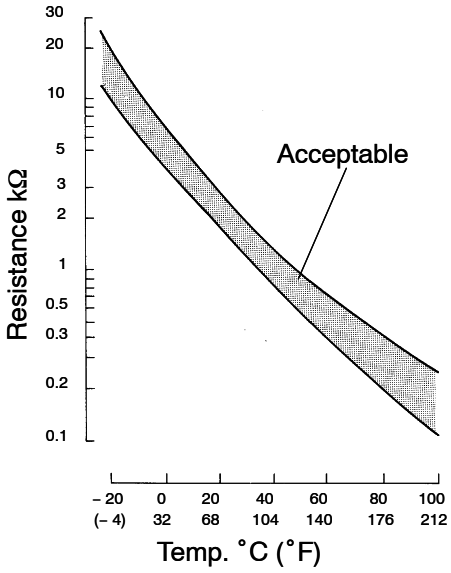
DTC 39 FUEL TEMPERATURE TOO HIGH

CIRCUIT DESCRIPTION

(Fig. 1)



The fuel temperature sensor senses the fuel temperature. A thermistor built into the sensor changes the resistance value according to the fuel temperature. The lower the fuel temperature is, the greater the thermistor resistance value is, and the higher the fuel temperature is, the lower the thermistor resistance value is (See Fig. 1).

The fuel temperature sensor is connected to the ECM (See below). A 5 V power source voltage in the ECM is applied to the fuel temperature sensor from terminal THF via a resistor R. That is, the resistor R and the fuel temperature sensor are connected in series. When the resistance value of the fuel temperature sensor changes in accordance with changes in the fuel temperature, potential at terminal THF also changes. Based on this signal, the ECM increases the fuel injection volume to improve driveability during low engine revolution and high fuel temperature.

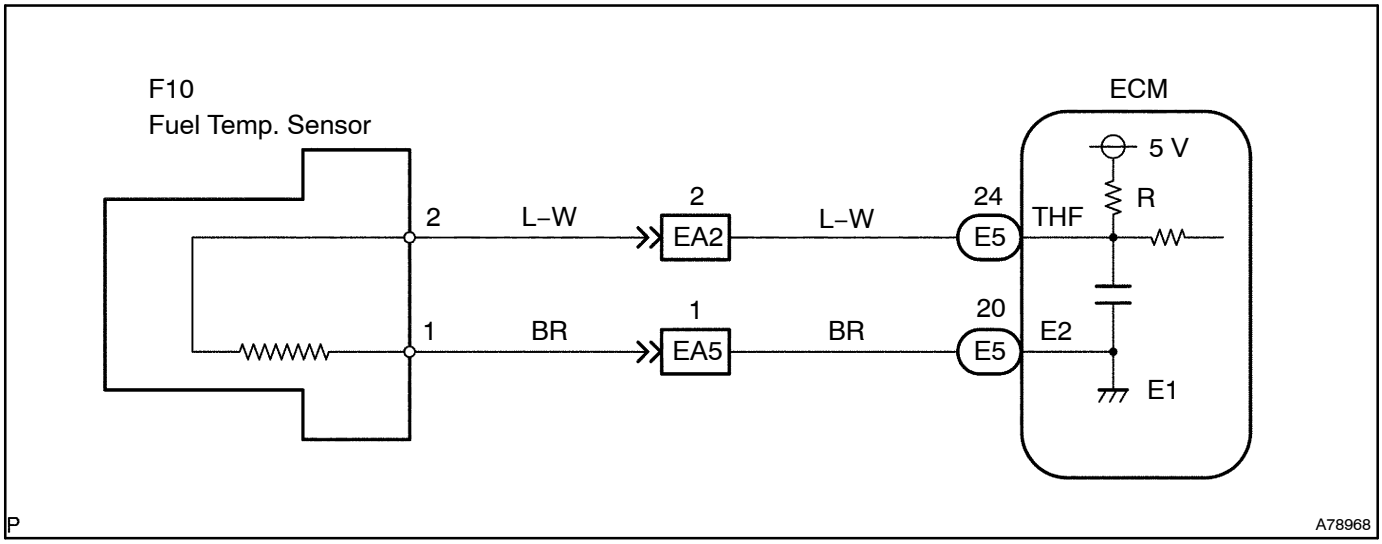
DTC No.	DTC Detection Condition	Trouble Area
39	Open or short in fuel temp. sensor circuit for 0.5 sec. or more	• Open or short in fuel temp. sensor circuit • Fuel temp. sensor • ECM

HINT:

After confirming DTC 39, use the hand–held tester to check the fuel temperature from the CURRENT DATA.

