

DTC	P0115	Engine Coolant Temp. Circuit Malfunction
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CIRCUIT DESCRIPTION

A thermistor built into the engine coolant temperature sensor changes the resistance value according to the engine coolant temperature. The structure of the sensor and connection to the ECM is the same as in the intake air temp. circuit malfunction shown on page DI-26 .

If the ECM detects the DTC P0115, it operates the fail-safe function in which the engine coolant temp. is assumed to be 80°C (176°F).

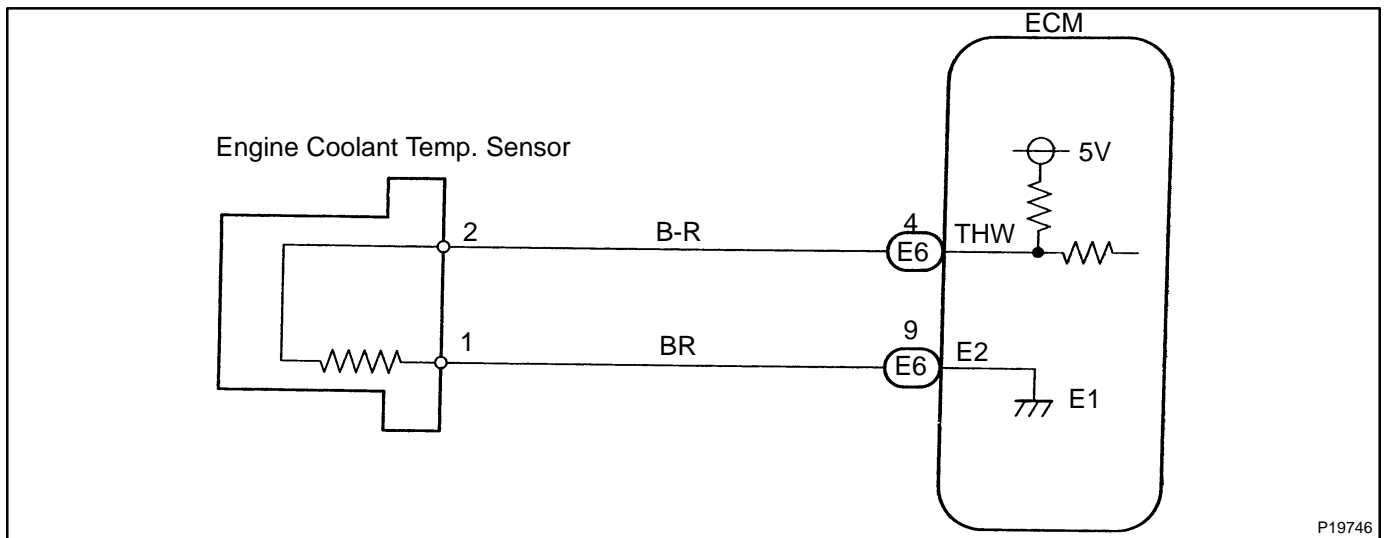
DTC No.	DTC Detecting Condition	Trouble Area
P0115	Open or short in engine coolant temp. sensor circuit	<ul style="list-style-type: none"> • Open or short in engine coolant temp. sensor circuit • Engine coolant temp. sensor • ECM

HINT:

After confirming DTC P0115 use the OBD II scan tool or TOYOTA hand-held tester to confirm the engine coolant temperature from "CURRENT DATA".

Temperature Displayed	Malfunction
-40 °C (-40 °F)	Open circuit
140 °C (284 °F) or more	Short circuit

WIRING DIAGRAM



P19746

INSPECTION PROCEDURE

HINT:

If DTC "P0105" (Manifold Absolute Pressure/Barometric Pressure Circuit Malfunction), "P0106" (Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance Problem), "P0110" (Intake Air Temp. Circuit Malfunction), "P0115" (Engine Coolant Temp. Circuit Malfunction), "P0120" (Throttle/Pedal Position Sensor/Switch "A" Circuit Malfunction) are output simultaneously, E2 (sensor ground) may be open.

1	Connect OBD II scan tool or TOYOTA hand-held tester, and read value of engine coolant temperature.
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PREPARATION:

- (a) Remove the fuse cover on the instrument panel.
- (b) Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- (c) Turn ignition switch ON and OBD II scan tool or TOYOTA hand-held tester main switch ON.

CHECK:

Read temperature value on the OBD II scan tool or TOYOTA hand-held tester.

OK:

Same as actual engine coolant temperature

HINT:

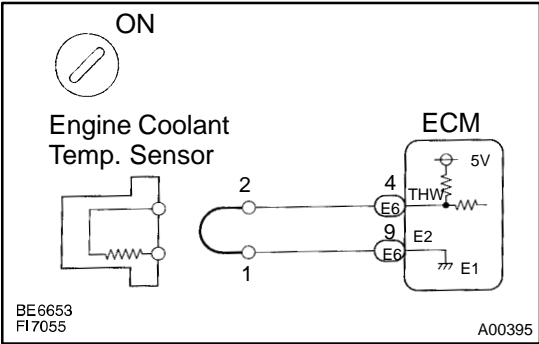
- If there is open circuit, OBD II scan tool or TOYOTA hand-held tester indicates -40°C (-40°F).
- If there is short circuit, OBD II scan tool or TOYOTA hand-held tester indicates 140°C (284°F) or more.

