Cermant Celent_CL254N

LED Flashing Christmas Tree DIY Kit Instruction Manual

Brand: Cermant | Model: Celent_CL254N

1. Introduction

This manual provides comprehensive instructions for assembling and operating your Cermant LED Flashing Christmas Tree DIY Kit. This kit is designed for individuals interested in learning basic electronic knowledge, circuit principles, and practicing soldering skills. Upon completion, the kit transforms into a beautiful, colorful flashing Christmas tree, suitable for decoration or as a creative gift.

Please note: This is a DIY kit and requires assembly. It is not a finished product.



Image: The fully assembled LED Flashing Christmas Tree illuminated with vibrant colors.

2. Safety Information

Warning:

- This product involves soldering. Welding type products require individuals to be 16 years of age or older and possess some knowledge of welding and circuits.
- Always use appropriate personal protective equipment, such as safety glasses, when soldering.
- Ensure proper ventilation in your workspace to avoid inhaling solder fumes.
- Be cautious of hot soldering irons and recently soldered components to prevent burns.
- Keep all components and tools out of reach of small children.

3. What's in the Box

Before beginning assembly, please verify that all components listed below are present in your kit. Refer to the image for a visual representation of the kit contents.



Image: Overview of all components included in the DIY kit.

- PCB LED Boards (3 pieces: 2 tree-shaped, 1 base)
- LED Diodes (36 pieces, 7-color flashing)
- Resistors (various values: 1KΩ, 10KΩ, 330Ω, 2.2KΩ)
- Capacitors (electrolytic)
- Transistors (S9014)
- Battery Holder (for 3 AA batteries, batteries not included)
- USB Power Cable
- Power Switch
- Nuts and Bolts for assembly
- Paper Instruction Manual (included in physical kit)

4. Setup and Assembly

This section guides you through the step-by-step assembly of your LED Flashing Christmas Tree. Patience and attention to detail are key for successful completion.

4.1. Required Tools (Not Included)

- Soldering Iron
- Solder Wire
- Multimeter (recommended for testing components and connections)
- Pliers (e.g., needle-nose pliers, diagonal cutters)
- Tweezers
- Cleaning Sponge or Brass Wool for soldering iron tip
- Screwdriver Set

4.2. Component Identification and Preparation

Familiarize yourself with the different components and their markings on the PCBs (Printed Circuit Boards). The kit includes two tree-shaped PCBs (MR-A and MR-B) and one square base PCB.

