

CHANZON 100F0805-5SE-KIT

CHANZON 0805 SMD LED Diode Lights Assorted Kit User Manual

Model: 100F0805-5SE-KIT

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1. OVERVIEW

This manual provides essential information for the CHANZON 0805 SMD LED Diode Lights Assorted Kit. This kit contains 100 pieces of 0805 surface-mount device (SMD) LEDs, with 20 pieces each of five different colors: White, Red, Green, Blue, and Yellow. These mini chip LEDs are designed for printed circuit board (PCB) applications requiring low voltage (DC 2-3V) and low current (20mA) operation.

The 0805 package size is 2.0mm x 1.2mm (0.08 x 0.05 inches), making them suitable for compact electronic projects.

Proper polarity identification is crucial for correct operation, which can be determined by an arrow marking on the reverse side of each LED.

2. PRODUCT FEATURES

- **Quantity:** 100 pieces (5 colors x 20pcs) per pack.
- **Package Type:** Surface Mount Device (SMD) SMT LEDs.
- **Mini Size:** 0805 package, measuring 2.0mm x 1.2mm (0.08 x 0.05 inches).
- **Emitting Colors:** White, Red, Green, Blue, Yellow.
- **Forward Voltage / Current:** DC 2-3V, 20mA (for each color).
- **Polarity:** Clearly marked with an arrow on the reverse side for anode and cathode identification.
- **Viewing Angle:** 120 degrees.
- **Electrode Type:** Copper.

3. SPECIFICATIONS

Attribute	Value
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Attribute	Value
Brand	CHANZON
Model Number	100F0805-5SE-KIT
Light Type	LED (0805 SMD)
Package Size	2.0mm x 1.2mm (0.08 x 0.05 inch)
Emitting Colors	White, Red, Green, Blue, Yellow (20 pcs each)
Forward Voltage (White/Blue/Green)	3V-3.2V
Forward Voltage (Red/Yellow)	2V-2.2V
Forward Current	20mA (each color)
Viewing Angle	120 Degrees
Electrode Type	Copper
Power Source	DC
Indoor/Outdoor Usage	Indoor
Item Weight	0.317 ounces (for 100 pcs)

*Note: Luminous intensity varies by color. Refer to the detailed specification image for specific values.*

## 4. SETUP

These 0805 SMD LEDs are designed for surface mounting onto Printed Circuit Boards (PCBs). Proper handling and soldering techniques are essential for successful integration.

### 4.1. Preparation

- Ensure your workspace is clean, well-lit, and static-free. Use an anti-static mat and wrist strap to prevent electrostatic discharge (ESD) damage to the LEDs.
- Gather necessary tools: fine-tip soldering iron, solder, flux, tweezers, magnifying glass, and a PCB.
- Identify the correct pads on your PCB for LED placement.

### 4.2. Polarity Identification

LEDs are diodes and are polarity-sensitive. They will only light up when current flows in the correct direction (from anode to cathode). Incorrect polarity will prevent the LED from illuminating and can potentially damage it if excessive voltage is applied.

- Each 0805 SMD LED has an arrow marking on its reverse side.
- The arrow points from the Anode (+) to the Cathode (-).
- Align the LED on the PCB such that the anode connects to the positive voltage supply and the cathode connects to the negative/ground.

### 4.3. Soldering

- Apply a small amount of solder paste or flux to the PCB pads.
- Carefully place the LED onto the pads using tweezers, ensuring correct orientation based on polarity markings.

- Heat one pad with the soldering iron, allowing the solder to flow and secure one side of the LED.
- Repeat for the other pad. Avoid excessive heat or prolonged contact, as this can damage the LED.
- Inspect the solder joints under a magnifying glass to ensure good connections and no short circuits.

## 5. OPERATING INSTRUCTIONS

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Once properly soldered, these LEDs require a DC power source within their specified voltage and current ranges.

- **Power Supply:** Connect the LED circuit to a stable DC power supply.
- **Current Limiting Resistor:** It is crucial to use a current-limiting resistor in series with each LED to prevent overcurrent and damage. The appropriate resistor value depends on your supply voltage and the LED's forward voltage and current.
- **Voltage Application:** Apply the specified forward voltage (2V-2.2V for Red/Yellow, 3V-3.2V for White/Blue/Green) across the LED, ensuring the current does not exceed 20mA.
- **Testing:** Briefly apply power to test the LED. If it does not light up, check polarity and connections before increasing voltage or current.

