

<b>DTC</b>	<b>P1133</b>	<b>A/F Sensor Circuit Response Malfunction (Bank 1 Sensor 1)</b>
------------	--------------	--

## CIRCUIT DESCRIPTION

Refer to DTC P0125 on page [DI-184](#) .

DTC No.	DTC Detection 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 characteristics of A/F sensor becomes deteriorated (2 trip detection logic)	<ul style="list-style-type: none"> <li>• Oper or short in A/F sensor circuit</li> <li>• A/F sensors</li> <li>• Air induction system</li> <li>• Fuel pressure</li> <li>• Injector</li> <li>• ECM</li> </ul>

## WIRING DIAGRAM

Refer to DTC P0125 on page [DI-184](#) .

## INSPECTION PROCEDURE

HINT:

Read freeze frame data using TOYOTA hand-held tester or 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.

<b>1</b>	<b>Are there any other codes (besides DTC P1133) being output?</b>
----------	--

YES

Go to relevant DTC chart (See page [DI-156](#) ).

NO

<b>2</b>	<b>Connect OBDII scan tool or TOYOTA hand-held tester, and read value of output voltage of A/F sensor.</b>
----------	--

### PREPARATION:

- (a) Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
- (b) Warm up the A/F sensor with the engine of speed 2,500 rpm for approximately 90 seconds.

### CHECK:

Read the voltage of the A/F sensor on the screen of the OBD II scan tool or TOYOTA hand-held tester when performing 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"> <li>• Not remains at 3.30 V (0.660 V*)</li> <li>• Not remains at 3.8 V (0.76 V*) or more</li> <li>• Not remains at 2.8 V (0.56 V*) or less</li> </ul> *: When using 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 operating throttle valve open and close.	

**HINT:**

- Although there is a case that the output voltage of the A/F sensor is below 2.8 V (0.56 V\*) during fuel enrichment, it is normal.
- Although there is a case that the output voltage of the A/F sensor is above 3.8 V (0.76 V\*) during fuel cut, 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 (0.76 V\*) 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.

\*: With 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-5](#)).

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-18](#)).

NG

Replace injector.

OK

Replace A/F sensor.

**8** Perform confirmation driving pattern (See page [DI-239](#)).

Go

**9** Is there DTC P1133 being output again?

YES

Check and replace ECM (See page [IN-28](#)).

NO

**10** Did vehicle run out of fuel in past?

NO

Check for intermittent problems (See page [DI-146](#)).

**YES**

**DTC P1133 is caused by shortage of fuel.**