

Optocoupler Amplifier Circuit

Overview

This post shows the design of a low cost precision analog isolation amplifier using HCNR201 (HCNR200) optocoupler where input signal is galvanically isolated from output signal. It covers the IL300's coupling specifications, and circuit topologies for photovoltaic and photoconductive amplifier design. The HCNR201/HCNR200 can be used to isolate analog signals in a wide variety of applications that require good stability. An optocoupler (or opto-isolator) is a component that transfer signals between circuits using light. In this guide, you'll learn how they work and how you can use one in your own projects. Figure 1 shows the basic form of such a device. Here, the Tx unit is a LED, but the Rx unit may take the form of. In this activity you will construct an optocoupler from an infra-red LED and an NPN photo transistor. An optocoupler, or optical isolator, is an.



Article Content

Oct 17, 2025

Activity: Optocouplers. [Analog Devices Wiki]

In this activity you will construct an optocoupler from an infra-red LED and an NPN photo transistor. You will investigate the operation of an optocoupler based analog isolation amplifier and floating current ...

Aug 16, 2025

Optocoupler Circuits

This interfacing can be achieved using various special-purpose "digital interfacing" optocoupler devices, or by using standard optocouplers; Figures 14 to 16 show circuits of the latter type.

Apr 16, 2026

Designing Linear Amplifiers Using the IL300 Optocoupler

It covers the IL300's coupling specifications, and circuit topologies for photovoltaic and photoconductive amplifier design. Specific designs include unipolar and bipolar responding amplifiers. Both single ...

May 20, 2026

Optocoupler Tutorial for Beginners

An optocoupler (or opto-isolator) is a component that transfer signals between circuits using light. In this guide, you'll learn how they work and how you can use one in your own projects.

Jan 28, 2026

Designing Linear Amplifiers Using the IL300 Optocoupler

This application note presents isolation amplifier circuit designs useful in industrial, instrumentation, medical, and communication systems. It covers the IL300's coupling specifications, and circuit ...

Jun 18, 2026

SIMPLE CIRCUIT MODIFICATIONS ENHANCE ...

It is the intent of this application note to present test data on circuit configurations which show improvements in the bandwidth performance of a common optocoupler.

Jul 06, 2026

Optoelectronic Feedback Control Techniques for Linear and ...

Figure 2 shows the phototransistor optocoupler schematic. Phototransistor optocouplers are current amplifiers. These couplers include an infrared light emitting diode, LED, and an NPN silicon ...

Jun 28, 2026

AN-107.qxd

This application note describes isolation amplifier design principles for the LOC Series linear optocoupler devices. It describes the circuit operation in photoconductive and photovoltaic modes and provides ...

Oct 25, 2025

ADALM2000 Activity: Optocouplers | Analog Devices

In this activity, you will construct an optocoupler from an infrared LED and an NPN phototransistor. You will investigate the operation of an optocoupler-based analog isolation amplifier and floating current ...

Apr 06, 2026

Precision Analog Isolation Amplifier Using HCNR201 Optocoupler

Applications of the isolation amplifier: The HCNR201 (HCNR200) optocoupler can be used to build a low cost precision isolation amplifier. Circuit diagram is shown below. Note that there ...

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