Sunicon AXD-1W-5V

Sunicon 1W 5V LED Chip Bulb (AXD-1W-5V) Instruction Manual

Model: AXD-1W-5V | Brand: Sunicon

1. Introduction

This manual provides essential information for the safe and effective use of your Sunicon 1W 5V LED Chip Bulbs. These high-power LED chips are designed for various DIY lighting applications, offering bright illumination with efficient energy consumption. Please read these instructions carefully before installation and operation.

2. Product Overview

2.1 Key Features

- **Multi-Purpose Use:** Suitable for flashlights, DIY modeling lights, headlights, spotlights, and other lighting products.
- **High-Quality Materials:** Constructed with a premium aluminum substrate and chips for low light decay, high brightness, and durability.
- **Energy-Efficient:** Features low power consumption and a long lifespan with instant start and uniform light emission.
- **Excellent Heat Dissipation:** Incorporates an aluminum base for efficient heat dissipation, contributing to a long service life.
- **Easy Installation:** Lightweight and compact design facilitates easy configuration and welding, ideal for various indoor and outdoor lighting applications.

2.2 Package Contents

- 25 x Sunicon 1W 5V LED Chips (Model: AXD-1W-5V, Pure White)

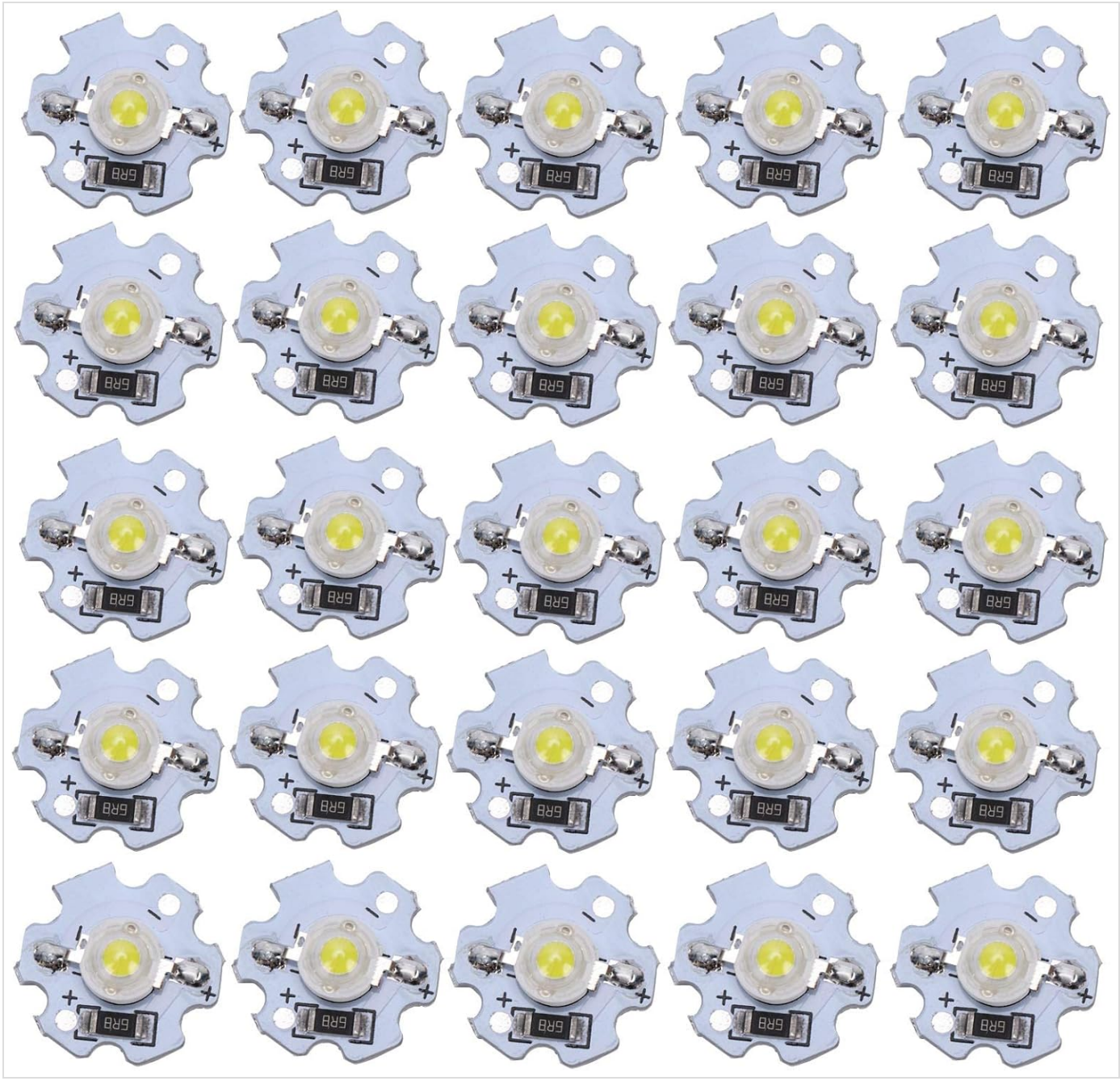

Image 1: A complete set of 25 Sunicon 1W 5V LED chips, each mounted on a star-shaped aluminum plate, ready for integration into lighting projects.