Temperature displayed	Malfunction
–40°C (–40°F)	Open circuit
140°C (284°F) or more	Short circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If DTCs 22, 24, 35 and 39 are output simultaneously, terminal E2 (sensor ground) may be open.
- Read freeze frame data using the hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

When using hand–held tester:

1	READ VALUE OF HAND–HELD TESTER

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch ON and push the hand–held tester main switch ON.
(c) Read the temperature value on the hand–held tester.

Standard: The same as the actual water temperature.

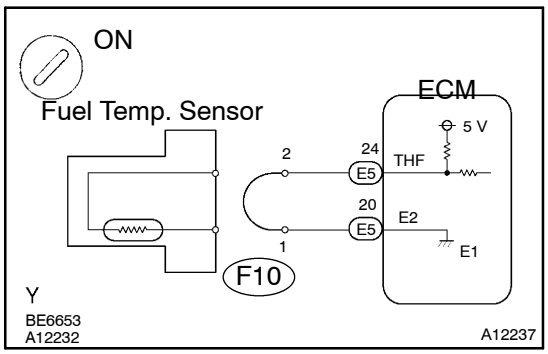
- If there is an open circuit, the hand–held tester indicates –40°C (–40°F). Proceed to A.
- If there is a short circuit, the hand–held tester indicates 140°C (284°F) or more. Proceed to B.

A	Go to step 2
B	Go to step 4

OK

CHECK FOR INTERMITTENT PROBLEMS

2 READ VALUE OF HAND–HELD TESTER

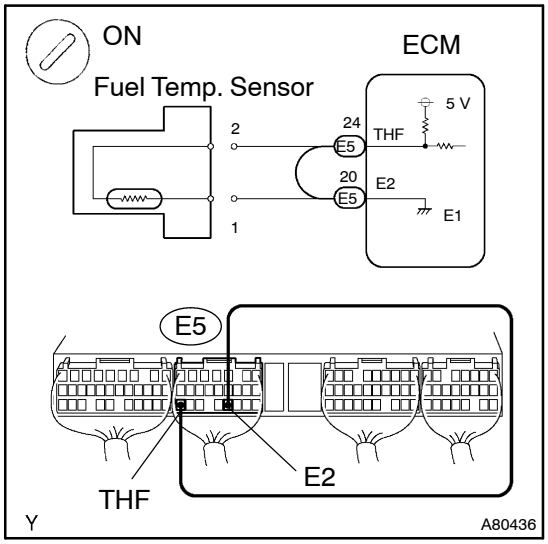


(a) Connect the hand–held tester to the DLC3.
(b) Connect the F10 sensor wire harness terminals together.
(c) Turn the ignition switch ON and push the hand–held tester main switch ON.
Standard: 140˚C (284˚F) or more

OK → **REPLACE FUEL PUMP**

NG

3 READ VALUE OF HAND–HELD TESTER



(a) Connect the hand–held tester to the DLC3.
(b) Connect terminals THF and E2 of the E5 ECM connector.

The fuel temperature sensor connector is disconnected. Before checking, perform a visual and contact pressure check for the ECM connector.

