

CHANZON 100F5T-YT-REGR-CA

CHANZON 5mm Red & Green LED Diode Lights User Manual

Model: 100F5T-YT-REGR-CA

INTRODUCTION

This manual provides essential information for the proper use and understanding of your CHANZON 5mm Red & Green LED Diode Lights. These bi-color LEDs are designed for various electronic projects, offering both red and green light emission from a single component. Please read this manual thoroughly before use.

PRODUCT SPECIFICATIONS

Specification	Value
Quantity	100 pieces / Packs
Lens Type	5mm Diameter / Transparent / Round
Emitting Colour (Red)	620nm-625nm
Emitting Colour (Green)	515nm-520nm
Luminous Intensity (Red)	2000-3000mcd (Ultrabright)
Luminous Intensity (Green)	15000-18000mcd (Ultrabright)
Viewing Angle	30 Degree
Forward Voltage (Red)	2V-2.2V
Forward Voltage (Green)	3V-3.2V
Forward Current	20mA
Wattage	0.1W
Lead Lengths	29.5mm / 26.5mm / 28.5mm
Polarity	Common Anode (Longer Part) 2 Cathode (Shorter Part)
Average Life	50000 Hours
Item Weight	1.69 ounces (48 Grams)

Product Dimensions	7.09 x 5.91 x 0.71 inches
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UNDERSTANDING COMMON ANODE BI-COLOR LEDs

These LEDs are Common Anode (CA) type. This means the longest lead is the common positive (+) terminal. The two shorter leads are the cathodes (-) for the red and green LEDs respectively.

- **Longest Lead:** Common Anode (+)
- **Shorter Lead 1:** Cathode (-) for Red LED
- **Shorter Lead 2:** Cathode (-) for Green LED

To illuminate the red LED, connect the common anode to a positive voltage source (e.g., +5V) and the red cathode to ground, typically through a current-limiting resistor. Similarly, for the green LED, connect the common anode to positive and the green cathode to ground via a resistor.