3. Specifications

Item Type	LED Chips
Model	AXD-1W-5V
Material	Aluminum Substrate
Power	1W
Voltage	5V
Brightness	200LM
Color Temperature	Pure White

Dimensions (D x H)	Approx. 20mm x 7mm (0.79in x 0.28in)
Weight (per chip)	Approx. 1.84g
Quantity	25 pcs

Image 2: Detailed view of a single Sunicon LED chip, illustrating its approximate dimensions of 20mm in diameter and 7mm in height.

4. Setup and Installation

1. **Preparation:** Ensure your working area is clean and free of static electricity. Gather necessary tools such as a soldering iron, solder, and appropriate wiring.
2. **Heat Dissipation:** The LED chip is pre-welded to an aluminum substrate, and thermal grease has been applied. This design facilitates heat dissipation. For optimal performance and longevity, ensure the LED chip is mounted to an additional heat sink or a surface that can effectively dissipate heat. The heat dissipation temperature of the aluminum material should not exceed 60 °C (140 °F).
3. **Wiring:** Identify the positive (+) and negative (-) terminals on the LED chip's aluminum plate. Connect your 5V power supply wires to the corresponding terminals. Ensure correct polarity to prevent damage.
4. **Soldering:** Carefully solder the wires to the terminals. Use appropriate soldering techniques to ensure a secure and reliable connection. Avoid prolonged heat application to the LED chip.

5. **Mounting:** Secure the LED chip in your desired lighting fixture or application. Ensure it is stable and that there is adequate airflow around the heat dissipation area.

