DTC	P2102	THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT LOW

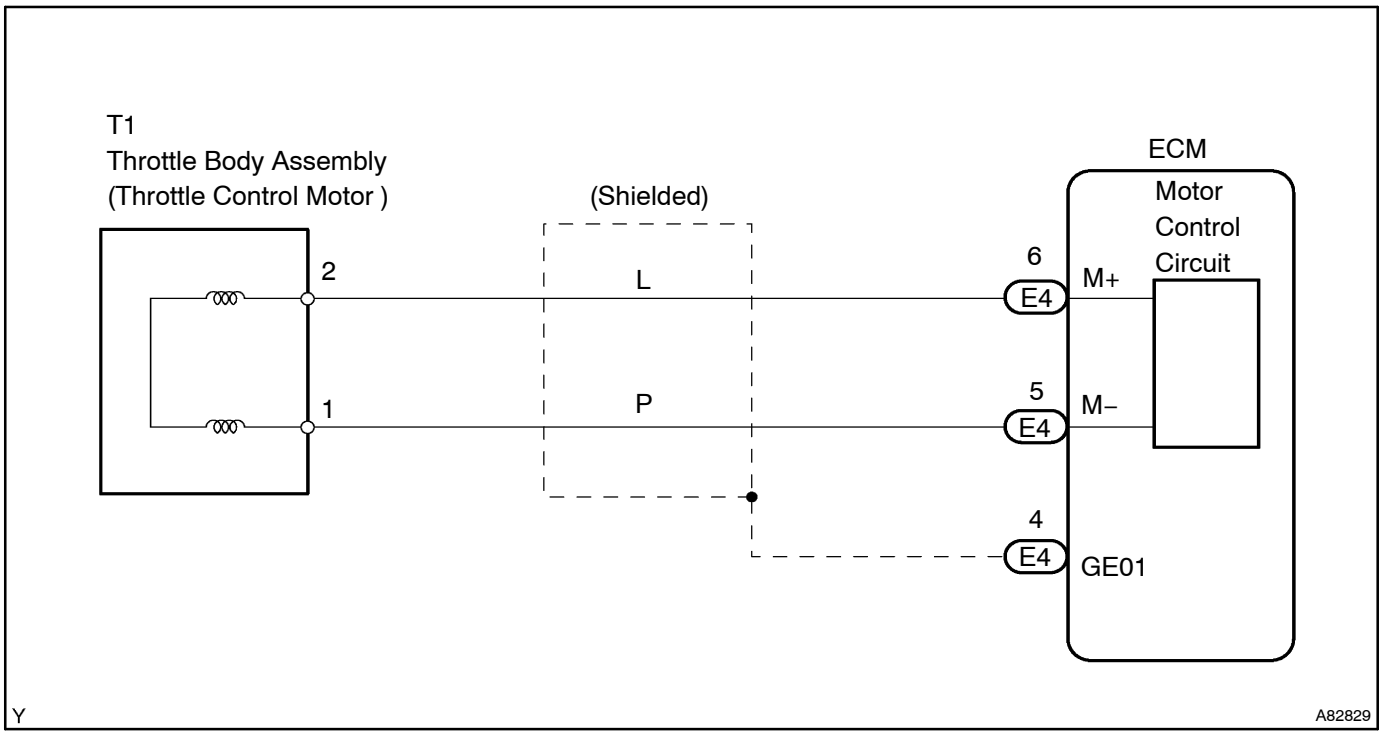
DTC	P2103	THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT HIGH

CIRCUIT DESCRIPTION

The throttle motor is operated by the ECM and it opens and closes the throttle valve.
The opening angle of the throttle valve is detected by the throttle position sensor which is mounted on the throttle body. The throttle position sensor provides feedback to the ECM. This feedback allows the ECM to control the throttle motor and monitor the throttle opening angle as the ECM responds to driver inputs.
HINT:
This Electrical Throttle Control System (ETCS) does not use a throttle cable.

