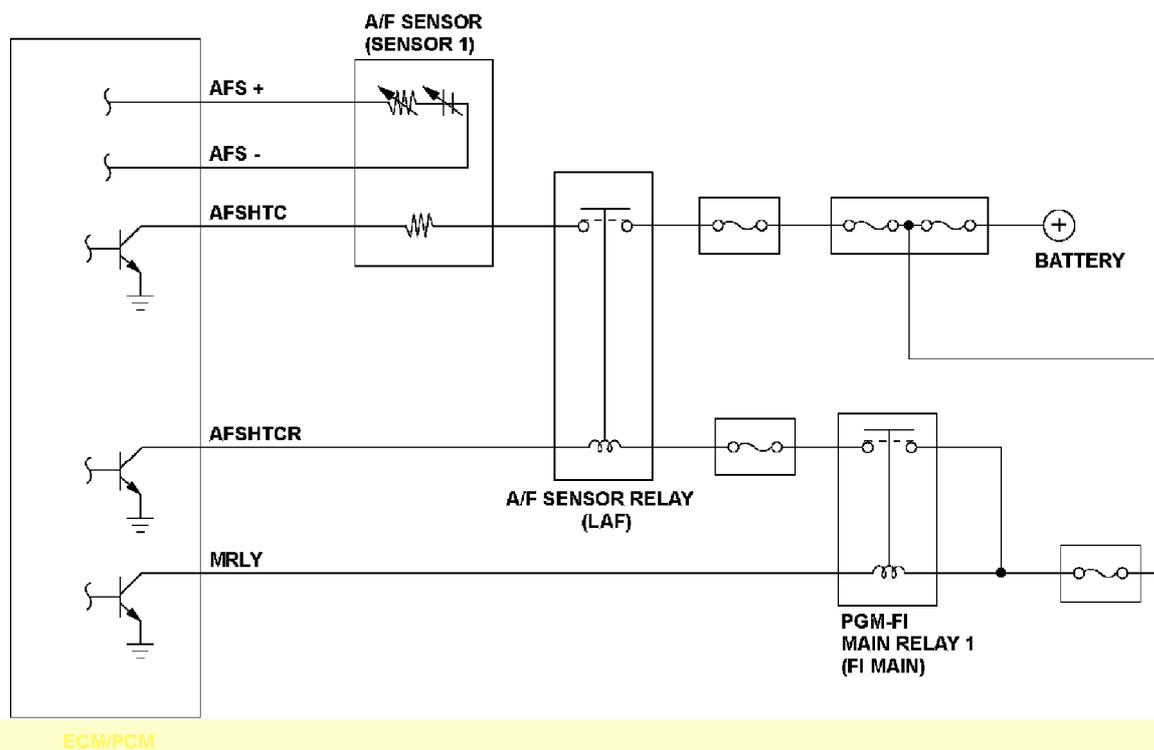


ALL Diagnostic Trouble Codes (DTC): P Code Charts

Air/Fuel Ratio (A/F) Sensor (Sensor 1) Heater Circuit Malfunction

DTC P0135: Air/Fuel Ratio (A/F) Sensor (Sensor 1) Heater Circuit Malfunction



General Description

A heater for the sensor element is embedded in the air/fuel ratio (A/F) sensor (Sensor 1), and it is controlled by the engine control module (ECM)/powertrain control module (PCM). It is activated and heats the sensor to stabilize and speed up the detection of oxygen content when the exhaust gas temperature is cold.

If the A/F sensor (Sensor 1) heater current is not a set value, or the heater is overheated, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

Execution	Continuous
Sequence	None
Duration	—
DTC Type	One drive cycle, MIL ON
OBD Status	PASSED/FAILED/NOT COMPLETED (STILL TESTING)

Monitor Execution, Sequence, Duration, DTC Type, OBD Status

Enable Conditions

Condition	Minimum	Maximum
Engine coolant temperature	68 °F (20 °C)	—
Battery voltage	10.5 V	—
State of the engine	Running	
No active DTCs	P0117, P0118, P0134, P1157, P2195, P2238, P2252	

Enable Conditions

Malfunction Threshold

One of these conditions must be met.

- The heater current is **0.8 A** or less for **at least 4 seconds** while the heater is activated, and the heater current is **0.8 A** or more for **at least 4 seconds** while the heater is not activated.
- The heater current is **15.2 A** or more for **at least 0.6 second**.

Driving Pattern

Start the engine. Hold the engine speed at **3,000 rpm** without load (in Park or neutral) until the radiator fan comes on, then let it idle.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the ECM/PCM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.