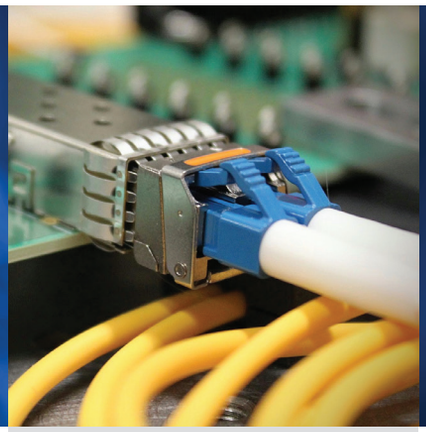
Pearl Semiconductor



PRL50X

ULN Extended Temperature Crystal Oscillator

Key Features

Crystal Oscillator for Networking Frequencies

- Factory Programmable
- Supports frequencies from 50MHz up to 1.25GHz

Ultra-Low Jitter

- 70 fs RMS Typ (12kHz - 20MHz)

Extended Operating Temperature Range

- -40 - +105 °C

Tight Temperature Stability Option

- ±3 ppm (-40 - +105 °C) - PRL503 - TS-XO

Low Power Consumption

- 68 mA Typ (LVDS)

Different O/P Formats

- LVDS
- CML
- LVPECL
- HCSL

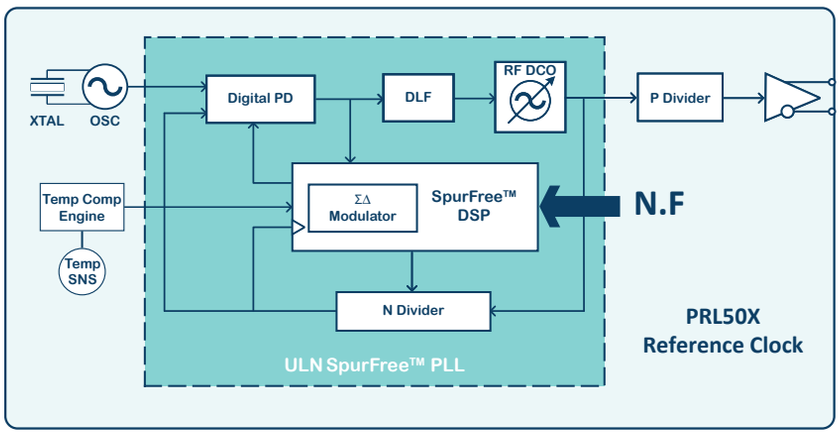
Different Package Sizes

- 3225
- 2520

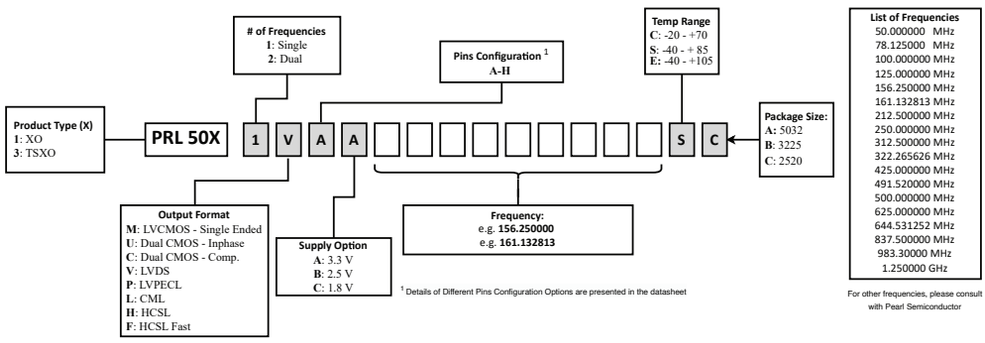
Recommended Applications

- Optical Pluggables
- Active Electrical Cables (AEC)
- Optical Communication

PRL50X is a Quartz Crystal based Ultra-Low Noise Extended Temperature Oscillator (XO) tailored for the growing market of Optical Pluggables, Active Electrical Cables (AECs) & Optical Communication. **PRL50X** is based on Pearl's patented **SpurFree™** Technology; a novel Phase Locked Loop (PLL) architecture that enjoys all the merits of a Sigma-Delta Fractional-N PLL architecture yet behaves like an integer-N PLL. The result is outstanding spur-free phase noise behavior with extremely low phase noise.



