

DTC	P0134	OXYGEN SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 SENSOR 1)
------------	--------------	---

DTC	P0154	OXYGEN SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 2 SENSOR 1)
------------	--------------	---

CIRCUIT DESCRIPTION

Refer to DTC P0130 on page [05-60](#) .

DTC No.	DTC Detecting Condition	Trouble Area
P0134 P0154	After engine is warmed up, heated oxygen sensor (bank 1, 2 sensor 1) output does not indicate RICH (≥ 0.45 V) even once when conditions (a), (b), (c) and (d) continue for at least 65 sec.: (a) Engine speed: 1,400 rpm or more (b) Vehicle speed: 130 km/h (81 mph) (c) Throttle valve is not fully closed (d) 180 sec. or more after starting engine	<ul style="list-style-type: none"> • Open or short in heated oxygen sensor (bank 1, 2 sensor 1) circuit • Heated oxygen sensor (bank 1, 2 sensor 1) • Heated oxygen sensor heater (bank 1, 2 sensor 1) • EFI relay • Air induction system • Fuel pressure • PCV hose connection • PCV valve and hose • Injector • Gas leakage in exhaust system • ECM

HINT:

After confirming DTCs "P0134 and P0154", use the hand-held tester or the OBD II scan tool to confirm the output voltage of the heated oxygen sensor (bank 1, 2 sensor 1) from the "DIAGNOSIS/ENHANCED OBD II/DATA LIST/ALL". If the output voltage of the heated oxygen sensor is less than 0.1 V, the heated oxygen sensor circuit may be open or short.

WIRING DIAGRAM

Refer to DTC P0130 on page [05-60](#) .

INSPECTION PROCEDURE

HINT:

Hand-held tester only:

The narrowing down the trouble area is possible by performing ACTIVE TEST of the following "A/F CONTROL" (heated oxygen sensor or another can be distinguished).

(a) Perform ACTIVE TEST by hand-held tester (A/F CONTROL).

HINT:

"A/F CONTROL" is an ACTIVE TEST which changes the injection volume to -12.5 % or +25 %.

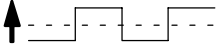

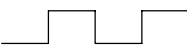
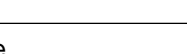
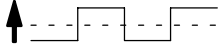

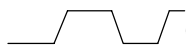
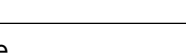
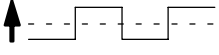


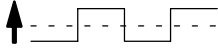

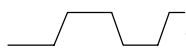
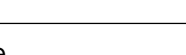
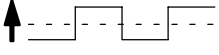

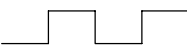
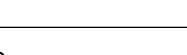
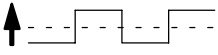

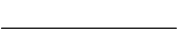
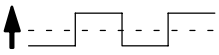

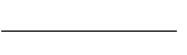
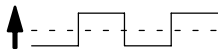

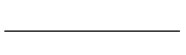
- (1) Connect the hand-held tester to the DLC3 on the vehicle.
- (2) Turn the ignition switch ON.
- (3) Warm up the engine with the engine speed at 2,500 rpm for approx. 90 sec.
- (4) Select the item "DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST/ A/F CONTROL".
- (5) Perform "A/F CONTROL" when idle condition (press the right or left button).

Result:

Heated oxygen sensor reacts in synchronizing with increase and decrease of injection volume (+25 % → rich output: More than 0.55 V, -12.5 % → lean output: Less than 0.4 V)

NOTICE:

However, there is a few second delay in the sensor 1 (front sensor) output. And there is about 20 seconds delay in the sensor 2 (rear sensor).

	Output voltage of heated oxygen sensor (sensor 1: front sensor)	Output voltage of heated oxygen sensor (sensor 2: rear sensor)	Mainly suspect trouble area
Case 1	Injection volume +25 %  -12.5 %  Output voltage More than 0.55 V  Less than 0.4V  OK	Injection volume +25 %  -12.5 %  Output voltage More than 0.55 V  Less than 0.4V  OK	—
Case 2	Injection volume +25 %  -12.5 %  Output voltage No reaction  NG	Injection volume +25 %  -12.5 %  Output voltage More than 0.55 V  Less than 0.4V  OK	Sensor 1: front sensor (sensor 1, heater, sensor 1 circuit)
Case 3	Injection volume +25 %  -12.5 %  Output voltage More than 0.55 V  Less than 0.4V  OK	Injection volume +25 %  -12.5 %  Output voltage No reaction  NG	Sensor 2: rear sensor (sensor 2, heater, sensor 2 circuit)
Case 4	Injection volume +25 %  -12.5 %  Output voltage No reaction  NG	Injection volume +25 %  -12.5 %  Output voltage No reaction  NG	Extremely rich or lean of the actual air-fuel ratio (Injector, fuel pressure, gas leakage in exhaust system, etc.)

