

<b>DTC</b>	<b>P2121</b>	<b>THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT RANGE/PERFORMANCE</b>
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## CIRCUIT DESCRIPTION

### HINT:

This is repair procedure of "accelerator pedal position sensor".

Refer to DTC P2120 on page [05-191](#) .

DTC No.	DTC Detection Condition	Trouble Area
P2121	Condition (a) and (b) continue for 0.5 seconds: (a) Difference between VPA1 and VPA2 exceeds the threshold (b) IDL is OFF	<ul style="list-style-type: none"> <li>• Accelerator pedal position sensor circuit</li> <li>• Accelerator pedal position sensor</li> <li>• ECM</li> </ul>

## WIRING DIAGRAM

Refer to DTC P2120 on page [05-191](#) .

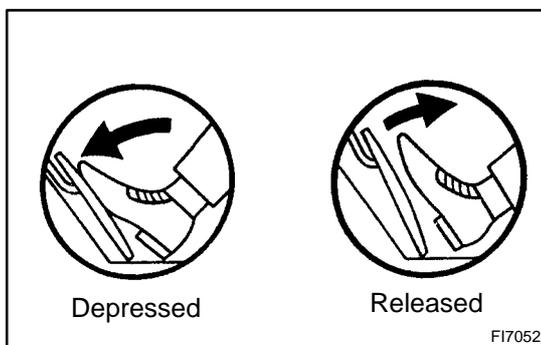
## INSPECTION PROCEDURE

### HINT:

Read freeze frame data using the hand-held tester or the OBD II scan tool, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.

### Hand-held tester:

<b>1</b>	<b>READ VALUE OF HAND-HELD TESTER(ACCEL POS #1 AND ACCEL POS #2)</b>
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- (a) Turn the ignition switch ON.
- (b) Select the item "DIAGNOSIS/ENHANCED OBD II/DATA LIST/ETCS/ACCEL POS #1 and ACCEL POS #2" and read its value displayed on the hand-held tester.

#### Standard:

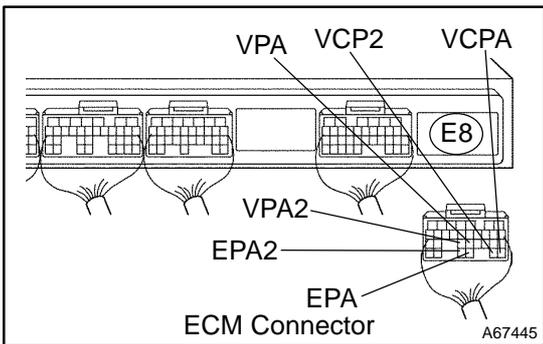
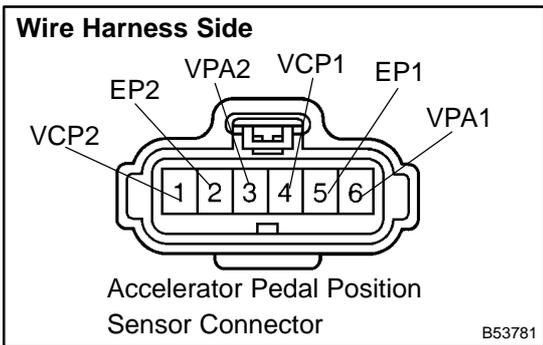
Accelerator pedal	ACCEL POS #1	ACCEL POS #2
Released	0.5 - 1.1 V	1.2 - 2.0 V
Depressed	2.6 - 4.5 V	3.4 - 5.3 V

**OK**

**CHECK AND REPLACE ECM  
(See page [01-35](#))**

**NG**

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



- (a) Disconnect the accelerator pedal position sensor connector.
- (b) Disconnect the ECM E8 connector.
- (c) Check the continuity between the wire harness side connectors.

