

GENERIC · POWERTRAIN

P01ED

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01ED

Engine Coolant Heater B Control Circuit Low

P01ED indicates that the powertrain control module (PCM) has detected an abnormally low voltage or current on the control circuit for the engine coolant heater, specifically for heater 'B' if multiple heaters are used. This circuit is responsible for activating the heater that warms engine coolant to improve cold-start emissions and cabin heat; a low condition means the PCM sees a short to ground or an open circuit on the control side.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp).
- Often no symptoms besides the warning light, especially in mild weather.
- Extended crank times or rough running when starting in very cold temperatures.
- Reduced cabin heat during the first few minutes of operation in cold weather.
- Possible failure of the engine coolant heater to activate, leading to longer warm-up periods.
- In some vehicles, a noticeable drop in fuel economy during cold starts.

Common causes, most likely first

- 1 Faulty engine coolant heater element (internal short or open circuit).
- 2 Damaged or corroded wiring harness on the control circuit (short to ground or open).
- 3 Failed coolant heater control module or relay.
- 4 Loose or corroded electrical connector at the heater or control module.
- 5 PCM internal driver failure for the control circuit.
- 6 Blown fuse or fusible link supplying power to the heater circuit.
- 7 Aftermarket accessories improperly tapped into the heater circuit causing a low-voltage condition.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related pending or history codes.
- 2 Inspect the coolant heater fuse and replace if blown; check for power at the heater connector with the key on.
- 3 Visually inspect the wiring harness and connectors for chafing, corrosion, or loose pins; repair as needed.
- 4 Measure resistance of the coolant heater element and compare to specification; replace if out of range.
- 5 Test the control circuit from the PCM to the heater control module for continuity and short to ground; repair wiring if faulty.
- 6 If all external components test good, check for a faulty PCM driver by back-probing the control circuit with a lab scope or test light.
- 7 Clear the code and perform a road test to verify the repair; ensure the heater activates under cold conditions.

Coolant heater circuit low: beyond the obvious

- A low control circuit code often results from a short to ground in the wiring, not a failed heater element, so always inspect the harness before replacing parts.
The engine coolant heater is primarily an emissions device; in warm climates, the heater may never activate, making this code intermittent and hard to reproduce.
- Some vehicles use multiple coolant heaters (A and B), and a low condition on circuit B can be caused by a shared ground or power supply issue affecting both circuits.
- A weak battery or charging system can cause the PCM to misreport a low circuit condition; always check battery voltage and ground connections first.
Aftermarket remote starters or block heaters wired into the coolant heater circuit can introduce a low-voltage condition that sets this code.

Can I keep driving with P01ED?

The vehicle is safe to drive under most conditions because the engine coolant heater is an auxiliary emissions and comfort device; however, in extremely cold weather, you may experience harder starting and reduced cabin heat until the fault is repaired. Avoid long periods of idling in cold temperatures and have the circuit inspected at your earliest convenience.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Test light
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools



Reading P01ED

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
1	Fuel and air metering.
ED	The exact fault within that area.

Often seen with

P01EC Engine Coolant Heater B Control Circuit/Open · **P01EE** Engine Coolant Heater B Control Circuit High · **P01EF** Engine Coolant Heater B Control Circuit Performance · **P01F0** Coolant Temperature Relapsed Below Diagnostic Monitoring Tem · **P2600** Coolant Pump Control Circuit/Open

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01ed/>

