




APPROVAL SHEET

| | | | |
|---------------|---|---|---|
| PRODUCT NAME | SMD CRYSTAL UNIT | | |
| USER NAME | | | |
| USER PART NO. | | | |
| Provider | PARTRON | | |
| PARTRON MODEL | CXC6X260000GHVRN00 | | |
| User | Issued by | Checked by | Approved by |
| | | | |
| PARTRON | Issued by | Checked by | Approved by |
| |  |  |  |
| In Charge | J.S.B. | M.N.S. | K.J.M. |
| Division | R & D | Q C | R & D |

| | | |
|--------------------|---|---|
| MSL | LEAD FREE | Halogen-Free |
| MSL LEVEL 1 |  |  |

| | |
|----------------------|----------------------|
| | Case |
| Fab | China/Yantai/Partron |
| Assembly | China/Yantai/Partron |
| Final Test & Packing | China/Yantai/Partron |

※ Please return one copy with approval to PARTRON

2011. 12. 13

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1. Revision History

| Rev. | Date | Rev. page | Revision Content and Reason | Remark |
|------|-----------|-----------|-----------------------------|--------|
| V1.0 | '11.12.13 | All Page | First-edition | |
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1. Scope

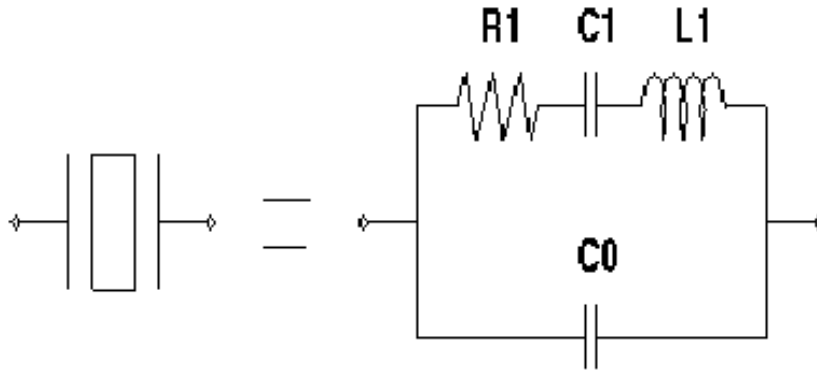
This specification is for SMD crystal units

2. Electrical Characteristics

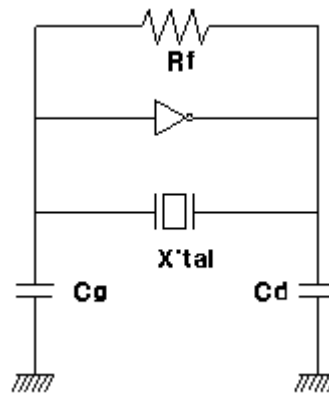
| No. | Item | Symbol | Content |
|------|---|----------------|---|
| 2.1 | Frequency | fo | 26.0000 MHz |
| 2.2 | Frequency Tolerance  | $\Delta f/fo$ | ± 10 ppm (@+25°C $\pm 2^\circ\text{C}$) |
| 2.3 | Temperature range | Storage | T _{STG} -40 to 85°C |
| | | Operating | T _{OPR} -30 to 85°C |
| 2.4 | Frequency stability | $\Delta f/fo$ | ± 10 ppm (-30°C to +85°C, Ref. @+25°C $\pm 2^\circ\text{C}$) |
| 2.5 | Drive level | DL | 100 uW max. |
| 2.6 | Equivalent series resistance | R1 | 50 Ω max. |
| 2.7 | Oscillation mode | O/T | Fundamental |
| 2.8 | Shunt capacitance | CO | 3 pF max. |
| 2.9 | Motional capacitance | C1 | 10 fF max. |
| 2.10 | Load capacitance | C _L | 9.0 pF |
| 2.11 | Aging | fa | ± 3 ppm/year max. (@+25°C $\pm 2^\circ\text{C}$) |
| 2.12 | Insulation resistance | IR | 500 M Ω min @ 100VDC |

[REMARK]