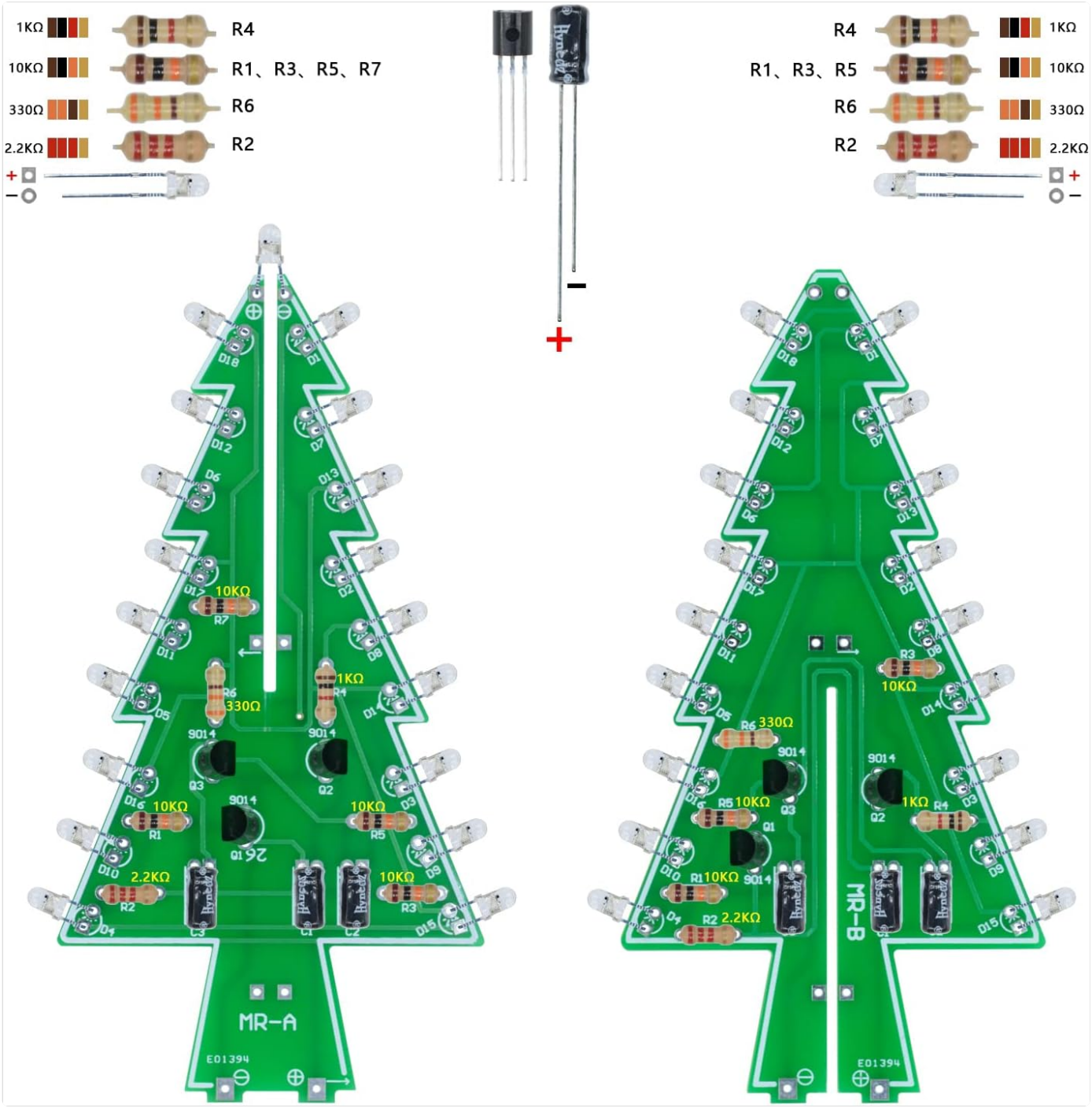


Image: PCB layouts showing component placement and resistor values.

Important Note on Resistors: Some kits may include clear LEDs that require different resistor values for optimal brightness. For R2, R4, and R6, it is recommended to use **220 ohm resistors**. The kit typically supplies 2.2K ohm resistors for these positions, which may result in dim lights. R1, R3, R5 should be 10K ohm, and R7 should be 1K ohm, as supplied.

4.3. Soldering Steps

Follow these steps carefully. Solder components one by one, ensuring correct polarity and good solder joints.

