

DTC	P0115	ENGINE COOLANT TEMP. CIRCUIT MALFUNCTION
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CIRCUIT DESCRIPTION

A thermistor built into the water temp. sensor changes the resistance value according to the water temperature.

The structure of the sensor and connection to the ECM is the same as the ones of the air temperature sensor. If the ECM detects the DTC P0115, it operates the fail-safe functions in which the engine coolant temperature is assumed to be 80°C (176°F).

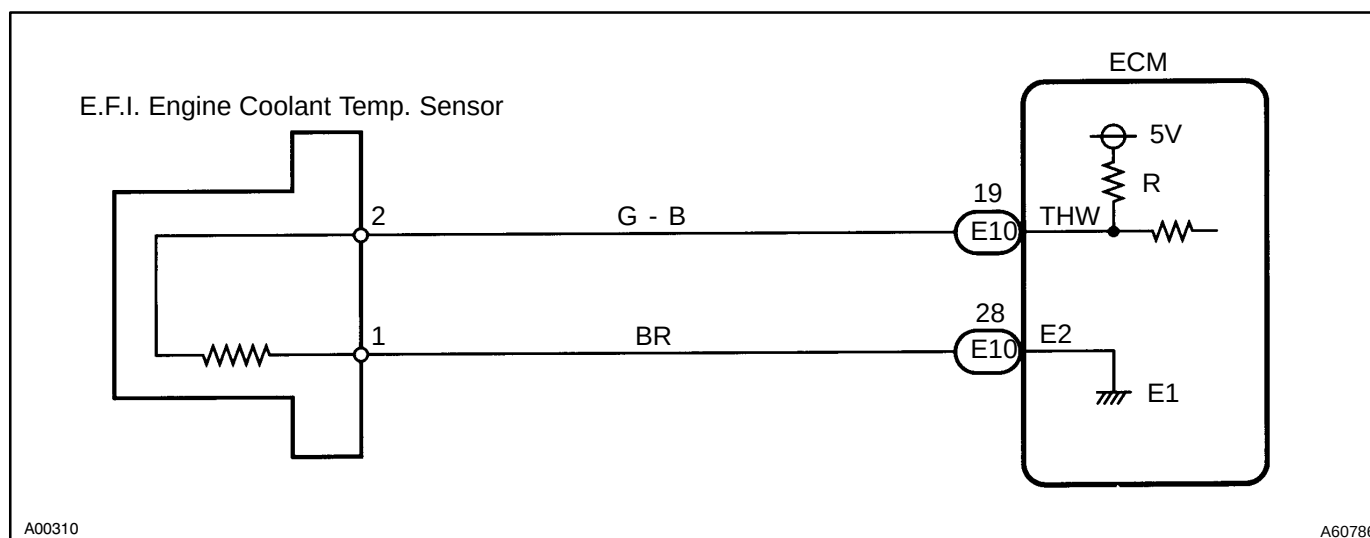
DTC No.	DTC Detecting Condition	Trouble Area
P0115	Open or short in water temp. sensor circuit	• Open or short in water temp. sensor circuit • E.F.I. engine coolant temperature sensor • ECM

HINT:

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

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

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If DTC P0110 (Intake Air Temp. Circuit Malfunction), P0115 (Water Temp. Circuit Malfunction), P0120 (Throttle/Pedal Position Sensor/Switch "A" Malfunction) are output simultaneously, E1, E2 etc. (Sensor Ground system) may be open.
- Read freeze frame data using hand-held tester. Because freeze frame records the engine conditions when the malfunction is detected, when troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.

1 READ VALUE OF OBD II SCAN TOOL OR HAND-HELD TESTER(COOLANT TEMP/WATER TEMP)

- (a) Read temperature value on the hand-held tester.

Temperature: The same as actual water temperature

Result:

A	B	C
-40 °C (-40°F)	140°C (284°F)	OK

B

Go to step 4

C

CHECK FOR INTERMITTENT PROBLEMS

A

2 READ VALUE OF OBD II SCAN TOOL OR HAND-HELD TESTER(CHECK FOR OPEN)

SST 09843-18040



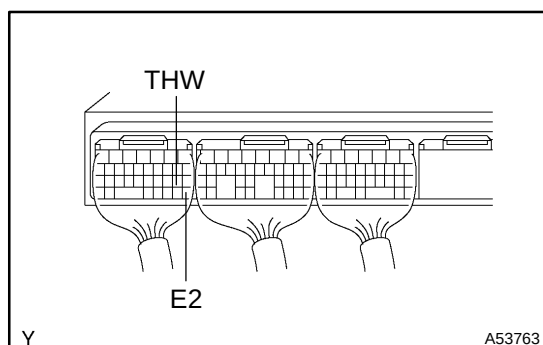
- (a) Disconnect the water temperature sensor connector.
 - (b) Connect the terminals 1 with 2 of the water temperature sensor connector.
 - (c) Turn the ignition switch ON.
 - (d) Read temperature value on the hand-held tester.
- Temperature: 140°C (284°F) or more**

OK

REPLACE E.F.I. ENGINE COOLANT TEMPERATURE SENSOR

NG

3 READ VALUE OF OBD II SCAN TOOL OR HAND-HELD TESTER(CHECK FOR OPEN)



- (a) Connect the terminals THW with E2 of the ECM connector.
 - (b) Turn the ignition switch ON.
 - (c) Read temperature value on the hand-held tester.
- Temperature: 140°C (284°F) or more**

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR

NG

CHECK AND REPLACE ECM

4	READ VALUE OF OBD II SCAN TOOL OR HAND-HELD TESTER(CHECK FOR SHORT)
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- (a) Disconnect the water temp. sensor connector.
- (b) Turn the ignition switch ON.
- (c) Read temperature value on the hand-held tester.

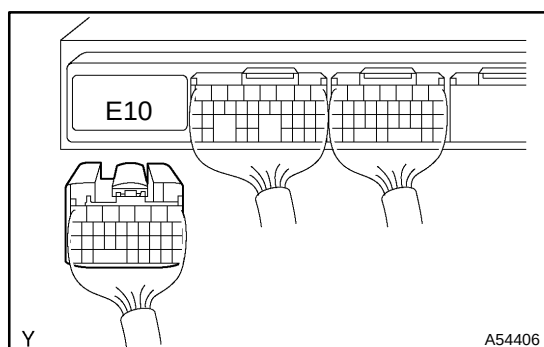
Temperature: -40°C (-40°F)

OK

REPLACE E.F.I. ENGINE COOLANT TEMPERATURE SENSOR

NG

5	READ VALUE OF OBD II SCAN TOOL OR HAND-HELD TESTER(CHECK FOR SHORT)
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- (a) Disconnect the ECM E10 connector.
- (b) Turn the ignition switch ON.
- (c) Read temperature value on the hand-held tester.

Temperature: -40°C (-40°F)

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR

NG

CHECK AND REPLACE ECM