

|            |              |                                                                     |
|------------|--------------|---------------------------------------------------------------------|
| <b>DTC</b> | <b>P0133</b> | <b>Heated Oxygen Sensor Circuit Slow Response (Bank 1 Sensor 1)</b> |
|------------|--------------|---------------------------------------------------------------------|

|            |              |                                                                     |
|------------|--------------|---------------------------------------------------------------------|
| <b>DTC</b> | <b>P0153</b> | <b>Heated Oxygen Sensor Circuit Slow Response (Bank 2 Sensor 1)</b> |
|------------|--------------|---------------------------------------------------------------------|

## CIRCUIT DESCRIPTION

Refer to DTC P0125 (Insufficient Coolant Temp. for Closed Loop Fuel Control) on page [DI-51](#).

| DTC No.        | DTC Detecting Condition                                                                                                                                                                         | Trouble Area                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P0133<br>P0153 | Response time for heated oxygen sensor's voltage output to change from rich to lean, or from lean to rich, is 1.1 sec. or more during idling after engine is warmed up (2 trip detection logic) | <ul style="list-style-type: none"> <li>• Open or short in heated oxygen sensor circuit</li> <li>• Heated oxygen sensor</li> <li>• Air induction system</li> <li>• Fuel pressure</li> <li>• Injector</li> </ul> |

HINT:

- Bank 1 refers to bank that includes cylinder No.1.
- Bank 2 refers to bank that does not include cylinder No.1.
- Sensor 1 refers to the sensor closer to the engine body.

## INSPECTION PROCEDURE

HINT:

Read freeze frame data using LEXUS 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.

|          |                                                                             |
|----------|-----------------------------------------------------------------------------|
| <b>1</b> | <b>Are there any other codes (besides DTC P0133 or P0153) being output?</b> |
|----------|-----------------------------------------------------------------------------|

**YES**

**Go to relevant DTC chart.**

**NO**

|   |                                                             |
|---|-------------------------------------------------------------|
| 2 | Check output voltage of heated oxygen sensor during idling. |
|---|-------------------------------------------------------------|

**PREPARATION:**

Warm up the heated oxygen sensor with the engine speed at 2,500 rpm for approx. 90 sec.

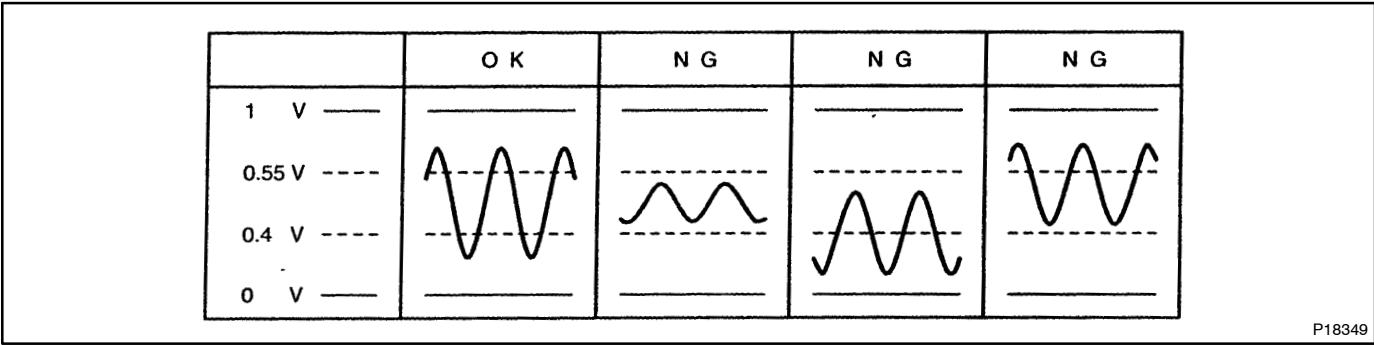
**CHECK:**

Use the OBD II scan tool or LEXUS hand-held tester to read the output voltage of the heated oxygen sensor during idling.

**OK:**

Heated oxygen sensor output voltage:

Alternates repeatedly between less than 0.4 V and more than 0.55 V (See the following table).



OK

Go to step 7.

NG

|   |                                                                                                                           |
|---|---------------------------------------------------------------------------------------------------------------------------|
| 3 | Check for open and short in harness and connector between ECM and heated oxygen sensor (See page <a href="#">IN-33</a> ). |
|---|---------------------------------------------------------------------------------------------------------------------------|

NG

Repair or replace harness or connector.

OK

|   |                                                              |
|---|--------------------------------------------------------------|
| 4 | Check air induction system (See page <a href="#">SF-1</a> ). |
|---|--------------------------------------------------------------|

NG

Repair or replace.

OK

|   |                                                       |
|---|-------------------------------------------------------|
| 5 | Check fuel pressure (See page <a href="#">SF-7</a> ). |
|---|-------------------------------------------------------|

NG

Check and repair fuel pump, pressure regulator, fuel pipe line and filter (See page [SF-1](#)).

OK

|   |                                                             |
|---|-------------------------------------------------------------|
| 6 | Check injector injection (See page <a href="#">SF-24</a> ). |
|---|-------------------------------------------------------------|

NG

Replace injector.

OK

Replace heated oxygen sensor.

|   |                                                                         |
|---|-------------------------------------------------------------------------|
| 7 | Perform confirmation driving pattern (See page <a href="#">DI-56</a> ). |
|---|-------------------------------------------------------------------------|

Go

|   |                                                 |
|---|-------------------------------------------------|
| 8 | Is there DTC P0133 or P0153 being output again? |
|---|-------------------------------------------------|

NO

Check for intermittent problems (See page [DI-3](#)).

YES

Check and replace ECM (See page [IN-33](#)).