DTC	P2111	THROTTLE ACTUATOR CONTROL SYSTEM – STUCK OPEN

DTC	P2112	THROTTLE ACTUATOR CONTROL SYSTEM – STUCK CLOSED

CIRCUIT DESCRIPTION

The throttle actuator is operated by the ECM and it opens and closes the throttle valve using gears. The opening angle of the throttle valve is detected by the Throttle Position (TP) sensor, which is mounted on the throttle body. The TP sensor provides feedback to the ECM to control the throttle actuator and set the throttle valve angle in response to driver input.

HINT:

This Electronic Throttle Control System (ETCS) does not use a throttle cable.

DTC No.	DTC Detection Condition	Trouble Area
P2111	ECM tries to close throttle valve but TP is stuck (1 trip detection)	• Throttle actuator circuit • Throttle actuator • Throttle body • Throttle valve
P2112	ECM tries t oopen throttle valve but TP is stuck (1 trip detection)	Same as above

MONITOR DESCRIPTION

The ECM concludes that there is a malfunction of the ETCS when the throttle valve remains at a fixed angle despite high drive current from the ECM. The ECM will turn on the MIL and set a DTC.

To activate the monitor, start the engine fully depress/fully release the accelerator pedal quickly (fully open/fully close the throttle valve).

FAIL–SAFE

If the ETCS has a malfunction, the ECM cuts off current to the throttle actuator. The throttle control valve returns to a predetermined opening angle (approximately 16°) by the force of the return spring. The ECM then adjusts the engine output by controlling the fuel injection (intermittent fuel–cut) and ignition timing in accordance with the accelerator pedal opening angle to enable the vehicle to continue at a minimal speed. If the accelerator pedal is depressed firmly and slowly, the vehicle can be driven slowly.

If a ”pass” condition is detected and then the ignition switch is turned OFF, the fail–safe operation will stop and the system will return to normal.

WIRING DIAGRAM

Refer to DTC P2102 on page 05–200.

INSPECTION PROCEDURE

HINT:
Read freeze frame data using the Intelligent Tester II. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air–fuel ratio was lean or rich, and other data from the time the malfunction occurred.

1	CHECK OTHER DTC OUTPUT

Display (DTC output)	Proceed to
P2111 or P2112	A
P2111 or P2112 and other DTCs	B

B → GO TO RELEVANT DTC CHART (See page 05–36)

A

2	CHECK THROTTLE BODY ASSY (VISUALLY CHECK THROTTLE VALVE)

Check for contamination between the throttle valve and the housing. If necessary, clean the throttle body. Also, check that the throttle valve moves smoothly.

NG → REPLACE THROTTLE BODY ASSY (See page 10–9)

OK

3	CHECK DTC OUTPUT

(a) Clear the DTC. Enter the following menus: Enter/ Power train/ Engine and ECT/ DTC/ Clear.
(b) Start the engine and fully depress/fully release the accelerator pedal quickly (fully open/fully close the throttle valve).
(c) Read DTC. Enter the following menus: DTC/ Pending.
Result:

Display (DTC output)	Proceed to
No DTC	A
P2111 or P2112	B

B → REPLACE ECM (See page 10–21)

A

CHECK FOR INTERMITTENT PROBLEM (See page 05–11)