

深圳市炬焯科技有限公司

CHIP SUN TECHNOLOGY CO., LTD

# APPROVAL SHEET



CUSTOMER: Quartz 1

DESCRIPTION: SMD5032 VCTCXO 10.000MHz

MANUFACTURER PART NO.: FVTO10.000M3.3SM5-1.0/2.0C

CUSTOMER PART NO: \_\_\_\_\_

USED IN MODEL: \_\_\_\_\_

| APPROVAL         |               |                  |
|------------------|---------------|------------------|
| TECHNOLOGY DEPT. | QUALITY DEPT. | PURCHASING DEPT. |
|                  |               |                  |

Date: 2019.10.28



深圳市炬焯科技有限公司

CHIP SUN TECHNOLOGY CO., LTD

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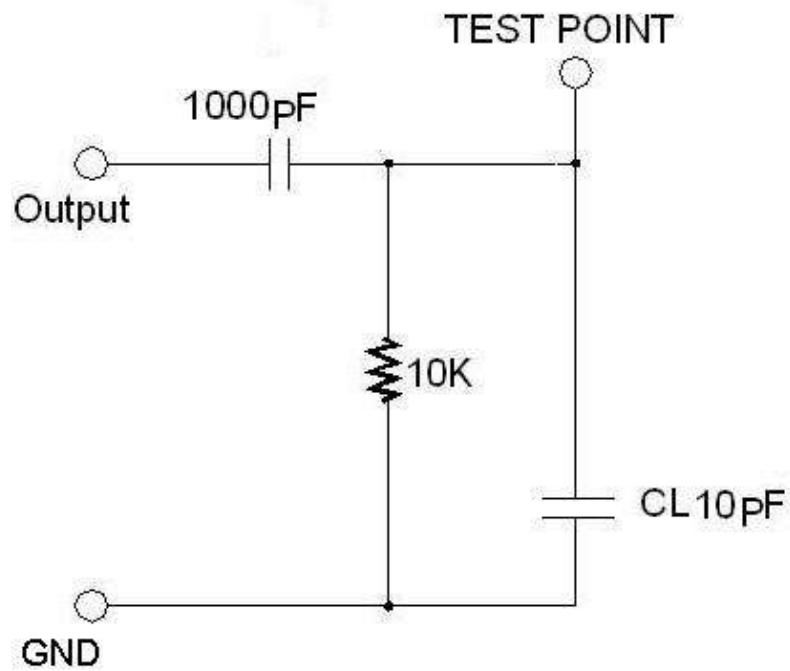
# 1. TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR SPECIFICATION

| Parameter                       | Value  | Condition                        |
|---------------------------------|--|----------------------------------|
| 1.1 Frequency:                  | 10.000MHz  |                                  |
| 1.2 Holder type:                | <b>FVTO531S</b>  |                                  |
| 1.3 Supply voltage:             | 3.3 V <sub>DC</sub> ± 5%   |                                  |
| 1.4 Current:                    | 3.5mA max  | 10K Ω //10pF                     |
| 1.5 Output Level:               | 0.8 V <sub>p-p</sub> Min (Clipped Sine Wave DC-coupled 10K Ω //10pF) |                                  |
| 1.6 Output Load:                | 10K Ω //10pF ± 10%   |                                  |
| 1.7 Operable temperature range: | -30°C To +85°C   |                                  |
| 1.8 Storage temperature range:  | -40°C To +85°C   |                                  |
| 1.9 Frequency tolerance:        | ± 1.0ppm max   | at 25°C                          |
| 1.10 Frequency Stability:       |  |                                  |
| vs. Temperature:                | ± 2.0ppm max   | -30°C To +85°C                   |
| vs. Supply voltage:             | ± 0.2ppm max   | 3.3V ± 5%                        |
| vs. Load Coefficient:           | ± 0.2ppm max   | 10K Ω //10pF +/-10%              |
| vs. Aging:                      | ± 1.0ppm max   | 1 Year (25 ± 2°C)                |
| 1.11 Start Up Time              | 3.0 ms max   | More than 90% of final amplitude |
| 1.12 Frequency Adjustment       | ± 10ppm min  | V <sub>cont</sub> =1.5 ± 1.0V    |
| 1.13 Phase noise:               |  |                                  |
| @ 1KHz offset                   | -145 dBc/Hz  |                                  |
| 1.14 Test circuit               | Refer to fig.2   |                                  |
| 1.15 Dimensions and marking     | Refer to page.3  |                                  |
| 1.16 Emboss carrier tape & reel | Refer to page.5 and page.6   |                                  |