NG	-40 °C (-40°F) ... Go to step 2. 140 °C (284°F) or more ... Go to step 4.
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OK

**Check for intermittent problems
(See page [DI-3](#)).**

2 Check for open in harness or ECM.



PREPARATION:

- (a) Disconnect the engine coolant temp. sensor connector.
- (b) Connect sensor wire harness terminals together.
- (c) Turn ignition switch ON.

CHECK:

Read temperature value on the OBD II scan tool or TOYOTA hand-held tester.

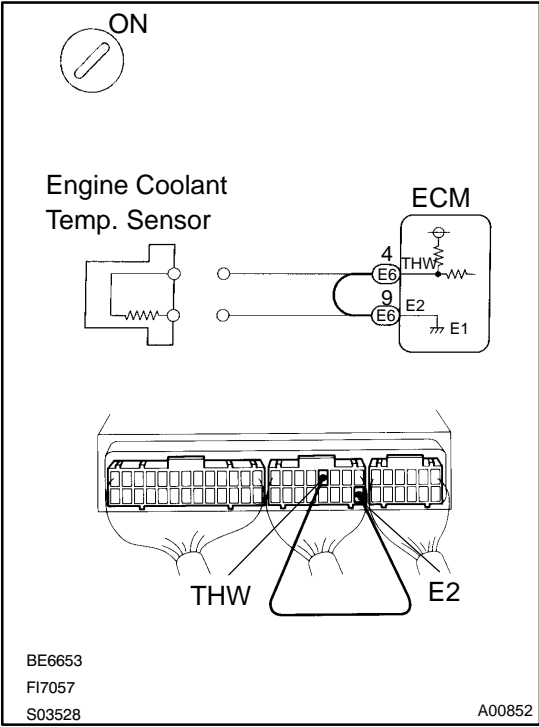
OK:

Temperature value: 140°C (284°F) or more

OK Confirm good connection at sensor. If OK, replace engine coolant temp. sensor

NG

3 Check for open in harness or ECM.



PREPARATION:

- (a) Remove the lower finish panel.
- (b) Connect between terminals THW and E2 of ECM connector.

HINT:

Engine coolant temp. sensor connector is disconnected. Before checking, do a visual and contact pressure check for the ECM connector (See page IN-27).

- (c) Turn ignition switch ON.

CHECK:

Read temperature value on the OBD II scan tool or TOYOTA hand-held tester.

OK:

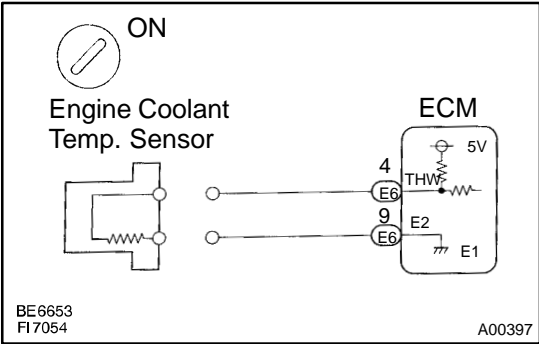
Temperature value: 140°C (284°F) or more

OK Open in harness between terminal E2 or terminal THW, repair or replace harness.

NG

Confirm good connection at ECM. If OK, replace ECM.

4 Check for short in harness and ECM.



PREPARATION:

- (a) Disconnect the engine coolant temp. sensor connector.
- (b) Turn ignition switch ON.

CHECK:

Read temperature value on the OBD II scan tool or TOYOTA hand-held tester.

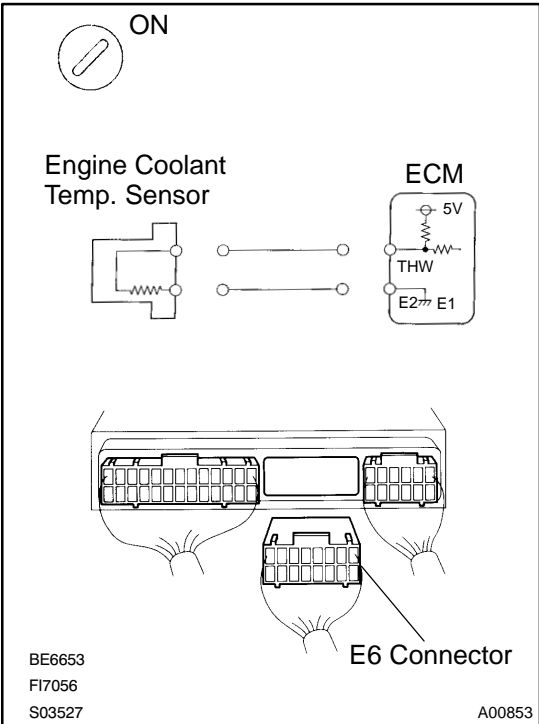
OK:

Temperature value: -40°C (-40°F)

OK → Replace engine coolant temp. sensor.

NG

5 Check for short in harness or ECM.



PREPARATION:

- (a) Remove the lower finish panel.
- (b) Disconnect the E6 connector of ECM.

HINT:

Engine coolant temp. sensor connector is disconnected.

- (c) Turn ignition switch ON.

CHECK:

Read temperature value on the OBD II scan tool or TOYOTA hand-held tester.

OK:

Temperature value: -40°C (-40°F)

OK → Repair or replace harness or connector.

NG

Check and replace ECM (See page IN-27).