Nanosecond Light Source

The LP870 Nanosecond Light Source is a simple, robust, convenient DC coupled LED pulser. Specifically designed for testing the pulse response of photoreceivers in a test and calibration system with minimal setup time.

The LP870 uses a specially-designed LED, and as you can see from Figure 3, it produces nice rectangular pulses with quick edges: rise / fall times of 3.75 ns / 2.25 ns (10%-90%) and 2.5 / 1.25 ns (20%–80%). (The measurements were made with a prototype 1-GHz-class silicon APD photoreceiver. Look for a product like that soon.)

The LP870 uses an LED which makes uniform illumination and alignment a none problem speeding up the test and characterization process.

Free up your development time by focusing on the value add.

Description

Our LP870 Nanosecond Light Source is a convenient and accurate low-coherence source for testing and characterization of silicon photodetection systems. Its fast edges (sub-4 ns rise and fall time typical) and clean pulses enable quick and reliable measurements up to a 50 MHz bandwidth, with no guesswork. It provides a clean optical step input to measure the rise/fall times and overshoot of your system, which tells you its bandwidth as well. It's suitable both for lab use and for integration into test and calibration jigs working at up to 50 MHz. Using an incoherent source ensures eye safety and makes it a breeze to get uniform illumination of the test device. Just plug in the power cord and connect your pulse generator. The LP870 has high internal voltage gain, which steepens up the input waveform to make sharp-edged optical pulses even when driven from ordinary 3.3 V to 5 V logic sources.

Figure 1: The LP870 delivers simple and reliable DC light source useful for test & development of photoreceivers with bandwidths up to 50 MHz.

Construction

The LP870 is designed to make testing problems go away. These physically small devices feature ESD, power supply overvoltage, pulse input overvoltage, and over temperature cutoff. Solidly constructed with zinc coated diecast brass connectors, and a solid extruded aluminum enclosure these will survive harsh treatment while maintaining excellent performance.

LP870 Typical Specifications

	LP870
Wavelength:	870 nm, 70 nm FWHM
Rise/Fall (10%-90%):	< 6 / 6 ns
Rise/Fall (20%-80%):	< 3 / 3 ns
Pulse-Top Artifacts:	< 1 %
Optical Power:	14 mW typical
Pulse Input:	Active high, 0-5V
Pulse Width:	4 ns - ∞
Dimensions:	118 × 32 × 32mm
Power:	5V @ 60 mA max
Repetition Rate:	> 60 MHz

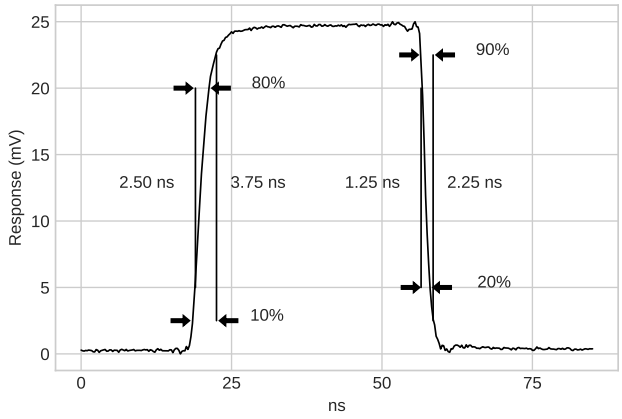

Figure 2: Pulse response of the LP870, measured with a P400 pulser and a prototype fast APD photoreceiver. Measured rise / fall times are 3.75 ns / 2.25 ns (10%–90%) and 2.5 / 1.25 ns (80%–20%).

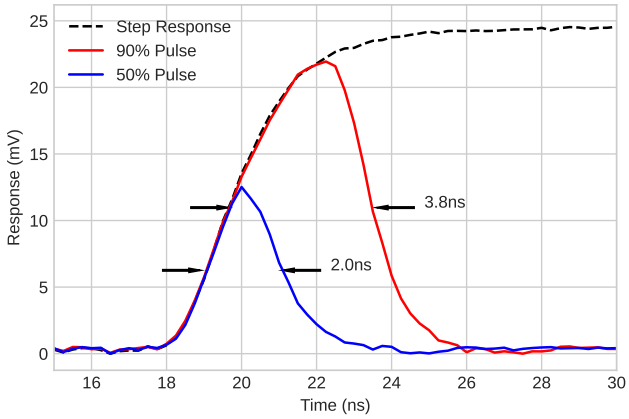

Figure 3: Pulse response reaching 50% & 90% of full scale output. FWHM point is marked on both.

Minimal Overshoot, Flat Pulse Top, DC Coupled

With an overshoot less than 1% and a flat pulse top the LP870 can reliably test a wide variety of photoreceivers. DC coupling allows it to be driven CW without issues. Thermal overload protection ensures no damage even in over temperature faults.

Resources

Product Page: hobbs-eo.com/LP870

User Manual: hobbs-eo.com/LP870/manual

Other Sources: hobbs-eo.com/sources

Company Information

Hobbs ElectroOptics

hobbs-eo.com
info@hobbs-eo.com
160 N. State Road, Suite 203
Briarcliff Manor, NY 10510