DTC	P0135	HEATED OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION (BANK 1 SENSOR 1)

DTC	P0141	HEATED OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION (BANK 1 SENSOR 2)

CIRCUIT DESCRIPTION

Refer to DTC P0125 on page 05–44.

DTC No	DTC Detecting Condition	Trouble Area
P0135 P0141	When heater operates, heater current exceeds 2 A (2 trip detection logic)	• Open or short in heater circuit of heated oxygen sensor • Heated oxygen sensor heater • ECM
	Heater current of 0.2 A or less when heater operates (2 trip detection logic)	

HINT:

- Bank 1 refers to the bank that includes cylinder No. 1.
- Sensor 2 refers to the sensor being farther from the engine body.

WIRING DIAGRAM

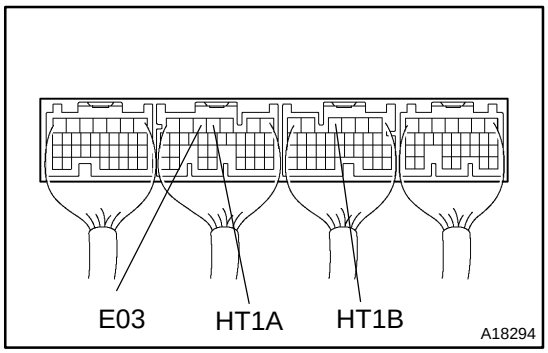
Refer to DTC P0125 on page 05–44.

INSPECTION PROCEDURE

HINT:

Read freeze frame data using hand–held tester or OBD II scan tool. 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	INSPECT ECM(CHECK VOLTAGE)

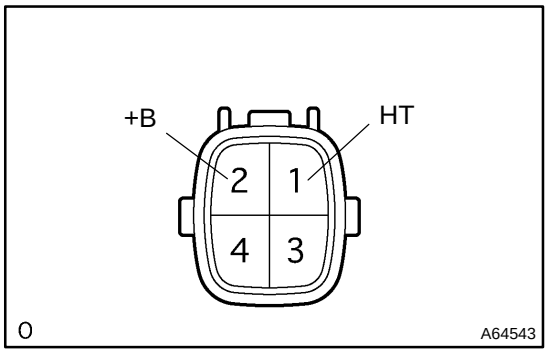


(a) Turn the ignition switch ON.
(b) Measure voltage between the terminals HT1A and E03 of the ECM connector.
Voltage: 9 – 14 V
(c) Measure voltage between the terminals HT1B and E03 of the ECM connector.
Voltage: 9 – 14 V

OK → **CHECK AND REPLACE ECM**

NG

2 CHECK OXYGEN SENSOR(OXYGEN SENSOR HEATER)

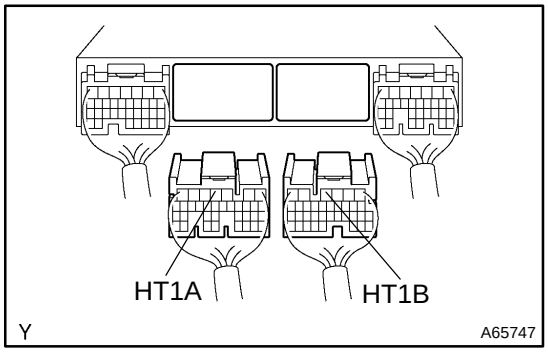


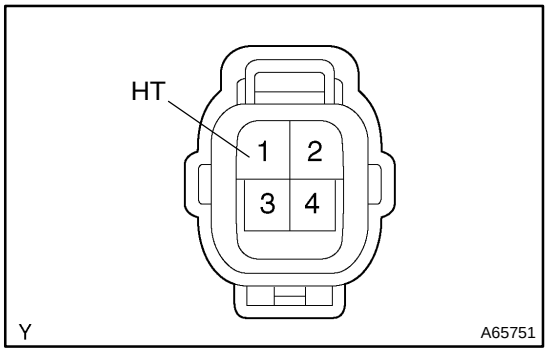
(a) Disconnect the oxygen sensor connector.
(b) Measure resistance between the terminals HT and +B of the oxygen sensor.
Resistance:
Bank1 Sensor1 at 20°C (68°F) 5 – 16 Ω
Bank1 Sensor2 at 20°C (68°F) 11 – 16 Ω

NG → **REPLACE OXYGEN SENSOR**

OK

3 CHECK HARNESS AND CONNECTOR(ECM–OXYGEN SENSOR)





(a) Disconnect the oxygen sensor connector.
(b) Disconnect the ECM E4 and E5 connector.
(c) Check continuity between the terminals HT of the oxygen sensor (Bank 1 sensor 1) and HT1A of the ECM connector.
Resistance: 1 Ω or less
(d) Check for short between the terminals HT1A and E03 of the ECM connector.
Resistance: 1 MΩ or more
(e) Check continuity between the terminals HT of the oxygen sensor (Bank 1 sensor 2) and HT1B of the ECM connector.
Resistance: 1 Ω or less
(f) Check for short between the terminals HT1B and E03 of the ECM connector.
Resistance: 1 MΩ or more

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

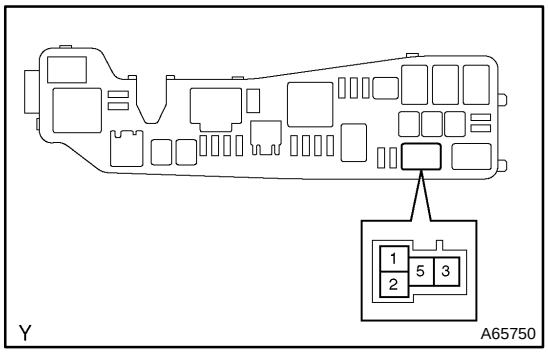
OK

4 CHECK CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–148)

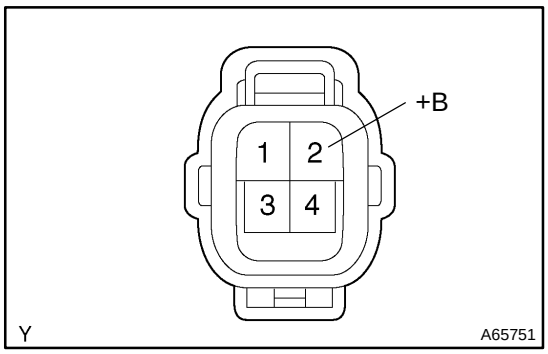
NG → **REPAIR OR REPLACE CHECK FOR ECM POWER SOURCE CIRCUIT**

OK

5	CHECK HARNESS AND CONNECTOR(E.F.I. RELAY–OXYGEN SENSOR)



(a) Disconnect the battery negative (–) terminal.
(b) Disconnect the oxygen sensor connector.
(c) Check continuity between the terminals 5 of the E.F.I. relay side connector and +B of the oxygen sensor connector.
Resistance: 1 Ω or less



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

OK

CHECK AND REPLACE ECM