

How to calculate the resistance of an optocoupler



Article Overview

To calculate the resistance for an optocoupler, use Ohm's Law to determine the resistor value needed to limit the forward current through the LED while considering the supply voltage and the LED's forward voltage drop.

Steps to Calculate the Resistor Value

- Identify Parameters:
 - Supply Voltage (V_{cc}): The voltage supplied to the circuit.
 - Forward Voltage (V_f): The voltage drop across the optocoupler's LED when it is conducting (typically found in the datasheet).
 - Desired Forward Current (I_f): The current you want to flow through the LED, which is also specified in the datasheet (usually in mA).
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- Use Ohm's Law:
 - The formula to calculate the resistor value (R) is:

$$R = \frac{V_{cc} - V_f}{I_f}$$

- Here, V_{cc} is the supply voltage, V_f is the forward voltage of the LED, and I_f is the desired forward current in amperes (convert mA to A by dividing by 1000).

- Example Calculation:
- Suppose you have a supply voltage of 5V, a forward voltage of 1.2V, and you want a forward current of 10mA (0.01A):...

Article Content

calculating optocoupler resistor values

hello all this is my first post i think i'm trying to build a circuit that isolates two PIC16F877As using a quad optocoupler -

How calculate the optocoupler circuit resistor values

If you want to optimize the design, you first need to find out what the following signals are connected to. Then get the

Using Opto Couplers

Calculating the Optocoupler Resistor Values Fig. 5.2.2 CTR vs. Forward Current for a PC817 The start of the design process is to

Using Opto Couplers

Using the data in Table 5.2.1 and assuming minimum 4.9V to 5V input at the HCT gate output, it is possible to calculate a suitable

Optocoupler Circuit Design and Detailed Analysis

Once you know what a CTR is and learn how to use it, then Optocoupler circuit design is that easy. Current transfer ratio or just CTR

Optocoupler Resistor Value Calculation | PDF

Optocoupler Resistor Value Calculation This document describes how to calculate the values of resistors R1 and R2 to correctly

ANO007 | Understanding Phototransistor Optocouplers

This capacitance, together with the output bias resistor RC, forms a low-pass filter which limits the optocoupler bandwidth. This is

What is the value of resistor in optocoupler?

What is the value of resistor in optocoupler? I will use optocoupler to isolate the output, the circuit will turn OFF the

OptoCoupler Calculations

The basic principles of optocoupler circuits are not complex... But given all the things that can be different from one need for an

Guidelines for reading an optocoupler datasheet

The phase-angle sweep across the operating frequency for a given collector-emitter voltage (VCE) and load resistance (RL) provides

current limiting resistor for optocoupler

I understand that I need a current limiting resistor on the input side of the optocoupler, so here is how I calculated it:

Optocoupler Resistor Value Calculation | PDF | Electrical Network ...

Optocoupler Resistor Value Calculation This document describes how to calculate the values of resistors R1 and R2 to correctly

Calculating correct resistor for an optocoupler

Larger resistor values will yield a smaller bandwidth. Smaller resistor values will yield higher speed, but they might increase the low

how to calculate resistor value for optocoupler

I am trying to understand how the resistance values are calculated. I followed this - "how do I calculate resistor value"

Contact Us

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