The following procedure of A/F CONTROL enable that to check its output (show its graph indication) of heated oxygen sensor.

To display the graph indication. Select and push the "YES or NO" button 2 data "O2S B1S1 and O2S B1S2" or "O2S B2S1 and O2S B2S2" and press button "4" after selecting "ACTIVE TEST/ A/F CONTROL/USER DATA".

HINT:

- If different DTCs that are related to 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.
- A high heated oxygen sensor (sensor 1) voltage (0.55 V or more) could be caused by a rich air fuel mixture. Check for conditions that would cause the engine to run rich.
- A low heated oxygen sensor (sensor 1) voltage (0.4 V or less) could be caused by a lean air fuel mixture. Check for conditions that would cause the engine to run lean.

1 CHECK OTHER DTC OUTPUT(BESIDES DTC P0134 AND/OR P0154)

- (a) Read the DTC using the hand-held tester or the OBD II scan tool.

Result:

Display (DTC output)	Proceed to
Only "P0134 and/or P0154" are output	A
"P0134 or P0154" and other DTCs are output	B

HINT:

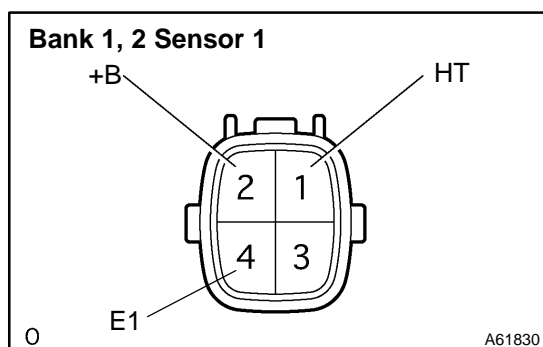
If any other codes besides "P0134 and/or P0154" are output, perform the troubleshoot on that DTC before.

B**GO TO RELEVANT DTC CHART**
(See page 05-18)**A****2 READ VALUE OF HAND-HELD TESTER OR OBD II SCAN TOOL(OUTPUT VOLTAGE OF HEATED OXYGEN SENSOR)**

- (a) Warm up the engine to the normal operating temperature above 75°C (169°F).
 (b) Read the output voltage of the heated oxygen sensor when the engine is suddenly raced.

HINT:

Perform a quick racing to 4,000 rpm 3 times by using the accelerator pedal.

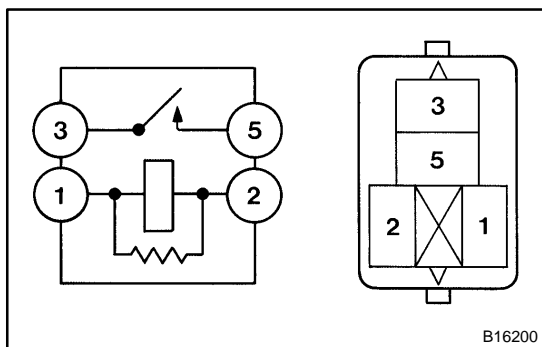
Standard:**Heated oxygen sensor outputs a RICH signal (0.45 V or more) at least once.****OK****Go to step 12****NG****3 CHECK CONNECTION OF PCV HOSE (See page 12-3)****NG****REPAIR OR REPLACE PCV HOSE****OK****4 INSPECT HEATED OXYGEN SENSOR(HEATER RESISTANCE)**

- (a) Measure the resistance between the terminals of the heated oxygen sensor connector.

Standard (Bank 1, 2 sensor 1):

Terminal No.	Resistance
1 (HT) ⇔ 2 (+B)	11 - 16 Ω at 20 °C (68 °F)
1 (HT) ⇔ 4 (E1)	No Continuity

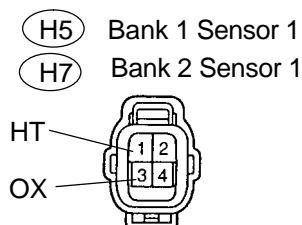
NG**REPLACE HEATED OXYGEN SENSOR****OK**

5 INSPECT EFI RELAY

- (a) Remove the EFI relay from the engine room R/B.
 (b) Inspect the EFI relay.