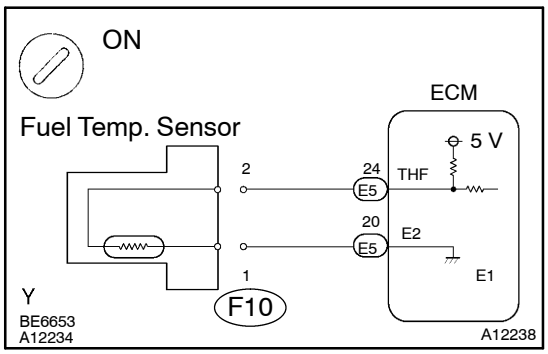
(c) Turn the ignition switch ON and push the hand–held tester main switch ON.
Standard: 140˚C (284˚F) or more

OK → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

NG

REPLACE ECM

4 READ VALUE OF HAND–HELD TESTER

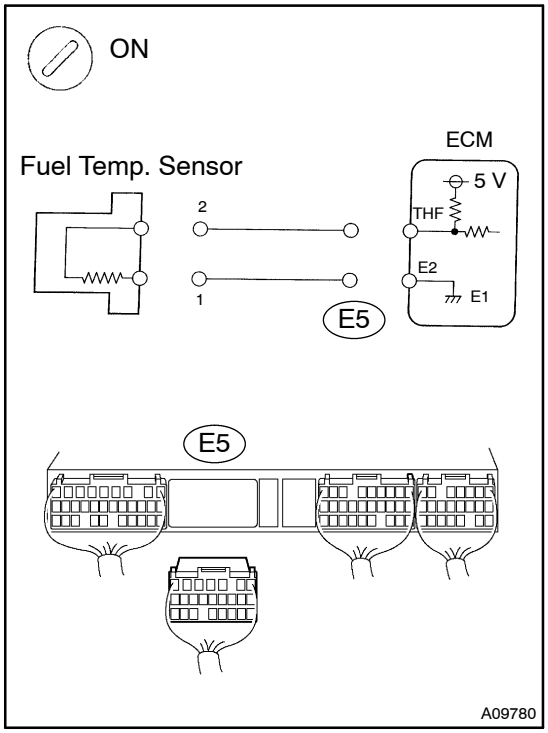


(a) Connect the hand–held tester to the DLC3.
(b) Disconnect the F10 fuel temp. sensor connector.
(c) Turn the ignition switch ON and push the hand–held tester main switch ON.
Standard: –40˚C (–40˚F)

OK	REPLACE FUEL TEMPERATURE SENSOR

NG

5 READ VALUE OF HAND–HELD TESTER



(a) Disconnect the E5 connector from the ECM.
(b) The fuel temperature sensor connector is disconnected.
(c) Turn the ignition switch ON.
Standard: –40˚C (–40˚F)

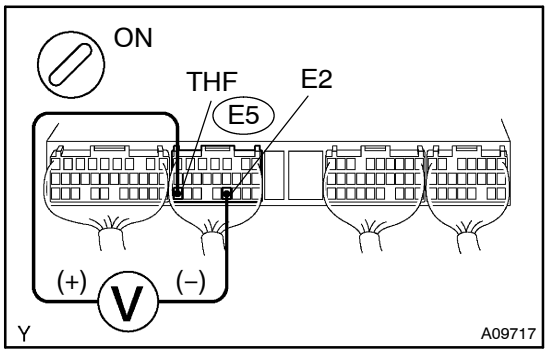
OK	REPAIR OR REPLACE HARNESS AND CONNECTOR

NG

CHECK AND REPLACE ECM (See page 01–27)

When not using hand–held tester:

1	CHECK ECM



(a) Turn the ignition switch ON.
(b) Measure the voltage between terminals THF and E2 of the E5 ECM connector.
Voltage:

Fuel Temp. °C (°F)	Voltage
20 (68) (Engine is cool)	0.2 – 3.8 V
80 (176) (Engine is hot)	0.1 – 1.5 V

OK → CHECK FOR INTERMITTENT PROBLEMS

NG

2	CHECK FUEL TEMPERATURE SENSOR (See page 10–1)

NG → REPLACE FUEL TEMPERATURE SENSOR

OK

3	CHECK WIRE HARNESS (ECM ⇔ FUEL TEMPERATURE SENSOR) (See page 01–27)

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

CHECK AND REPLACE ECM (See page 01–27)