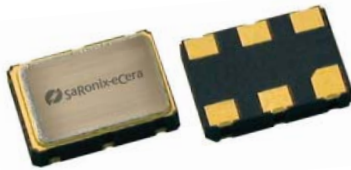


# 3.3V PECL Low Jitter XO

**PN**



7.0 x 5.0mm Ceramic SMD

## Product Features

- 1 to 800 MHz Frequency Range
- <4 ps RMS jitter
- Tight stability over a broad range of operating conditions
- Designed for standard reflow & washing techniques
- Pb-free and RoHS/Green compliant

## Product Description

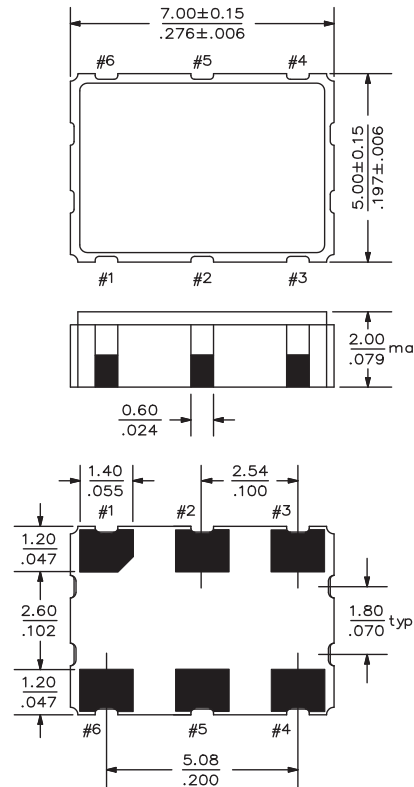
The PN Series 3.3V crystal clock oscillator achieves superb jitter and stability over a broad range of operating conditions and frequencies. The output clock signal, is compatible with LVPECL logic levels. The device, available on tape and reel, is contained in a 7.0 x 5.0mm surface-mount ceramic package.

## Applications

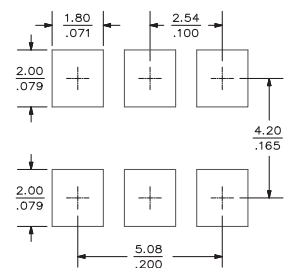
The PN Series is an ideal reference clock for high-speed applications requiring includes:

- 1/10 Gigabit Ethernet
- 2/4/10G Fibre Channel
- Serial Attached SCSI (SAS)
- Server & Storage platforms
- SONET/SDH linecards
- Passive Optical Network (PON) devices
- HD Video Systems

## Package:



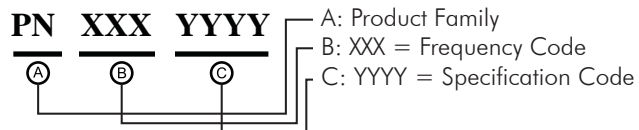
## Recommended Land Pattern:



## Pin Functions:

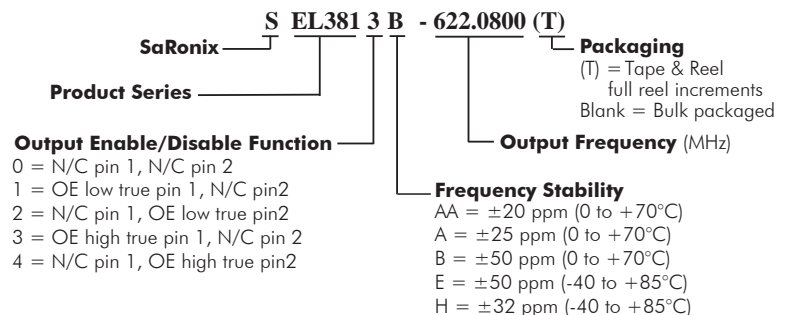
Pin	Function
1	OE or NC
2	OE or NC
3	V <sub>EE</sub>
4	Q Output
5	$\bar{Q}$ Output
6	V <sub>CC</sub>

## Part Ordering Information:



Following the above format, Saronix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

