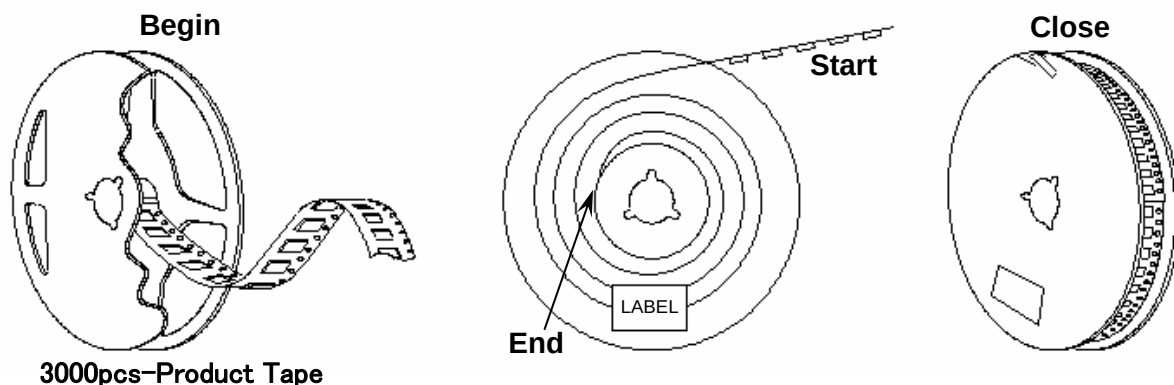
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## PACKING



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