2-1 Crystal Equivalent Circuit and Application Circuit



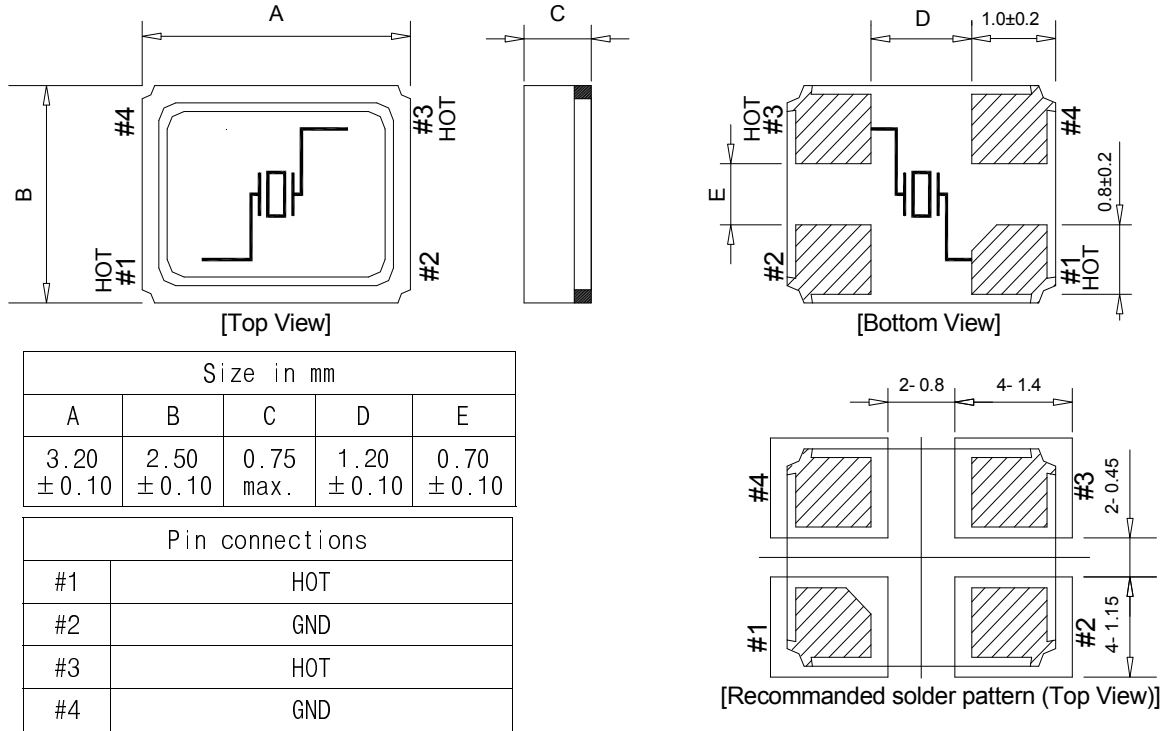
[Crystal and equivalent circuit]



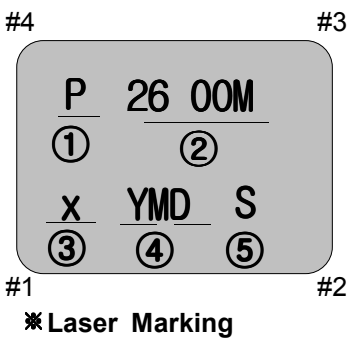
[Application circuit for oscillation]

3. Mechanical characteristics

3-1 Outline Dimensions and Pin connections



3-2 Marking and LOT No



| ITEM | MARKING | REMARK |
|------|---------|--|
| ① | P | Partron logo |
| ② | 26 00M | Frequency: 26.0000MHz |
| ③ | X | CRYSTAL CL (1 digit) |
| ④ | YMD | Y : the last 1 digit of year M : 1 digit of month (Jan to Sept; 1 to 9, Oct; A, Nov B, Dec; C) D : 1 digit of day 1 to 9, A to V (A=10, V=31) EX) 769 = 2007.06.09, 8AS = 2008.10.28 |
| ⑤ | S | Manufacturing Site K .. Korea C .. China |

