



SPECIFICATION  
AND  
PERFORMANCE

TYPE OF PRODUCT

KX32.768KHF2T-ES

## 32.768KHz

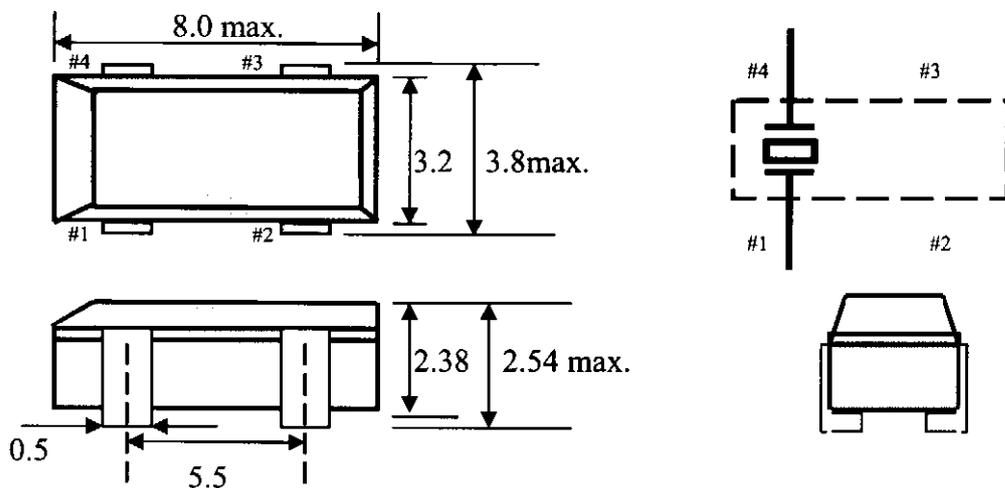
### 1. Scope :

This specification shall cover the characteristics of tuning fork

### 2. Electric Specification:

Item	SPECIFICATION
Holder Type	SMD
Mode of Vibration	+2° X-cut ,Fundamental
Nominal frequency	32768Hz
Load Capacitance	12.5 PF Typical
Frequency Tolerance at 25 °C	± 20 ppm
Series Resistance	50 KΩ max
Peak Temperature	25 °C ± 5 °C
Temperature Coefficient	-0.04 ppm/°C <sup>2</sup> Typical
Operation Temperature	-40 °C ~ +85 °C
Storage Temperature	-55 °C ~ +125 °C
Motional Capacitance	1.8PF Typical
Shunt Capacitance	0.9PF Typical
Aging 1st Year	± 3 ppm max.
Shock Resistance	± 5 ppm max.
Insulation resistance	500MΩ min.
Drive Level	1.0±0.2 μW

### 3. Dimensions: ( mm )



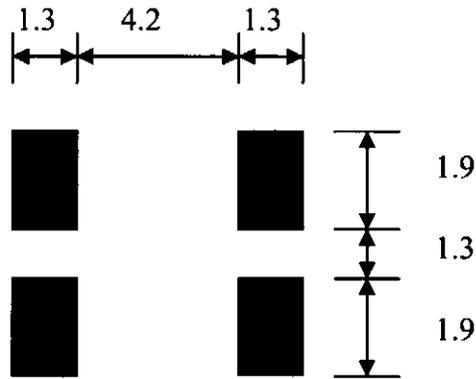


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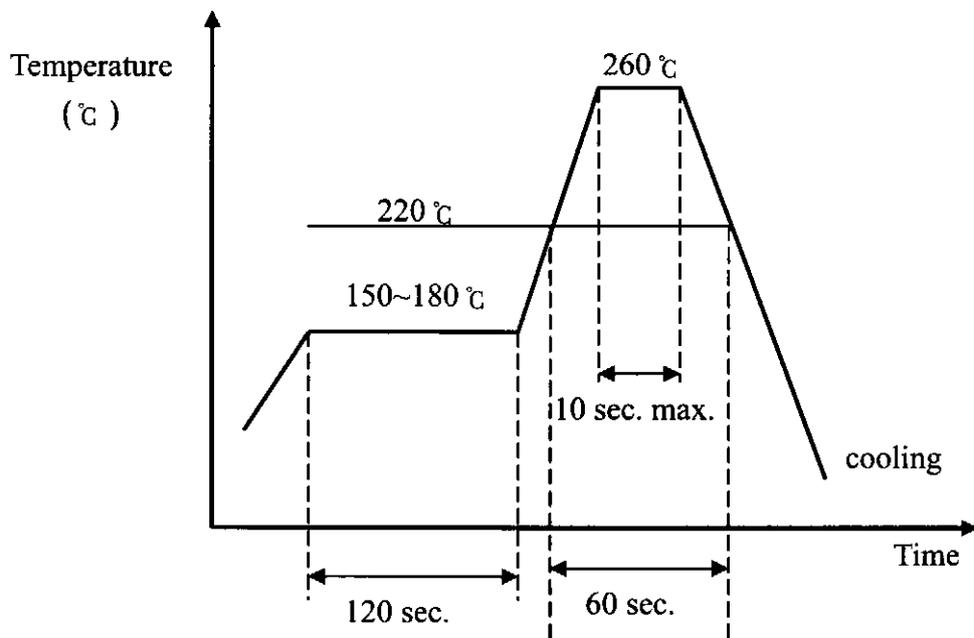
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4. Recommended soldering pattern: ( mm )