**Standard (Check for open):**

Symbols (Terminal No.)	Specified condition
VPA1 (6) ⇔ VPA (E8-22)	Continuity
EP1 (5) ⇔ EPA (E8-28)	
VCP1 (4) ⇔ VCPA (E8-26)	
VPA2 (3) ⇔ VPA2 (E8-23)	
EP2 (2) ⇔ EPA2 (E8-29)	
VCP2 (1) ⇔ VCP2 (E8-27)	

**Standard (Check for short):**

Symbols (Terminal No.)	Specified condition
VPA1 (6) or VPA (E8-22) ⇔ Body ground	No continuity
EP1 (5) or EPA (E8-28) ⇔ Body ground	
VCP1 (4) or VCPA (E8-26) ⇔ Body ground	
VPA2 (3) or VPA2 (E8-23) ⇔ Body ground	
EP2 (2) or EPA2 (E8-29) ⇔ Body ground	
VCP2 (1) or VCP2 (E8-27) ⇔ Body ground	

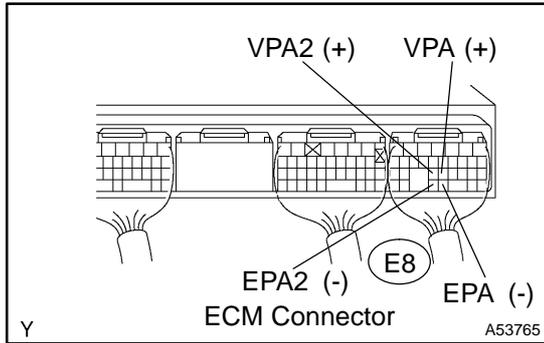
**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**REPLACE ACCELERATOR PEDAL ROD ASSY**

**OBD II scan tool (excluding hand-held tester):**

**1 INSPECT ECM(VPA AND VPA2 VOLTAGE)**



- (a) Turn the ignition switch ON.
- (b) Measure the voltage between the terminals of the E8 ECM connector.

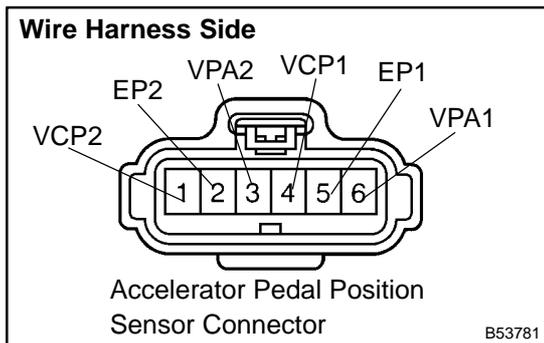
**Standard:**

Accelerator pedal position	Symbols (Terminal No.)	Symbols (Terminal No.)
	VPA (E8-22) ↔ EPA (E8-28)	VPA2 (E8-23) ↔ EPA2 (E8-29)
Released	0.5 - 1.1 V	1.2 - 2.0 V
Depressed	2.6 - 4.5 V	3.4 - 5.3 V

**OK** → **CHECK AND REPLACE ECM (See page 01-35)**

**NG**

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



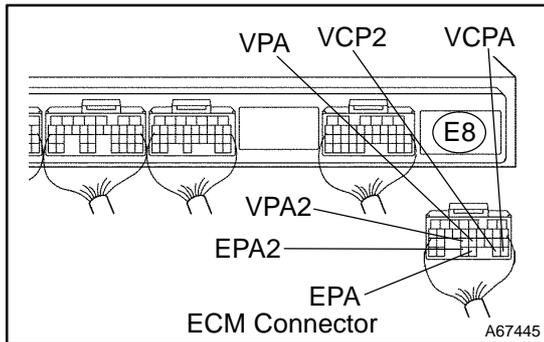
- (a) Disconnect the accelerator pedal position sensor connector.
- (b) Disconnect the ECM E8 connector.
- (c) Check the continuity between the wire harness side connectors.

**Standard (Check for open):**

Symbols (Terminal No.)	Specified condition
VPA1 (6) ↔ VPA (E8-22)	Continuity
EP1 (5) ↔ EPA (E8-28)	
VCP1 (4) ↔ VCPA (E8-26)	
VPA2 (3) ↔ VPA2 (E8-23)	
EP2 (2) ↔ EPA2 (E8-29)	
VCP2 (1) ↔ VCP2 (E8-27)	

**Standard (Check for short):**

Symbols (Terminal No.)	Specified condition
VPA1 (6) or VPA (E8-22) ↔ Body ground	No continuity
EP1 (5) or EPA (E8-28) ↔ Body ground	
VCP1 (4) or VCPA (E8-26) ↔ Body ground	
VPA2 (3) or VPA2 (E8-23) ↔ Body ground	
EP2 (2) or EPA2 (E8-29) ↔ Body ground	
VCP2 (1) or VCP2 (E8-27) ↔ Body ground	



**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**REPLACE ACCELERATOR PEDAL ROD ASSY**