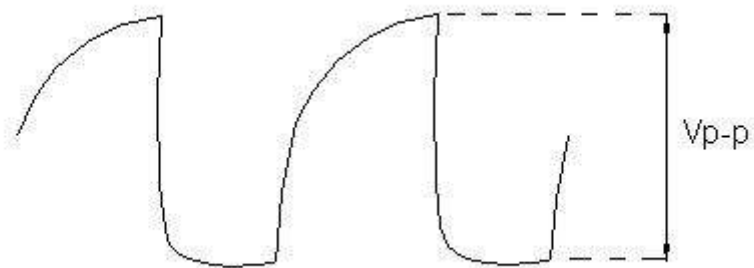
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## 2. Test circuit



## 3. Output Waveform:

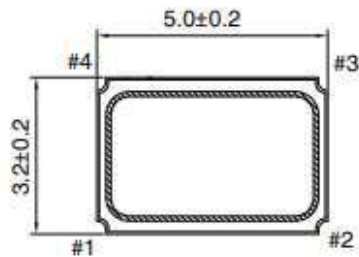


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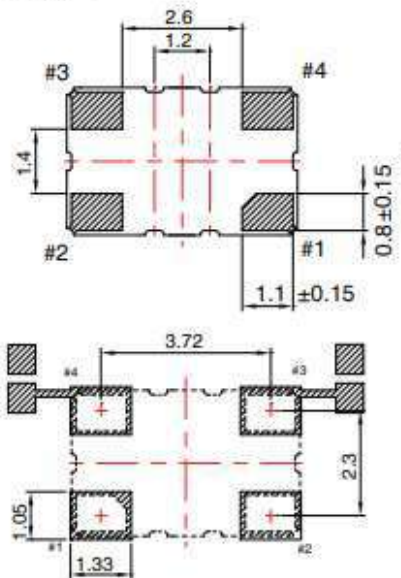
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## 4. FVTO531S DIMENSIONS

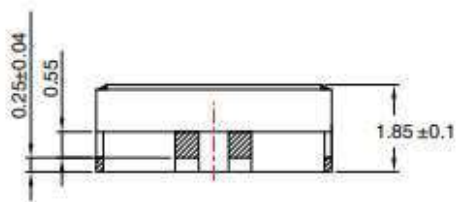
[ TOP VIEW ]



[ BOTTOM VIEW ]



[ SIDE VIEW ]



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1 $\mu$ F as close to the part as possible between VDD and GND pads.

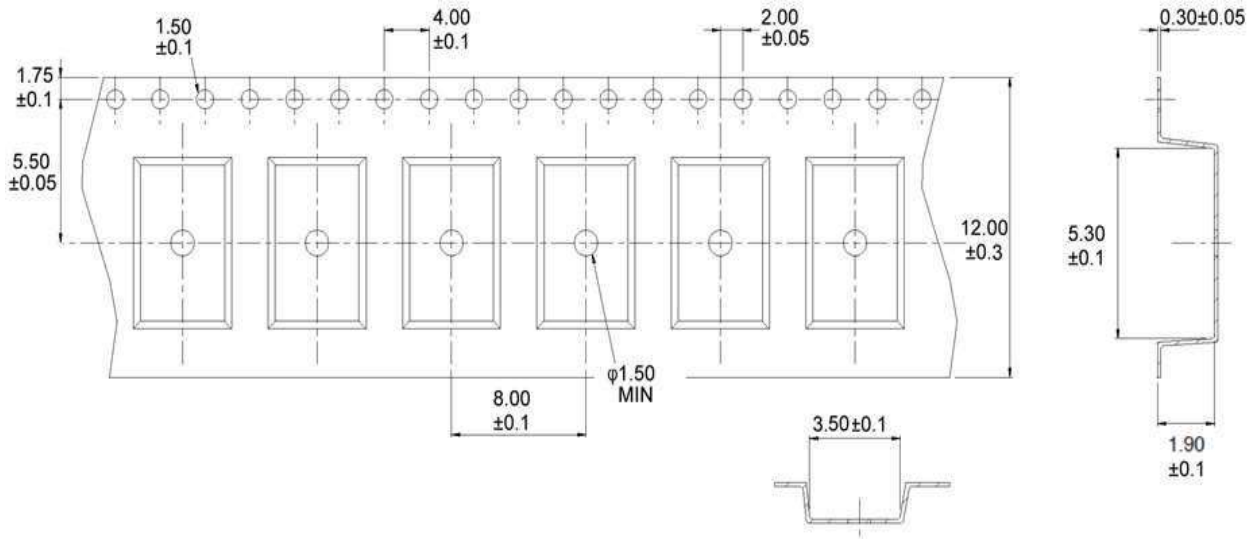
| Pin | Function                    |
|-----|-----------------------------|
| #1  | VOCN:VC-TCXO<br>GND/NC:TCXO |
| #2  | GND                         |
| #3  | OUTPUT                      |
| #4  | VDD                         |