## Legacy Ordering Information - For Reference Only:



### Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	1		800	MHz	As specified
Supply Voltage	2.97	3.3	3.63	V	
Supply Current			25	mA	<24 MHz
			65	mA	24 to 96 MHz
			100	mA	96 to 800 MHz
Frequency Stability			±20 to ±50	ppm	See Note 1 below
Operating Temp. Range	-40		+85	°C	As specified
Output Logic 0, V <sub>OL</sub>			V <sub>CC</sub> - 1.620	V	-40 to +85°C
Output Logic 1, V <sub>OH</sub>	V <sub>CC</sub> - 1.025			V	-40 to +85°C
Output Load	50Ω to V <sub>CC</sub> - 2V				output requires termination
Duty Cycle	45		55	%	measured at V <sub>DD</sub> - 1.3 VDC
Rise and Fall Time		0.5	1.5	ns	measured 20/80% of waveform
Jitter, Phase		2.5	4	ps RMS (1-σ)	12kHz to 20MHz frequency band
Jitter, Accumulated			6	ps RMS (1-σ)	10,000 adjacent periods
Jitter, Total			40	ps pk-pk	10,000 random periods
Phase Noise		-90		dBc/Hz	100 Hz offset (155.52 MHz output)
		-115		dBc/Hz	1 kHz offset (155.52 MHz output)
		-125		dBc/Hz	10 kHz offset (155.52 MHz output)
		-119		dBc/Hz	100 kHz offset (155.52 MHz output)

#### Notes:

- As specified. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (5 years at 40°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales

### Output Enable / Disable Function (Active High Default and Active Low\*)

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin OE), Output Enable	V <sub>OH</sub>			V	or open (Legacy SEL3813 and SEL3814)
Input voltage (pin OE), Output Disable			V <sub>OL</sub>	V	Outputs disabled to Hi-Z
*Input Voltage (OE pin), Output Enable			V <sub>OL</sub>	V	or open (Legacy SEL3811 and SEL3812)
*Input voltage (OE pin), Output Disable	V <sub>OH</sub>			V	Outputs disabled to Hi-Z

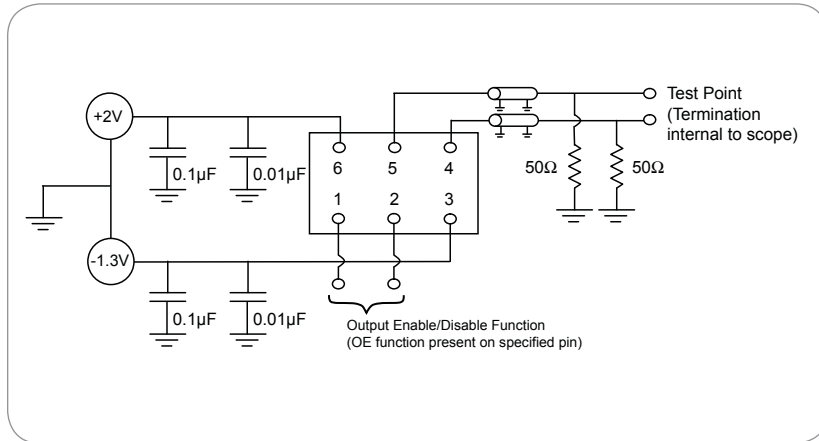
#### \*Note:

- Oe active low option is available. Please contact sales.

### Absolute Maximum Ratings

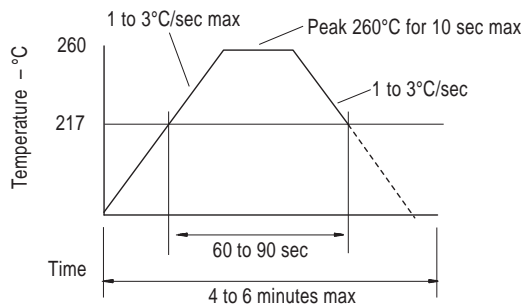
Parameter	Min.	Typ.	Max.	Units	Notes
Storage Temperature	-55		+125	°C	

### Test Circuit



### Reflow Soldering Profile

As per IPC/JEDEC J-STD-020C



### Reliability Test Ratings

This product is rated to meet the following test conditions:

Type	Parameter	Test Condition
Mechanical	Shock	MIL-STD-883, Method 2002, Condition B
Mechanical	Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Mechanical	Terminal strength	MIL-STD-883, Method 2004, Condition D
Mechanical	Gross leak	MIL-STD-883, Method 1014, Condition C
Mechanical	Fine leak	MIL-STD-883, Method 1014, Condition A2 ( $R_1 = 2 \times 10^{-8}$ atm cc/s)
Mechanical	Solvent resistance	MIL-STD-202, Method 215
Environmental	Thermal shock	MIL-STD-883, Method 1011, Condition A
Environmental	Moisture resistance	MIL-STD-883, Method 1004
Environmental	Vibration	MIL-STD-883, Method 2007, Condition A
Environmental	Resistance to soldering heat	J-STD-020C Table 5-2 Pb-free devices (2 cycles max)

### Output Waveform

