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› EDGELEC 5mm White Blinking LED Diodes User Manual

EDGELEC ED_YT05_BLK-W_100Pcs

EDGELEC 5mm White Blinking LED Diodes Instruction Manual

Model: ED_YT05_BLK-W_100Pcs

1. PRODUCT OVERVIEW

The EDGELEC 5mm White Blinking LED Diodes are designed for various electronic projects requiring a flashing light source. This package includes 100 pieces of 5mm clear round lens blinking LEDs and 100 pieces of 430ohm resistors, suitable for DC 6-12V applications. These LEDs feature a 1.5Hz blinking frequency and operate at a forward voltage of 3.0V-3.2V (at 20mA current). They are characterized by low energy consumption and low heat generation, making them ideal for general purpose use.

- **Product Type:** 5mm White Blinking LED Diodes (Single Color Flashing)
- **Quantity:** 100 LEDs + 100 Resistors
- **Blinking Frequency:** 1.5Hz
- **Lead Length:** 29mm, designed for convenient operation.
- **Included Accessories:** 430ohm (for DC 6-12V) 1/4 Watt Metal Film Resistors with $\pm 1\%$ Tolerance.



Figure 1.1: EDGELEC 5mm White Blinking LED Diodes and included resistors.

2. COMPONENTS AND DIMENSIONS

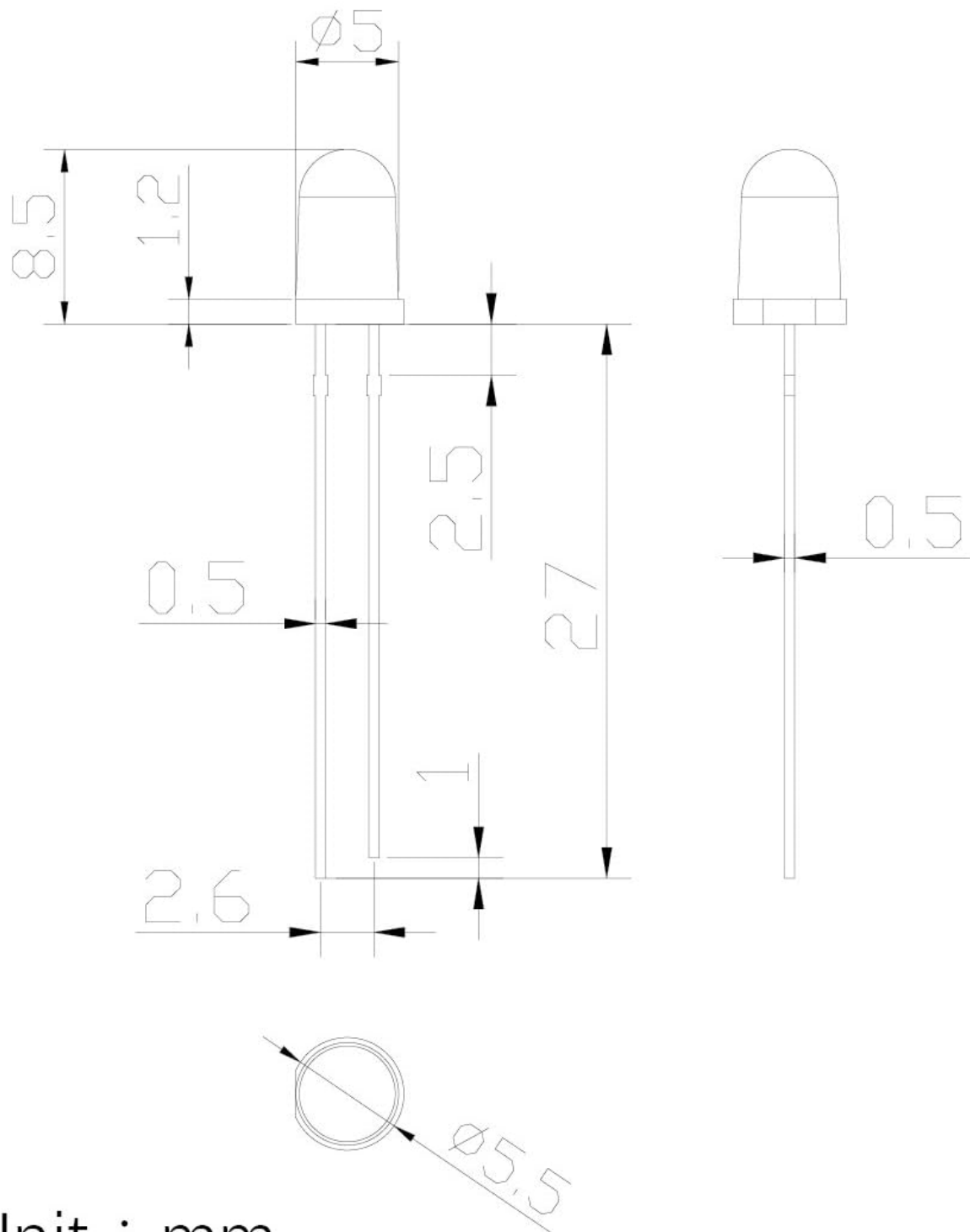
Each package contains 100 individual 5mm white blinking LEDs and 100 corresponding 430ohm resistors. The LEDs feature a clear round lens and 29mm long leads for ease of integration into various circuits. The resistors are 1/4 Watt metal film resistors with a $\pm 1\%$ tolerance, designed to regulate current when operating the LEDs with DC 6-12V power sources.



