



P1847 · GM

2-3 Shift Solenoid Circuit High Voltage

P1847 on GM vehicles means the transmission control module (TCM) has detected high voltage on the 2-3 shift solenoid circuit, indicating an open circuit, short to power, or a failed solenoid coil. The TCM commands the solenoid to shift between second and third gear and monitors the circuit for expected current draw, so a high-voltage reading tells it the circuit is not completing properly.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Transmission

Symptoms you may notice

- Check engine light or transmission warning light illuminated on the dash
- Harsh or delayed shifts between second and third gear, or the transmission may default to a limp mode
- Transmission stuck in second or third gear, or erratic shifting patterns
- Slipping or flaring during the 2-3 shift under acceleration
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Failed 2-3 shift solenoid coil (open winding or internal short)
- 2 Damaged or corroded wiring harness connector at the transmission solenoid pack
- 3 Open circuit in the power or ground wire between the TCM and the 2-3 shift solenoid
- 4 Short to voltage on the solenoid control circuit from chafed wiring
- 5 Faulty transmission control module (TCM) driver circuit
- 6 Contaminated transmission fluid or internal valve body debris affecting solenoid operation

How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P1847 is current and not history
- 2 Inspect the transmission wiring harness and solenoid pack connector for corrosion, loose pins, or chafing
- 3 Measure resistance of the 2-3 shift solenoid at the connector and compare to GM specification
- 4 Check for battery voltage on the solenoid control circuit with the key on and TCM disconnected to rule out a short to power
- 5 Perform a voltage drop test on the power and ground circuits to the solenoid while commanding the solenoid on with a scan tool
- 6 If wiring and connectors pass, replace the 2-3 shift solenoid and clear codes, then verify with a road test
- 7 If the fault persists after solenoid replacement, diagnose the TCM driver circuit or replace the TCM as a last step



What GM technicians check before replacing the solenoid

- A high-voltage code on a shift solenoid often comes from a poor ground or corroded connector pin rather than a failed solenoid, so always inspect the harness before condemning the part.
- Intermittent P1847 can be set by vibration or heat affecting a chafed wire, so wiggle-test the harness while watching solenoid resistance on a scan tool.
- Some GM transmissions use a common power feed for multiple solenoids, so a fault in that shared circuit can set codes for several solenoids at once, not just P1847.
- A low fluid level or contaminated fluid can cause the solenoid to draw abnormal current and set a high-voltage code even when the solenoid itself is good.
- Replacing the solenoid without clearing adaptive shift learning can leave the transmission shifting poorly, so a relearn or adaptive reset is part of a proper repair.

Can I keep driving with P1847?

You can drive cautiously to a repair shop if the transmission still shifts, but avoid heavy acceleration and towing because limp mode or harsh shifts can worsen internal wear. If the transmission is stuck in one gear or slipping badly, stop driving and have it towed to prevent further damage.

Tools that help

- OBD-II scan tool with bidirectional control and transmission data
- Digital multimeter with resistance and voltage measurement
- Test light or fused jumper wire for circuit testing
- Wire terminal pick and electrical contact cleaner
- Factory service information for wiring diagrams and solenoid specifications

Reading P1847

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (GM): its meaning depends on the make.
8	Transmission.
47	The exact fault within that area.

Often seen with

P1845 Transmission Gear Ratio Output Circuit · **P1846** Transmission Transfer Case Contact Plate A Circuit Failure · **P0700** Transmission Control System Malfunction · **P0751** Shift Solenoid 'A' Performance or Stuck Off · **P0756** Shift Solenoid 'B' Performance or Stuck Off



See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1847/>