4. A Primary test result

Electrical Characteristics Testing Data

| Item | Result | FL (ppm) | C0 (pF) | RR (Ω) | C1 (fF) | L (mH) | TS (ppm/pF) | Remark |
|---------|--------|-------------|------------|--------------------|------------|-----------|----------------|--------|
| Spec | High | 10.0 | 3.0 | 50.0 | 10.0 | - | - | |
| | Low | -10.0 | - | - | - | - | - | |
| Max | Pass | 4.9 | 1.5 | 27.3 | 5.8 | 7.3 | 25.1 | |
| Min | Pass | 0.2 | 1.5 | 13.3 | 5.1 | 6.5 | 24.2 | |
| Average | Pass | 3.5 | 1.5 | 20.4 | 5.6 | 6.7 | 24.8 | |
| Stdev | Pass | 1.3 | 0.0 | 4.3 | 0.2 | 0.2 | 0.3 | |
| 1 | Pass | 0.2 | 1.5 | 13.3 | 5.1 | 7.3 | 24.7 | |
| 2 | Pass | 4.2 | 1.5 | 20.4 | 5.6 | 6.7 | 24.5 | |
| 3 | Pass | 4.9 | 1.5 | 18.2 | 5.6 | 6.7 | 24.8 | |
| 4 | Pass | 4.1 | 1.5 | 23.6 | 5.6 | 6.7 | 24.9 | |
| 5 | Pass | 3.9 | 1.5 | 18.3 | 5.7 | 6.6 | 25.0 | |
| 6 | Pass | 2.8 | 1.5 | 20.7 | 5.7 | 6.6 | 24.2 | |
| 7 | Pass | 3.3 | 1.5 | 17.8 | 5.8 | 6.5 | 25.1 | |
| 8 | Pass | 3.0 | 1.5 | 26.4 | 5.5 | 6.8 | 25.0 | |
| 9 | Pass | 4.0 | 1.5 | 18.3 | 5.5 | 6.8 | 25.0 | |
| 10 | Pass | 4.4 | 1.5 | 27.3 | 5.6 | 6.7 | 24.8 | |

5. Reliability test

5.1 Environment Test

| Contents | Condition | Remark |
|--|---------------------------|--|
| High temperature Storage | +125°C±5°C, 240 hr | *Testing is complete, leave at room temperature for 24 hours, and Measure.(25°C±5°C) * Be satisfied with contents No 2. Specification |
| Low temperature Storage | -55°C±5°C, 240 hr | |
| High temperature High humidity Storage | +85°C±5°C, RH=85%, 96 hr | |
| PCT | +121°C±5°C, RH=100%, 24hr | |

5.2 Thermal shock , Reflow Test

| Contents | Condition | Remark |
|---------------|---|--|
| Thermal shock | -40°C ± 5°C, +90°C ± 5°C, 15 min, 200 cycle | *Testing is complete, leave at room temperature for 24 hours, and Measure.(25°C±5°C) * Be satisfied with contents No 2. Specification |
| REFLOW | Pre Heating 200±5°C , 30~60 sec Peak Heating 260°C ± 5°C , 30sec Max | |