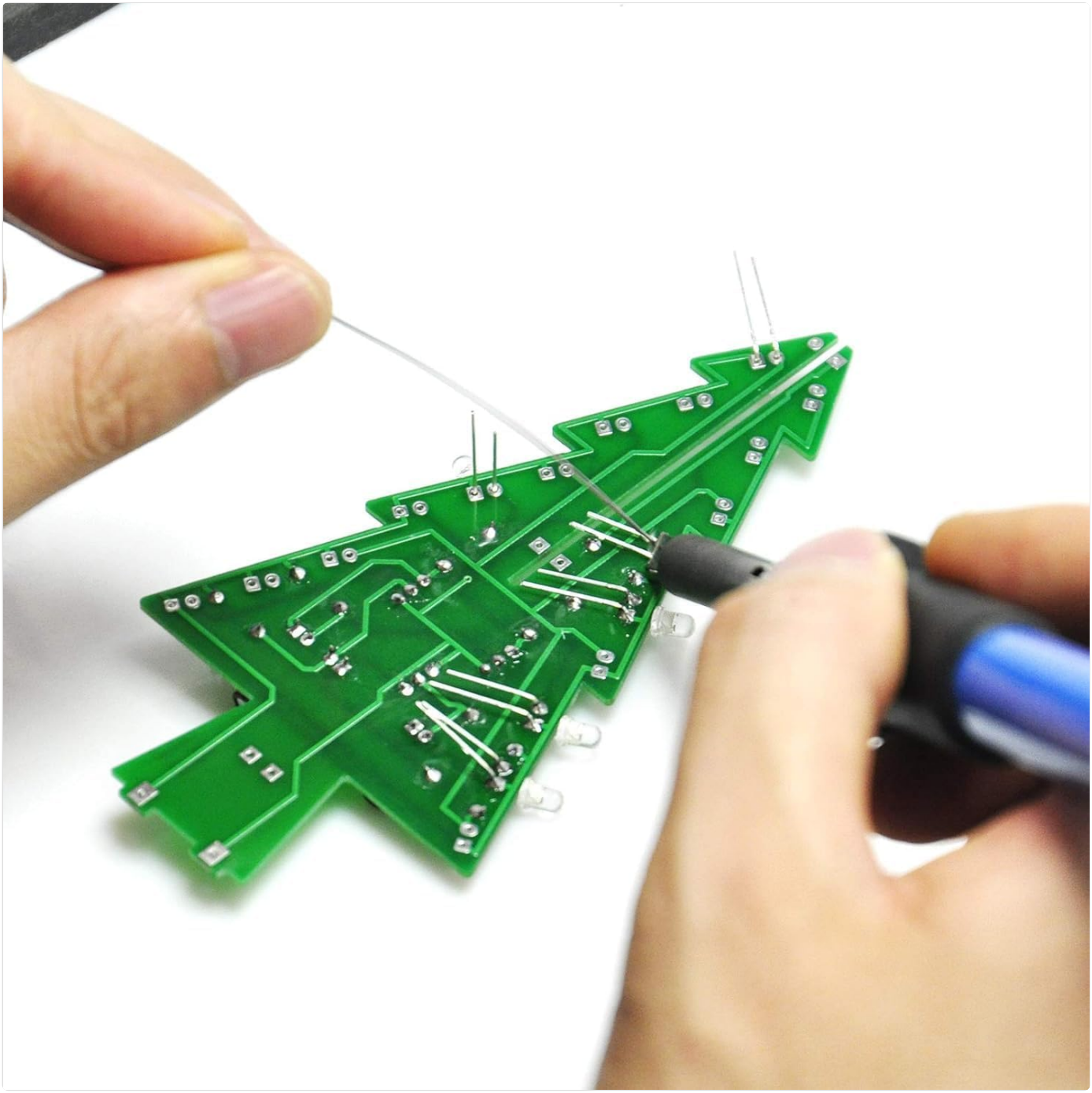


Image: Demonstrating the soldering process on a PCB.

1. **Solder Resistors:** Begin by soldering all resistors onto the MR-A and MR-B tree PCBs according to their marked positions (R1-R7). Pay special attention to the recommended 220 ohm resistors for R2, R4, and R6. Resistors do not have polarity.
2. **Solder Capacitors:** Solder the electrolytic capacitors. These components are polarized; ensure the longer lead (positive) matches the '+' marking on the PCB, or the stripe on the capacitor matches the negative marking.
3. **Solder Transistors:** Solder the S9014 transistors. Ensure their flat side aligns with the flat marking on the PCB.
4. **Solder LEDs:** Solder the 36 LED diodes onto both tree PCBs (D1-D18 on each). LEDs are polarized. The longer lead is positive (+), and the shorter lead is negative (-). The flat edge on the LED casing also indicates the negative side. Ensure correct orientation. It is recommended to solder one lead first, then adjust the LED's position before soldering the second lead.
5. **Assemble Tree Structure:** Once all components are soldered onto the MR-A and MR-B PCBs, carefully interlock them. The connection points are clearly marked. Ensure they form a stable 3D tree shape.
6. **Connect to Base PCB:** Solder the assembled 3D tree structure onto the square base PCB. Ensure the arrows on the tree PCBs align with the arrows on the base PCB for correct orientation and power flow.

7. **Solder Power Switch:** Solder the power switch onto the base PCB. Be careful to orient it correctly as per the PCB markings.
8. **Connect Battery Holder/USB:**
    - **Battery Holder:** Thread the red and black wires from the battery holder through the designated holes on the base PCB. Solder them securely, ensuring red wire connects to positive (+) and black to negative (-).
    - **USB Power:** The kit also supports USB power. Connect the provided USB cable to the appropriate port on the base PCB.



