

Automotive Lighting Circuit Diagnostic Checklist

Step 1: Identify the Pattern

- ONE light out (e.g., left low beam): >95% chance it's the bulb.
- ONE SIDE out (e.g., all left-side lights): Suspect fuse or bad ground.
- A PAIR out (both low beams): Likely fuse or relay.
- ALL lights dim/flickering: System-wide issue (battery, alternator, or main ground).

Step 2: Simple Checks (Solve 80% of Problems)

1. Check the Fuse: Inspect visually or test with a multimeter.
2. Check the Bulb: Look for broken filament or discoloration.
3. Check Power at Socket: Test light or multimeter at bulb contacts.
→ Power PRESENT? Bad bulb, replace it.
→ Power ABSENT? Issue upstream (fuse, relay, switch, wire).

Step 3: Advanced Checks

1. Test the Relay: Swap with known-good identical relay.
2. Find the Ground: Clean and tighten the connection at body.
3. Trace the Wire: Look for damaged, pinched, or corroded wires.
4. Pro Tips:
 - Bulb Test: Touch bulb base to battery terminals to confirm function.
 - Relay Click: Listen for soft click when lights on.
 - Dielectric Grease: Apply to contacts to prevent corrosion.
 - Upgrade Wisely: Use compatible LED replacements, avoid higher-wattage overloads.

Quick Troubleshooting Table

Symptom / Pattern	Likely Cause	Recommended Action
One light out	Bulb	Replace bulb
One side out	Ground or fuse	Check ground connection and fuse
Pair out	Fuse/Relay	Check and replace fuse or relay
All lights dim/flicker	Battery/Alternator/Main Ground	Check battery voltage, alternator output, and main