5.3 Mechanical Test

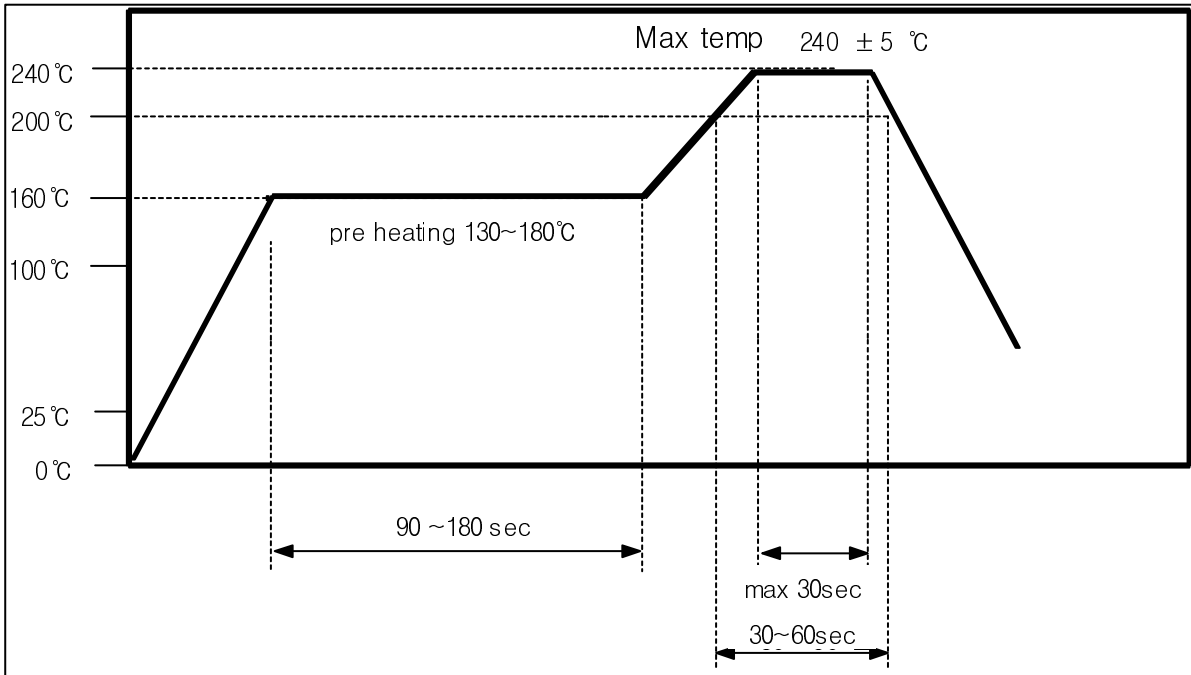
| Contents | Condition | Remark |
|-----------|---|---|
| Vibration | Frequency : 10~500Hz, 10 ×9.8m/s ² (G) Sweep time 15min ,X.Y.Z each 5 times | *Testing is complete, leave at room temperature for 1 hours, and Measure.(25°C±5°C) * Be satisfied with contents No 2. Specification |
| Drop test | 12 times falling at a 160cm height (falling with jig) | |

5.4 Table

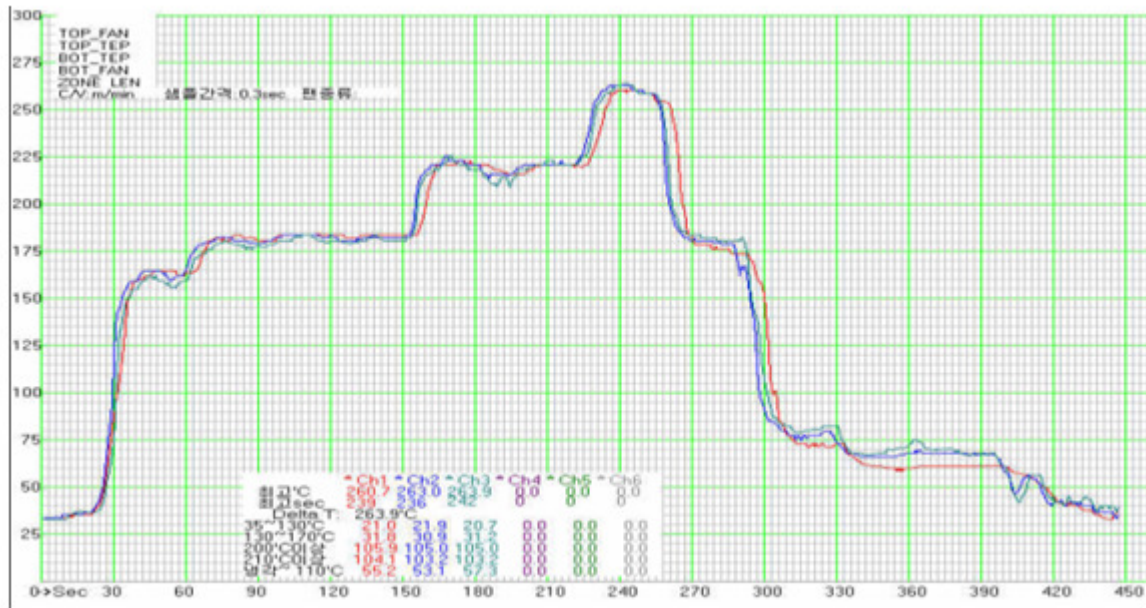
| | |
|----------------------------|-------------|
| Frequency change permitted | ± 3ppm Max. |
|----------------------------|-------------|