Figure 2.1: Included 430ohm resistors for current limiting.



Figure 2.2: Comparison of LED lead lengths, highlighting the 29mm long leads.



Unit : mm

Figure 2.3: Detailed dimensions of the 5mm LED diode (Unit: mm).

3. SETUP AND INSTALLATION

To properly set up your EDGELEC blinking LED, follow these general guidelines. LEDs are polarity-sensitive; ensure correct connection to avoid damage. The longer lead of the LED is typically the anode (positive), and the shorter lead is the cathode (negative).

3.1 Connecting with Resistors (for DC 6-12V)

When operating the LEDs with a power supply between 6V and 12V DC, it is essential to use the included 430ohm resistors to limit the current and protect the LED from overcurrent. Connect one end of the resistor to the positive terminal of your power supply and the other end to the anode (longer lead) of the LED. Connect the cathode (shorter lead) of the LED directly to the negative terminal of your power supply.

Circuit Diagram (Conceptual):

```
+V (6-12V DC)
|
---[ Resistor (430ohm) ]---
|
---|>|--- (LED Anode to Cathode)
|
GND (0V)
```

3.2 Direct Connection (for DC 3.0-3.2V)

If your power supply provides a stable DC voltage between 3.0V and 3.2V, you may connect the LED directly without a resistor. Connect the anode (longer lead) to the positive terminal and the cathode (shorter lead) to the negative terminal of your power supply.

Important: Exceeding the recommended forward voltage or current without proper current limiting will damage the LED.

4. OPERATING INSTRUCTIONS

Once properly connected to a power source within the specified voltage range (3.0-3.2V DC directly, or 6-12V DC with the included 430ohm resistor), the EDGELEC 5mm White Blinking LED will automatically begin to flash. The blinking frequency is approximately 1.5Hz, meaning it will flash about 1.5 times per second. This is an inherent feature of these specific LEDs and does not require external control circuitry for the blinking effect. The LED is designed for single-color flashing, providing a consistent white light blink. No user interaction is required for the blinking function once power is applied.

5. MAINTENANCE AND HANDLING

5.1 Storage Conditions

Store the LEDs and resistors in a dry environment, away from direct sunlight, high temperatures, and excessive humidity. Keep them in their original packaging or in antistatic bags to prevent damage from static discharge.

5.2 Soldering Conditions

When soldering the LED leads, observe the following conditions to prevent damage:

- **Manual Soldering:** Less than 3 seconds with a soldering iron temperature between 482°F (250°C) and 527°F (275°C).
- **Reflow Soldering:** Less than 5 seconds with a temperature of 500°F (260°C).

