

BOJACK BJ-17-125

BOJACK 1N5817 Schottky Diode Instruction Manual

Model: 1N5817 (BJ-17-125)
Brand: BOJACK

1. INTRODUCTION

The BOJACK 1N5817 is a high-performance Schottky diode designed for various electronic applications. This component is characterized by its low forward voltage drop and fast switching speed, making it ideal for circuits where efficiency and rapid response are critical. Each package contains 125 pieces of these lead-free and RoHS compliant diodes, suitable for product development, student experiments, maintenance, and production environments.

This manual provides essential information for the proper handling, installation, and application of the 1N5817 Schottky diode to ensure optimal performance and longevity.

2. KEY FEATURES

- **Electrical Characteristics:** Forward rectified current of 1 Ampere (1A) and a maximum recurrent peak reverse voltage of 20 Volts (20V).
- **Performance:** Features low forward voltage, high current capability, low leakage current, and high surge capability.
- **Construction:** Molded plastic case utilizing UL 94V-0 recognized flame retardant epoxy.
- **Terminals:** Equipped with axial leads, which are solderable per MIL-STD-202 standards.
- **Polarity Indication:** A distinct color band on the diode body denotes the cathode (negative) terminal.

3. SPECIFICATIONS

Parameter	Value
Part Number	1N5817
Manufacturer Part Number	BJ-17-125
Brand	BOJACK
Forward Rectified Current (I _F)	1 A
Maximum Recurrent Peak Reverse Voltage (V _{RRM})	20 V

Parameter	Value
Package Case	DO-41 Axial
Quantity per Pack	125 PCS
Compliance	Lead-Free / RoHS Compliant
Item Weight	1.13 ounces
Package Dimensions	6.26 x 3.86 x 0.31 inches

4. SETUP AND INSTALLATION

Proper installation is crucial for the reliable operation of the 1N5817 Schottky diode. Follow these guidelines:

- Polarity Identification:** Always identify the cathode (negative) terminal, which is marked by a color band on the diode body. Incorrect polarity will prevent the diode from functioning correctly and may damage the component or circuit.
- Lead Forming:** When bending the axial leads, ensure the bend is not too close to the diode body to prevent stress on the glass seal. Maintain a small distance (e.g., 2-3mm) from the body before bending.
- Soldering:** Use appropriate soldering techniques. Avoid excessive heat and prolonged soldering times, as this can damage the diode. The leads are solderable per MIL-STD-202 standards. Use a soldering iron with temperature control if possible.
- Static Discharge:** Handle diodes with care to prevent damage from electrostatic discharge (ESD). Use anti-static mats and wrist straps when working with electronic components.



This image displays multiple BOJACK 1N5817 Schottky Diodes arranged on a tape, ready for use. Each diode features axial leads for through-hole mounting and a distinct color band indicating the cathode (negative) terminal.

5. OPERATING PRINCIPLES

The 1N5817 is a Schottky barrier diode, which differs from conventional PN junction diodes in its construction and performance characteristics. It utilizes a metal-semiconductor junction, resulting in a significantly lower forward voltage drop (typically 0.2V to 0.4V) compared to silicon PN diodes (0.7V). This lower voltage drop leads to less power dissipation and higher efficiency, especially in low-voltage, high-current applications.

Another key advantage of Schottky diodes is their fast switching speed. They have very little reverse recovery charge, allowing them to switch rapidly from forward conduction to reverse blocking. This makes them suitable for high-frequency applications such as switching power supplies, DC-DC converters, and RF mixers.

6. APPLICATIONS

The BOJACK 1N5817 Schottky diode is versatile and can be used in a wide range of electronic circuits. Common applications include:

- Reverse Polarity Protection:** Protecting sensitive circuits from damage due to incorrect power supply connection.
- Voltage Clamping:** Limiting voltage swings in circuits.
- Switching Power Supplies:** Used as rectifiers in high-frequency power conversion circuits due to their fast switching and low forward voltage drop.
- DC-DC Converters:** Improving efficiency in buck, boost, and other converter topologies.

- **Solar Power Projects:** Preventing reverse current flow from batteries to solar panels at night.
- **General Rectification:** In low-power, high-efficiency rectification circuits.
- **Educational and Hobby Projects:** Ideal for student experiments and DIY electronic projects due to their common use and robust nature.

7. MAINTENANCE AND CARE

Schottky diodes are generally robust components, but proper care ensures their longevity and reliable performance:

- **Physical Handling:** Avoid excessive mechanical stress on the diode body and leads, especially after soldering.
- **Thermal Management:** While the 1N5817 has good thermal characteristics, ensure that the operating environment does not exceed its maximum junction temperature. Consider heat sinking if operating at higher currents or in confined spaces.
- **Cleaning:** If cleaning the circuit board, use appropriate electronic-grade cleaning agents and ensure they do not leave corrosive residues.

8. TROUBLESHOOTING

If your circuit involving the 1N5817 diode is not functioning as expected, consider the following common issues:

- **Incorrect Polarity:** Verify that the diode is installed with the correct polarity. The color band indicates the cathode.
- **Exceeding Ratings:** Ensure that the forward current (1A) and reverse voltage (20V) ratings are not being exceeded in your circuit. Over-current or over-voltage can lead to immediate or premature failure.
- **Poor Solder Joints:** Inspect solder connections for cold joints, bridges, or insufficient solder. Re-solder if necessary.
- **Physical Damage:** Check for any visible cracks on the diode body or bent/broken leads that might have occurred during handling or installation.
- **ESD Damage:** Although not always visible, ESD can damage semiconductor devices. Ensure proper ESD precautions were taken during handling.

9. STORAGE

To maintain the quality and performance of unused diodes:

- Store in their original packaging to protect against physical damage and environmental factors.
- Keep in a cool, dry place, away from direct sunlight and extreme temperatures.
- Avoid environments with high humidity or corrosive gases.



The BOJACK 1N5817 Schottky Diodes are supplied in a clear plastic bag, typically containing 125 pieces. The packaging includes a label detailing the part number (1N5817), package case (BJ-17), voltage (20V), current (1A), and quantity, along with RoHS compliance.

10. WARRANTY AND SUPPORT

For information regarding product warranty, returns, or technical support, please refer to the purchase documentation or contact your seller directly. BOJACK is committed to providing high-quality electronic components and customer satisfaction.

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