6. Soldering Condition

6.1 Standard Reflow soldering condition



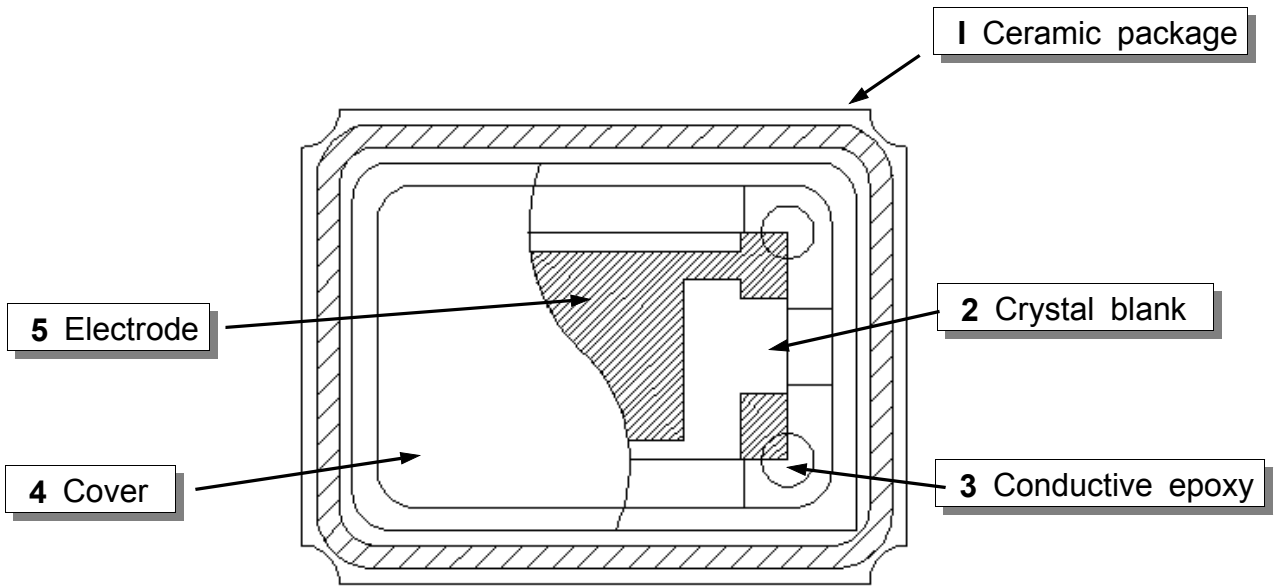
6.2 The maximum temperature guarantees to the 260°C(10sec Max)



6.3 Soldering Iron Method

- Pre heating : 120°C (30 ~ 300 sec)
- Max temp : 410°C Max
- Time : Max 4 sec

7. Construction



| No | item |
|----|------------------|
| 1 | Ceramic package |
| 2 | Crystal blank |
| 3 | Conductive Epoxy |
| 4 | Lid(Cover) |
| 5 | Electrode |

8. Notices

8-1 Max. two(2) times reflow is allowed.

Once miss soldering is happen, hand work soldering by soldering iron is recommended.
(+400°C x within 5 sec)

8-2 Ultrasonic vibration may cause deterioration and destruction of the components.
Please avoid ultrasonic cleaning

8-3 We recommend storing products at +15°C to +35°C and 25% R.H to 75% R.H

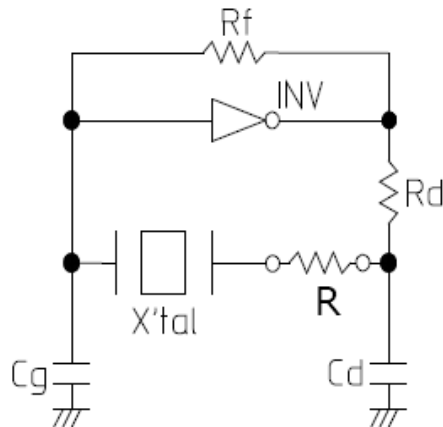
8-4 ESD Level : Class2(2000V ~ 4000V)

8-5 MSL LEVEL 1 (JEDEC J-STD-020C)

| ITEM | Floor Life | | Soak Requirements | |
|------|------------|---------------|-------------------|---------------|
| | Time | Conditions | Time | Conditions |
| 1 | Unlimited | =< 30°C/85%RH | 165+5/-0 | =< 85°C/85%RH |

8-6 Unless adequate negative resistance is allocated in the oscillation circuit, start up time of oscillation may be increased, or no oscillation may occur. In order to avoid this, please provide enough negative resistance in the circuit design.

