

# PROGRAMMABLE CRYSTAL OSCILLATOR

## YSV220PR VCXO



### Applications

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

### Features

- Freq range:10MHz-1500MHz.
- Output LVPECL or LVDS.
- Package Size: 3.2x2.5, 5.0x3.2, 7.0x5.0mm
- High precision characteristic covering up to wide frequency range.



## Specifications

Item/Type	SMD VCXO	LVPECL	LVDS	Remarks
Output Frequency Range		10MHz~1500MHz		
Supply Voltage		2.5Vdc ± 10% 3.3Vdc ± 10%		
Operating Temperature Range		-40~+85°C, or specify		
Storage Temperature Range		-55~+125°C		
Total Stability		±50ppm		
Absolute Pull Range		±50ppm Min,		
Input Resistance		1Mohms Typ		
Current Consumption		80mA Max	50mA Max	OE=Vcc, LVPECL=(50)Ω or LVDS=(100)Ω
Disable Current		16mA Typ		OE=GND
Output Voltage (LVPECL)		VOH=Vcc-1.03 Min	--	DC characteristics
		VOL=Vcc-1.6 Max	--	
Output Voltage (LVDS)		--	VOD= 175mV	VOD1, VOD2
		--	dVOD=50mV Max.	dVOD= VOD1-VOD2
		--	VOS= 1.25V	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		1nS 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°C First year, Vcc=2.5V, 3.3V
Phase Jitter(12KHz~20MHz)		1.0ps Typ.		200MHz~800MHz
		2.0ps Typ.		801MHz~1500MHz

## Pin Dimension

Pin	#1	#2	#3	#4	#5	#6
FUNCTION	Vcon	OE	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).

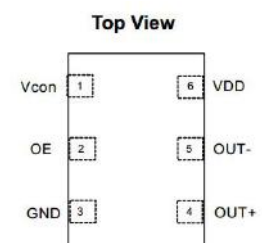


Figure 1. Pin Assignments

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Dimensions and Patterns [unit:mm]



Package Size – Dimensions (Unit: mm)	Recommended Land Pattern (Unit: mm)
<p>3.2 x 2.5mm</p>	
<p>5.0 x 3.2mm</p>	
<p>7.0 x 5.0mm</p>	
<p><b>Notes:</b> 1.A capacitor of value 0.01uf~0.1uf or higher between Vdd and GND is required.</p>	

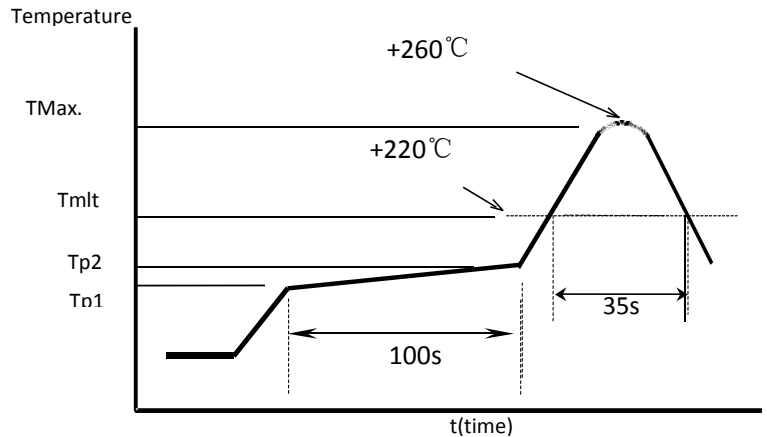
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### Reflow Soldering Profile

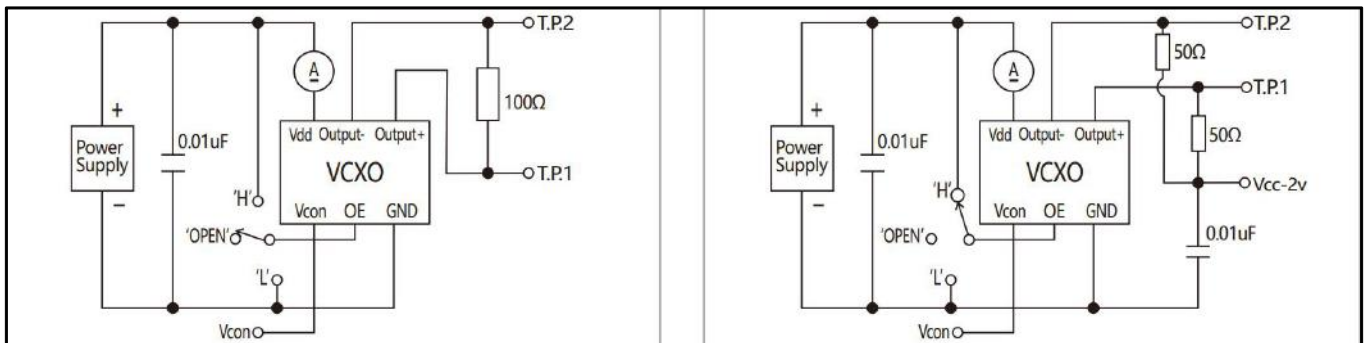
Pre Heating Temperature  $T_{p1} \sim T_{p2} = +170\text{ }^{\circ}\text{C}$   
 Heating Temperature  
 $T_{Mlt} = +220\text{ }^{\circ}\text{C}$   
 Peak Temperature  
 $T_{Max.} = +260\text{ }^{\circ}\text{C}$   
 Point of measuring  
 In case of Solder ability Terminal.  
 In case of Resistance to soldering heat Surface.



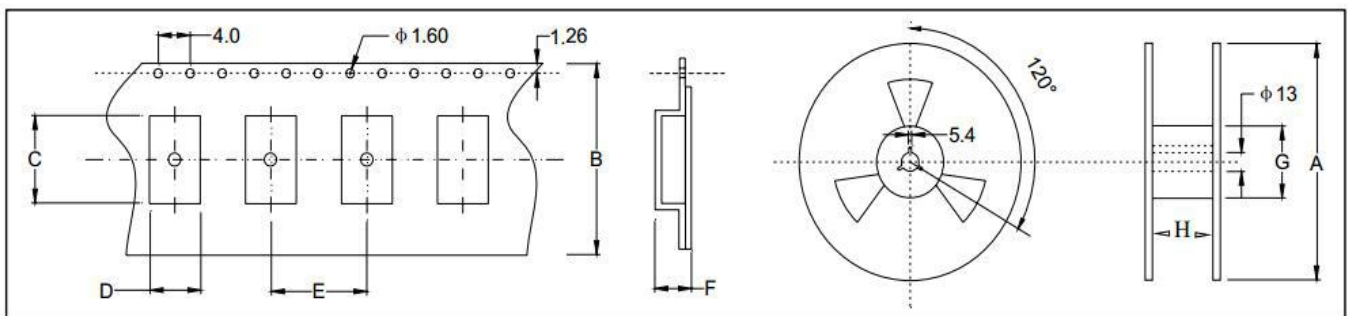
### Test Circuit

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