5. Reflow temperature profile



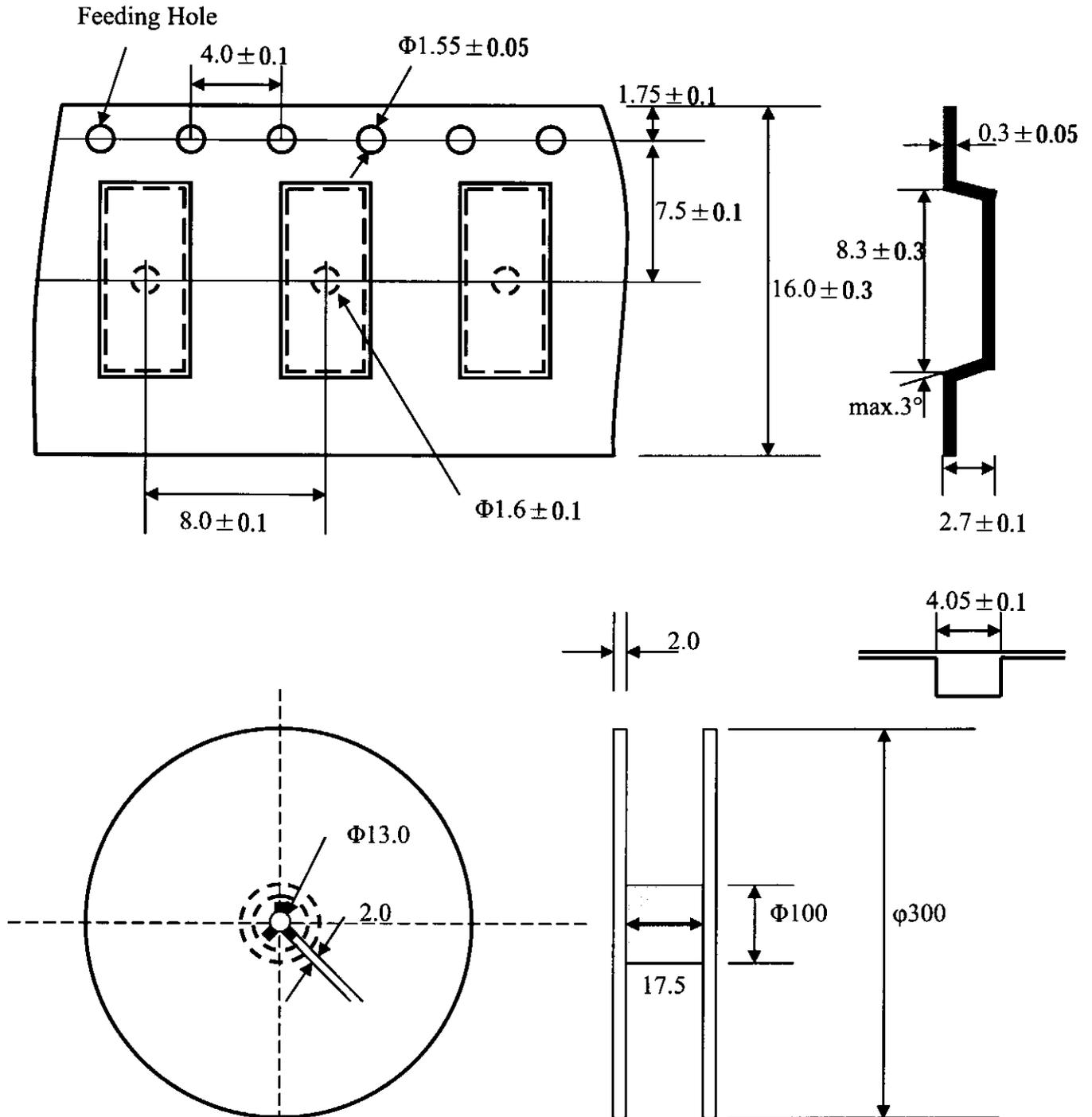


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## 6. Packing





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**7. Physical And Environmental Characteristics :**

**Electrical Performance**

Item	Condition Of Test
7-1. Humidity	Keep the crystal at $40\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and 90%- 95%RH for $96 \pm 4$ hours. Then release the crystal into the room conditions for 1 hour prior to the measurement.
7-2. High Temperature Exposure	Subject the crystal to $85\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ for $96 \pm 4$ hours . Then release the crystal into the room conditions for 1 hour prior to the measurement .
7-3. Low Temperature Exposure	Subject the crystal to $-20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ for $96 \pm 4$ hours . Then release the crystal into the room conditions for 1 hour prior to the measurement .
7-4. Mechanical Shock	Drop the crystal from 75cm height 3 times on hard wood . Frequency variation less than 5 ppm Resistance variation less than 15%
7-5. Temperature Cycling	Subject the crystal to $-30\text{ }^{\circ}\text{C}$ for 30 min. followed by a high temperature of $+85\text{ }^{\circ}\text{C}$ for 30 min. Cycling shall be repeated 5 times with a transfer time of 15 sec. at the room condition. Then release the crystal into the room temperature for 2 hour prior to the measurement.
7-6. Vibration	Subject the crystal to vibration for 2 hours each in x, y, and z axes with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10-55 Hz .
7-7. Resistance to Solder Heat	Dip the crystal terminals no closer than 2 mm into the solder bath $260\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ for $5 \pm 1$ sec; Then release the crystal into the room temperature for 1 hour prior to the measurement .

**5. Review of Specification :**

When something get doubtful with this specifications , we shall jointly work to get an agreement .