Image: Two power supply options: 3xAA battery case or USB cable.

9. **Final Checks:** Before powering on, visually inspect all solder joints for cold joints, bridges, or incorrect component placement. Use a multimeter to check for continuity and shorts if you have one.

5. Operating Instructions

Once assembly is complete and verified, your LED Flashing Christmas Tree is ready for operation.

5.1. Powering On

- **Using Batteries:** Insert 3 AA batteries (not included) into the battery holder, observing correct polarity. Flip the power switch on the base PCB to the "ON" position.
- **Using USB Power:** Connect the provided USB cable to the USB port on the base PCB and plug the other end into a compatible USB power source (e.g., a USB wall adapter, power bank, or computer USB port). Flip the power switch to the "ON" position.

The 36 multi-color LEDs will begin to flash in a dynamic pattern, creating a festive display.

5.2. Powering Off

To turn off the LED Christmas Tree, simply flip the power switch on the base PCB to the "OFF" position. If using batteries, you may also remove the batteries for extended storage.

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6. Maintenance

The Cermant LED Flashing Christmas Tree DIY Kit requires minimal maintenance to ensure its longevity.

- **Cleaning:** Use a soft, dry cloth to gently wipe dust from the PCBs and LEDs. Avoid using liquid cleaners or abrasive materials.
- **Storage:** When not in use, store the assembled tree in a dry, cool place, away from direct sunlight and extreme temperatures. If using batteries, remove them before long-term storage to prevent leakage.
- **Handling:** Handle the assembled tree with care to avoid bending or damaging the soldered components or PCBs.

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7. Troubleshooting

If you encounter issues during or after assembly, refer to the common problems and solutions below.

Problem	Possible Cause	Solution
Tree does not light up at all.	◦ Power switch is OFF. ◦ Batteries are dead or incorrectly inserted. ◦ USB power source is not working or cable is faulty. ◦ Poor solder joint on power connections. ◦ LEDs or other components are installed with incorrect polarity. ◦ Short circuit on the PCB.	◦ Ensure power switch is ON. ◦ Replace batteries or check their orientation. ◦ Try a different USB port or cable. ◦ Inspect and re-solder power connections (battery holder wires, USB port). ◦ Carefully check polarity of all LEDs and polarized components (capacitors, transistors). Re-solder if necessary. ◦ Visually inspect for solder bridges between pads. Use a multimeter to check for shorts.
Some LEDs are dim or do not light up.	◦ Incorrect resistor values used. ◦ Poor solder joint on specific LEDs. ◦ LED installed with incorrect polarity. ◦ Faulty LED.	◦ **Crucial:** Verify that R2, R4, and R6 are 220 ohm resistors. If they are 2.2K ohm, replace them with 220 ohm resistors. ◦ Inspect and re-solder connections for the affected LEDs. ◦ Check polarity of affected LEDs. ◦ If all else fails, replace the specific faulty LED.

Problem	Possible Cause	Solution
Tree lights up but does not flash.	◦ Issue with the timing circuit components (capacitors, transistors, resistors). ◦ Poor solder joints on these components.	◦ Re-inspect and re-solder all components in the timing circuit section of the PCBs. ◦ Ensure correct component values and polarity for capacitors and transistors.

If you have followed all troubleshooting steps and the issue persists, please contact Cermant customer support for further assistance. Provide details of the problem and any steps you have already taken.

8. Specifications

Feature	Detail
Product Name	LED Flashing Christmas Tree DIY Kit
Brand	Cermant
Model Number	Celent_CL254N
Working Voltage	DC 4.5-5V
Finished Dimensions	60mm (length) x 60mm (width) x 136mm (height)
LEDs	36 pieces, 7-color flashing
Power Supply Modes	3xAA Battery (not included) or USB (cable included)
Item Weight	2.08 ounces (approx. 59 grams)
Package Dimensions	7.13 x 4.49 x 0.91 inches

9. Customer Support

For any questions, technical assistance, or issues not covered in this manual, please contact Cermant customer support.
While specific warranty details are not provided in this manual, Cermant is committed to customer satisfaction.
You can typically find contact information on the product packaging or through the retailer where you purchased the kit.
Please have your model number (Celent_CL254N) and a description of your issue ready when contacting support.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Email

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question