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

HINT:

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

Refer to DTC P2120 on page [05-184](#) .

| 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"> • Accelerator pedal position sensor circuit • Accelerator pedal position sensor • ECM |

WIRING DIAGRAM

Refer to DTC P2120 on page [05-184](#) .

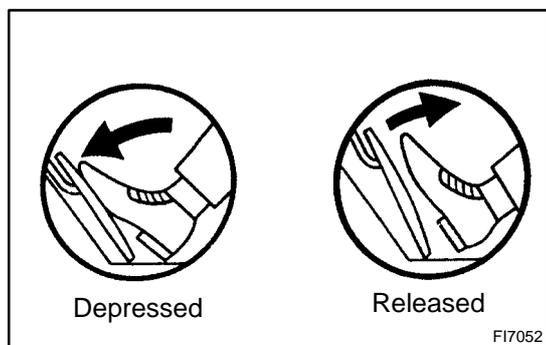
INSPECTION PROCEDURE

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:

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| 1 | READ VALUE OF HAND-HELD TESTER(ACCEL POS #1 AND ACCEL POS #2) |
|----------|--|



- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the ignition switch ON.
- (c) 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.

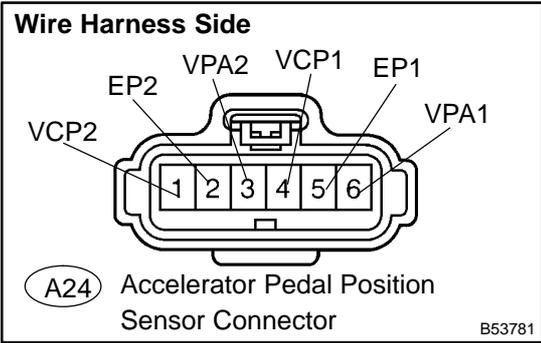
Standard:

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

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| OK | CHECK AND REPLACE ECM (See page 01-35) |
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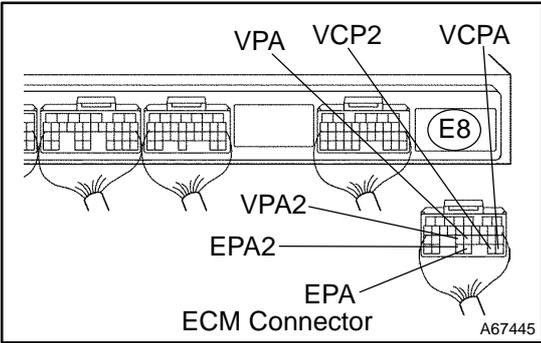
2 CHECK HARNESS AND CONNECTOR(ACCELERATOR PEDAL POSITION SENSOR - ECM)



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

Standard (Check for open):

| Symbols (Terminal No.) | Specified condition |
|-----------------------------|---------------------|
| VPA1 (A24-6) - VPA (E8-22) | Continuity |
| EP1 (A24-5) - EPA (E8-28) | |
| VCP1 (A24-4) - VCPA (E8-26) | |
| VPA2 (A24-3) - VPA2 (E8-23) | |
| EP2 (A24-2) - EPA2 (E8-29) | |
| VCP2 (A24-1) - VCP2 (E8-27) | |



Standard (Check for short):

| Symbols (Terminal No.) | Specified condition |
|--|---------------------|
| VPA1 (A24-6) or VPA (E8-22) - Body ground | No continuity |
| EP1 (A24-5) or EPA (E8-28) - Body ground | |
| VCP1 (A24-4) or VCPA (E8-26) - Body ground | |
| VPA2 (A24-3) or VPA2 (E8-23) - Body ground | |
| EP2 (A24-2) or EPA2 (E8-29) - Body ground | |
| VCP2 (A24-1) or VCP2 (E8-27) - Body ground | |

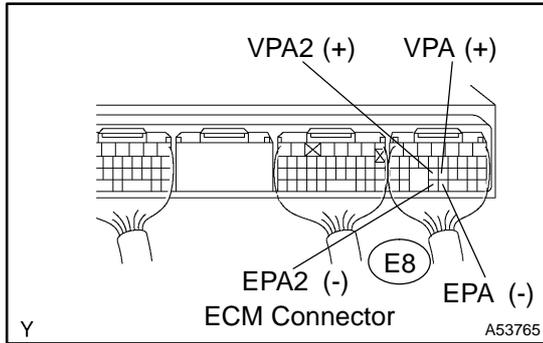
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10-12)

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.

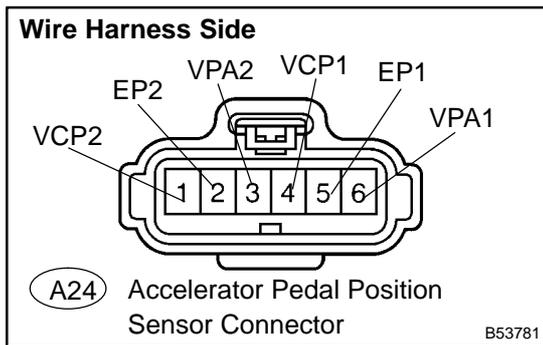
Standard:

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

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

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



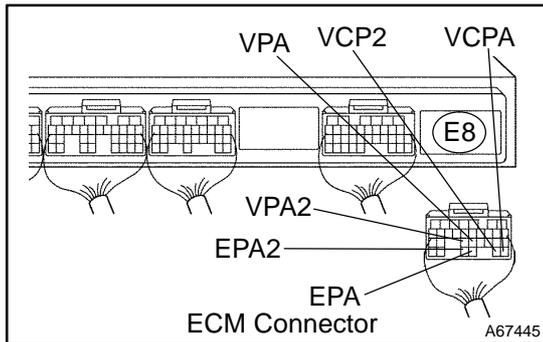
- (a) Disconnect the accelerator pedal position sensor connector.
- (b) Disconnect the ECM E8 connector.
- (c) Check for continuity between the wire harness side connectors.

Standard (Check for open):

| Symbols (Terminal No.) | Specified condition |
|-----------------------------|---------------------|
| VPA1 (A24-6) - VPA (E8-22) | Continuity |
| EP1 (A24-5) - EPA (E8-28) | |
| VCP1 (A24-4) - VCPA (E8-26) | |
| VPA2 (A24-3) - VPA2 (E8-23) | |
| EP2 (A24-2) - EPA2 (E8-29) | |
| VCP2 (A24-1) - VCP2 (E8-27) | |

Standard (Check for short):

| Symbols (Terminal No.) | Specified condition |
|--|---------------------|
| VPA1 (A24-6) or VPA (E8-22) - Body ground | No continuity |
| EP1 (A24-5) or EPA (E8-28) - Body ground | |
| VCP1 (A24-4) or VCPA (E8-26) - Body ground | |
| VPA2 (A24-3) or VPA2 (E8-23) - Body ground | |
| EP2 (A24-2) or EPA2 (E8-29) - Body ground | |
| VCP2 (A24-1) or VCP2 (E8-27) - Body ground | |



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

OK

REPLACE ACCELERATOR PEDAL ROD ASSY (See page 10-12)