

# CRYSTAL UNIT

## 32.768KHZ

# YSX146GA Glass Sealed



### Applications

- RTC.

### Features

- Dimensions: 7.00 x 1.50 x 1.40 mm.
- Reflow is possible.
- Standard Frequency: 32.768KHz
- Contains Pb in sealing glass exempted by RoHS directive.

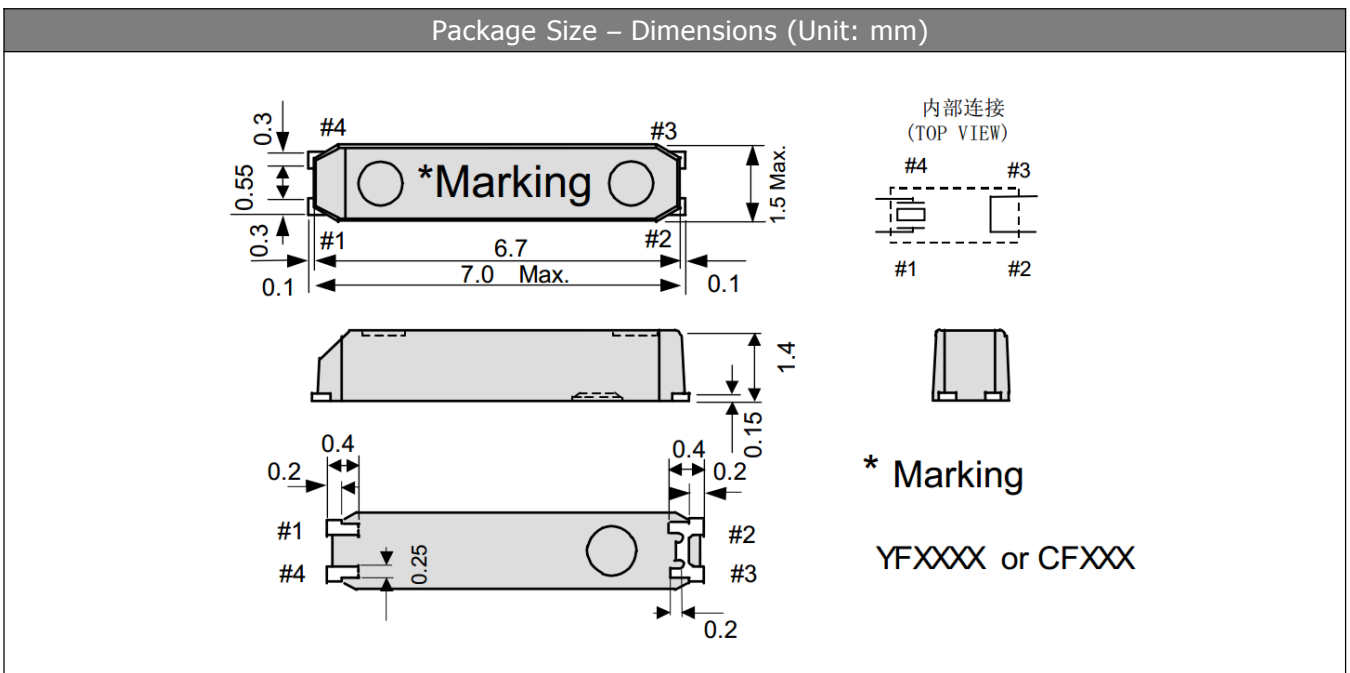
## Specifications

Standard Frequency	32.768 KHz
Load Capacitance	7pF, 9pF, 12.5pF, or specify
Frequency Tolerance (at 25 )	±10ppm, ±20ppm, or specify
Parabolic Coefficient	( - 0.036 ± 0.006 ) * 10 <sup>-6</sup> / °C <sup>2</sup>
Operating Temperature	-40~+85°C, or specify
Storage Temperature	-55~+125°C
Shunt Capacitance	2.0pF Max.
Motional Capacitance	3.0fF
Level of Drive	1.0µWMax
Aging (at 25 °C )	±5ppm/year Max.

## Equivalent Series Resistance(ESR)

YSX146GA
65K Ω Max.

## Dimensions and Patterns [unit:mm]



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### Reflow Soldering Profile



