

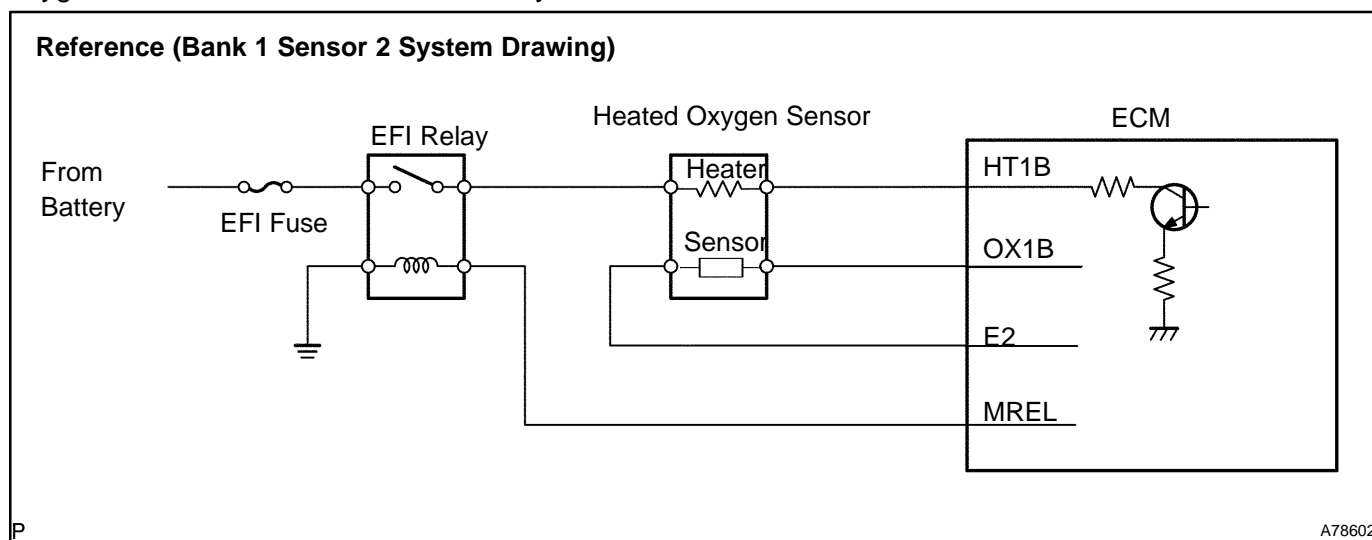
DTC	P0037	OXYGEN SENSOR HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 2)
DTC	P0038	OXYGEN SENSOR HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 2)
DTC	P0057	OXYGEN SENSOR HEATER CONTROL CIRCUIT LOW (BANK 2 SENSOR 2)
DTC	P0058	OXYGEN SENSOR HEATER CONTROL CIRCUIT HIGH (BANK 2 SENSOR 2)

CIRCUIT DESCRIPTION

Refer to DTC P0136 on page [05-73](#) .

HINT:

The ECM provides a pulse width modulated control circuit to adjust current through the heater. The heated oxygen sensor heater circuit uses a relay on the B+ side of the circuit.



DTC No.	DTC Detection Condition	Trouble Area
P0037 P0057	Heated current is 0.2 A or less when heater operates with +B > 10.5 V and < 11.5 V (1 trip detection logic) Heated current is 0.25 A or less when heater operates with +B \geq 11.5 V (1 trip detection logic)	<ul style="list-style-type: none"> • Open or short in heater circuit of heated oxygen sensor • Heated oxygen sensor heater • EFI relay • ECM
P0038 P0058	When heater operates, heated current exceeds 2 A (1 trip detection logic)	

HINT:

- Bank 1 refers to the bank that includes cylinder No.1.
- Bank 2 refers to the bank that does not include cylinder No.1.
- Sensor 1 refers to the sensor closest to the engine assembly.
- Sensor 2 refers to the sensor farthest away from the engine assembly.

WIRING DIAGRAM

Refer to DTC P0136 on page [05-73](#) .

