

Aexit PC817

Aexit PC817 Optocoupler Photocoupler Optoisolator Instruction Manual

MODEL: PC817

Brand: Aexit

1. INTRODUCTION

The Aexit PC817 is a general-purpose optocoupler (also known as an optoisolator or photocoupler) designed for applications requiring electrical isolation between two circuits. It consists of an infrared emitting diode optically coupled to a phototransistor. This component allows signals to be transmitted between circuits without a direct electrical connection, providing high isolation voltage and noise immunity.

2. PRODUCT OVERVIEW



An image showing multiple Aexit PC817 optocoupler components, highlighting their black plastic bodies and metal pins, ready for integration into electronic circuits.

The PC817 optocoupler is typically housed in a 4-pin DIP (Dual In-line Package) configuration. Its primary function is to prevent high voltages or transient noise from affecting sensitive parts of a circuit, making it ideal for power supply feedback loops, digital signal isolation, and motor control applications.

3. KEY FEATURES

- **Isolation Voltage:** 5KV
- **Input Current:** 20mA (maximum)
- **Output Type:** Optotransistor
- **Output Voltage:** 80V (maximum)
- **Rise/Drop Time:** 18 μ S
- **Power Consumption:** 200mW (maximum)
- **Dimensions (Approx):** 9 x 8 x 5mm (L*W*T)
- **Material:** Copper (pins)

4. SETUP AND CONNECTION

The PC817 optocoupler typically has four pins:

1. **Pin 1 (Anode):** Positive terminal of the input LED.

2. **Pin 2 (Cathode):** Negative terminal of the input LED.
3. **Pin 3 (Emitter):** Emitter of the output phototransistor.
4. **Pin 4 (Collector):** Collector of the output phototransistor.

Connection Guidelines:

- Connect a current-limiting resistor in series with the input LED (Pins 1 and 2) to protect it from excessive current. Ensure correct polarity.
- Connect the collector (Pin 4) of the phototransistor to the positive supply of the isolated output circuit, typically through a pull-up resistor.
- Connect the emitter (Pin 3) of the phototransistor to the ground of the isolated output circuit.
- Always ensure that the input and output circuits have separate grounds to maintain electrical isolation.

5. OPERATING PRINCIPLES

When a current flows through the input LED (Pins 1 and 2), it emits infrared light. This light crosses a small insulating gap and strikes the base of the phototransistor on the output side (Pins 3 and 4). The light causes the phototransistor to conduct, allowing current to flow between its collector and emitter. The intensity of the light determines the amount of current that flows through the phototransistor. This optical coupling effectively transfers a signal from the input circuit to the output circuit without any direct electrical connection, thus providing galvanic isolation.

6. MAINTENANCE AND HANDLING

Optocouplers are generally robust electronic components, but proper handling and storage are essential for their longevity and performance.

- **Storage:** Store components in a dry, cool environment, preferably in anti-static bags or containers to prevent electrostatic discharge (ESD) damage.
- **Handling:** Avoid bending the pins excessively or applying undue mechanical stress to the component body. Use appropriate ESD precautions when handling.
- **Cleaning:** If cleaning is necessary, use a soft, dry brush or compressed air. Avoid liquid cleaners or solvents that could damage the plastic casing or internal components.

7. TROUBLESHOOTING

If the optocoupler is not functioning as expected, consider the following troubleshooting steps:

- **No Output Signal:**
 - Verify that the input LED is receiving sufficient current and is correctly polarized.

- Check the power supply to the output phototransistor circuit.
- Ensure the output load is correctly connected and within the phototransistor's specifications.
- Confirm that the phototransistor's collector and emitter pins are correctly connected.

• **Incorrect Output Signal:**

- Check for external noise or interference affecting either the input or output circuit.
- Ensure the input signal characteristics (voltage, current, frequency) are within the optocoupler's operating limits.
- Verify the values of any external resistors (current-limiting, pull-up/down) are appropriate for the application.

- **Component Damage:** Visually inspect the component for any signs of physical damage, such as bent pins or cracked casing.

8. TECHNICAL SPECIFICATIONS

Specification	Value
Product Name	Optocoupler Optoisolator
Model	PC817
Isolation Voltage	5KV
Input Current	20mA
Output Type	Optotransistor
Output Voltage	80V
Rise/Drop Time	18μS
Power Consumption	200mW
Dimensions (Approx)	9 x 8 x 5mm (L*W*T)
Weight (Package Content)	5g
Material	Copper (pins)
Manufacturer	Aexit
Part Number	f190412ae155727
ASIN	B079WHTLJ7
Date First Available	February 11, 2018

9. WARRANTY INFORMATION

This product is covered by the standard manufacturer's warranty. For specific warranty terms and conditions, including duration and coverage details, please refer to the Aexit official website or contact your retailer at the point of purchase.

10. CUSTOMER SUPPORT

For technical assistance, product inquiries, or support related to the Aexit PC817 Optocoupler, please contact Aexit customer service directly or reach out to your product supplier. Ensure you have your purchase details and product model number (PC817) available for faster service.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question