DTC	P2121	THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT RANGE/PERFORMANCE

HINT:
This is repair procedure for the Accelerator Pedal Position (APP) sensor.

CIRCUIT DESCRIPTION

Refer to DTC P2120 on page 05–211.

DTC No.	DTC Detection Condition	Trouble Area
P2121	Difference between VPA and VPA2 is less than 0.4 V, or more than 1.2 V for 0.5 seconds (1 trip detection logic)	• Accelerator pedal position (APP) sensor circuit • APP sensor • ECM

MONITOR DESCRIPTION

When the difference between voltage outputs of the VPA1 or VPA2 deviate from the standard range, the ECM concludes that there is a defect in the APP sensor. The ECM turns on the MIL and sets a DTC.
This monitor runs for 1 second (the first second of engine idle) after the engine is started.

FAIL–SAFE

The APP sensor has two (main and sub) sensor circuits. If a malfunction occurs in either of the sensor circuits, the ECM detects the abnormal signal voltage difference between the two sensor circuits and changes to limp mode. In limp mode, the remaining circuit is used to calculate the accelerator pedal opening angle to allow the vehicle to continue driving.
If both circuits malfunction, the ECM regards the opening angle of the accelerator pedal to be fully closed. In this case, the throttle valve will remain closed as if the engine is idling.
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 condition.

WIRING DIAGRAM

Refer to DTC P2120 on page 05–211.

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
P2121	A
P2121 and other DTCs	B

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

A

2	REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10–23)

NEXT

3	CHECK DTC (ACCELERATOR PEDAL POSITION SENSOR DTCS ARE OUTPUT AGAIN)

(a) Clear the DTC. Enter the following menus: Enter / Power train / Engine and ECT / DTC / Clear.
(b) Allow the engine to idle for a minute.
(c) Read DTC. Enter the following menus: DTC / Current.

Result:

Display (DTC output)	Proceed to
P2121	A
No DTC	B

B → CHECK FOR INTERMITTENT PROBLEM (see page 05–11)

A

REPLACE ECM (See page 10–21)