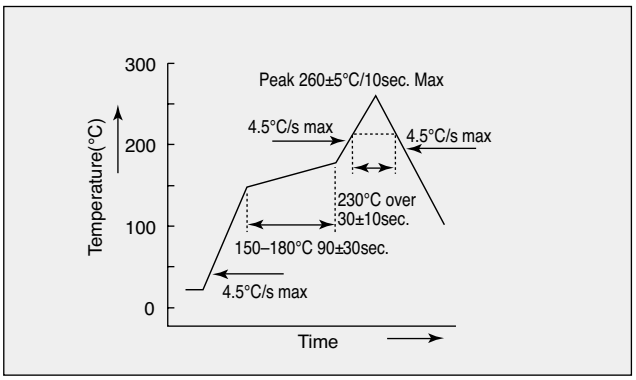
■ How to Handle 2700-series Crystal Oscillators

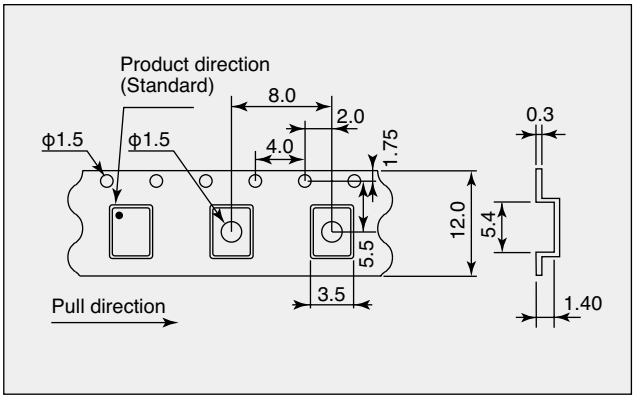
■ Example of Lead-free Soldering Conditions (Infrared Soldering)



- Soldering conditions
  The product's characteristics may deteriorate, depending on soldering conditions. Use the product within the following limitations:
  * At 260°C or less within 10 seconds or at 230°C or less within 60 seconds
- Shock resistance
  This product has been designed to be highly resistant to shock (it is guaranteed that it will not be damaged when dropped three times from a height of 75 cm onto a hard wooden board or at 29,400/s^2 in each of the half-wave sine-wave X, Y, and Z directions three times). However, if the unit is dropped by mistake, measure the performance (oscillation check) of the product again.
- Cleaning
  Ultrasonic cleaning of this product is possible, but depending on the cleaning conditions the product's oscillator may suffer a resonance fracture. Before ultrasonic cleaning, make sure to check the conditions.
- Others
  • Because CMOS is used for this product, pay great care to static electricity in the same way as for normal CMOS IC.
  • The #2 terminal (GND) is a ground terminal. Therefore, if it is mistaken for the #4 terminal (V_{DD}) and a reverse voltage applied, it may suffer internal fractures Make sure to connect the terminal correctly.

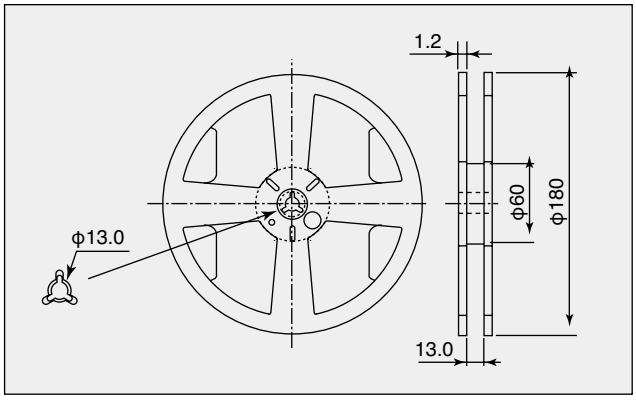
■ Packing of 2700-series Crystal Oscillators

■ Tape



Up to 1,000 pieces per reel are boxed and shipped with the taping method shown above.

■ Reel



*Note: The packing shown above is the standard method used for a large order.
Packing and shipping of small orders, samples, etc. differs, depending on quantity.

■ Guaranteed Items of 2700 Series

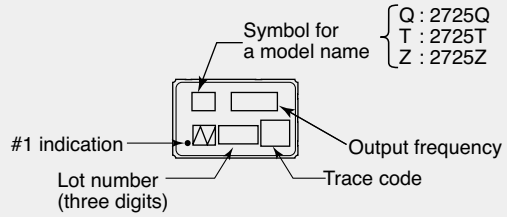
● The environmental and mechanical characteristics of the 2700 Series are guaranteed by conducting the following tests:

No.	Test Items	Conditions	Specifications
1	Thermal shock resistance	100 cycles (one cycle is conducted for 30 minutes at –40 °C and for 30 minutes at +85 °C.)	*1
2	High temperature and high humidity resistance	Subject to a temperature of +85 °C, in humidity of 80 to 85 %, and for 500 hours (nonactive)	*1
3	85 °C aging	85 °C (nonactive), for 720 hours Total amplitude:	*1
4	Vibration resistance	Total amplitude: 1.52 mm or 196 m/s^2, frequency: 10 to 2,000 Hz, and logarithmic frequency sweep for 20 minutes in each of the three orthogonal directions for four hours (12 hours in total)	*1
5	Shock resistance	Impact acceleration: 29,400 m/s^2, impact time: 0.3 ms, and half-wave sine wave in each of the three orthogonal directions, three times	*1
6	Free drop impact resistance	Dropped three times from a height of 75 cm onto a hard wooden board	*1
7	Soldering property	Immersed in a solder bath at a temperature of +230±5 °C for 3.5±1 seconds	Ninety-five percent or more of the soldered part must be covered with solder.
8	Soldering heat resistance	Reflow is conducted three times at a warm-up temperature of 180 °C for 90±30 seconds and at the peak temperature of 260±5 °C for up to 10 seconds (at 230 °C or more for 30±10 seconds).	*1

(*1) After the above tests have been conducted, the tested product must then meet the electric characteristic specifications. In addition, the change amount of F before and after the above tests must follow $\Delta F/F \leq \pm 10 \times 10^{-6}$.
The electric characteristic specifications refer to the standard specifications of the following items:
(Current consumption, Tr/Tf, V_{OL}/V_{OH} symmetry, current consumption during standby, and standby function)

■ 2700-series Package Indications

■ 2700 Series



● Because of space limitations, the output frequency is indicated as six digits including the decimal point.
Therefore, 14.31818 MHz is indicated as 14.318.