

Differential Oscillator

YSO230LR



Applications

- 10 GB Ethernet,
SONET, SATA, SAS,
Fibre Channel

Features

- Freq range:13.5MHz-200MHz.
- Output LVPECL or LVDS.

- Package Size: 2.5*2.0, 3.2*2.5, 5.0*3.2
7.0*5.0mm.

Specifications

| Item/Type | LVPECL | | LVDS | | Remarks | | |
|-----------------------------|--------------------------------|----------------|-------------------|----------------|--|--------|--|
| | 7050/5032 | 3225/2520 | 7050/5032 | 3225/2520 | | | |
| Output Frequency Range | 13.5~200MHZ | 13.5~156.25MHZ | 13.5~200MHZ | 13.5~156.25MHZ | | | |
| Supply Voltage | 2.5V~3.3V | | 1.8V, 2.5V~3.3V | | | | |
| Operating Temperature Range | -40~+85℃, or specify | | | | | | |
| Storage Temperature Range | -55~+125℃ | | | | | | |
| Total Stability | ±50ppm | | | | | | |
| Current Consumption | 80mA Max | 50mA Max | 60mA Max | 40mA Max | OE=Vcc, LVPECL=(50)Ω or LVDS=(100)Ω | | |
| Disable Current | 10uA Max | | | | OE=GND | | |
| Output Voltage (LVPECL) | VOH=Vcc-1.03 Min | | -- | | DC characteristics | | |
| | VOL=Vcc-1.6 Max | | -- | | | | |
| Output Voltage (LVDS) | -- | | VOD= 247~454mV | | VOD1, VOD2 | | |
| | -- | | dVOD=50mV Max. | | dVOD= VOD1-VOD2 | | |
| | -- | | VOS= 1.125~1.375V | | VOS1, VOS2 | | |
| | -- | | dVOS=50mV Max. | | dVOS= VOD1-VOD2 | | |
| Output Load Condition | L_PECL=50Ω | | -- | | Terminated to Vcc-2.0V | | |
| | -- | | L_LVDS=100Ω | | Connected between OUT to OUT | | |
| Input Voltage | VIH=70% VccMin, VIL=30%Vcc Max | | | | OE terminal | | |
| Output Symmetry | 45~55% | | | | | | |
| Rise Time/Fall Time | 0.8nS Max | | | | LVPECL: Between 20% and 80% of (VOH-VOL), LVDS: Between 20% and 80% Differential Output peak to peak voltage | | |
| Start-up time | 10mS | | | | Time at minimum supply voltage to be 0 s | | |
| Aging | ±3ppm | | | | 25℃ First year, Vcc=2.5V, 3.3V | | |
| Phase Jitter(12KHZ~20MHZ) | 100MHZ | 125MHZ | 148.5MHZ | 156.25MHZ | 180MHZ | 200MHZ | |
| | 0.3ps Typ. | | 0.1ps Typ. | | | | |

Pin Dimension

| Pin | #1 | #2 | #3 | #4 | #5 | #6 |
|----------|----|----|-----|------|------|-----|
| FUNCTION | OE | NC | GND | OUT+ | OUT- | VDD |

Notes: 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

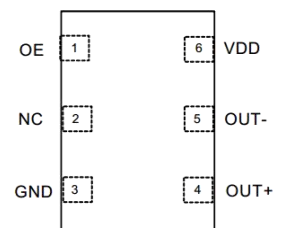


Figure 1. Pin Assignments

YSO230LR

Dimensions and Patterns [unit:mm]

| Package Size – Dimensions (Unit: mm) | Recommended Land Pattern (Unit: mm) |
|--------------------------------------|-------------------------------------|
| <p>2.5*2.0mm</p> | |
| <p>3.2*2.5mm</p> | |
| <p>5.0*3.2mm</p> | |
| <p>7.0*5.0mm</p> | |

Notes:

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

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Reflow Soldering Profile

Pre Heating Temperature $T_{p1} \sim T_{p2} = +170\text{ }^{\circ}\text{C}$

Heating Temperature

$T_{Mlt} = +220\text{ }^{\circ}\text{C}$

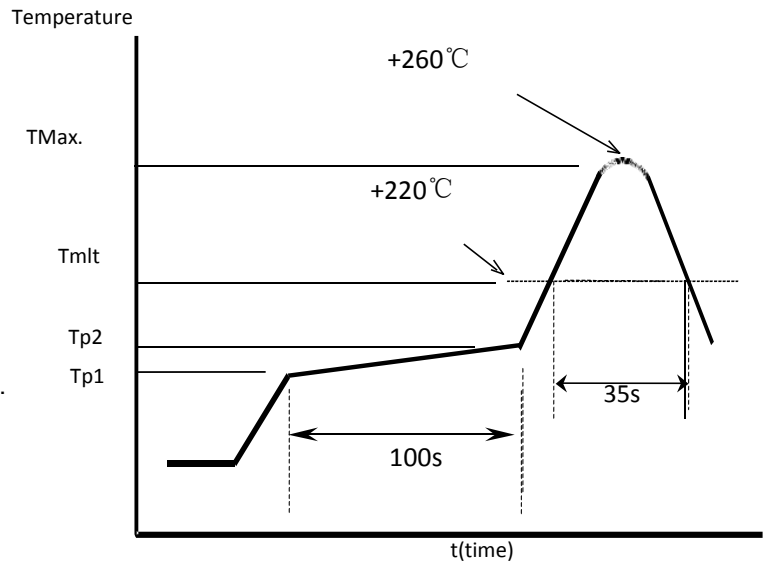
Peek Temperature

$T_{Max.} = +260\text{ }^{\circ}\text{C}$

Point of measuring

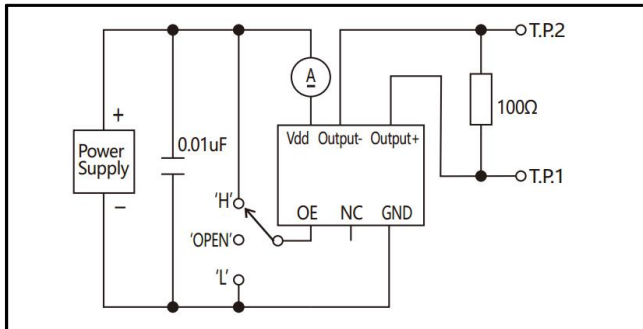
In case of Solder ability Terminal.

In case of Resistance to soldering heat Surface.

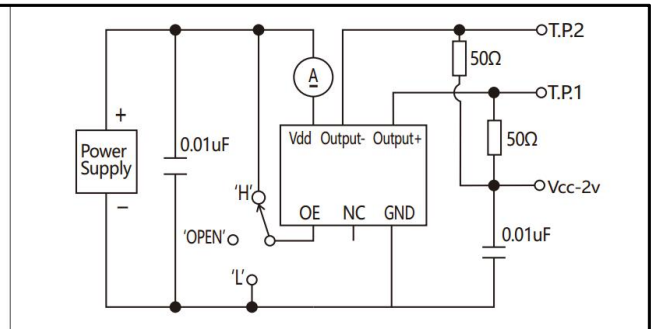


Test Circuit

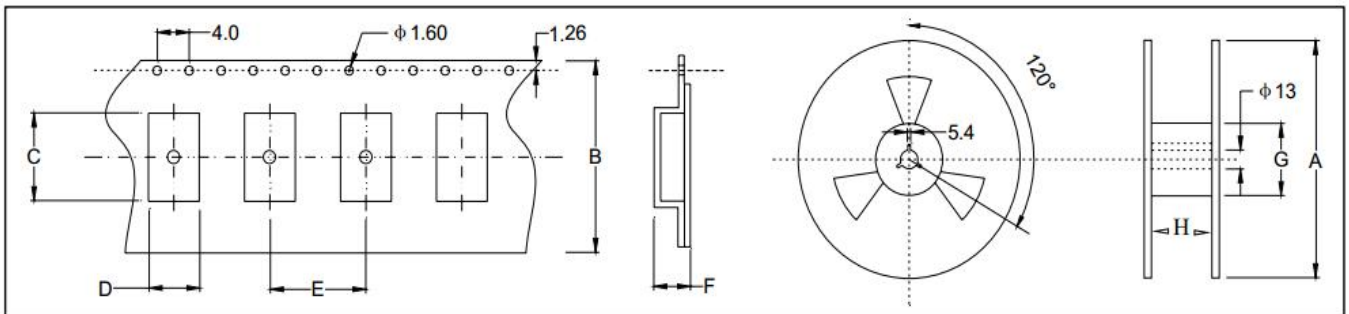
LVDS



LVPECL



Taping Specification(Unit: mm)



| Size(OSC) | A | B | C | D | E | F | G | H |
|-----------|---------|----------|----------|----------|---------|----------|----------|----------|
| SMD-7050 | 180±2.0 | 16.0±0.3 | 7.50±0.1 | 5.50±0.1 | 8.0±0.1 | 2.00±0.1 | 61.0±1.0 | 16.0±1.0 |
| SMD-5032 | 180±2.0 | 12.0±0.3 | 5.40±0.1 | 3.60±0.1 | 8.0±0.1 | 1.70±0.1 | 61.0±1.0 | 12.0±1.0 |
| SMD-3225 | 180±2.0 | 8.0±0.3 | 3.40±0.1 | 2.70±0.1 | 4.0±0.1 | 1.50±0.1 | 61.0±1.0 | 8.0±1.0 |
| SMD-2520 | 180±2.0 | 8.0±0.3 | 2.90±0.1 | 2.40±0.1 | 4.0±0.1 | 1.20±0.1 | 61.0±1.0 | 8.0±1.0 |

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