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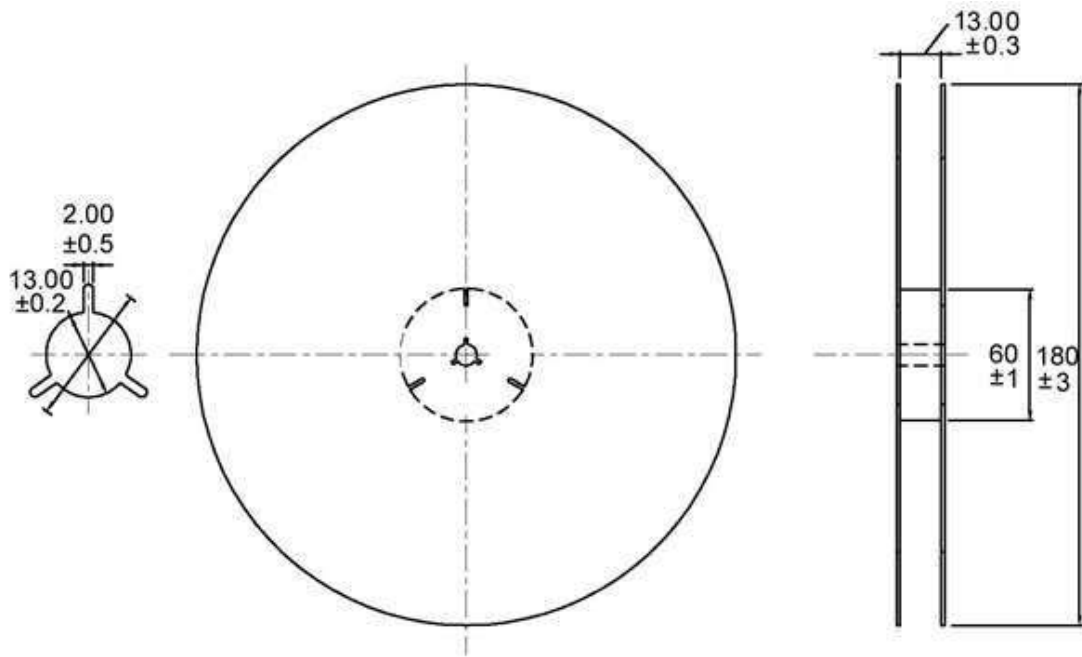
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## 5. FVTO531S EMOSS CARRIER TAPE & REEL

