

The parameters of the APD optical receiver are as follows

Overview

The R604-APD offers a high optical sensitivity of -27.5 dBm , an optical dynamic range $> 27 \text{ dB}$, differential transimpedance gain of $12,000 \text{ ohms}$, a decision threshold adjustment function and very low power dissipation of 200 mW . The R604-APD is available in both module and. The DSC-R604-APD is a high-gain APD (avalanche photodiode) + Transimpedance + Limiting amplifier ideally suited for digital applications up to 11 Gb/s . Having both an amplifier and photodetector in the same package allows low-noise pickup from the surrounding environment and reduces. The transmitter converts electrical pulses to light and on the receiver side, a photodetector senses the light falling on it and converts it into an electrical pattern. PIN (p-i-n) and APDs (Avalanche Photo Diode) are the most commonly used photo diodes in optical transceivers. The basic structural elements provided by the APD designer include an absorption region A, and a multiplication region M. Present across region A is an electric field E that serves to separate the photo-generated.



Article Content

Jun 07, 2026

Optical Receivers | Springer Nature Link

The basis of all receivers in optical transmission is the internal photoelectric effect. The simplest receiver is the p-n

Sep 26, 2025

Avalanche Photodiodes in High-Speed Receiver Systems

In an optical receiver system, the advantage of internal gain, in the APD, is experienced when the amplifier noise

May 23, 2026

OPTICAL RECEIVER OPERATION

Receiver Task: Converting the optical energy emerging from the end of a fiber into electrical signal. Amplifying the signal Signal

Oct 11, 2025

Optical Receivers | Springer Nature Link

The fastest receiver is the p-n photo diode, which can be very fast due to drift. The most sensitive receiver is the

Jun 10, 2026

Hybrid Optical APD Receiver Modules

The Excelitas Hybrid Optical APD Receiver Modules are comprised of a photodetector (PIN or APD) and a transimpedance amplifier

Jan 06, 2026

Microsoft PowerPoint

Optical Receivers Optical receivers convert optical signal (light) to electrical signal (current/voltage) Hence referred "O/E Converter"

Feb 01, 2026

APD Receivers

Our H-series receivers offer the user an APD with matched, integrated pre-amplifier in a compact, hermetic package. All the

May 26, 2026

HIGH SENSITIVITY APD OPTICAL RECEIVER APPLICATION NOTES

The Model 7511A is a high gain, low noise optical receiver employing an avalanche photodiode (APD) with a nominal

Apr 21, 2026

Schematic diagram of APD receiver circuits.

Download scientific diagram | Schematic diagram of APD receiver circuits. from publication: Germanium on Silicon Avalanche

Jul 15, 2026

Chapter 6 PIN and APD Detectors

There are a wide variety of photodetectors that can be used for different pur-poses. In fiber optics, two types of photodetectors are of

Aug 22, 2025

PIN and APD Detectors | Springer Nature Link

As the front end of optical receivers, photodetectors convert photons to electrons. Although a variety of devices can

Apr 03, 2026

Sensitivity Calculations of High-Speed Optical Receivers Based on ...

Sensitivity of high-speed optical receivers is heavily influenced by the performance of the optical detectors used in the

Aug 11, 2025

Fiber Optic Receivers Information

Typically, fiber optic receivers include a removable adaptor for connections to other devices. Choices include D4, MTP, MT-RJ, MU,

Feb 17, 2026

Avalanche Photodiodes: A User's Guide

For low-light detection in the 200 to 1150 nm range, the designer has three basic detector choices - the silicon PIN detector, the

Oct 15, 2025

Performance Comparison of APD and PIN Photodiodes using Different ...

Analysis is performed for NRZ and RZ line codes with various different wavelengths using APD and PIN photodiodes receivers.

Nov 23, 2025

Avalanche Photodiodes in High-Speed Receiver Systems

The sensitivity of APD-based high speed optical receivers is governed by three main competing factors, namely the excess noise,

Dec 23, 2025

(PDF) SENSITIVITY ANALYSIS OF AVALANCHE PHOTODIODE

In the paper, the influence of temperature variation on the sensitivity of an avalanche-photodiode-based optical receiver

Nov 30, 2025

Optical Receiver Noise

The performance of an optical receiver depends on the SNR. the SNR of a receiver with a p-i-n photodiode is considered here; APD

Mar 12, 2026

Avalanche Photodiodes: A User's Guide

2.2 Critical Performance Parameters An APD differs from a PIN photodiode by providing internal photo-electronic signal gain.

Feb 17, 2026

Sensitivity Modeling of Binary Optical Receivers

We describe in this paper two parameters for qualitative RFE classification and modelling in terms of absolute sensitivity and in terms

Aug 05, 2025

10 Gb/s High-Sensitivity High-Gain Limiting APD Optical Receiver

The R604-APD offers a high optical sensitivity of -27.5dBm, an optical dynamic range > 27dB, differential transimpedance gain of

May 28, 2026

What is PIN and APD Photodiodes in Optical Transceivers

What is Photodiode? A photodiode is a semiconductor device that converts light into electrical current. In optical

Jun 10, 2026

Optical Receiver Fundamentals and Types | PDF | Signal To ...

It discusses detector response time, the basic operation of optical receivers, and provides details on topics like detection principles,

May 03, 2026

Optical Receiver Front-End Integrated Circuit Design

The optical receivers have key roles in high-speed optical fiber communications, in high-speed chip-to-chip interconnections in

Oct 11, 2025

Optical Receiver

An optical receiver usually consists of a photodetector and an electrical circuit for transimpedance amplification and signal

Apr 26, 2026

Receiver Noise—Shot Noise Enhancement with APD

Optical receivers with APD generally provide a higher SNR for the same incident optical power. The improvement in

Jun 16, 2026

Avalanche photodiode

Series noise, which is the effect of shot noise, is basically proportional to the APD capacitance, while the parallel noise is associated

Sep 12, 2025

Avalanche Photo Diode

Introduction Avalanche photo diode (APD) receiver modules are widely used in fiber optic communication systems. An APD module

Mar 04, 2026

What is PIN and APD Photodiodes in Optical Transceivers

This article explores the concept, working principles, types, differences, and applications of photodiodes, while

Mar 30, 2026

HIGH SENSITIVITY APD OPTICAL RECEIVER APPLICATION NOTES

MODEL 7511A HIGH SENSITIVITY APD OPTICAL RECEIVER APPLICATION NOTE
INTRODUCTION The Model

Aug 14, 2025

Optical Receiver Fundamentals and Types | PDF | Signal To ...

This document discusses an advanced optical communication lecture on optical receivers. It covers the basics of optical detection

Dec 09, 2025

APDs in Optical Transceivers: Technology

Introduction In fiber optic communication systems, transceivers play a vital role. The

Jun 20, 2026

APDs in Optical Transceivers: Technology & Applications Guide

These are some of the common parameters for a 25G APD. APDs with their high sensitivity are well suited for long

Jul 29, 2025

Technical note / Si APD

The APD (avalanche photodiode) is a high-speed, high-sensitivity photodiode that internally multiplies photocurrent when reverse

Dec 15, 2025

Unit-5 Fiber Optical Receiver

Unit-5 Fiber Optical Receiver Optical Detectors-PIN diode and APD diodes -Photo detector noise, SNR, -Comparison of Photo

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

This document is for informational purposes only. Specifications subject to
change without notice.

