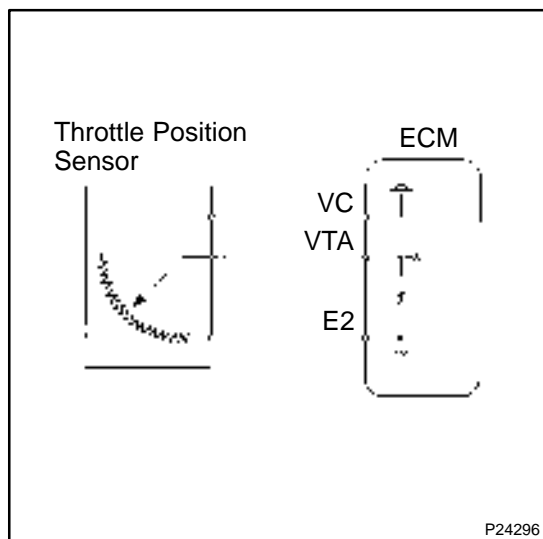


| | | |
|------------|--------------|--|
| DTC | P0120 | Throttle/Pedal Position Sensor/Switch "A" Circuit Malfunction |
|------------|--------------|--|

CIRCUIT DESCRIPTION



The throttle position sensor is mounted in the throttle body and detects the throttle valve opening angle. When the throttle valve is fully closed, a voltage of approximately 0.3 – 1.0 V is applied to terminal VTA of the ECM. The voltage applied to the terminals VTA of the ECM increases in proportion to the opening angle of the throttle valve and becomes approximately 3.2 – 4.9 V when the throttle valve is fully opened. The ECM judges the vehicle driving conditions from these signals input from terminal VTA and uses them as one of the conditions for deciding the air-fuel ratio correction, power increase correction and fuel-cut control etc.

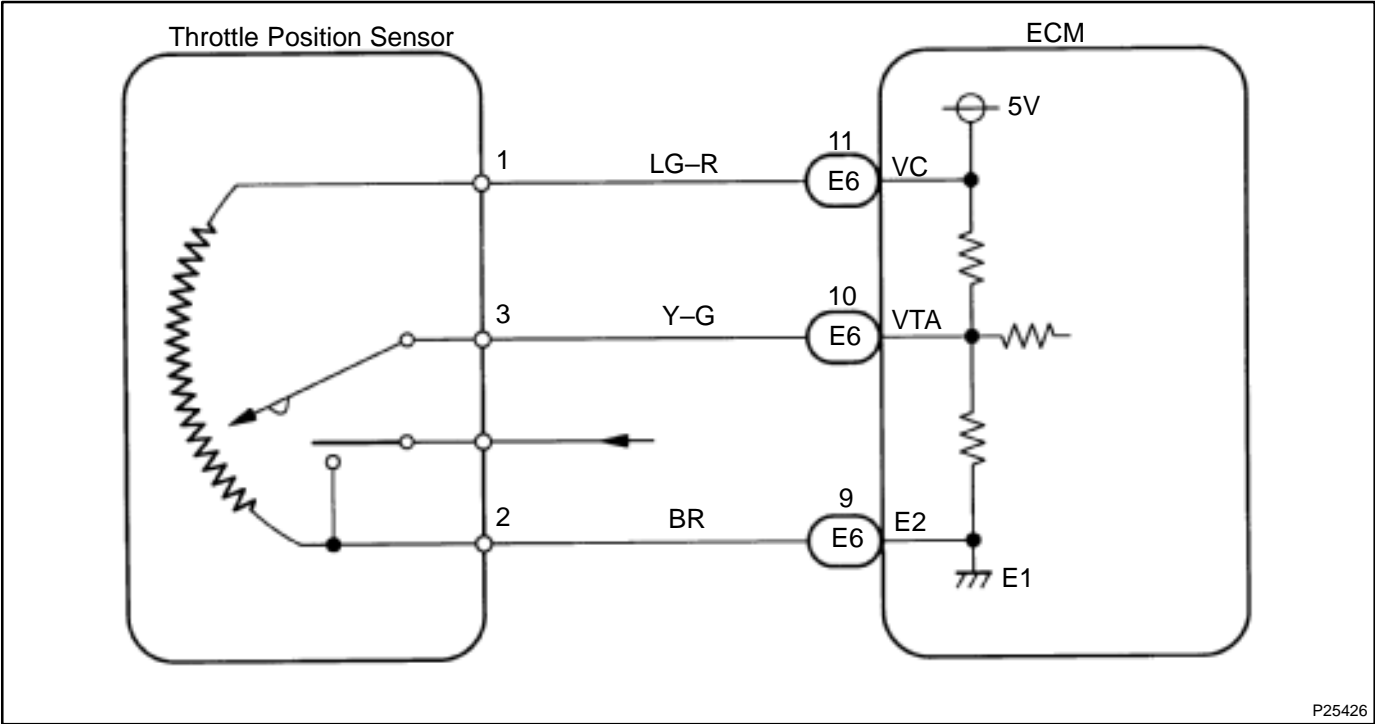
| DTC No. | DTC Detecting Condition | Trouble Area |
|---------|---|--|
| P0120 | Condition (a) or (b) continues: (a) VTA < 0.1 V (b) VTA > 4.9 V | <ul style="list-style-type: none"> • Open or short in throttle position sensor circuit • Throttle position sensor • ECM |

HINT:

After confirming DTC P0120 use the OBD II scan tool or TOYOTA hand-held tester to confirm the throttle valve opening percentage.

| Throttle valve opening position expressed as percentage | | Trouble Area |
|---|---------------------------|--|
| Throttle valve fully closed | Throttle valve fully open | |
| 0 % | 0 % | VC line open VTA line open or short |
| 100 % | 100 % | E2 line open |

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

If DTC "P0105" (Manifold Absolute Pressure/Barometric Pressure Circuit Malfunction), "P0110" (Intake Air Temp. Circuit Malfunction), "P0115" (Engine Coolant Temp. Circuit Malfunction), "P0120" (Throttle/Pedal Position Sensor/Switch "A" Circuit Malfunction) are output simultaneously, E2 (sensor ground) may be open.

