

## 2006 Chevrolet Cobalt SS

2006 ENGINE PERFORMANCE Engine Controls Diagnosis (DTC P0442 To P1115) - 2.2L (L61) - Cobalt & G5 Pursuit (Canadian)

### DTC P0651

#### Circuit Description

The engine control module (ECM) uses the 5-volt reference circuit as a sensor feed to the following sensors:

- The manifold absolute pressure (MAP)
- The throttle position (TP) sensor 2
- The accelerator pedal position (APP) sensor 2

The ECM monitors the voltage on the 5-volt reference circuit. If the voltage is out of tolerance, the ECM will set DTC P0651.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P0651 5-Volt Reference 2 Circuit

#### Conditions for Running the DTC

- DTCs P0601, P0602, P0604, P0606, P060D, P060E, P062F, P1621, P2610 are not set.
- The ignition is ON.
- The ignition voltage is greater than 10.9 volts.
- DTC P0651 runs continuously when the above conditions are met.

#### Conditions for Setting the DTC

- The PCM detects a voltage out of tolerance condition on the 5-volt reference circuit.
- The above condition is present for longer than 1 second.

#### Action Taken When the DTC Sets

- The control module illuminates the malfunction indicator lamp (MIL) when the diagnostic runs and fails.
- The control module records the operating conditions at the time the diagnostic fails. The control module stores this information in the Freeze Frame/Failure Records.

#### Conditions for Clearing the MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- Clear the MIL and the DTC with a scan tool.

## 2006 Chevrolet Cobalt SS

2006 ENGINE PERFORMANCE Engine Controls Diagnosis (DTC P0442 To P1115) - 2.2L (L61) - Cobalt & G5 Pursuit  
(Canadian)

### DTC P0651

Step	Action	Values	Yes	No
<b>Schematic Reference: <u>Engine Controls Schematics</u></b> <b>Connector End View Reference: <u>Engine Control Module (ECM) Connector End Views</u> or <u>Engine Controls Connector End Views</u></b>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <b><u>Diagnostic System Check - Vehicle</u></b>
2	<ol style="list-style-type: none"> <li>1. Observe the Freeze Frame/Failure Records for this DTC.</li> <li>2. Turn OFF the ignition for 30 seconds.</li> <li>3. Start the engine.</li> <li>4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records.</li> </ol> Did the DTC fail this ignition?	-	Go to Step 3	Go to <b><u>Intermittent Conditions</u></b>
3	Visually and physically inspect the engine control module (ECM) and engine grounds. Ensure that the grounds are clean and secure. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> . Did you find and correct the condition?	-	Go to Step 12	Go to Step 4
4	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the manifold absolute pressure (MAP) sensor.</li> <li>3. Turn ON the ignition, with the engine OFF.</li> <li>4. Measure the voltage from the 5-volt reference circuit of the MAP sensor harness connector to a good ground with a DMM. Refer to <b><u>Circuit Testing</u></b> .</li> </ol> Is the voltage near the specified value?	5 V	Go to Step 6	Go to Step 5
5	Is the voltage more than the specified value?	5 V	Go to Step 9	Go to Step 7
6	<ol style="list-style-type: none"> <li>1. Connect the MAP sensor.</li> <li>2. Disconnect the accelerator pedal position (APP) sensor.</li> <li>3. Measure the voltage from the 5-volt reference circuit of the APP sensor harness connector to a good ground with a DMM. Refer to <b><u>Circuit Testing</u></b> .</li> </ol>	5 V		

## 2006 Chevrolet Cobalt SS

2006 ENGINE PERFORMANCE Engine Controls Diagnosis (DTC P0442 To P1115) - 2.2L (L61) - Cobalt & G5 Pursuit  
(Canadian)

	Is the voltage near the specified value?		Go to <b><u>Intermittent Conditions</u></b>	Go to <b>Step 11</b>
7	<ol style="list-style-type: none"> <li>1. Observe the DMM while disconnecting all other devices that are connected to the 5-volt reference 2 circuit, one at a time.</li> <li>2. If the voltage changes when one of the above components are disconnected, replace the component. Refer to the appropriate replacement procedure below: <ul style="list-style-type: none"> <li>• <b><u>Manifold Absolute Pressure (MAP) Sensor Replacement</u></b></li> <li>• <b><u>Accelerator Pedal with Position Sensor Replacement</u></b></li> <li>• <b><u>Throttle Body Assembly Replacement</u></b></li> </ul> </li> </ol> <p>Was a component replaced?</p>	-	Go to <b>Step 12</b>	Go to <b>Step 8</b>
8	<p>Test the 5-volt reference 2 circuits for a short to ground. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> .</p> <p>Did you find and correct the condition?</p>	-	Go to <b>Step 12</b>	Go to <b>Step 10</b>
9	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the ECM.</li> <li>3. Turn ON the ignition, with the engine OFF.</li> <li>4. Test the following circuits for a short to voltage: <ul style="list-style-type: none"> <li>• The 5-volt reference 2 circuits</li> <li>• The MAP signal circuit-Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> .</li> </ul> </li> </ol> <p>Did you find and correct the condition?</p>	-	Go to <b>Step 12</b>	Go to <b>Step 10</b>
10	<p>Replace the ECM. Refer to <b><u>Control Module References</u></b> for replacement, setup, and programming.</p> <p>Did you complete the repair?</p>	-	Go to <b>Step 12</b>	-
11	<p>Replace the MAP sensor. Refer to <b><u>Manifold Absolute Pressure (MAP) Sensor Replacement</u></b> .</p> <p>Did you complete the replacement?</p>	-	Go to <b>Step 12</b>	-
	<ol style="list-style-type: none"> <li>1. Clear the DTCs with a scan tool.</li> <li>2. Turn OFF the ignition for 30 seconds.</li> </ol>			

## 2006 Chevrolet Cobalt SS

2006 ENGINE PERFORMANCE Engine Controls Diagnosis (DTC P0442 To P1115) - 2.2L (L61) - Cobalt & G5 Pursuit  
(Canadian)

12	<p>3. Start the engine.</p> <p>4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records.</p> <p>Did the DTC fail this ignition?</p>	-	Go to <b>Step 3</b>	Go to <b>Step 13</b>
13	<p>Observe the Capture Info with a scan tool.</p> <p>Are there any DTCs that have not been diagnosed?</p>	-	Go to <b><u>Diagnostic Trouble Code (DTC) List - Vehicle</u></b>	System OK