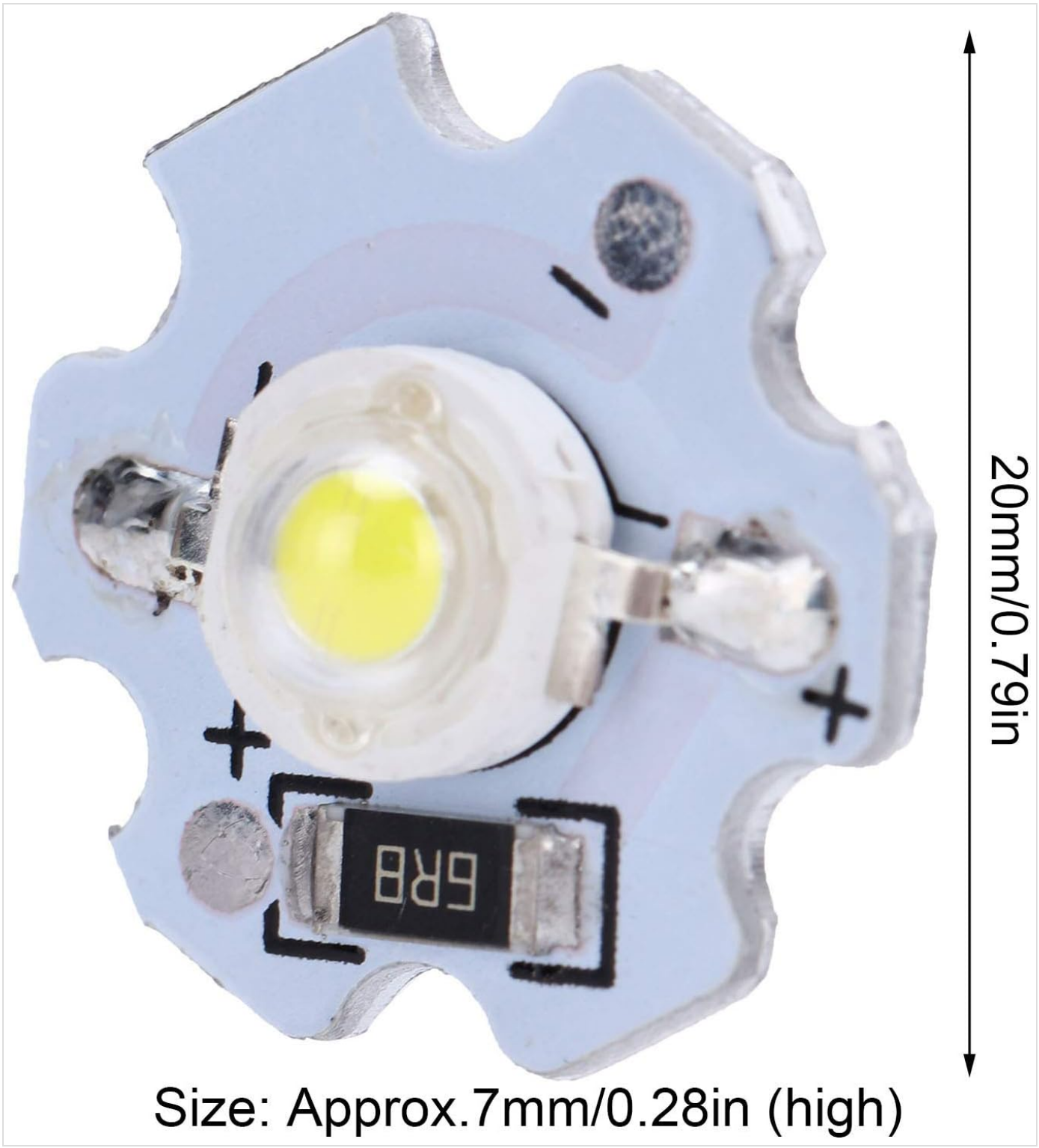

Image 3: An illuminated Sunicon LED chip undergoing a basic functionality test with electrical probes, confirming its operational status.

5. Operating Instructions

Once properly installed and connected to a stable 5V power source, the LED chip will illuminate instantly.

- **Power Supply:** Always use a regulated 5V DC power supply that can provide sufficient current for the number of LED chips being used. Each chip consumes 1W of power.
- **Load Capacity:** Do not exceed the specified load capacity of your power supply or the individual LED chip's voltage and wattage ratings. Overloading can lead to damage and reduced lifespan.

- **Application:** These LED chips are versatile and can be used in various DIY projects, including custom flashlights, decorative lighting, accent lighting, and small spotlights.

Image 4: Examples of Sunicon LED chips used in diverse lighting scenarios, such as illuminating outdoor pathways and providing accent lighting in modern homes.

6. Maintenance

- **Cleaning:** If necessary, gently clean the surface of the LED chip with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Heat Management:** Regularly check that the heat dissipation system (e.g., heat sink) is free from dust and debris to ensure efficient cooling. Overheating can significantly reduce the lifespan of the LED.
- **Environmental Conditions:** These LED chips are **not waterproof**. Ensure they are used in dry environments or adequately protected from moisture if used outdoors.
- **Connection Integrity:** Periodically inspect soldered connections for any signs of corrosion or loosening, especially in applications subject to vibration or environmental stress.

7. Troubleshooting

Problem	Possible Cause	Solution
LED does not light up.	◦ Incorrect polarity. ◦ No power supply or faulty power supply. ◦ Loose or faulty wiring/solder joint. ◦ Damaged LED chip.	◦ Check and correct wiring polarity (+ to +, - to -). ◦ Verify power supply is connected and providing 5V. ◦ Inspect all connections and re-solder if necessary. ◦ Replace the LED chip if damaged.
LED is dim or flickers.	◦ Insufficient power supply current. ◦ Voltage drop in wiring. ◦ Overheating.	◦ Ensure power supply can deliver enough current for all connected LEDs. ◦ Use thicker gauge wires for longer runs. ◦ Check heat dissipation; ensure adequate cooling.
LED fails prematurely.	◦ Over-voltage or over-current. ◦ Poor heat dissipation. ◦ Exposure to moisture.	◦ Verify power supply output matches 5V and current limits. ◦ Improve heat sinking and airflow. ◦ Ensure the LED is protected from water.

8. Safety Information

- Always disconnect power before installing, maintaining, or troubleshooting the LED chips.
- Do not look directly into the illuminated LED chip for extended periods, as the bright light can cause eye strain or damage.
- Ensure proper heat dissipation. The aluminum material's temperature should not exceed 60 ℃ (140 ℉).
- These LED chips are **not waterproof**. Protect them from water and moisture.
- Do not exceed the rated 5V voltage or 1W power for each chip.
- Keep out of reach of children.

9. Warranty and Support

Specific warranty information for the Sunicon 1W 5V LED Chip Bulb (AXD-1W-5V) is not provided in the product details. For any product support or warranty inquiries, please contact the seller or manufacturer directly through your purchase platform.