◎ How to check the negative resistance



- (1) Connect the resistor (R) to the circuit in series with the crystal resonator.
- (2) Adjust R so that oscillation can start (or stop).
- (3) Measure R when oscillation just start (or stop) in above (2).
- (4) Get the negative resistance
 $-R = R + CI$ value
- (5) Recommended -R
 $[-R] > CI \times 5$

9. Packing

9.1 Reel, carrier tape material

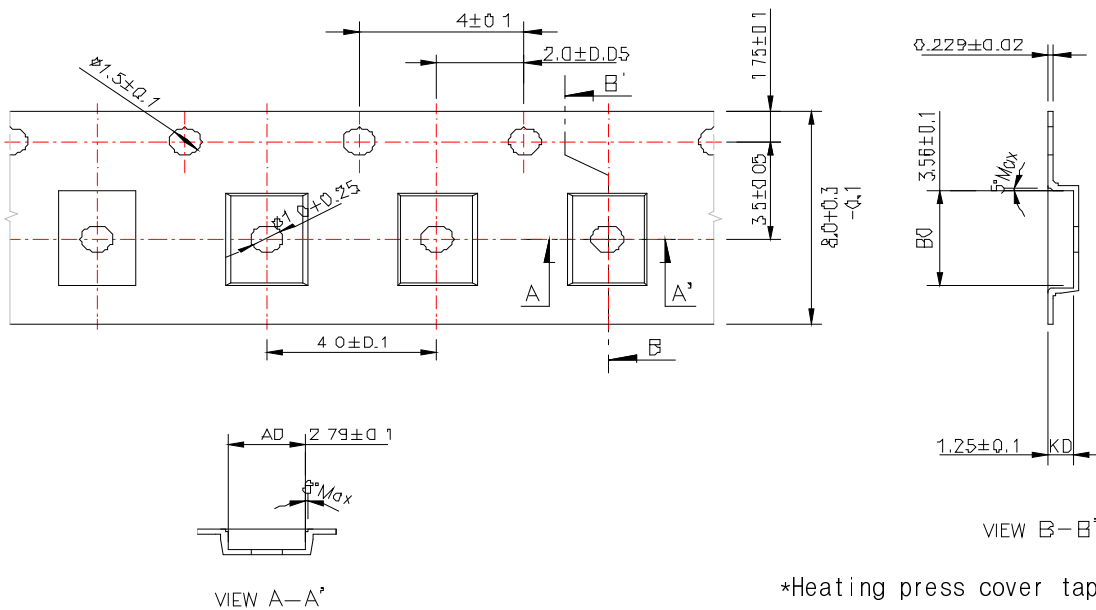
| item | Main Material |
|--------------|---|
| Cover Tape | PE (Polyester film) |
| Carrier Tape | PC (Poly Carbonate +Carbon) or (Clear Poly Carbonate) |
| Reel | PS (Poly Styrene) |

9.2 inner Box : 1 reel/inner box and 2000 Oscillators/1 reel.

