

Optocoupler secondary current is too low



Overview

The optocoupler is able to switch a few mA (the datasheet says max. 30mA @ 5mA input current) which is enough for a LED but obviously by far not enough for your DC motor. A simple solution would be to add a transistor at the secondary side (motor side) of the the. An optocoupler is an electronic component that basically acts as an interface between two separate circuits with different voltage levels while providing electrical isolation (Galvanic isolation) between them. It is used to protect low voltage circuits from high voltage circuits by preventing. Optocouplers are available with various CTR ranges Assume that you expect your supply to operate in a -40°C to 85°C environment. From, you know that you need to multiply the minimum CTR by a factor of about 0. Transferring signals over a light. Below is a detai LED analysis of common problems with the PC817 optocoupler and practical steps to solve them.



Article Content

Feb 04, 2026

The Ultimate Optocouplers Guide: Isolation, Types, and

Our complete optocouplers guide covers what they are, how they work, the different types, and key applications. Learn to select the right opto-isolator.

Nov 01, 2025

Understanding Optocoupler Biasing for Stable Isolated

In an isolated SMPS (Switched-Mode Power Supply), the optocoupler acts as a bridge between the secondary-side voltage sensing and the primary

Jan 20, 2026

Make sure your optocoupler is properly biased

By providing resistor R2, the cathode of the TL431 is able to raise to a high-enough voltage, eliminating current flow in the optocoupler's LED. Thus, the circuit design guarantees the minimum R6 current,

Jan 10, 2026

Optocoupler consuming too much power : r/diyelectronics

That will rule out most other options like FETs or BJTs. Really the "right" answer here is to have the optocoupler run on as low current as possible for the LED, and then rely on a power source in the

Feb 27, 2026

Understanding Optocoupler Biasing for Stable Isolated

An optocoupler is an electronic component that basically acts as an interface between two separate circuits with different voltage levels while

Jul 05, 2025

Voltage Drop after optocoupler. | Electronics Forums

Use the diode symbol in LTSPICE, then select an LED as component), as neither you nor we are interested in what's going on on the optocoupler's secondary side (transistor). To know

Jan 27, 2026

Help: lowest input current optocoupler | All About Circuits

Hi all, I am searching for the lowest input current optocoupler to turn on led. I have tested 4N35, it has 0.3mA, but I want a low current possible. I have 5Vdc input, speed is not a problem, it

Jan 19, 2026

Voltage Drop after optocoupler. | Electronics Forums

I am currently testing the ports with a simple program that pulses the digital pins to high and low (3.3V) at the base of the transistor. I have also done a simulation in LTSpice (Image

Apr 22, 2026

Guidelines for reading an optocoupler datasheet

Special specifications such as high operating temperature, high current transfer ratio, and low coupling capacitance are identified to give an overview. The application section introduces the most common

Aug 13, 2025

Common Problems with PC817 Optocouplers and How to Solve Them

Mismatch between input and output side circuits: The load on the output transistor might be incorrectly matched to the optocoupler's output rating. Incorrect supply voltage: The voltage

Mar 29, 2026

ANO007 | Understanding Phototransistor Optocouplers

A low CIO is important in applications where very high dv/dt transients across input and output of the optocoupler are generated, like for example, high-side isolated gate driver systems in power

Dec 19, 2025

When using optocoupler as a switch, why do all examples always

When using optocoupler as a switch, why do all examples always show "Option 1", never "Option 2"? It seems to work too - what are the downsides? Sorry for noobish question. Share Add a Comment

Jul 30, 2025

Common Problems with PC817 Optocouplers and How to Solve Them

How to Diagnose and Solve: Step 1: Check the load connected to the output. Ensure that it is within the recommended ratings for the PC817's output transistor (typically a collector current of

Mar 16, 2026

Optocouplers, Part 1: Principles and usefulness FAQ

The optocoupler — also called an optoisolator — is among the most useful, versatile, problem-solving components available to the design engineer.

Apr 28, 2026

Optocoupler

If you want a better chance at a lifetime in the 10's of thousands of hours, you should design your circuit so it will work with a significant decrease in CTR; in addition to operating the

Jul 09, 2025

Current Transfer Ratio (CTR) and opto couplers

Too much current and the LED will dim with time. Often I set the LED current to what works and will not age the part. Then I look at the transistor. Say 20mA LED current is good, The

Aug 14, 2025

How Optocouplers Work

FREE COURSE!! Learn about optocouplers. We'll look at how they are used to control circuits, how they work and also how to design some simple

Apr 16, 2026

Optocoupler: Its Types and Various Application in

Optocoupler also called Opto-isolator, photo coupler or optical isolator. Often in circuits, especially low voltage or highly noise sensitive circuits,

Sep 06, 2025

Everything You Need to Know About Optocouplers in

Have you ever heard the word isolation, especially in electronics? As you might guess, isolation is a key factor when it comes to optocouplers. Isolation

Mar 11, 2026

How Photocouplers / Optocouplers Are Used | Renesas

In analog applications, photocouplers are typically used in the feedback control loops of switching regulators in which the primary and secondary domains are isolated.

Aug 06, 2025

Optoelectronic Feedback Control Techniques for Linear and Switch

INTRODUCTION The power supply designer is continually being pressured to provide units which have higher efficiency, better regulation, less EMI and RFI, and smaller size and weight, all at a lower cost.

Dec 20, 2025

Optocoupler not working properly, current in diode

I have got an optocoupler to switch an output between 0V and 3.3V. That output is also inverted with a NOT gate, but for simplicity, we could focus on

Jun 06, 2026

Optocoupler

No one can do that, not even the manufacturer. If you want a better chance at a lifetime in the 10's of thousands of hours, you should design your circuit so it will work with a significant

Dec 28, 2025

Current drops drastically when optocoupler is used : r

It might barely be on at all and this particular optocoupler seems to expect a fairly decent amount of current for the input. Treat it as a 1.2V LED and aim for 20mA

Aug 24, 2025

Does Optocoupler with Low Collector Current Work?

Mind that load current must be larger than the maximum dark current (leakage), else an indeterminate logic level results. You can therefore relax I F

Jul 07, 2025

Don't Let Your Feedback Loop Fall Flat: Bias Your

Proper biasing of an optocoupler in SMPS feedback systems is essential to ensure accurate analog signal transmission across the isolation

Mar 05, 2026

Common Problems in PC817B Optocouplers and How to Repair Them

Common Problems in PC817 B Optocoupler s and How to Repair Them Common Problems in PC817 B Optocouplers and How to Repair Them The PC817B optocoupler is a widely used component for

Contact Us

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