

## DTC P0511 [ZJ, Z6]

B3E010200500W05

DTC P0511	IAC circuit problem
<b>DETECTION CONDITION</b>	<ul style="list-style-type: none"> <li>If the PCM detects that the IAC signal voltage is above or below the threshold* when the IAC control duty target is <b>within 19-50%</b>, the PCM determines that the IAC circuit problem.</li> <li>*: Detected threshold value depends on the battery voltage and the IAC control signal duty value.</li> <li><b>Diagnostic support note</b></li> <li>This is a continuous monitor (CCM).</li> <li>The MIL illuminates if the PCM detects the above malfunction condition in the first drive cycle.</li> <li>PENDING CODE is available if the PCM detects the above malfunction condition.</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>IAC valve malfunction</li> <li>Connector or terminal malfunction</li> <li>Open circuit in wiring harness between IAC valve terminal A and PCM terminal 2X</li> <li>Short to power supply in wiring harness between IAC valve terminal A and PCM terminal 2X</li> <li>Short to GND in wiring harness between IAC valve terminal A and PCM terminal 2X</li> <li>Open circuit in wiring harness between IAC valve terminal B and PCM terminal 2AB</li> <li>Short to power supply in wiring harness between IAC valve terminal B and PCM terminal 2AB</li> <li>Short to GND in wiring harness between IAC valve terminal B and PCM terminal 2AB</li> <li>PCM malfunction</li> </ul>
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>IAC VALVE</p> <p>IAC VALVE WIRING HARNESS-SIDE CONNECTOR</p> <p>PCM WIRING HARNESS-SIDE CONNECTOR</p> </div> </div>	

### 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 IAC VALVE CONNECTOR FOR POOR CONNECTION</b> • Turn the ignition switch off. • Disconnect the IAC valve 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 IAC VALVE CIRCUIT FOR SHORT TO GND</b> • Turn the ignition switch off. • Inspect for continuity between the following circuits:  - IAC valve terminal A (wiring harness-side) and body GND - IAC valve terminal B (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.
5	<b>INSPECT IAC VALVE CIRCUIT FOR SHORT TO POWER SUPPLY</b> • Turn the ignition switch to the ON position (Engine off). • Measure the voltage between the following circuits:  - IAC valve terminal A (wiring harness-side) and body GND - IAC valve terminal B (wiring harness-side) and body GND  • Is the voltage <b>B+</b> ?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 9.
		No	Go to the next step.
6	<b>INSPECT IAC VALVE</b> • Inspect the IAC valve. (See <a href="#">IDLE AIR CONTROL (IAC) VALVE INSPECTION [ZJ, Z6].</a> ) • Is there any malfunction?	Yes	Replace the IAC valve, then go to Step 9. (See <a href="#">IDLE AIR CONTROL (IAC) VALVE REMOVAL/INSTALLATION [ZJ, Z6].</a> )
		No	Go to the next step.
7	<b>INSPECT PCM CONNECTOR FOR POOR CONNECTION</b> • Turn the ignition switch off. • Disconnect the PCM 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.
	<b>INSPECT IAC VALVE CIRCUIT FOR OPEN CIRCUIT</b> • Turn the ignition switch off. • Inspect for continuity between the following circuits:	Yes	Go to the next step.

8	<ul style="list-style-type: none"> <li>- IAC valve terminal A (wiring harness-side) and PCM terminal 2X (wiring harness-side)</li> <li>- IAC valve terminal B (wiring harness-side) and PCM terminal 2AB (wiring harness-side)</li> </ul> <p>• Is there continuity?</p>	No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
9	<b>VERIFY TROUBLESHOOTING OF DTC P0511 COMPLETED</b> <ul style="list-style-type: none"> <li>• Make sure to reconnect all disconnected connectors.</li> <li>• Clear the DTC from the PCM memory using the WDS or equivalent.</li> <li>• Start the engine.</li> <li>• Is the same DTC present?</li> </ul>	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.
10	<b>VERIFY AFTER REPAIR PROCEDURE</b> <ul style="list-style-type: none"> <li>• Perform the "AFTER REPAIR PROCEDURE".</li> <li>(See <a href="#">AFTER REPAIR PROCEDURE [ZJ, Z6].</a>)</li> <li>• Are any DTCs present?</li> </ul>	Yes	Go to the applicable DTC inspection. (See <a href="#">DTC TABLE [ZJ, Z6].</a> )
		No	DTC troubleshooting completed.