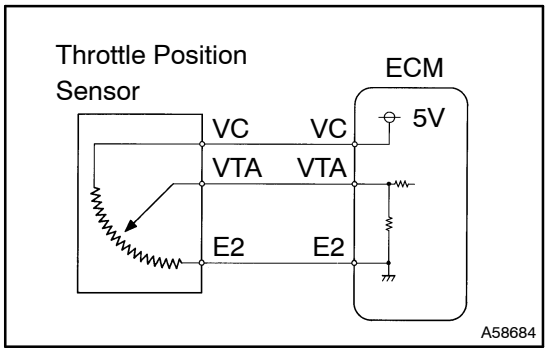
DTC 41 THROTTLE POSITION SENSOR CIRCUIT

CIRCUIT DESCRIPTION

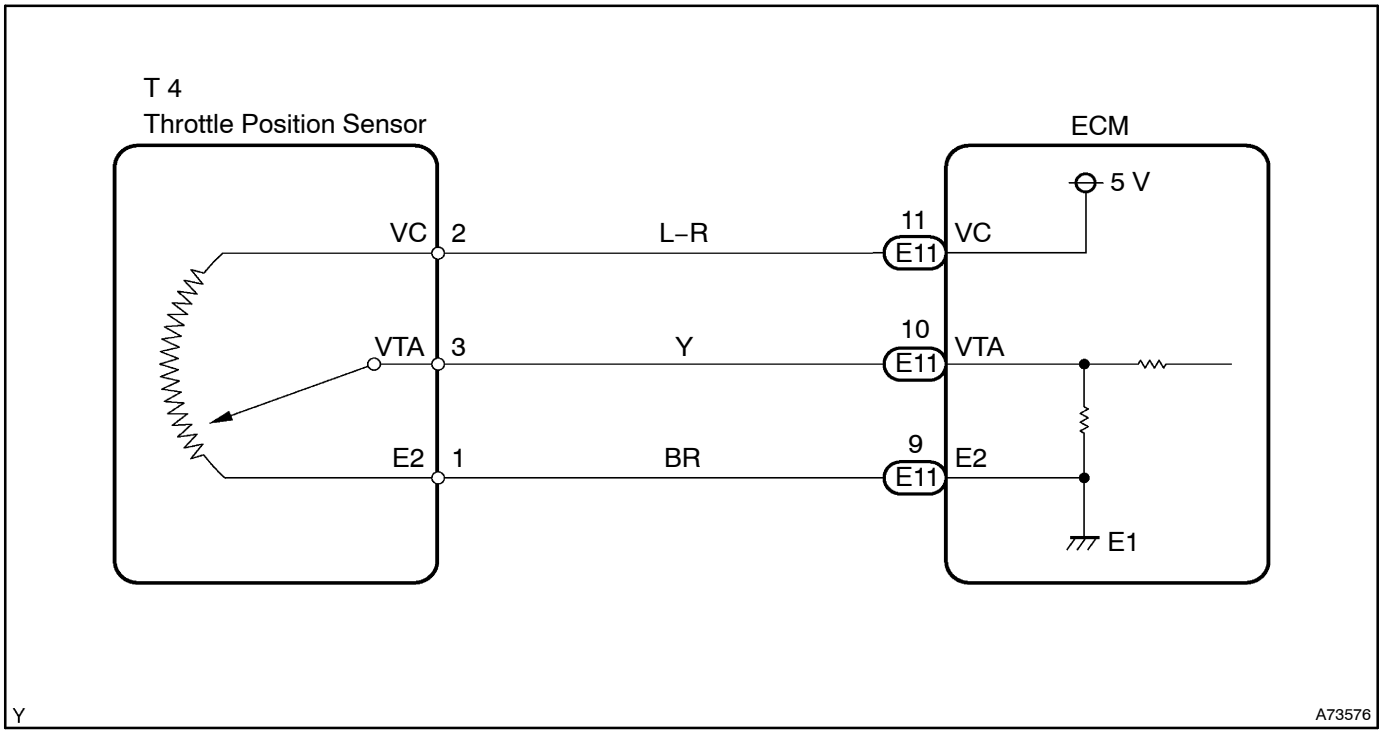


The throttle position sensor is mounted on the throttle body and detect the throttle valve opening angle.
When the throttle valve is fully closed, a voltage of approximately 0.3 – 0.8 V is applied to the terminal VTA of the ECM. When the throttle valve is opened, the voltage applied to the terminal VTA 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 the 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
41	Condition (a) or (b) continues with more than 5 sec. (a) VTA < 0.1 V (b) VTA > 4.9 V	• Open or short in throttle position sensor circuit • Throttle position senor • ECM

HINT:
When the connector for the throttle position sensor is disconnected, DTC 41 is not displayed. DTC 41 is displayed only when there is open or short in the VTA signal circuit of the throttle position sensor.

