

# Temperature Compensated Crystal Oscillator

## YSO510TP TCXO

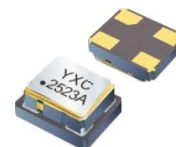


### Applications

- 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                  | $\pm 0.28\text{ppm} / \pm 0.5\text{ppm} / \pm 1.5\text{ppm} / \pm 2.5\text{ppm}$                             |            |            |             |             |
| 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)   |

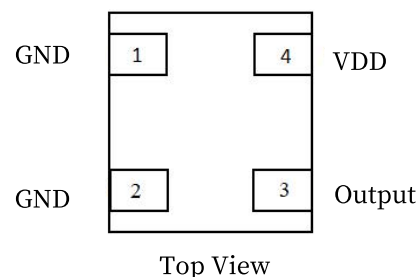
# Temperature Compensated Crystal Oscillator YSO510TP TCXO



## Pin Dimension (脚位尺寸)

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

## Pin Assignments



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

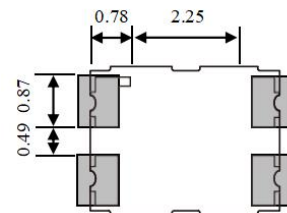
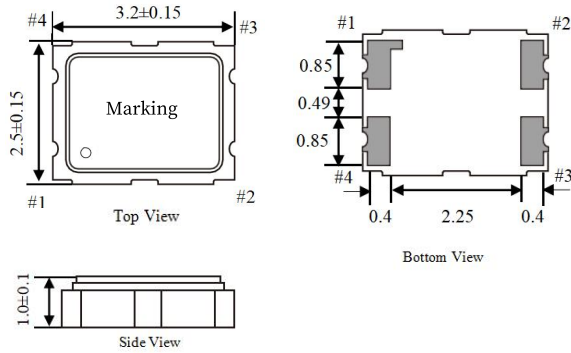
| Dimensions (Unit: mm)                                                | Recommended Land Pattern (Unit: mm)        |
|----------------------------------------------------------------------|--------------------------------------------|
| <p>2.0*1.6mm</p> <p>Top View</p> <p>Bottom View</p> <p>Side View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

# Temperature Compensated Crystal Oscillator

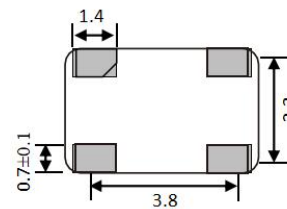
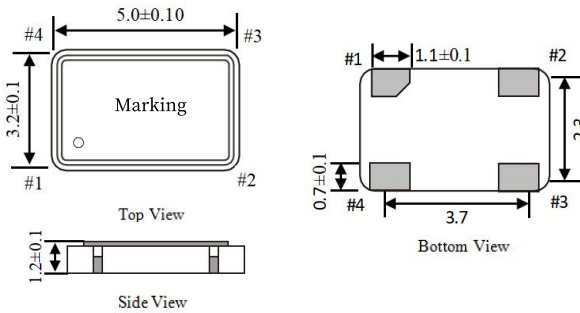
## YSO510TP TCXO



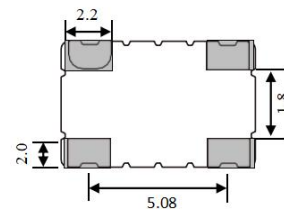
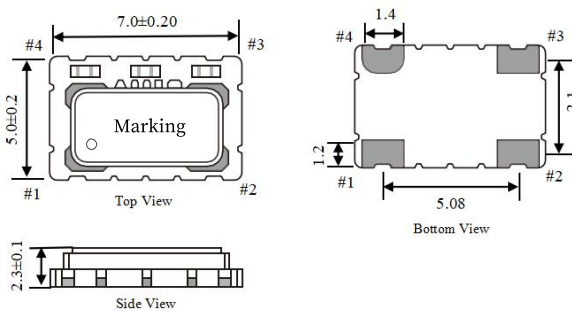
3.2\*2.5mm



5.0\*3.2mm



7.0\*5.0mm



Notes:

1.A capacitor of value 0.01uf~0.1uf or higher between Vdd and GND is required.

# Temperature Compensated Crystal Oscillator

## YSO510TP TCXO



### Test Circuit (测试电路)