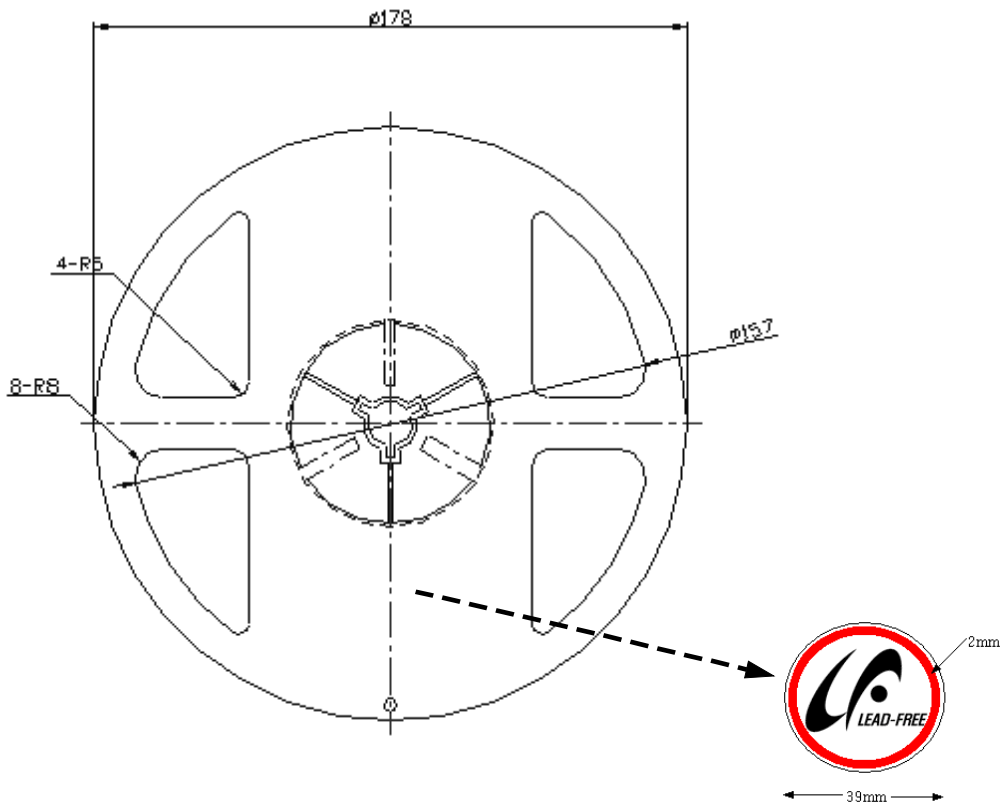
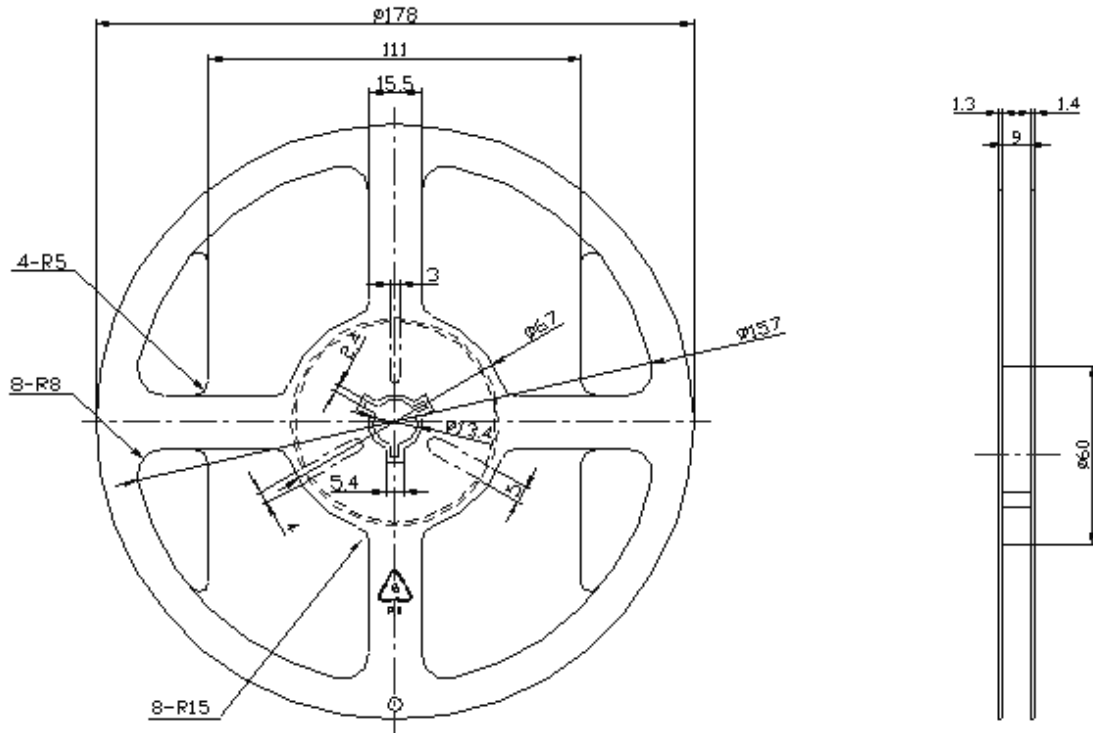
9.3 Outer Box : 10 inner boxes/Outer Box

Total 20,000 Oscillators are paked in a 1 out box

9.4 Reel and Carrier tape dimensions(unit : mm)



9.5 Reel size (unit : mm)



9.6 inner, outer box dimensions(unit : mm)

