

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

Refer to DTC P2120 on [page 05-562](#).

DTC No.	DTC Detection Condition	Trouble Area
P2121	Conditions (a) and (b) continue for 2.0 seconds: (a) Difference between VPA1 and VPA2 exceeds the threshold (b) IDL is OFF	<ul style="list-style-type: none"> Accelerator pedal position sensor circuit Accelerator pedal position sensor ECM

HINT:

When DTC P2121 is detected, check the accelerator pedal position sensor output voltage by selecting Powertrain/Engine and ECT/ Data List/ Accel Position on the Intelligent Tester II.

Reference:

Accelerator pedal opening position expressed as percentage		Trouble Area
Accelerator pedal fully closed	Accelerator pedal fully open	
0 %	0 %	<ul style="list-style-type: none"> Open in VCC circuit Open or short in VA or VAS circuit
Approximately 100 %	Approximately 100 %	<ul style="list-style-type: none"> Open in E2C circuit

WIRING DIAGRAM

Refer to DTC P2120 on [page 05-562](#).

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1

INSPECT ACCELERATOR PEDAL ASSY (ACCELERATOR PEDAL POSITION SENSOR)

Component Side (RHD):

EP2

EP1

3 2 1

6 5 4

VCP2

VCP1

Accelerator Pedal Position Sensor

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Component Side (LHD):

EP1

EP2

3 2 1

6 5 4

VCP1

VCP2

Accelerator Pedal Position Sensor

A84814

(a) Disconnect the A16 accelerator pedal position sensor connector.

(b) Measure the resistance between each pair of terminals.

Standard (RHD):

Tester Connection	Specified Condition
EP1 (1) – VCP1 (4)	2.25 to 4.75 kΩ at 20°C (68°F)
EP2 (3) – VCP2 (6)	

Standard (LHD):

Tester Connection	Specified Condition
EP1 (3) – VCP1 (6)	2.25 to 4.75 kΩ at 20°C (68°F)
EP2 (1) – VCP2 (4)	

(c) Reconnect the accelerator pedal position sensor connector.

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REPLACE ACCELERATOR PEDAL ASSY

OK

2

INSPECT ECM (VPA AND VPA2 VOLTAGE)

VPA (+) E8

VPA2 (+) E2C (-) E2C2 (-)

ECM Connector

Y

A56850

(a) Turn the ignition switch to ON.

(b) Measure the voltage between the specified terminals of the E8 ECM connector.

Standard:

Accelerator Pedal Position	Tester Connection	Specified Condition
Released	VPA (E8-19)	0.5 to 1.1 V
Depressed	– E2C (E8-27)	2.6 to 4.5 V
Released	VPA2 (E8-28)	1.2 to 2.0 V
Depressed	– E2C2 (E8-24)	3.4 to 5.3 V

OK

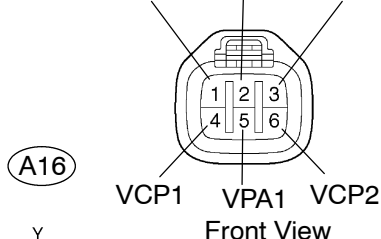
REPLACE ECM (See page 10-30)

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3 CHECK HARNESS AND CONNECTOR(ACCELERATOR PEDAL POSITION SENSOR - ECM)

Wire Harness Side (RHD):

Accelerator Pedal Position Sensor Connector EP1 VPA2 EP2



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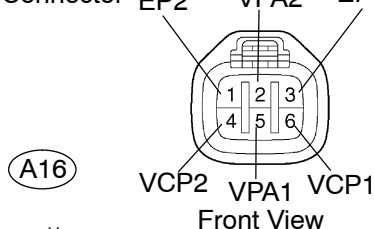
- Disconnect the A16 accelerator pedal position sensor connector.
- Disconnect the E8 ECM connector.
- Check the resistance.

Standard (Check for open) (RHD):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-22)	Below 1 Ω
EP1 (A16-1) - E2C (E8-28)	
VCP1 (A16-4) - VCC (E8-26)	
VPA2 (A16-2) - VPA2 (E8-23)	
EP2 (A16-3) - E2C2 (E8-29)	
VCP2 (A16-6) - VCC2 (E8-27)	

Wire Harness Side (LHD):

Accelerator Pedal Position Sensor Connector EP2 VPA2 EP1



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Standard (Check for open) (LHD):

Tester Connection	Specified Condition
VPA1 (A16-5) - VPA (E8-19)	Below 1 Ω
EP1 (A16-3) - E2C (E8-27)	
VCP1 (A16-6) - VCC (E8-8)	
VPA2 (A16-2) - VPA2 (E8-28)	
EP2 (A16-1) - E2C2 (E8-24)	
VCP2 (A16-4) - VCC2 (E8-13)	

Standard (Check for short) (RHD):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-19) - Body ground	10 k Ω or higher
EP1 (A16-1) or E2C (E8-27) - Body ground	
VCP1 (A16-4) or VCC (E8-8) - Body ground	
VPA2 (A16-2) or VPA2 (E8-28) - Body ground	
EP2 (A16-3) or E2C2 (E8-24) - Body ground	
VCP2 (A16-6) or VCC2 (E8-13) - Body ground	

Standard (Check for short) (LHD):

Tester Connection	Specified Condition
VPA1 (A16-5) or VPA (E8-19) - Body ground	10 k Ω or higher
EP1 (A16-3) or E2C (E8-27) - Body ground	
VCP1 (A16-6) or VCC (E8-8) - Body ground	
VPA2 (A16-2) or VPA2 (E8-28) - Body ground	
EP2 (A16-1) or E2C2 (E8-24) - Body ground	
VCP2 (A16-4) or VCC2 (E8-13) - Body ground	

- Reconnect the accelerator pedal position sensor connector.
- Reconnect the ECM connector.

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ACCELERATOR PEDAL ASSY