

SUZUKI · POWERTRAIN

P1705

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1705 · Suzuki

TCM ECT Sensor Circuit Fault

P1705 on Suzuki vehicles means the Transmission Control Module (TCM) has detected a fault in the Engine Coolant Temperature (ECT) sensor circuit it relies on for shift scheduling. The TCM compares the coolant temperature signal it receives against expected values and flags the code when the signal is out of range, intermittent, or missing entirely.

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

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- Harsh or delayed shifting, especially when the engine is cold, because the TCM defaults to a fixed shift strategy.
- The transmission may hold lower gears longer or refuse to enter overdrive until the fault clears.
- Poor fuel economy from the altered shift points and torque converter lockup strategy.
- Often no symptoms besides the warning light, particularly if the fault is intermittent.
- In some cases the transmission enters limp mode with a single fixed gear.

Common causes, most likely first

- 1 A failed or degraded engine coolant temperature sensor that no longer produces a reliable resistance curve.
- 2 Corroded, loose, or pushed-back pins in the ECT sensor connector or the TCM connector.
- 3 A chafed or open signal wire between the ECT sensor and the TCM, often near the engine harness routing.
- 4 A short to ground or short to voltage on the ECT signal circuit.
- 5 A faulty thermostat stuck open, causing the coolant temperature to stay below the range the TCM expects.
- 6 Low coolant level or trapped air in the cooling system giving the sensor an inaccurate reading.
- 7 An internal TCM fault in the temperature input circuit, though this is the least common cause.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1705, then clear the code and verify whether it returns immediately or only after a cold start.
- 2 Inspect the ECT sensor connector and the TCM connector for corrosion, loose pins, or pushed-back terminals, and repair as needed.
- 3 Measure the ECT sensor resistance with a multimeter at known coolant temperatures and compare against Suzuki specifications for the engine in the vehicle.
- 4 Back-probe the ECT signal wire at the TCM and compare the voltage or resistance reading with the sensor value to isolate a wiring fault.
- 5 Check the cooling system for correct coolant level, a stuck-open thermostat, and proper bleed procedure, since a cold-running engine can set this code.
- 6 If wiring and sensor check out, substitute a known-good ECT sensor and re-test before condemning the TCM.
- 7 Only after all circuit and sensor tests pass should the TCM be suspected, and then only with a confirmed internal fault diagnosis.

Why a cold engine can set P1705

- A thermostat stuck open is a commonly missed cause because the ECT sensor itself tests fine, but the coolant never reaches the temperature the TCM expects.
- The TCM often shares the ECT signal with the engine control module, so a fault in that shared circuit can set P1705 alongside engine-side temperature codes.
- Intermittent connector faults at the ECT sensor frequently appear only on cold mornings or over rough roads, so a wiggle test of the harness is essential.
- Replacing the ECT sensor without checking the thermostat and coolant level leads to a repeat code and unnecessary parts cost.
- P1705 does not automatically mean the transmission is damaged; the TCM is reporting an input signal problem, not a mechanical failure.

Can I keep driving with P1705?

You can usually drive the vehicle to a workshop, but expect harsh shifting and reduced fuel economy, and avoid heavy towing or aggressive acceleration until the fault is repaired. If the transmission enters limp mode or the warning light flashes, stop and arrange a diagnostic scan before continuing.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement
- Back-probe kit or fine test leads
- Suzuki service information for ECT sensor resistance specifications
- Coolant refractometer or hydrometer for checking coolant condition
- Basic hand tools for connector and sensor access

Reading P1705

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

Often seen with

P0115 Engine Coolant Temperature Circuit Malfunction · **P0116** Engine Coolant Temperature Circuit Range/Performance · **P0117** Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P0128** Coolant Thermostat (Coolant Temperature Below Thermostat Reg

See it working

Watch the animated explainer [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/suzuki-p1705/>

