

Optocoupler reverse voltage



Article Overview

The reverse voltage of an optocoupler is the maximum voltage that can be applied in the reverse direction across the LED without causing damage, typically ranging from 5V to 7-9V depending on the model.

Understanding Reverse Voltage

- **Definition:** The reverse voltage (VR) rating of an optocoupler indicates the maximum voltage that can be applied in the reverse direction across the LED without causing reverse breakdown or damage. Exceeding this voltage can lead to a reverse current that may degrade the LED's performance or destroy it entirely .

Typical Ratings

- For many optocouplers, such as the 4N25, the maximum reverse voltage is around 5V. This means that if the reverse voltage exceeds this limit, the LED inside the optocoupler can be damaged .
- In the case of the PC817, the reverse voltage can typically withstand around 7-9V before experiencing breakdown, but prolonged exposure to reverse voltage can lead to degradation .

Importance in Circuit Design

- **Protection:** It is crucial to design circuits that do not exceed the reverse voltage rating. This can be achieved by using protective components such as diodes in reverse parallel with the LED to clamp the reverse voltage to a safe level

Article Content

Jan 04, 2026

opto isolator

Ok, I know the basic function of an optocoupler is "turn on irLED, triggering a phototransistor and allowing current to

Apr 29, 2026

Transistor Output Optocouplers Frequently Asked Questions (FAQs)

A: The input of optocouplers is defined with the forward current I_F of the emitting diode and the reverse voltage which should not be

Mar 10, 2026

Optocoupler Circuits, Working, Characteristics, Interfacing

Optocoupling devices work as logic level changeovers between two circuits, It has the ability to block noise transfer

Feb 18, 2026

What is the maximum voltage that I can put on the input of an optocoupler

the optocoupler is connected to the mains AC using a full bridge rectifier and using tow 47k ohm resistors. my question is how is that

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Basic Characteristics and Application Circuit Design of Transistor

To prevent a reverse surge voltage in the LED, a Si diode (for example, 1SS352) should be connected in reverse parallel with the

Aug 07, 2025

ANO007 | Understanding Phototransistor Optocouplers

Its value depends on the forward and reverse voltage applied to the device. For the WL-OCPT datasheet value, the

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Optocoupler

Author Topic: Optocoupler - wide input voltage range (Read 14268 times) 0 Members and 1 Guest are viewing this topic.

Jul 02, 2026

Optocoupler specifications for circuit design | doEEEt

Optocoupler parameters like CTR, isolation voltage, and timing are key for reliable circuit design performance.

Oct 29, 2025

forward/reverse voltage

I have an optocoupler that has a max forward voltage of 1.65 and a max reverse voltage of 6.0 does this mean i can

Dec 08, 2025

Opto-coupler led driver protection circuit

I think I should go as low as 3.3V almost and the optocoupler led will work. 1.8V (led driver voltage overhead) + 0.6V

Nov 14, 2025

Opto-isolator

Schematic diagram of an opto-isolator showing source of light (LED) on the left, dielectric barrier in the center, and sensor

Aug 23, 2025

opto isolator

I have to provide some isolated inputs that accept 12-24V. There should be some protection against reverse polarization, transient

Feb 06, 2026

Guidelines for Reading an Optocoupler Datasheet

As an isolator, an optocoupler can prevent high voltages from affecting the side of the circuit receiving the signal. Transferring signals

Dec 27, 2025

The 4N35 optocoupler and its input voltage.

Hello everyone! i have a question about the 4N35 optocoupler and trying to find the input voltage (diode) on it! the

Feb 11, 2026

Make sure your optocoupler is properly biased

If the optocoupler is current-starved, the output voltage will keep rising until the proper amount of LED current conducts through the

May 06, 2026

Would reverse voltage kill the optocoupler over long time period?

Typical maximum reverse bias for a normal optoisolator would be around 5V and in this case the LEDs must anyway

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what does the reverse voltage rating on an optoisolator mean?

If you connect the LED anode to the same voltage as the op-amp rail, it will be impossible for the LED to be reverse

Sep 25, 2025

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

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Basic Characteristics and Application Circuit Design of Transistor

This document outlines the basic characteristics and application design of general-purpose transistor output photocouplers (optical

Aug 02, 2025

optocoupler input with a resistor and reverse voltage protection diode ...

optocoupler design esd I have a optocoupler input with a resistor and reverse voltage protection diode. See basic

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Guidelines for reading an optocoupler datasheet

On the input side, the infrared emitting diode has a maximum forward current (IF) rating and allowed reverse voltage (VR). Therefore,

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AN-3001 Optocoupler Input Drive Circuits

Where the input applied voltage is reversible or alternating and it is desired to detect the phase or polarity of the input,

Oct 06, 2025

Optocoupler Tutorial for Beginners

Optocoupler Example: Isolating A Motor Circuit From Your Arduino Sometimes you need to control a high current

Apr 25, 2026

Everything You Need to Know About Optocouplers in Electronics

In reverse bias, you should get no voltage, so "OL" should be displayed on the multimeter, indicating that no current

May 01, 2026

Optocoupler Circuits | Nuts & Volts Magazine

Typical isolating optocoupler applications include low-voltage to high-voltage (or vice versa) signal coupling, interfacing of a

Mar 09, 2026

Phototransistor Optocouplers: Understanding & Design

07. OPTOCOUPLER DC-BIAS applications. 7.1 DC-Bias Circuit and Operating point
Input reverse voltage: maximum reverse

Mar 14, 2026

ANO007 | Understanding Phototransistor Optocouplers

Input reverse voltage: maximum reverse voltage that the IR-LED can withstand. Since it is only 6 V, careful design is required in

Sep 04, 2025

Opto-isolator

When the photodiode is reverse-biased with an external voltage source, incoming light increases the reverse current flowing through

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