Pre Heating Temperature

    Tp1 ~ Tp2 = + 170 °C

Heating Temperature

    TMlt = + 220 °C

Peek Temperature

    TMax. = + 260 °C

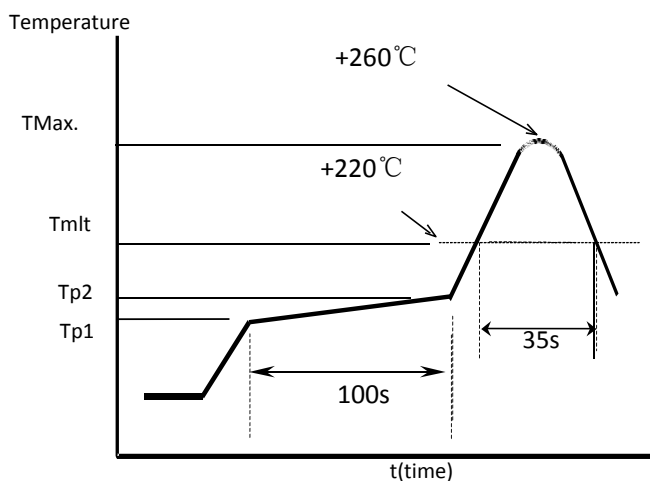
Point of measuring

    In case of Solder ability

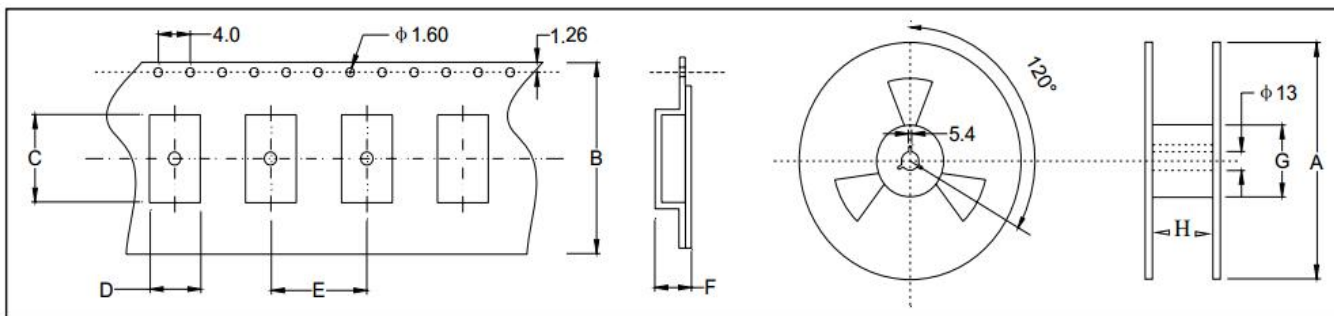
Terminal.

    In case of Resistance to soldering heat

    Surface.



## Taping Specification(Unit: mm)



Size	A	B	C	D	E	F	G	H
SMD-7015	330±2.0	16.0±0.3	7.20±0.1	1.70±0.1	4.0±0.1	1.5±0.1	61.0±1.0	16.0±1.0

3000 pcs per reel

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## Handling Notice for Standard Tuning Fork Crystal (Cylindrical Type)

### 1. Shock resistance

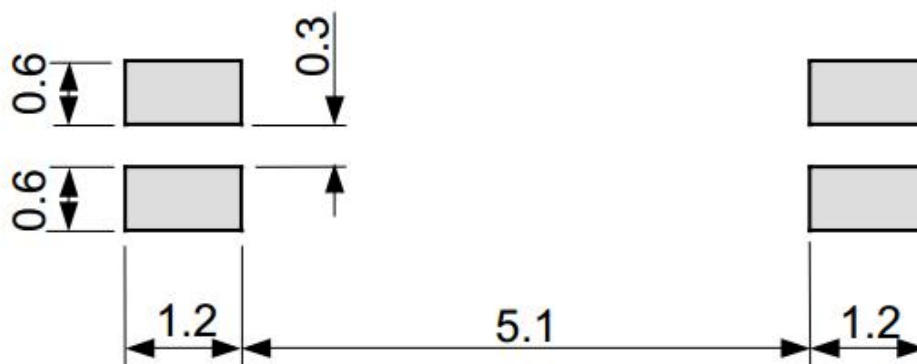
It may deteriorate the characteristics or cause of no oscillation if excess physical shock given. Please be careful not to drop. Please use under condition to minimize the shocks as much as possible. Please review the conditions if it is used by auto mounting or after the conditions are changed.

### 2. Heat and humidity resistance in storage

Storing the crystal products under higher or lower temperature or high humidity for a long period may deteriorate the characteristics of crystal units. Please store and use the crystal products at the normal temperature and humidity.

### 3. Mounting method to PCB

When the crystal products need to be lay down please fix to PCB securely. If the crystal is used with mechanical vibration location, please put cushion in between PCB or fix with elasticity glue (Silicon etc) as shown in below figure. Please don't gluing hermetic seal grass.



### 4. Ultrasonic cleaning and ultrasonic soldering

Soldered by ultrasonic cannot be guaranteed, because crystal maybe sympathetic vibrated and may damage. Please study at your side about ultrasonic cleaning.

### 5. Drive level

Applying excessive drive level to the crystal units may cause deterioration of characteristics or damage. Less than  $1.0\mu\text{W}$  is recommended to this products. More than  $2.0\mu\text{W}$  cannot be guaranteed.

## REVIEW OF SPECIFICATION

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