

GENERIC · BODY

B0501

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

B0501

Passenger Power Window Circuit Malfunction

B0501 indicates that the body control module (BCM) has detected an abnormal condition in the passenger door power window circuit, such as a short to ground, short to voltage, or an open circuit. The BCM monitors the circuit for expected voltage or current when the window switch is activated and sets this code when the readings fall outside the normal range.

SYSTEM

Body

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Airbags, seats, doors, lights and comfort systems

Symptoms you may notice

- Passenger window fails to move in one or both directions
- Window moves slowly or intermittently
- Window switch feels unresponsive or requires multiple presses
- Window may operate from the master switch but not the passenger switch, or vice versa
- Often no symptoms besides the warning light

Common causes, most likely first

- 1 Faulty passenger window switch
- 2 Damaged wiring in the door jamb boot (flexing fatigue)
- 3 Corroded or loose electrical connector at the window motor or switch
- 4 Failed window motor (excessive current draw or open winding)
- 5 Blown fuse or faulty relay in the power window circuit
- 6 BCM internal fault (rare)

How to diagnose and fix it

- 1 Check the power window fuse and relay; replace if blown or faulty
- 2 Inspect the wiring harness in the door jamb for chafing or broken wires; repair as needed
- 3 Test the window switch with a multimeter for continuity and correct operation; replace if defective
- 4 Measure voltage and ground at the window motor connector while operating the switch; repair open or short circuits
- 5 Perform a current draw test on the window motor to check for excessive current or a seized regulator
- 6 If all circuits test good, substitute a known-good BCM to rule out internal failure



Before you replace the window motor

- A common oversight is assuming the motor is at fault when the real problem is a broken wire inside the rubber boot between the door and body, which flexes every time the door opens.
- The passenger window circuit often shares a ground point with other door functions, so a corroded ground can set B0501 along with other codes.
- After replacing a window motor or switch, the BCM may need to relearn the window position; failing to do so can cause the code to reappear.
- On some vehicles, the passenger window is controlled by the BCM through a serial data bus, and a fault in the bus can mimic a circuit malfunction.
- A weak battery or low charging system voltage can cause the BCM to set false window codes; always verify battery condition first.

Can I keep driving with B0501?

The vehicle remains safe to drive because the passenger window circuit does not affect steering, braking, or other critical systems. Avoid operating the window until repaired to prevent further damage, and keep the window closed to protect the interior from weather.

Tools that help

- Digital multimeter
- Test light
- Trim removal tools
- Wiring diagram for the specific vehicle
- Scan tool with bidirectional control

Reading B0501

- B** Body: airbags, seats, doors, lights and comfort systems.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Airbags, seats, doors, lights and comfort systems.
- 01** The exact fault within that area.

Often seen with

B0502 Left Rear Power Window Circuit Malfunction · **B0503** Right Rear Power Window Circuit Malfunction · **B0510** Driver Door Open Switch



See it working

Watch the animated explainer [Inline-Four Engine X-Ray: Firing Order 1-3-4-2](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/b0501/>

