

GENERIC · POWERTRAIN

P06D1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P06D1

Internal Control Module Ignition Coil Control Performance

P06D1 is a generic powertrain code indicating that the engine control module (ECM) has detected an internal performance fault within its own ignition coil control circuitry. The ECM monitors the command signals it sends to the ignition coils and compares them against expected electrical feedback, and when the correlation falls outside the programmed threshold, it stores this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Engine misfire or rough running, especially under load or acceleration
- Reduced engine power or limp mode in some vehicles
- Difficulty starting or intermittent no-start conditions
- Poor fuel economy or increased emissions

Common causes, most likely first

- 1 Faulty engine control module (ECM) internal ignition coil driver circuit
- 2 Damaged or corroded wiring harness between the ECM and ignition coils
- 3 Poor electrical connections at the ignition coil connectors
- 4 Failed ignition coil causing excessive current draw that stresses the ECM driver
- 5 Voltage supply issues or ground faults affecting the ECM
- 6 Software corruption or calibration error within the ECM

How to diagnose and fix it

- 1 Perform a thorough visual inspection of the ignition coil wiring and connectors for damage or corrosion
- 2 Check for technical service bulletins (TSBs) or software updates for the ECM related to this code
- 3 Test the ignition coil primary and secondary resistance and compare to specifications
- 4 Measure voltage drops and continuity on the coil control circuits to rule out wiring faults
- 5 Swap ignition coils with a known-good cylinder to see if the misfire follows the coil
- 6 Reprogram or reflash the ECM with the latest calibration if available
- 7 Replace and program the ECM only after all other causes have been ruled out



When the ECM itself is the culprit

- A failing ignition coil can back-feed voltage spikes into the ECM and damage its internal driver, so always replace faulty coils before condemning the ECM.
- Many vehicles require ECM replacement to be performed by a dealer or with a pass-through programming tool, as the new module must be married to the vehicle's security system.
- Intermittent wiring faults can mimic an internal ECM failure, so wiggle-test the harness while monitoring live data to avoid unnecessary module replacement.
- This code can be set by a low battery or charging system issue that causes voltage fluctuations, so always verify battery and alternator health first.
- Some aftermarket ignition coils have incorrect resistance values that stress the ECM driver over time, leading to this code even when the coils seem to function.

Can I keep driving with P06D1?

Driving with P06D1 is not recommended because it can cause engine misfires that may damage the catalytic converter and lead to sudden loss of power. If you must drive, avoid heavy acceleration and have the vehicle inspected by a professional as soon as possible.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope for signal analysis
- Factory service information and wiring diagrams
- ECM programming tool (if applicable)

Reading P06D1

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
6	Computer and output circuits.
D1	The exact fault within that area.

Often seen with

P0351 Ignition Coil A Primary/Secondary Circuit Malfunction · **P0352** Ignition Coil B Primary/Secondary Circuit Malfunction · **P0353** Ignition Coil C Primary/Secondary Circuit Malfunction · **P0354** Ignition Coil D Primary/Secondary Circuit Malfunction · **P0355** Ignition Coil 'E' Primary/Secondary Circuit



See it working

Watch the animated explainer **Four-Stroke Engine Cutaway: Intake to Exhaust** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p06d1/>

