

## DTC P0031 [ZJ, Z6]

B3E010200001W03

DTC P0031	Front HO2S heater control circuit low
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"> <li>The PCM monitors front HO2S heater control voltage at PCM terminal 2AM. If PCM turns front HO2S heater off but front HO2S heater circuit has low voltage, PCM determines that front HO2S heater circuit has malfunction.</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>Front HO2S heater is controlled by duty signal.</li> </ul> <p><b>Diagnostic support note</b></p> <ul style="list-style-type: none"> <li>This is a continuous monitor (HO2S heater).</li> <li>The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM.</li> <li>PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle.</li> <li>FREEZE FRAME DATA is available.</li> <li>The DTC is stored in the PCM memory.</li> </ul>
<b>POSSIBLE CAUSE</b>	<ul style="list-style-type: none"> <li>Front HO2S heater malfunction</li> <li>Connector or terminal malfunction</li> <li>Open circuit in wiring harness between front HO2S terminal C and PCM terminal 2T</li> <li>Open circuit in wiring harness between front HO2S terminal D and PCM terminal 2AM</li> <li>Short to ground in wiring harness between front HO2S terminal D and PCM terminal 2AM</li> <li>PCM malfunction</li> </ul>

### Diagnostic procedure

STEP	INSPECTION		ACTION
1	<b>VERIFY FREEZE FRAME DATA HAS BEEN RECORDED</b> • Has FREEZE FRAME DATA been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the repair order, then go to the next step.
2	<b>VERIFY RELATED REPAIR INFORMATION AVAILABILITY</b> • Verify related service repair information availability. • Is any related repair information available?	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	<b>INSPECT FRONT HO2S CONNECTOR FOR POOR CONNECTION</b> • Turn the ignition switch off. • Disconnect the front HO2S connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
4	<b>INSPECT FRONT HO2S HEATER</b> • Inspect the front HO2S heater. (See <a href="#">FRONT HEATED OXYGEN SENSOR (HO2S) INSPECTION [ZJ, Z6].</a> ) • Is there any malfunction?	Yes	Replace the front HO2S, then go to Step 9. (See <a href="#">FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [ZJ, Z6].</a> )
		No	Go to the next step.
5	<b>INSPECT FRONT HO2S HEATER POWER CIRCUIT FOR OPEN CIRCUIT</b> • Turn the ignition switch off. • Disconnect the PCM connector. • Inspect for continuity between front HO2S terminal C (wiring harness-side) and PCM terminal 2T (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to Step 9.
6	<b>INSPECT PCM CONNECTOR FOR POOR CONNECTION</b> • Turn the ignition switch off. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 9.
		No	Go to the next step.
7	<b>INSPECT FRONT HO2S CIRCUIT FOR SHORT TO GND</b> • Turn the ignition switch off. • Inspect for continuity between front HO2S terminal D (wiring harness-side) and body GND. • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to GND, then go to Step 9.
		No	Go to the next step.
8	<b>INSPECT FRONT HO2S CIRCUIT FOR OPEN CIRCUIT</b> • Turn the ignition switch off. • Inspect for continuity between front HO2S terminal D (wiring harness-side) and PCM terminal 2AM (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
9	<b>VERIFY TROUBLESHOOTING OF DTC P0031 COMPLETED</b> • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the WDS or equivalent. • Perform the "HO2S heater, HO2S, and TWC Repair Verification Drive Mode". (See <a href="#">OBD DRIVE MODE [ZJ, Z6].</a> ) • Is the PENDING CODE for this DTC present?	Yes	Replace the PCM, then go to the next step. (See <a href="#">PCM REMOVAL/INSTALLATION [ZJ, Z6].</a> )
		No	Go to the next step.
	<b>VERIFY AFTER REPAIR PROCEDURE</b>		Go to the applicable DTC inspection.

10	<ul style="list-style-type: none"><li>• Perform the "AFTER REPAIR PROCEDURE". (See <a href="#">AFTER REPAIR PROCEDURE [ZJ, Z6]</a>.)</li><li>• Are any DTCs present?</li></ul>	Yes	(See <a href="#">DTC TABLE [ZJ, Z6]</a> .)
		No	DTC troubleshooting completed.