



# YSO110TR

给您一颗快乐的“芯”！



## Features

- Package Size: 2.0\*1.6 2.5\*2.0 3.2\*2.5 5.0\*3.2 7.0\*5.0mm
- Frequency range: 1MHz ~ 50MHz.
- Ultra Small SMD seam sealed clock crystal oscillator units.
- Applications: WLAN, Bluetooth, DSC, DSL and other IT product.
- Tri-state function available

## Electrical Specifications

| Item / Type                                  | YSO110TR                              |
|--|---------------------------------------|
| Output Frequency Range                       | 1~50MHz or specify                    |
| Output Type                                  | CMOS                                  |
| Supply Voltage                               | 1.8V ~ 3.3V                           |
| Oscillation Mode                             | Fundamental                           |
| Frequency Tolerance ( at 25 )                | ±10ppm, ±20ppm, or specify            |
| Output Load                                  | 15 pF, or specify                     |
| Operating Temperature Range                  | -40~+85 °C , or specify               |
| Frequency Versus Temperature Characteristics | ± 20ppm, ± 30ppm, ± 50ppm, or specify |
| Storage Temperature Range                    | - 55 ~ + 125 °C                       |
| Voltage Vol ( Max. ) / Vol ( Min. )          | 90%Vdd min./10%Vdd max                |
| Symmetry                                     | 45~55%                                |
| Rise ( Tr ) / Fall ( Tf ) Time               | 4ns Max.                              |
| Start-up Time                                | 3 msMax.                              |
| Supply Current                               | See Below                             |
| Frequency Aging ( at 25 °C )                 | ± 3 ppm / year Max.                   |

## Dimensions

| PAD      | #1               | #2  | #3     | #4  |
|----------|------------------|-----|--------|-----|
| FUNCTION | Enable / Disable | GND | OUTPUT | VDD |

### Notes:

1. To maintain stable operation provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product( between Vcc-GND )

### Top View

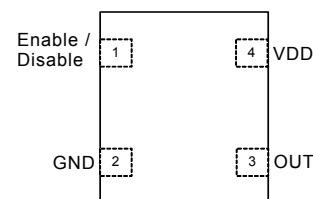


Figure 1. Pin Assignments

| Package Size -- Dimensions(Unit:mm) | Recommended layout Pattern (Unit:mm) |
|-------------------------------------|--------------------------------------|
| 2.0x1.6x0.80mm                      |                                      |



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| Package Size -- Dimensions(Unit:mm) | Recommended layout Pattern (Unit:mm) |
|-------------------------------------|--------------------------------------|
| <p>2.5x2.0x0.90mm</p>               |                                      |
| <p>3.2x2.5x1.00mm</p>               |                                      |
| <p>5.0x3.2x1.20mm</p>               |                                      |
| <p>7.0x5.0x1.30mm</p>               |                                      |



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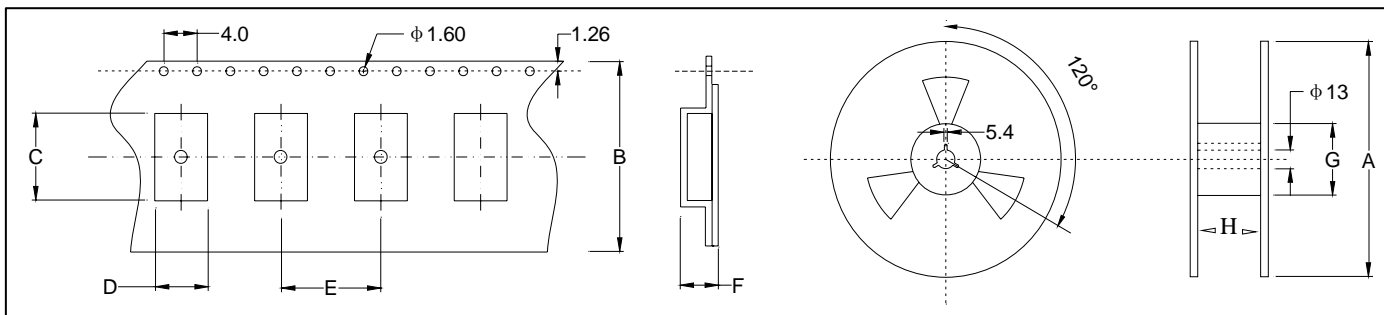
★ PART NUMBER GUIDE 部件号示例 e.g. OT252028.888MJBA4SL YSO110TR=2.5×2.0 SMD SEAM TYPE