4RUNNER Supplement (RM1034U)

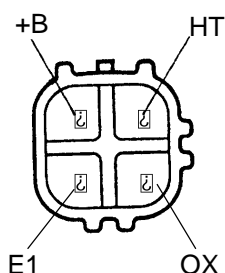
INSPECTION PROCEDURE

HINT:

- If different DTCs that are related to a different system are output simultaneously while terminal E2 is used as a ground terminal, terminal E2 may be open.
- Read freeze frame data using the hand-held tester or the OBD II scan tool, 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.

1 INSPECT HEATED OXYGEN SENSOR(HEATER RESISTANCE)

Bank 1, 2 Sensor 2



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- Disconnect the heated oxygen sensor connector.
- Measure the resistance between the terminals of the heated oxygen sensor connector.

Standard (Bank 1, 2 sensor 2):

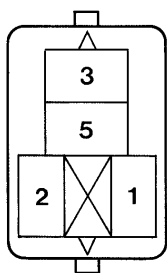
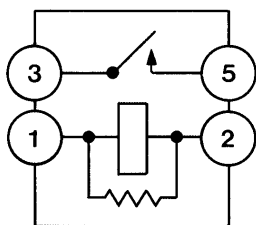
Terminal No.	Resistance
1 (HT) - 2 (+B)	5 to 10 Ω at 20 °C (68 °F)
1 (HT) - 4 (E1)	No Continuity

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REPLACE HEATED OXYGEN SENSOR

OK

2 INSPECT EFI RELAY



B16200

- Remove the EFI relay from the engine room R/B.
- Inspect the EFI relay.

Standard:

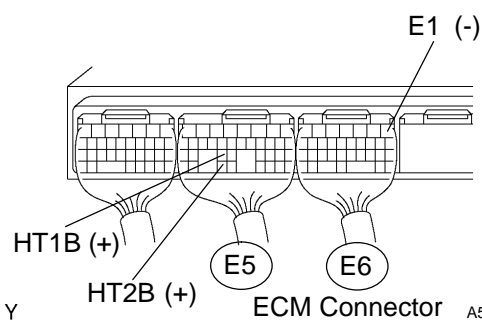
Terminal No.	Specified condition
1 - 2	Continuity
3 - 5	No Continuity
	Continuity (Apply battery voltage terminals 1 and 2)

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REPLACE EFI RELAY

OK

3 INSPECT ECM(HT1B OR HT2B VOLTAGE)



A53763

- Turn the ignition switch ON.
- Measure the voltage between the applicable terminals of the E5 and E6 ECM connectors.

Standard:

Symbols (Terminal No.)	Specified condition
HT1B (E5-25) - E1 (E6-1)	9 to 14 V
HT2B (E5-33) - E1 (E6-1)	

HINT:

- The HT1B means the heated oxygen sensor bank 1 sensor 2.
- The HT2B means the heated oxygen sensor bank 2 sensor 2.

OK

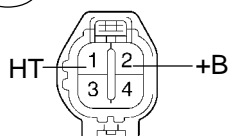
CHECK AND REPLACE ECM
 (See page 01-35)

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**CHECK HARNESS AND CONNECTOR(HEATED OXYGEN SENSOR - ECM,
HEATED OXYGEN SENSOR - EFI RELAY)**
Wire Harness Side

- (H6) Bank 1 Sensor 2
(H8) Bank 2 Sensor 2



Heated Oxygen Sensor Connector

A72895

- (a) Check the harness and connector between the ECM and heated oxygen sensor connectors.

- (1) Disconnect the H6 or H8 heated oxygen sensor connector.
- (2) Disconnect the E5 ECM connector.
- (3) Check for continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
HT (H6-1) - HT1B (E5-25)	Continuity
HT (H8-1) - HT2B (E5-33)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
HT (H6-1) or HT1B (E5-25) - Body ground	No continuity
HT (H8-1) or HT2B (E5-33) - Body ground	

- (b) Check the harness and connector between the heated oxygen sensor connector and EFI relay.

- (1) Disconnect the H6 or H8 heated oxygen sensor connector.
- (2) Remove the EFI relay from the engine room R/B.
- (3) Check for continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
+B (H6-2) - EFI relay (3)	Continuity
+B (H8-2) - EFI relay (3)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
+B (H6-2) or EFI relay (3) - Body ground	No continuity
+B (H8-2) or EFI relay (3) - Body ground	

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**REPAIR OR REPLACE HARNESS OR
CONNECTOR**

OK

CHECK AND REPLACE ECM (See page 01-35)