DTC	P0135/21	OXYGEN SENSOR HEATER CIRCUIT (BANK 1 SENSOR 1)

CIRCUIT DESCRIPTION

Refer to DTC P0130/21 on page 05–127.

DTC No	DTC Detecting Condition	Trouble Area
P0135/21	Open or short in heater circuit of oxygen sensor for 0.5 sec. or more	• Open or short in heater circuit of oxygen sensor • Heated oxygen sensor • ECM

HINT:
Sensor 1 refers to the sensor closer to the engine body.

WIRING DIAGRAM

Refer to DTC P0130/21 on page 05–127.

INSPECTION PROCEDURE

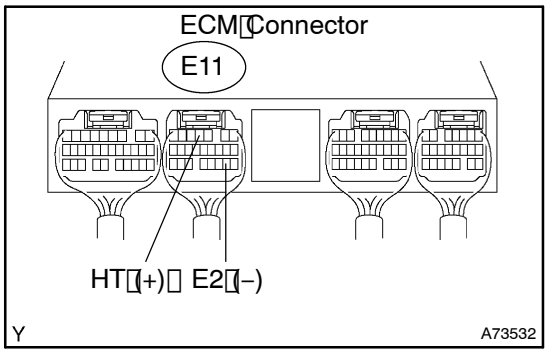
HINT:
Read freeze frame data using hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

1	INSPECT HEATED OXYGEN SENSOR (See page 12–5)

NG → REPLACE HEATED OXYGEN SENSOR

OK

2	CHECK ECM (HT VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between the terminals E11 ECM connector.

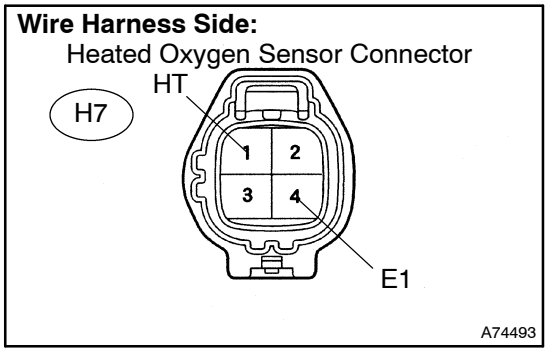
Voltage:

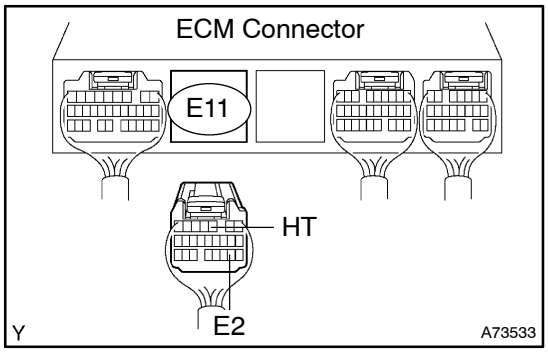
Symbols (Terminal No.)	Specified condition
HT (E11–4) ⇔ E2 (E11–18)	9 – 14 V

OK → CHECK AND REPLACE ECM (See page 01–36)

NG

3 CHECK HARNESS AND CONNECTOR (HEATED OXYGEN SENSOR ⇔ ECM)





(a) Disconnect the H7 heated oxygen sensor connector.
(b) Disconnect the E11 ECM connector.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (terminal No.)	Specified condition
HT (H7–1) ⇔ HT (E11–4)	Continuity
E1 (H7–4) ⇔ E2 (E11–18)	

Standard (Check for short):

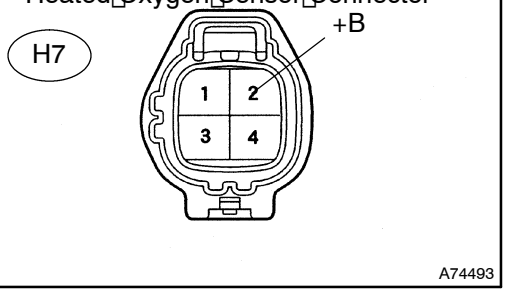
Symbols (terminal No.)	Specified condition
HT (H7–1) or HT (E11–4) ⇔ Other terminal and body ground	No continuity

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

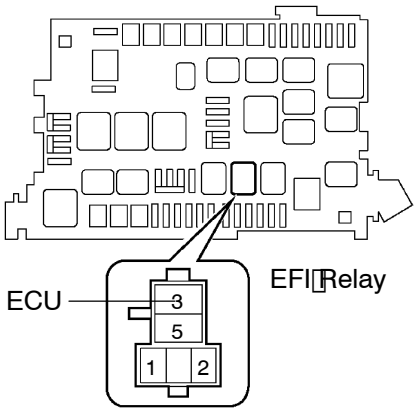
OK

4	CHECK HARNESS AND CONNECTOR (HEATED OXYGEN SENSOR ⇔ EFI RELAY)

Wire Harness Side:
Heated Oxygen Sensor Connector



Engine Room R/B



(a) Disconnect the H7 heated oxygen sensor connector.
(b) Remove the EFI relay.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (terminal No.)	Specified condition
+B (H7–2) ⇔ ECU (EFI relay terminal 3 of R/B)	Continuity

Standard (Check for short):

Symbols (terminal No.)	Specified condition
+B (H7–2) or ECU (EFI relay terminal 3 of R/B) ⇔ Other terminals and body ground	No continuity

NOTICE:
Do not insert the tester hard in the procedure (c), or the holder may be damaged.

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

OK →

CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–158)