DTC No.	DTC Detection Condition	Trouble Area
P2102	Conditions (a) and (b) continue for 2.0 seconds: (a) Throttle control motor output duty is 80 % or more (b) Throttle control motor current is 0.5 A or less	• Open in throttle control motor circuit • Throttle control motor • ECM
P2103	Following conditions are met: • Throttle control motor current is 10 A or more (0.6 second) • When electronic throttle actuator is ON (i.e. actuator power is ON or actuator power supply voltage is 8 V or more), hybrid IC current limiter port fails	• Short in throttle control motor circuit • Throttle control motor • Throttle valve • Throttle body assembly • ECM

WIRING DIAGRAM

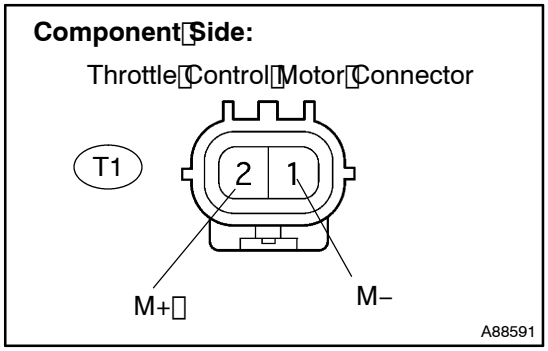


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data records the engine condition when malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air–fuel ratio was lean or rich, and other data from the time the malfunction occurred.

1 INSPECT THROTTLE W/MOTOR BODY ASSY(THROTTLE CONTROL MOTOR)



(a) Disconnect the throttle control motor connector.

(b) Using an ohmmeter, measure the motor resistance between terminals 1 (M–) and 2 (M+).

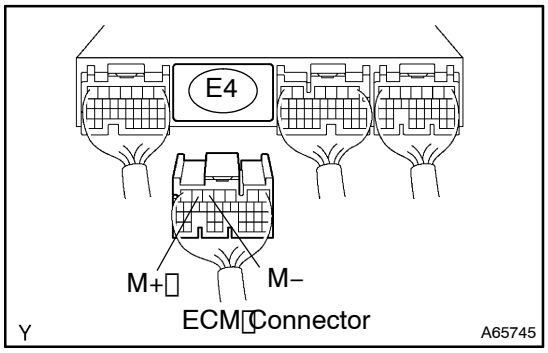
Standard:

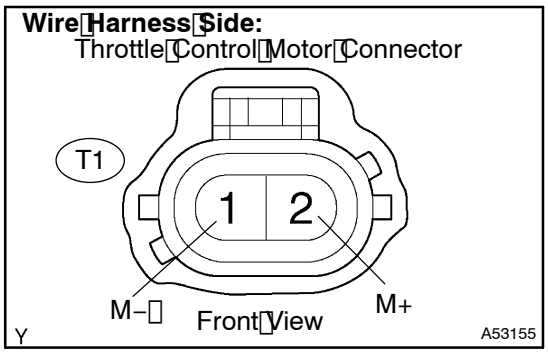
Tester Connection	Specified Condition
M– (1) – M+ (2)	0.3 to 100 Ω at 20°C (68°F)

NG → **REPLACE THROTTLE W/MOTOR BODY ASSY (See page 10–13)**

OK

2 CHECK HARNESS AND CONNECTOR(ECM – THROTTLE CONTROL MOTOR)





(a) Disconnect the E4 ECM connector.

(b) Disconnect the throttle control motor connector.

(c) Check the resistance between the wire harness side connectors.

Standard: (check for open)

Tester Connection	Specified Condition
Throttle control motor (2) – M+ (E4 –6)	Below 1 Ω
Throttle control motor (1) – M– (E4 –5)	Below 1 Ω

Standard: (check for short)

Tester Connection	Specified Condition
Throttle control motor (2) or M+ (E4–6) – Body ground	10 kΩ or higher
Throttle control motor (1) or M– (E4–5) – Body ground	10 kΩ or higher

(d) Reconnect the ECM connector and the throttle control motor connector.

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

OK

3	INSPECT THROTTLE W/MOTOR BODY ASSY

(a) Visually check between the throttle valve and its housing for foreign objects.
Also, check if the valve can open and close smoothly.

OK: The throttle valve is not contaminated by foreign objects and can move smoothly.

NG → **REMOVE FOREIGN OBJECT AND CLEAN THROTTLE BODY**

OK

REPLACE ECM (See page 10–24)