

DTC	P1133	A/F Sensor Circuit Response Malfunction (Bank 1 Sensor 1)
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CIRCUIT DESCRIPTION

Refer to DTC P0125 on page [DI-42](#) .

DTC No.	DTC Detecting Condition	Trouble Area
P1133	After engine is warmed up and during vehicle driving at engine speed 1,400 rpm or more and vehicle speed 60 km/h (38 mph) or more, if response characteristic of A/F sensor becomes deteriorated (2 trip detection logic)	<ul style="list-style-type: none"> • Open or short in A/F sensor circuit • A/F sensor • Air induction system • Fuel pressure • Injector • ECM

WIRING DIAGRAM

Refer to DTC P0125 on page [DI-42](#) .

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the TOYOTA 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 was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.

1	Are there any other codes (besides DTC P1133) being output?
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YES

Go to relevant DTC chart.

NO

2	Connect OBDII scan tool or TOYOTA hand-held tester, and read value for voltage output of A/F sensor.
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PREPARATION:

- Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- Warm up the A/F sensor with the engine speed at 2,500 rpm for approx. 90 sec.

CHECK:

Read the voltage of the A/F sensor on the screen of the OBD II scan tool or TOYOTA hand-held tester when you perform all the following conditions.

HINT:

The voltage of the AF1+ terminal of the ECM is fixed at 3.3 V and the voltage of the AF1- terminal is fixed at 3.0 V. Therefore, it is impossible to check the A/F sensor output voltage at the terminals (AF1+/AF1-) of the ECM.

OK:

Condition	A/F Sensor Voltage value
Engine idling	<ul style="list-style-type: none"> • Not remains at 3.30 V (0.660 V*) • Not remains at 3.8 V (0.76 V*) or more • Not remains at 2.8 V (0.56 V*) or less *: When you use the OBD II scan tool (excluding TOYOTA hand-held tester)
Engine racing	
Driving at engine speed 1,500 rpm or more and vehicle speed 40 km/h (25 mph) or more, and operate throttle valve open and close	

HINT:

- During fuel enrichment, there is a case that the output voltage of the A/F sensor is below 2.8 V (0.56 V*), it is normal.
- During fuel cut, there is a case that the output voltage of the A/F sensor is above 3.8 V (0.76 V*), it is normal.
- If the output voltage of the A/F sensor remains at 3.30 V (0.660 V*) even after performing all the above conditions, the A/F sensor circuit may be open.
- If the output voltage of the A/F sensor remains at 3.8 V (0.76V*) or more, or 2.8 V (0.56 V*) or less even after performing all the above conditions, the A/F sensor circuit may be short.

*: When you use the OBD II scan tool (excluding TOYOTA hand-held tester).

OK**Go to step 8.****NG****3**

Check for open and short in harness and connector between ECM and A/F sensor (See page [IN-28](#)).

NG**Repair or replace harness or connector.****OK****4**

Check resistance of A/F sensor heater (See page [SF-51](#)).

NG**Replace A/F sensor.****OK****5**

Check air induction system (See page [SF-1](#)).

NG**Repair or replace.**

OK**6** Check fuel pressure (See page [SF-7](#)).**NG**Check and repair fuel pump, pressure regulator, fuel pipe line and filter (See page [SF-1](#)).**OK****7** Check injector injection (See page [SF-21](#)).**NG**

Replace injector.

OK

Replace A/F sensor.

8 Perform confirmation driving pattern (See page [DI-122](#)).**Go****9** Is there DTC P1133 being output again?**YES**Check and replace ECM (See page [IN-28](#)).**NO****10** Did vehicle runs out of fuel in past?**NO**Check for intermittent problems (See page [DI-3](#)).

YES

DTC P1133 is caused by running out of fuel.