*Example Resistor Calculation:* If using a 5V supply for a White LED ( $V_f=3.2V$ ,  $I_f=20mA$ ), the resistor value  $R = (V_s - V_f) / I_f = (5V - 3.2V) / 0.02A = 1.8V / 0.02A = 90 \text{ Ohms}$ . Always choose the next standard resistor value higher than the calculated value (e.g., 100 Ohms).

## 6. MAINTENANCE

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These SMD LEDs are generally maintenance-free once properly installed. However, consider the following for longevity:

- **Storage:** Store unused LEDs in their original packaging or in a dry, anti-static environment to prevent moisture absorption and ESD damage.
- **Cleaning:** If cleaning is necessary, use a soft, dry brush or a lint-free cloth with isopropyl alcohol. Avoid abrasive materials or harsh chemicals.
- **Environmental Conditions:** Operate LEDs within their specified temperature and humidity ranges. Extreme conditions can shorten their lifespan.

## 7. TROUBLESHOOTING

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### 7.1. LED Does Not Light Up

- **Check Polarity:** Ensure the LED is connected with the correct anode (+) and cathode (-) orientation. Reverse polarity will prevent illumination.
- **Verify Connections:** Inspect solder joints for cold joints, bridges, or poor contact. Re-solder if necessary.
- **Power Supply:** Confirm the power supply is providing the correct voltage and current.
- **Current Limiting Resistor:** Ensure a current-limiting resistor is used and its value is appropriate for the circuit. An incorrect resistor can prevent the LED from lighting or cause damage.
- **LED Damage:** The LED might be damaged due to ESD, overheating during soldering, or overcurrent. Replace the LED if other checks fail.

### 7.2. LED is Dim or Flickering

- **Insufficient Current:** The current-limiting resistor might be too high, or the power supply is not providing enough current.
- **Poor Connection:** Check for intermittent connections or loose solder joints.
- **Power Supply Instability:** Ensure the power supply is stable and not fluctuating.