### a.) Dimensions of Carrier Tape



### b.) Dimensions of Reel

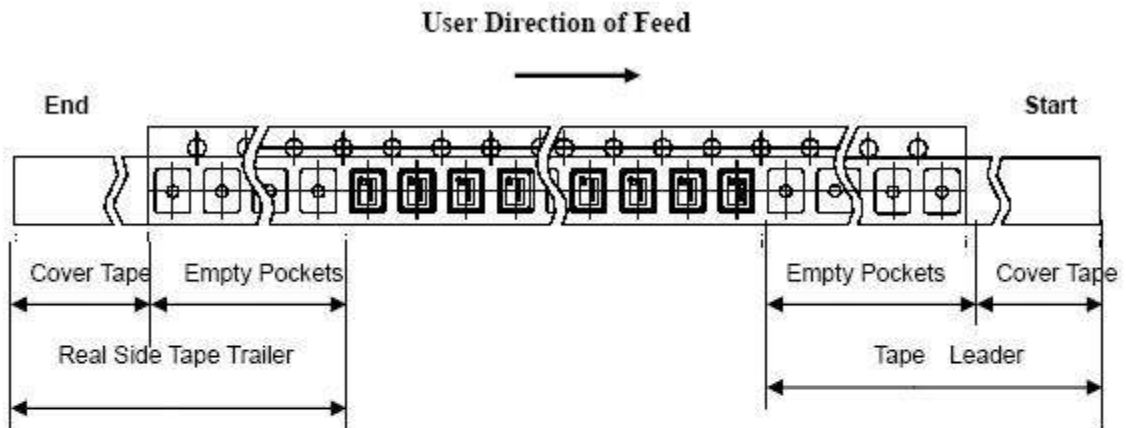


Unit:mm

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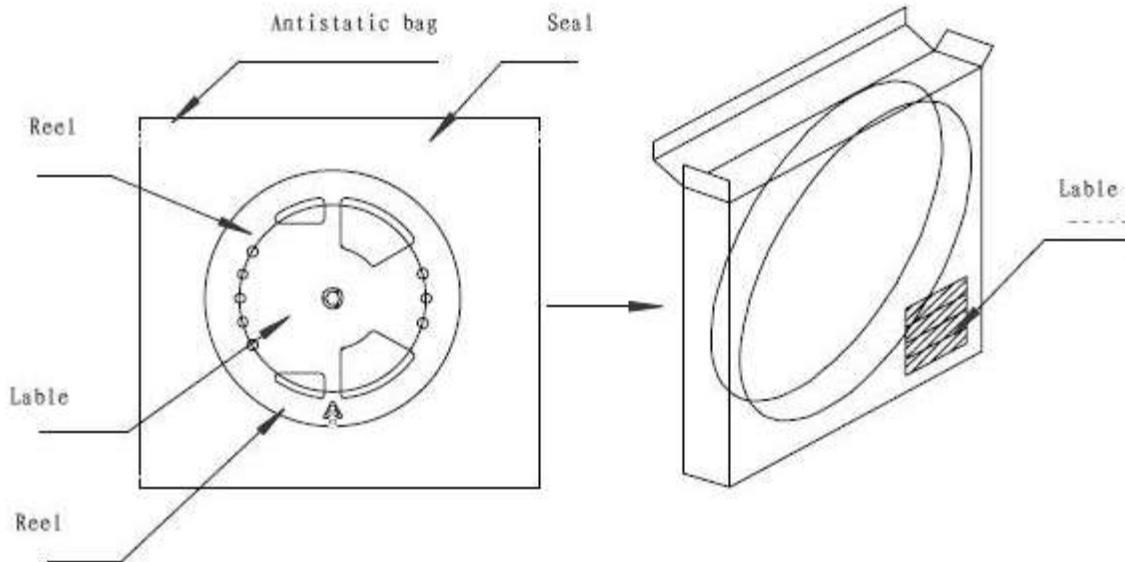
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c.) Packing



| Item         |               | Empty Space    |
|--------------|---------------|----------------|
| Tape Leader  | Cover Tape    | Min.250mm      |
|              | Empty Pockets | Min.160pockets |
| Tape Trailer | Cover Tape    | Min.250mm      |
|              | Empty Pockets | Min.160mm      |

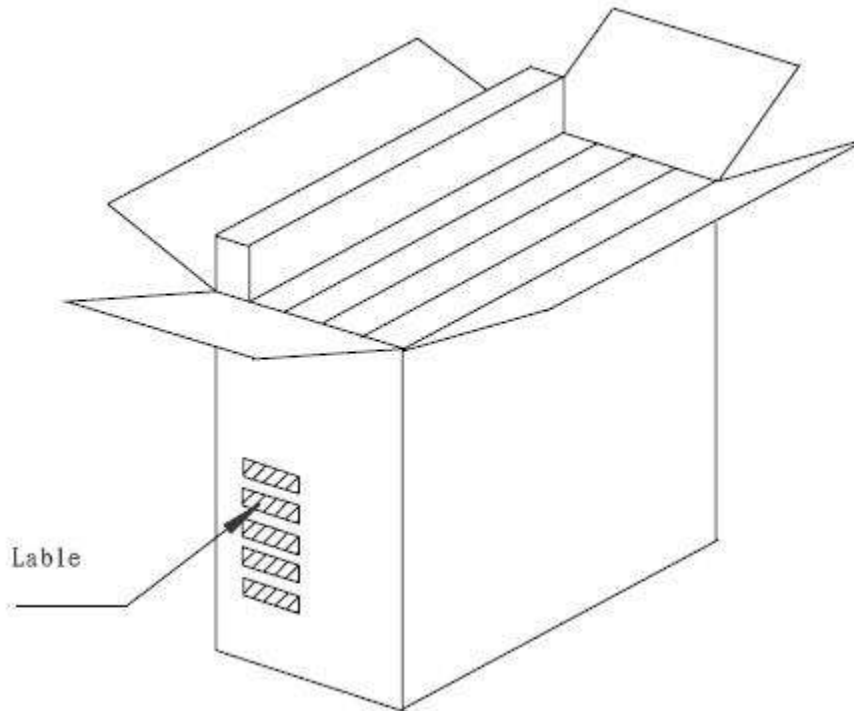
d.) Inner carton



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d.) Outet carton



e.) Marking Label

Label contents

- .The type of product
- .Our specification No.
- .Your Part No.
- .Lot No.
- .Nominal Frequency
- .Quantity
- .Our Company Name

| INSPECTION RECORDS                  |  |
|-------------------------------------|--|
| PART NUMBER                         |  |
| Lot. NO:                            |  |
| HOLDER TYPE                         |  |
| FREQUENCY                           |  |
| REMAKS                              |  |
| QUANTITY                            |  |
| <b>CHIP SUN TECHNOLOGY CO., LTD</b> |  |