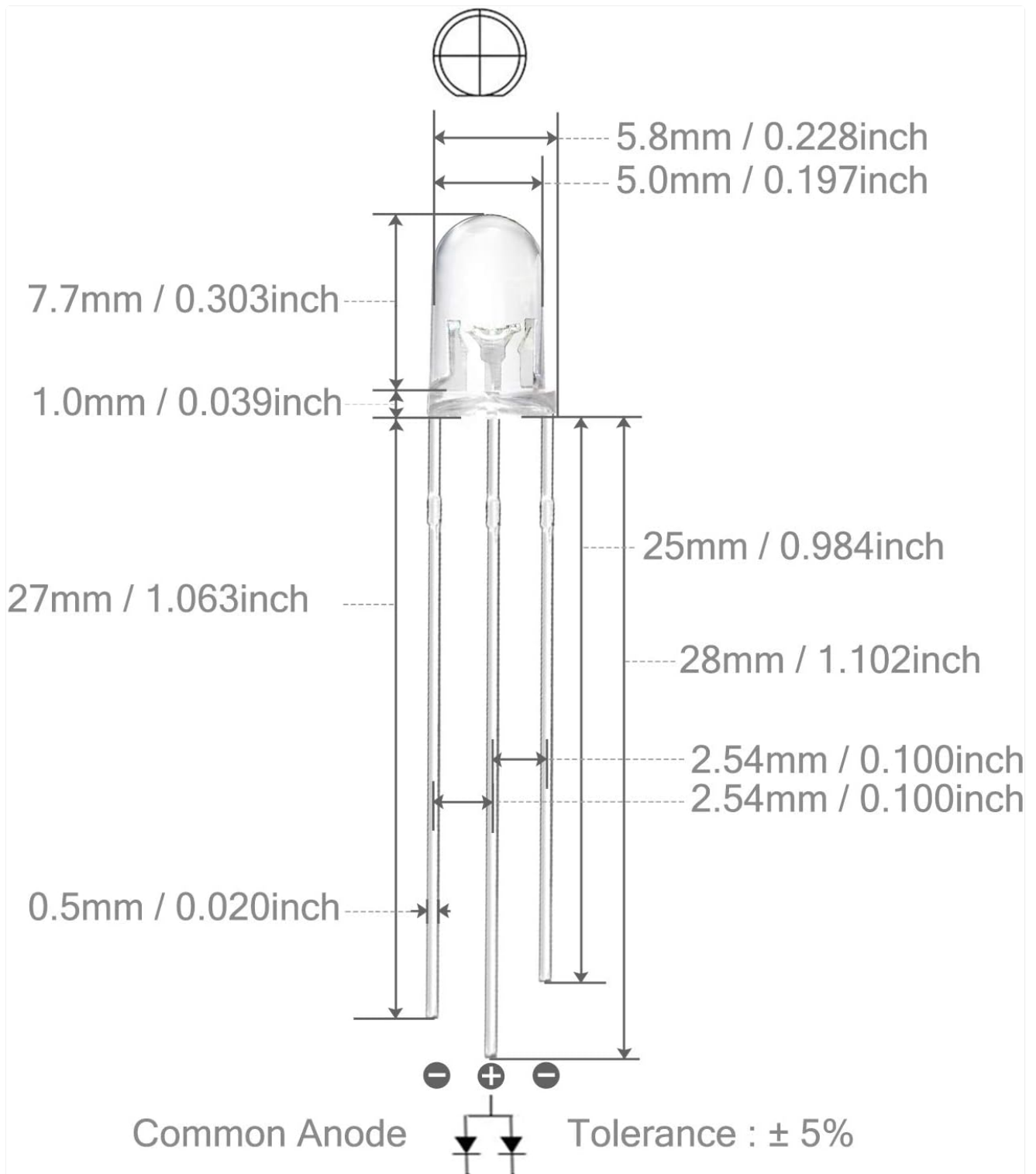


Figure 1: LED Dimensions and Polarity Diagram. This image illustrates the physical dimensions of the 5mm bi-color LED and clearly labels the common anode (longest lead) and the two cathode leads for red and green.

SETUP AND CONNECTION

Proper setup is crucial for the longevity and performance of your LEDs. Always use a current-limiting resistor in series with each LED to prevent damage from excessive current.

Calculating Resistor Value:

Use Ohm's Law: $R = (V_s - V_f) / I$

- **R:** Resistor value in Ohms (Ω)
- **Vs:** Supply voltage (e.g., 5V from Arduino)

- **V_f**: Forward voltage of the LED (Red: 2V-2.2V, Green: 3V-3.2V)
- **I**: Desired forward current (typically 20mA or 0.02A for these LEDs)

Example for Red LED (V_s=5V, V_f=2.1V, I=0.02A): $R = (5V - 2.1V) / 0.02A = 2.9V / 0.02A = 145 \Omega$. A common resistor value like 150 Ω or 220 Ω would be suitable.

Example for Green LED (V_s=5V, V_f=3.1V, I=0.02A): $R = (5V - 3.1V) / 0.02A = 1.9V / 0.02A = 95 \Omega$. A common resistor value like 100 Ω or 120 Ω would be suitable.

Connection Steps:

1. Identify the common anode (longest lead) and the two cathode leads.
2. Connect the common anode lead to your positive voltage supply.
3. Connect a calculated current-limiting resistor in series with each of the two cathode leads.
4. Connect the other end of each resistor to the control pin (e.g., microcontroller output) or directly to ground if always on.
5. Ensure all connections are secure and correct before applying power.



Figure 2: Packaging and Individual LED. This image displays the bulk packaging of 100 LEDs, alongside a single LED and examples of the red and green light output.

OPERATING THE LEDs

These bi-color LEDs allow for individual control of red and green light, or a combination to create a mixed color (e.g., orange/yellow depending on intensity).

- **Red Light:** Apply appropriate voltage to the common anode and connect the red cathode (shorter lead) to ground via its resistor.
- **Green Light:** Apply appropriate voltage to the common anode and connect the green cathode (shorter lead) to ground via its resistor.
- **Mixed Color:** Apply appropriate voltage to the common anode and connect both red and green cathodes to ground via their respective resistors. The resulting color will be a blend of red and green.