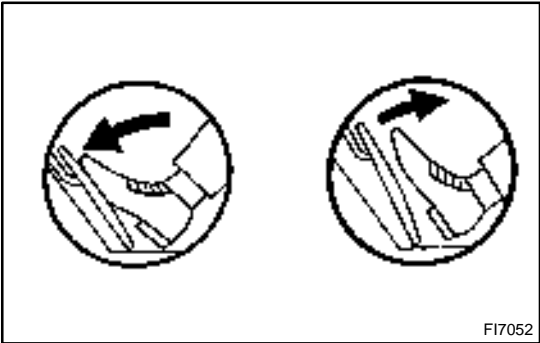
| | |
|---|--|
| 1 | Connect the OBD II scan tool or TOYOTA hand-held tester, read the throttle valve opening percentage. |
|---|--|

PREPARATION:

- (a) Remove the fuse cover on the instrument panel.
- (b) Connect the OBD II scan tool or TOYOTA hand-held tester to DLC3.
- (c) Turn ignition switch ON and OBD II scan tool or TOYOTA hand-held tester main switch ON.

CHECK:

Read the throttle valve opening percentage.



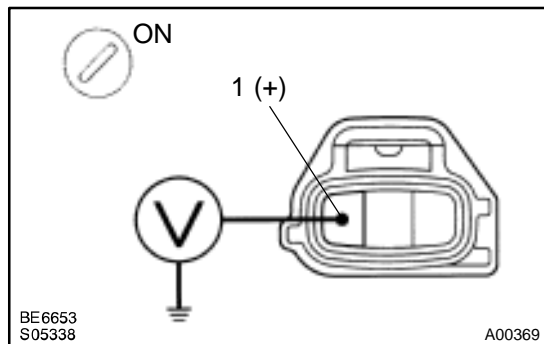
OK:

| Throttle valve | Throttle valve opening position expressed as percentage |
|----------------|---|
| Fully open | Approx. 70 % |
| Fully closed | Approx. 10 % |

OK

Check for intermittent problems (See page DI-3).

NG

2 Check voltage between terminal 1 of wire harness side connector and body ground.**PREPARATION:**

- (a) Disconnect the throttle position sensor connector.
- (b) Turn ignition switch ON.

CHECK:

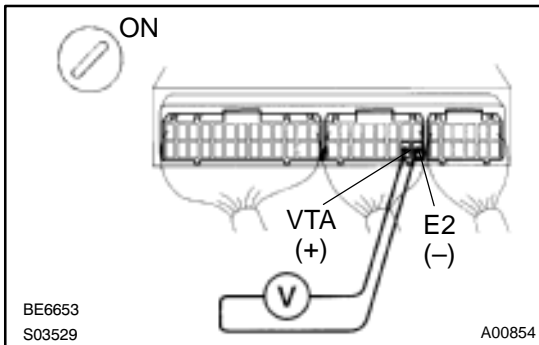
Measure voltage between terminal 1 (VC) of wire harness side connector and body ground.

OK:

Voltage: 4.5 – 5.5 V

NG**Go to step 5.****OK****3 Check throttle position sensor (See page [SF-25](#)).****NG****Replace throttle position sensor.****OK**

4 Check voltage between terminals VTA and E2 of ECM connector.



PREPARATION:

- Remove the lower finish panel.
- Turn ignition switch ON.

CHECK:

Measure voltage between terminals VTA and E2 of ECM connector.

OK:

| Throttle valve | Voltage |
|----------------|-------------|
| Fully closed | 0.3 – 1.0 V |
| Fully open | 3.2 – 4.9 V |

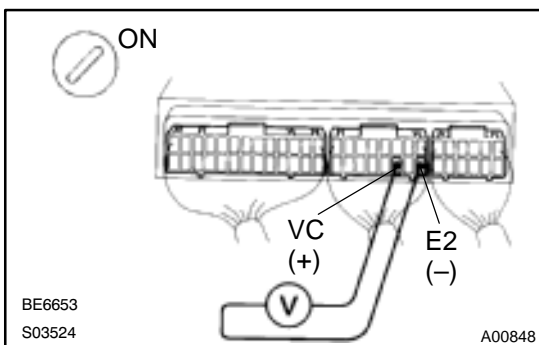
NG

Check for open and short in harness and connector between ECM and throttle position sensor (VTA or E2 line) (See page [IN-27](#)).

OK

Check and replace ECM (See page [IN-27](#)).

5 Check voltage between terminals VC and E2 of ECM connector.



PREPARATION:

- Remove the lower finish panel.
- Turn ignition switch ON.

CHECK:

Measure voltage between terminals VC and E2 of ECM connector.

OK:

Voltage: 4.5 – 5.5 V

NG

Check and replace ECM (See page [IN-27](#)).

OK

Check for open in harness and connector between ECM and sensor (VC line) (See page [IN-27](#)).