| Quartz Crystal Oscillator | Type Code | Package Size                   | Frequency (Hz) | Supply Voltage (V) | Frequency Stability Overall (ppm) | Output | Pin | Material | Operating Temp. Frequency Temp. |
|---------------------------|-----------|--------------------------------|----------------|--------------------|-----------------------------------|--------|-----|----------|---------------------------------|
| O                         | T         | 2016 2520<br>3225 5032<br>7050 | 28.888M        | J                  | B                                 | A      | 4   | S        | L                               |

★ INPUT CURRENT 工作电流

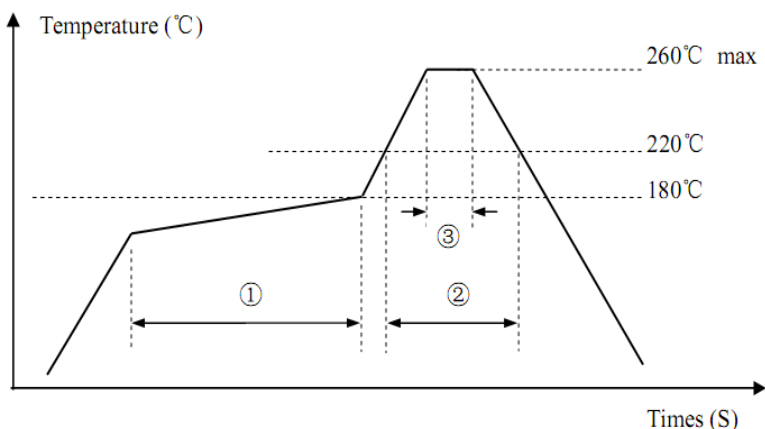
|         |                | Vdc=1.8~3.3V   |           | 15pF only           |          |
|---------|----------------|----------------|-----------|---------------------|----------|
| Voltage | Frequency Size | 1~40MHZ        |           | 41~50MHZ            |          |
|         |                | 7050/5032/3225 | 2520/2016 | 7050/5032/3225/2520 | 2016     |
| 1.8V    |                | 4mA max        | 4mA max   | 9mA max             | 10mA max |
| 2.5V    |                | 4.5mA max      |           | 10mA max            |          |
| 3.3V    |                | 5mA max        |           | 12mA max            |          |

★ TAPING SPECIFICATION (Unit: mm) 编带规格



| Size                 | A       | B        | C         | D         | E        | F        | G        | H        |
|----------------------|---------|----------|-----------|-----------|----------|----------|----------|----------|
| OSC-SMD7050 1000 pcs | 180±2.0 | 16.0±0.3 | 7.50±0.10 | 5.50±0.10 | 8.00±0.1 | 2.00±0.1 | 61.0±1.0 | 16.0±1.0 |
| OSC-SMD5032 1000 pcs | 180±2.0 | 12.0±0.3 | 5.40±0.10 | 3.60±0.10 | 8.00±0.3 | 1.70±0.1 | 61.0±1.0 | 12.0±1.0 |
| OSC-SMD3225 3000 pcs | 180±2.0 | 8.0±0.3  | 3.40±0.10 | 2.70±0.10 | 4.00±0.1 | 1.50±0.1 | 61.0±1.0 | 8.0±1.0  |
| OSC-SMD2520 3000 pcs | 180±2.0 | 8.0±0.3  | 2.90±0.10 | 2.40±0.10 | 4.00±0.1 | 1.20±0.1 | 61.0±1.0 | 8.0±1.0  |
| OSC-SMD2016 3000 pcs | 180±2.0 | 8.0±0.3  | 2.30±0.10 | 1.90±0.10 | 3.85±0.1 | 0.95±0.1 | 61.0±1.0 | 8.0±1.0  |

★ REFLOW SOLDERING PROFILE 回流焊特性



| Pb free reflow A | ① | Preheat      | 160~180°C | 120sec. max |
|------------------|---|--------------|-----------|-------------|
|                  | ② | Primary heat | 220°C     | 60sec. max  |
|                  | ③ | Peak         | 260°C     | 10sec. max. |

★ Test Circuit 测试电路



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