Standard:

Terminal No.	Condition	Specified condition
1 \leftrightarrow 2	Constant	Continuity
3 \leftrightarrow 5	Usually	No Continuity
	Apply B+ between Terminals 1 and 2	Continuity

NG**REPLACE EFI RELAY****OK****6 CHECK HARNESS AND CONNECTOR(HEATED OXYGEN SENSOR - ECM)****Wire Harness Side**

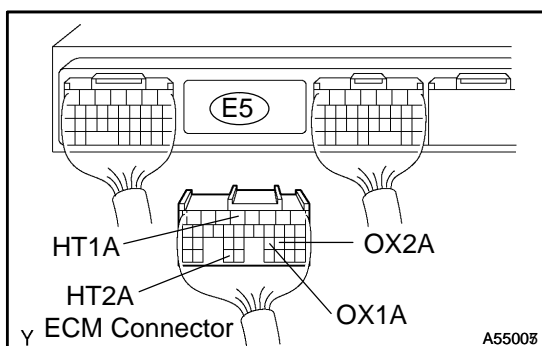
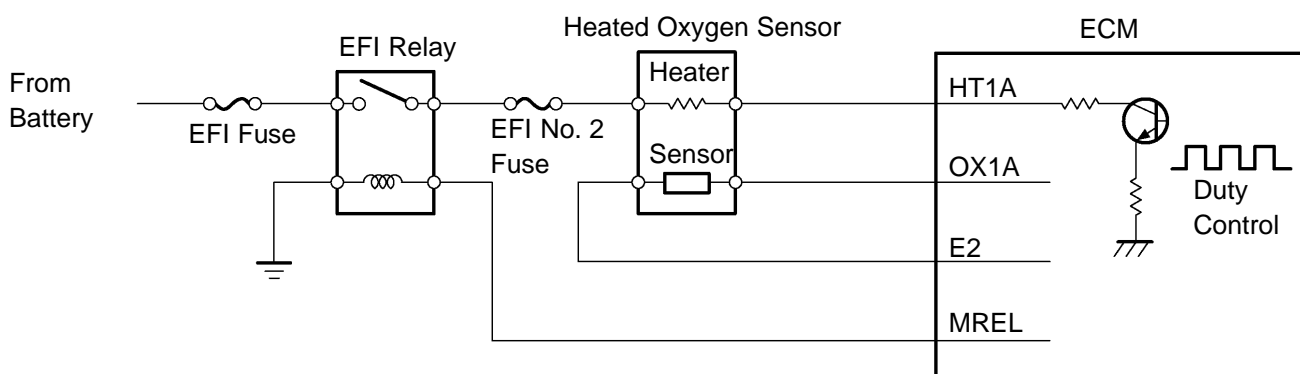
- (a) Disconnect the H5 or H7 heated oxygen sensor connector.
 (b) Disconnect the E5 ECM connector.
 (c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
OX (H5-3) \leftrightarrow OX1A (E5-23)	Continuity
HT (H5-1) \leftrightarrow HT1A (E5-4)	
OX (H7-3) \leftrightarrow OX2A (E5-22)	
HT (H7-1) \leftrightarrow HT2A (E5-33)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
OX (H5-3) or OX1A (E5-23) \leftrightarrow Body ground	No continuity
HT (H5-1) or HT1A (E5-4) \leftrightarrow Body ground	
OX (H7-3) or OX2A (E5-22) \leftrightarrow Body ground	
HT (H7-1) or HT2A (E5-33) \leftrightarrow Body ground	

**Reference (Bank 1 Sensor 1 System Drawing)**

Y

A72920

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7

CHECK WHETHER MISFIRE IS OCCURRED OR NOT BY MONITORING DTC AND DATA LIST

NG

PERFORM TROUBLESHOOTING FOR MISFIRE
(See page 05-5)

OK

8

CHECK AIR INDUCTION SYSTEM

(a) Check the vacuum leaks in air induction system.

NG

REPAIR OR REPLACE AIR INDUCTION SYSTEM

OK

9

CHECK FUEL PRESSURE (See page 11-5)

(a) Check the fuel pressure (high or low pressure).

NG

REPAIR OR REPLACE FUEL SYSTEM

OK

10

INSPECT FUEL INJECTOR ASSY(INJECTION AND VOLUME) (See page 11-7)

NG

REPLACE FUEL INJECTOR ASSY

OK

11

CHECK FOR EXHAUST GAS LEAK

NG

REPAIR OR REPLACE EXHAUST GAS
LEAKAGE POINT (See page 15-2)

OK

REPLACE HEATED OXYGEN SENSOR

12

PERFORM CONFIRMATION DRIVING PATTERN (See page 05-60)

GO

13	READ OUTPUT DTC(DTC P0134 AND/OR P0154 ARE OUTPUT AGAIN)
-----------	---

(a) Read the DTC using the hand-held tester or the OBD II scan tool.

Result:

Display (DTC output)	Proceed to
"P0134 and/or P0154" are not output again	A
"P0134 and/or P0154" are output again	B

B

CHECK AND REPLACE ECM
(See page [01-35](#))

A

14	CONFIRM VEHICLE RUNS OUT OF FUEL IN PAST
-----------	---

NO

CHECK FOR INTERMITTENT PROBLEMS
(See page [05-5](#))

YES

DTC IS CAUSED BY RUNNING OUT OF FUEL (DTC P0134 AND/OR P0154)
--