DTC	P2118	THROTTLE ACTUATOR CONTROL MOTOR CURRENT RANGE/PERFORMANCE

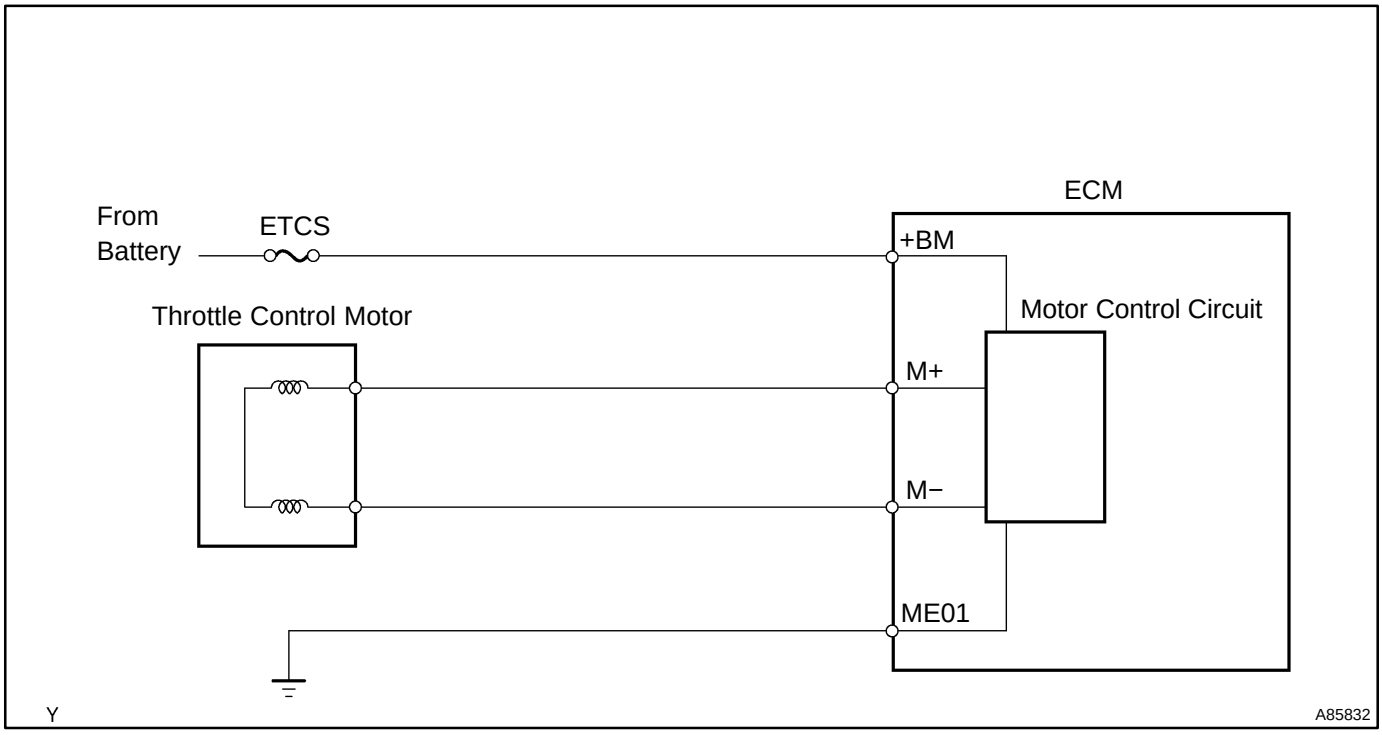
CIRCUIT DESCRIPTION

The Electronic Throttle Control System (ETCS) has a dedicated power supply circuit. The voltage (+BM) is monitored and when the voltage is low (less than 4 V), the ECM concludes that the ETCS has a fault and current to the throttle control motor is cut.

When the voltage becomes unstable, the ETCS itself becomes unstable. For this reason, when the voltage is low, the current to the motor is cut. If repairs are made and the system has returned to normal, turn the ignition switch to OFF. The ECM then allows current to flow to the motor and the motor can be restarted.

HINT:

This ETCS does not use a throttle cable.



DTC No.	DTC Detection Condition	Trouble Area
P2118	Open in ETCS power source circuit	• Open in ETCS power source circuit • ETCS fuse • ECM

MONITOR DESCRIPTION

The ECM monitors the battery supply voltage applied to the electronic throttle motor. When the power supply voltage drops below the threshold, the ECM concludes that the power supply circuit has an open circuit. A DTC is set and the MIL is turned on.

FAIL SAFE

If the ETCS has a malfunction, the ECM cuts off current to the throttle control motor. The throttle control valve returns to a predetermined opening angle (approximately 16°) by the force of the return spring. The ECM then adjusts the engine output by controlling the fuel injection (intermittent fuel−cut) and ignition timing in accordance with the accelerator pedal opening angle to enable the vehicle to continue at a minimal speed. If the accelerator pedal is depressed firmly and slowly, the vehicle can be driven slowly.
If a ”pass” condition is detected and the ignition switch is turned OFF, the fail−safe operation will stop and the system will return to normal.