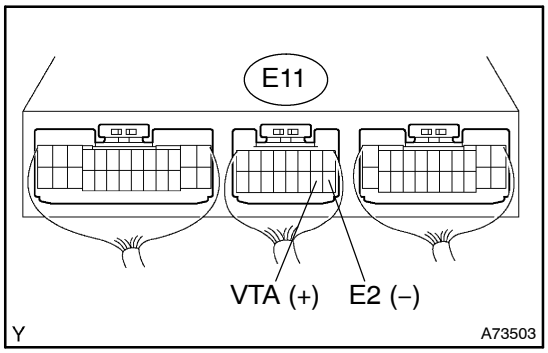
WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
If different DTCs that are related to different systems are output simultaneously while terminal E2 is used as a ground terminal, terminal E2 may be open.

1 CHECK ECM (VTA VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage between terminals of E11 ECM connector.
Standard:

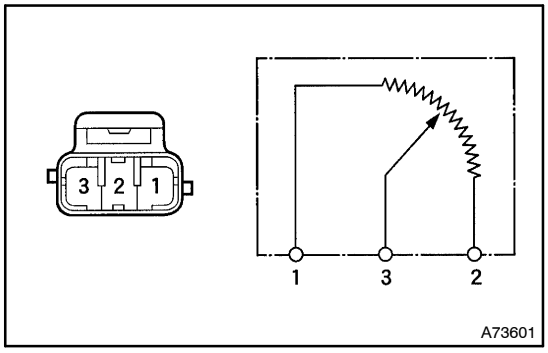
Symbols (Terminal No.)	Throttle valve	Specified condition
VTA (E11–10) ⇔ E2 (E11–9)	Fully closed	0.3 – 0.8 V
	Fully open	3.2 – 4.9 V

HINT:
The voltage should increase steadily in proportion to the throttle valve opening angle.

OK → **CHECK FOR INTERMITTENT PROBLEMS (See page 05–15)**

NG

2 INSPECT THROTTLE POSITION SENSOR



(a) Measure the resistance between the terminals.
Resistance:

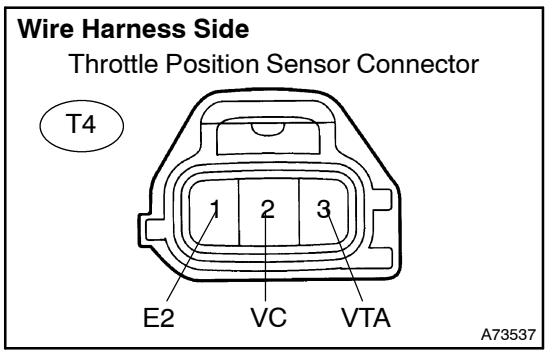
Terminal No.	Throttle valve	Specified condition
1 ⇔ 2	–	2.5 – 6.0 kΩ
1 ⇔ 3	Fully open	0.2 – 5.7 kΩ
	Fully closed	2.0 – 10.2 kΩ

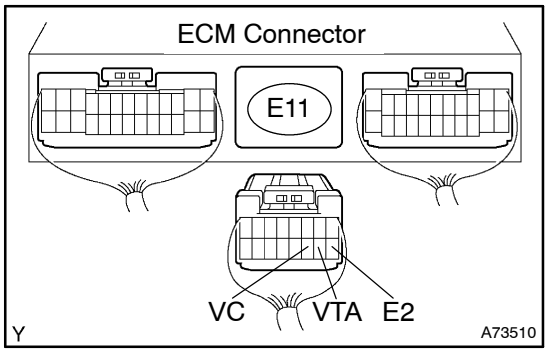
HINT:
Resistance between the terminals 1 and 3 should increace gradually in accordance with the throttle valve opening angle.

NG → **REPLACE THROTTLE POSITION SENSOR (See page 10–10)**

OK

3 CHECK HARNESS AND CONNECTOR (THROTTLE POSITION SENSOR ⇔ ECM)





(a) Disconnect T4 throttle position sensor connector.
(b) Disconnect the E11 ECM connector
(c) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
VC (T4–2) ⇔ VC (E11–11)	Continuity
VTA (T4–3) ⇔ VTA (E11–10)	
E2 (T4–1) ⇔ E2 (E11–9)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
VC (T4–2) or VC (E11–11) ⇔ Other terminals and body ground	No continuity
VTA (T4–3) or VTA (E11–10) ⇔ Other terminals and body ground	

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

OK

CHECK AND REPLACE ECM (See page 01–36)