PRL50X comes with a variety of features that can be programmed at the factory according to the following ordering guide. PRL501 supports 18 standard frequencies covering all major networking applications.



Superior Design

PRL50X is designed targeting specifically the Optical Pluggables and AECs applications requirements, primarily Ultra-Low Noise, Temperature Range and Frequency Stability, Power Consumption and Package Size.

Ultra-Low Noise

PRL50X utilizes **SpurFree™** Ultra-Low Noise PLL architecture to achieve an outstanding noise performance of **70 fs RMS Typ** making it the perfect candidate for AEC's and Optical Pluggables.

Low Power Consumption

PRL50X is designed with a low power consumption as a main target. **PRL50X** achieves a **68 mA** typical current consumption for LVDS output. this is a crucial spec for the target applications.

Extended Temperature Range

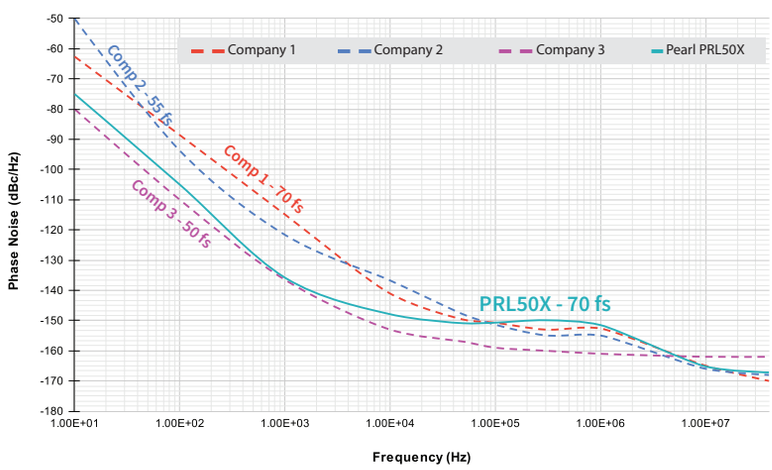
PRL50X enjoys an extended operating temperature range from **-40 °C to +105 °C** with a temperature compensation option (**PRL503**) that brings down the frequency stability against temperature to an outstanding **±3 ppm**.

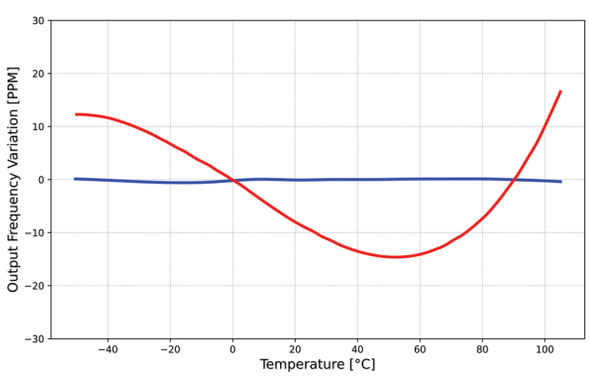
Small Package Size

PRL50X has a proprietary packaging solution where the crystal is integrated with the oscillator chip into an all-plastic package. **PRL50X** is offered in a **2520 (2.5 mm x 2.0 mm)** package.

Performance

- Excellent phase noise performance against competiton.
- Better phase noise performance against PLL-based competition parts at low frequency offsets and similar to Epson's which is an oscillator-only part.





- Extended operting temperature range from -40 to +105 °C.
- An integrated emperature compensation engine with an on-chip temperature sensor.
- ±3 ppm frequency stability across the whole temperature range.

Pearl Semicondcutor Egypt LLC.
3 Khaled Ibn Al-Waleed St.
Heliopolis, Cairo 11361, Egypt
Tel: +20 2 22 69 00 75

info@pearlsemi.com