## 8. PRODUCT VISUALS

### 8.1. Product Images



White



Red



Yellow



Green

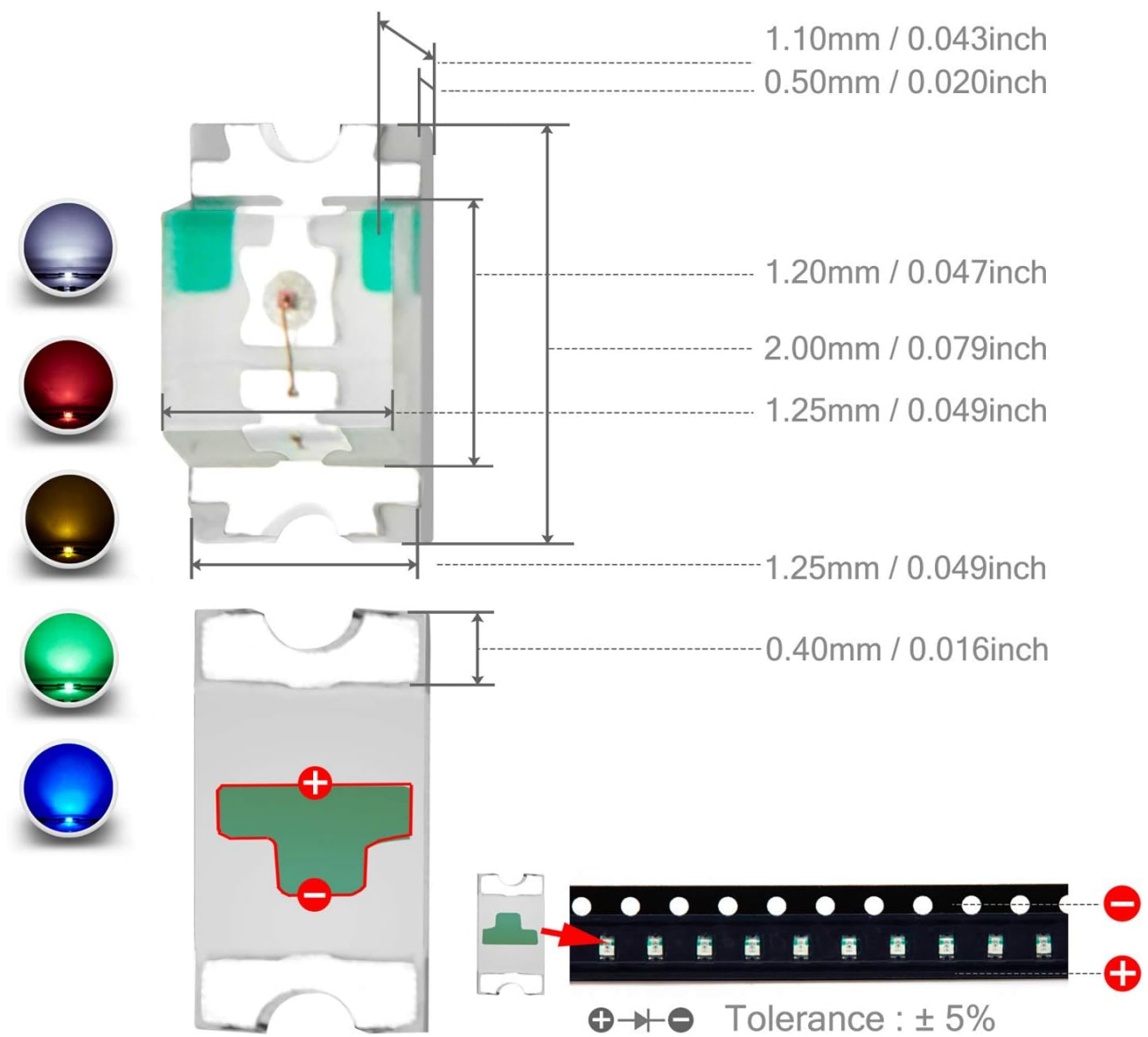


Blue

Chip Size	Color		Luminous Intensity	Forward Voltage	Forward Current	Viewing Angle
0805 (2012)	White	6000-9000K	180-210mcd	3V-3.2V	20mA	120°
0805 (2012)	Red	620-625nm	120-150mcd	2V-2.2V	20mA	120°
0805 (2012)	Green	523-526nm	210-250mcd	3V-3.2V	20mA	120°
0805 (2012)	Blue	460-465nm	160-170mcd	3V-3.2V	20mA	120°
0805 (2012)	Yellow	588-592nm	120-150mcd	2V-2.2V	20mA	120°

**Image 1:** This image displays the five different colors of 0805 SMD LEDs included in the kit (White, Red, Yellow, Green, Blue) along with a table detailing their chip size, color, luminous intensity, forward voltage, forward current, and viewing angle. It provides a visual representation of the product and its key electrical characteristics.





**Image 2:** This image illustrates the precise dimensions of the 0805 SMD LED chip in millimeters and inches. It also clearly shows the polarity marking (an arrow pointing from anode to cathode) on the underside of the LED, which is crucial for correct installation. The image also depicts the LEDs on a tape reel, indicating how they are typically packaged.

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5 Colors in 5 Independent Bags with Specification Label , Easy to Distinguish.



**Image 3:** This image shows the CHANZON 0805 SMD LED kit with each of the five colors individually packaged in separate bags. Each bag includes a specification label, making it easy to distinguish between the different colors and their respective characteristics. This packaging method aids in organization and identification.



**Image 4:** This image provides a close-up view of the 0805 SMD LEDs mounted on their tape reels. The LEDs are visible in various colors, demonstrating their compact size and how they are presented for use in automated pick-and-place machines or for manual handling in electronic projects.

## 8.2. Official Product Videos

### Chanzon LED Diode SMD 0603 0805 1206 Different Color Overview

Your browser does not support the video tag.

This video provides an overview of various CHANZON SMD LED sizes, including the 0805 LEDs. It demonstrates the physical appearance and different emitting colors available, offering a visual comparison of the LED types.

## 9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your CHANZON 0805 SMD LED Diode Lights Assorted Kit, please refer to the seller's policies on the platform where the product was purchased. Keep your proof of purchase for any warranty claims.

For additional resources or inquiries, you may visit the official CHANZON store page or contact their customer service

directly through the retailer's support channels.