Sticks label for every reel.

f.) Standard packing quantity

1,000PCS / REEL

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## 6. STORAGE ENVIRONMENT

- \* Storage the reel at normal temperature and humidity
- \* Open the packing just before using.
- \* Do not expose the sun.
- \* Do not storage with some erosive chemicals.
- \* Nothing is allowed to put on the reel or carton to prevent mechanical damage.

## 7. HANDLING

- \* Handle with care to prevent the damage of tape, reel and products.

- ELECTROSTATIC DISCHARGES

This device contains a CMOS IC. Please take precautionary measures against ESD damage.

- SHOCK RELIABILITY

This device contains a quartz crystal, so please do not give too much shock or vibration. Surface mounters can be used for assembling, but be sure to check your machine conditions before using them.

- ULTRASONIC CLEANING

Also be sure to check your cleaning condition of ultrasonic cleaning apparatus.

- TEMPERATURE AND HUMIDITY

We recommend to store and use device under normal temperature and humidity for frequency stability. Condensation may cause this device damages.

|                                     |                               |            |
|-------------------------------------|-------------------------------|------------|
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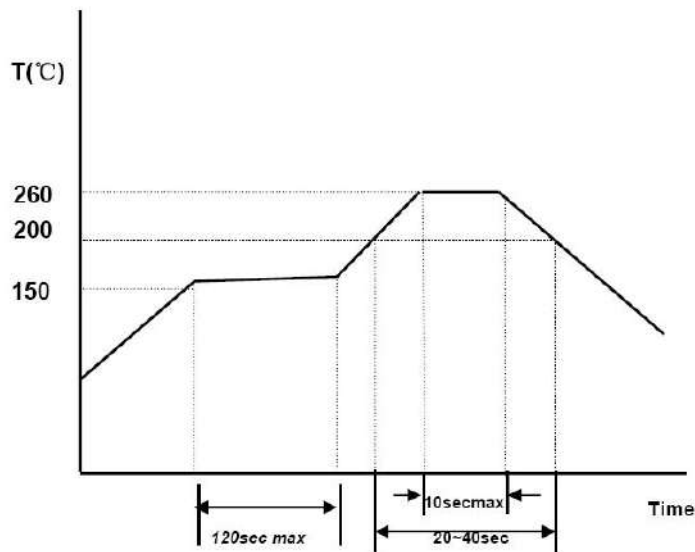
## 8. Mechanical Characteristics:

| NO. | ITEM                | CONDITIONS   | REQUIREMENT  |
|-----|---------------------|--|--|
| 8.1 | Shock Test          | 150cm, onto concrete,<br>each side(6), corner(1), total 7times                           | No visible damage<br>Meet electrical specification.                                  |
| 8.2 | Vibration Test      | 20Hz~500Hz, amplitude 1.5mm<br>500-2000Hz, accelerate 20g<br>X,Y,Z each direction ×15min | No visible damage<br>Meet electrical specification.                                  |
| 8.3 | Solder ability Test | 235°C±5°C solder bath, 3±0.5sec  | No visible damage<br>more than 95% must be covered<br>Meet electrical specification. |

## 9. Environmental Characteristics:

| NO. | ITEM                      | CONDITIONS   | REQUIREMENT   |
|-----|---------------------------|--|---|
| 9.1 | Low Temperature Enduring  | -40±2°C, 120±2 hours<br>cooled to room temperature for 2 hours.              | No visible damage<br>Meet electrical specification. |
| 9.2 | High Temperature Enduring | +85±2°C, 120±2 hours<br>cooled to room temperature for 2 hours.              | No visible damage<br>Meet electrical specification. |
| 9.3 | Humidity                  | +60°C, 95%RH, 120±2 hours<br>cooled to room temperature for 2 hours.         | No visible damage<br>Meet electrical specification. |
| 9.4 | Heat shock                | -40°C/30min~85°C/30min, 100cycles<br>cooled to room temperature for 2 hours. | No visible damage<br>Meet electrical specification. |

## INFRARED REFLOW TEMP. PROFILE:



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