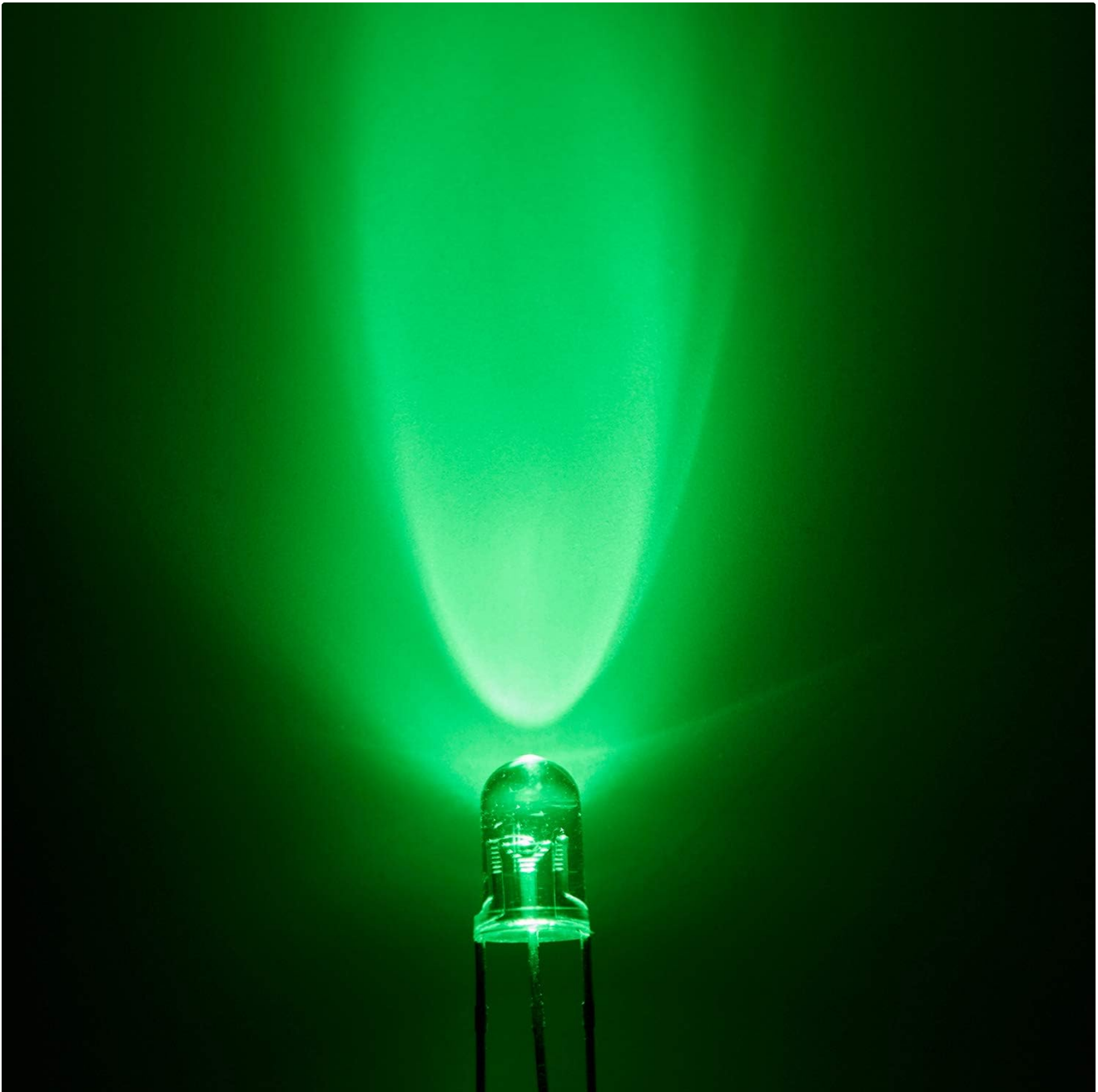


Figure 3: Red Light Emission. This image shows a single LED illuminated with red light, demonstrating its brightness and beam pattern.



Figure 4: Green Light Emission. This image shows a single LED illuminated with green light, demonstrating its brightness and beam pattern.

MAINTENANCE

These LEDs are robust electronic components and require minimal maintenance.

- **Storage:** Store LEDs in a dry, cool environment, preferably in their original anti-static packaging, to prevent damage from moisture or static discharge.
- **Handling:** Avoid bending the leads excessively or repeatedly, as this can cause them to break. Handle by the body of the LED whenever possible.
- **Cleaning:** If necessary, gently wipe the LED lens with a soft, dry cloth. Avoid using harsh chemicals.

TROUBLESHOOTING

Problem	Possible Cause	Solution
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LED does not light up.	Incorrect polarity, insufficient voltage, no current-limiting resistor, faulty connection, or damaged LED.	Verify common anode and cathode connections. Check power supply voltage. Ensure a resistor is in series. Inspect solder joints/connections. Test with a known good LED.
LED is too dim or too bright.	Incorrect resistor value.	Recalculate and replace the current-limiting resistor with the appropriate value for desired brightness.
Only one color lights up.	Connection issue with one of the cathode leads or its resistor.	Check the connection and resistor for the non-lighting color. Ensure the correct cathode is being driven.

PRODUCT VIDEO

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Video 1: CHANZON LED Diode Light Overview. This video provides a visual overview of various CHANZON LED diode lights, including 3mm and 5mm sizes, demonstrating both clear transparent and diffused lens types, and showing them in use on a breadboard.

WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the seller's policies on the purchase platform or contact CHANZON directly through their official channels. Keep your purchase receipt for any warranty claims. You can visit the official CHANZON store for more products and support:[CHANZON Store](#)