Avoid applying excessive mechanical stress to the leads during soldering or bending. Allow the LED to cool completely before handling after soldering.

6. TROUBLESHOOTING

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

- **LED Not Lighting Up:**

- **Check Polarity:** Ensure the anode (longer lead) is connected to positive and the cathode (shorter lead) to negative.
 - **Verify Power Supply:** Confirm your power supply is providing the correct voltage (3.0-3.2V for direct connection, 6-12V with resistor).
 - **Resistor Connection:** If using a resistor, ensure it is correctly wired in series with the LED.
 - **Check Connections:** Inspect all wiring for loose connections or breaks.
 - **Test LED:** Try testing the LED with a known good power source and resistor (if applicable) to rule out a faulty LED.
- **LED Not Blinking:**
 - These are specifically blinking LEDs. If it's not blinking, it might be a faulty unit or an incorrect voltage/current. Ensure the voltage is within the specified range.
 - **LED Too Dim or Too Bright:**
 - **Voltage:** Ensure the input voltage is within the recommended range. Higher voltage (without proper resistance) can lead to excessive brightness and damage, while lower voltage can result in dimness.
 - **Resistor Value:** If using a resistor, ensure it is the correct value (430ohm for 6-12V). Using a resistor with too high a value will make the LED dim; too low a value can make it too bright and potentially burn it out.

7. SPECIFICATIONS

Parameter	Value
Brand	EDGELEC
Model Number	ED_YT05_BLK-W_100Pcs
LED Type	5mm Blinking LED (Single Color Flashing)
Color	White
Lens Type	Clear Round Lens
Blinking Frequency	1.5Hz
Forward Voltage (Vf)	3.0V - 3.2V (at If=20mA)
Power Consumption	0.06 Watts
Luminance Intensity	12000-14000 mcd (White)
Wavelength	6000K-9000K (White)
Viewing Angle	30°
Lead Length	29mm
Resistor Included	100pcs 430ohm (for DC 6-12V) 1/4 Watt Metal Film Resistors (±1% Tolerance)
Material	Metal, Polycarbonate (PC)

Parameter	Value
Product Dimensions	0.21 x 0.2 x 1.4 inches (approx. 5.3 x 5 x 35.5 mm)
Item Weight	0.29g (per single LED diode)

Color	Lens Type	If=20mA			Viewing Angle
		Forward Voltage (V)	Luminous Intensity (mcd)	Wavelength	
White	5mm Round Top / Water Clear	3.0-3.2	12000-14000	6000-9000K	30°
Warm White		3.0-3.2	14000-16000	3000-3500k	
Red		2.0-2.2	2000-3000	620-625nm	
Yellow		2.0-2.2	1500-2000	585-595nm	
Green		3.0-3.2	15000-18000	520-525nm	
Yellow Green		2.0-2.2	500-700	570-575nm	
Blue		3.0-3.2	7000-8000	460-470nm	
Orange		2.0-2.2	1500-2000	602-610nm	
Ultraviolet (Purple)		3.0-3.4	300-400	395-400nm	
Pink		3.0-3.2	7000-8000	—	

Figure 7.1: General LED parameter table (Note: Specific values for this product are listed above).

8. SAFETY INFORMATION

Please observe the following safety precautions when working with electronic components:

- Always disconnect power before making or changing connections.
- Ensure proper ventilation when soldering.
- Avoid direct eye exposure to the LED light, especially at high brightness, as it can be harmful.
- Do not exceed the specified voltage and current ratings for the LEDs and resistors.
- Keep components out of reach of children.
- Dispose of electronic waste responsibly according to local regulations.

9. WARRANTY AND SUPPORT

For any questions regarding the product, technical support, or warranty information, please contact EDGELEC customer service through the retailer's platform where the product was purchased. Refer to your purchase documentation for specific contact details.

You can also visit the official EDGELEC store for more information and product offerings: [EDGELEC Store on Amazon](#).