

# Temperature Compensated Crystal Oscillator

## YSO510TP TCXO

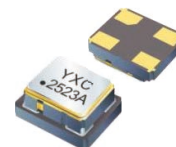


### Applications

- Networking
- Industrial

### Features

- Frequency Stability as Tight as  $\pm 1.0$  ppm Over  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- Ultra Small SMD Seam Sealed Crystal Oscillator
- Package Size : 2.0\*1.6, 2.5\*2.0, 3.2\*2.5, 5.0\*3.2, 7.0\*5.0mm



## Specifications (规格参数)

| Item/Type                                     | Clipped Sine Wave or CMOS  |  |            |             |             |           |
|---|--|--|------------|-------------|-------------|-----------|
| Package Size<br>封装尺寸                          | 2.0 x 1.6  | 2.5 x 2.0  | 3.2 x 2.5  | 5.0 x 3.2   | 7.0 x 5.0   |           |
| Frequency Range<br>额定频率范围                     | 26 ~ 52MHz   | 13 ~ 52MHz   | 13 ~ 52MHz | 6.4 ~ 52MHz | 6.4 ~ 52MHz |           |
| Supply Voltage<br>电源电压                        | 1.8V, 2.5V, 3V, 3.3V   |  |            |             |             |           |
| Operating Temperature Range<br>工作温度           | $-30 \sim +85^{\circ}\text{C}$ , or specify  |  |            |             |             |           |
| Storage Temperature Range<br>储存温度             | $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$   |  |            |             |             |           |
| Output Type<br>输出方式                           | Clipped Sine wave or CMOS  |  |            |             |             |           |
| Current Consumption (max.)<br>消耗电流            | 10~15MHz: 1.5mA ; 15.1~26MHz: 2mA ; 26.1~52MHz: 3.5mA  |  |            |             |             |           |
| Duty Cycle<br>占空比                             | 45~55%   |  |            |             |             |           |
| Output Voltage Level (peak to peak)<br>峰峰值    | 0.8 Vp-p ( min.) (CMOS)  |  |            |             |             |           |
| Start-up Time<br>启动时间                         | 2.0msec( typ.), 5.0msec( max.)<br>( reach 90% amplitude and at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ) |  |            |             |             |           |
| Initial Calibration Tolerance<br>初始校准公差       | $\pm 2.0$ ppm ( max.) at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ( at the shipment )                     |  |            |             |             |           |
| Output Load<br>输出负载                           | 10K $\Omega$ // 10pF $\pm 10\%$ or 15pF  |  |            |             |             |           |
| Frequency Stability<br>频率偏差                   | vs Aging at Ta = $+25^{\circ}\text{C}$   | $\pm 1.0$ ppm / year ( max.)                                   |            |             |             |           |
|   | vs Voltage Change  | $\pm 0.2$ ppm ( max.) , for a $\pm 5\%$ input voltage change   |            |             |             |           |
|   | vs Load Change   | $\pm 0.2$ ppm ( max.) , for a $\pm 10\%$ load condition change |            |             |             |           |
|   | vs Reflow  | $\pm 2.5$ ppm ( max.)  |            |             |             |           |
|   | vs Temperature Change  | $\pm 0.28$ ppm / $\pm 0.5$ ppm / $\pm 1.5$ ppm / $\pm 2.5$ ppm |            |             |             |           |
| Phase Noise<br>[ dBc / Hz ; ( typ.) ]<br>相位噪声 | Offset   | 10 Hz  | 100 Hz     | 1 KHz       | 10 KHz      | 10 KHz    |
|   | 13.0 MHz   | -80 (max)  | -115       | -135        | -148        | -148(min) |

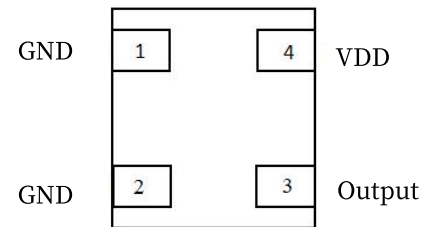
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## Pin Dimension (脚位尺寸)

| Pin      | #1     | #2     | #3     | #4             |
|----------|--------|--------|--------|----------------|
| Function | Ground | Ground | Output | Supply Voltage |

## Pin Assignments



Top View

## Dimensions and Recommended Land Pattern (外观尺寸及推荐焊盘)

| Dimensions (Unit: mm) | Recommended Land Pattern (Unit: mm)        |
|-----------------------|--|
| <p>2.0*1.6mm</p>      |  |
| <p>2.5*2.0mm</p>      | <p>Pad Connections : Pad 2、Pad 5 : N.C</p> |

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|   |  |
|---|--|
| <p>3.2*2.5mm</p>  |  |
| <p>5.0*3.2mm</p>  |  |
| <p>7.0*5.0mm</p>  |  |
| <p>Notes:</p> <p>1.A capacitor of value 0.01uf~0.1uf or higher between Vdd and GND is required.</p> |  |

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## Test Circuit (测试电路)