MONITOR STRATEGY

Related DTCs	P2118: Throttle Actuator Power Supply
Required sensors/ components (Main)	Throttle actuator, Throttle valve, ETCS fuse
Required sensors/ components (Related)	−
Frequency of operation	Continuous
Duration	0.8 seconds
MIL operation	Immediate
Sequence operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever this DTC is not present	See page 05−16
Battery voltage	More than 8 V

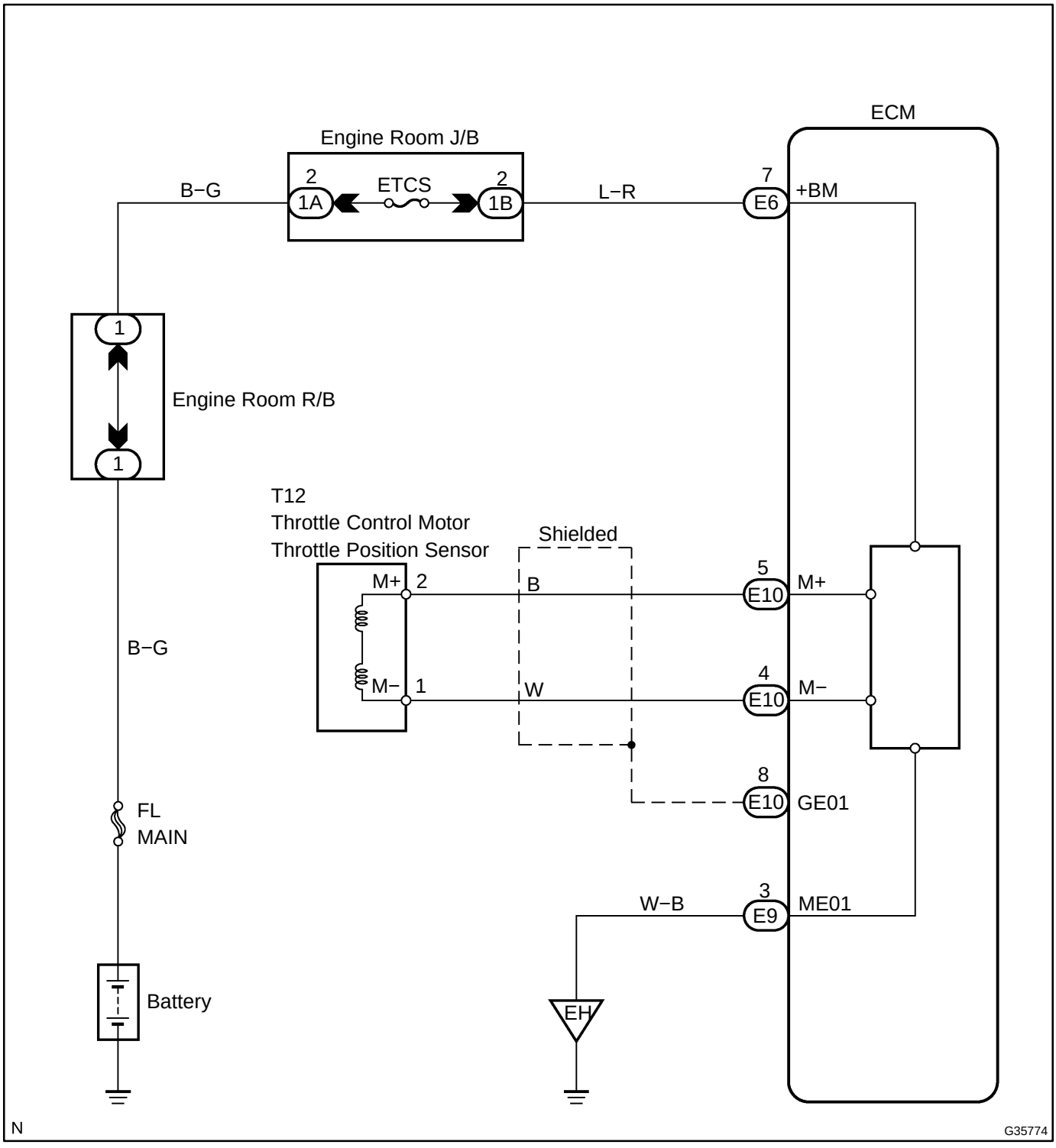
TYPICAL MALFUNCTION THRESHOLDS

Throttle actuator power supply voltage	Less than 4 V

COMPONENT OPERATING RANGE

Throttle actuator power supply voltage	9 to 14 V

WIRING DIAGRAM

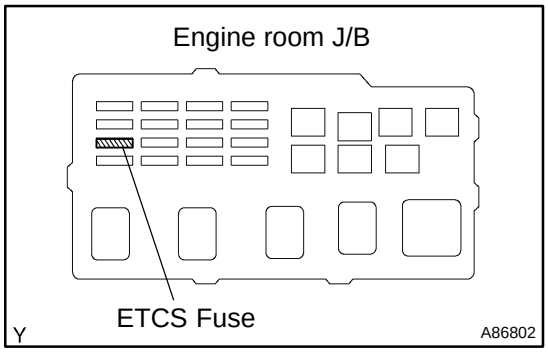


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand−held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a 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	CHECK FUSE (ETCS)

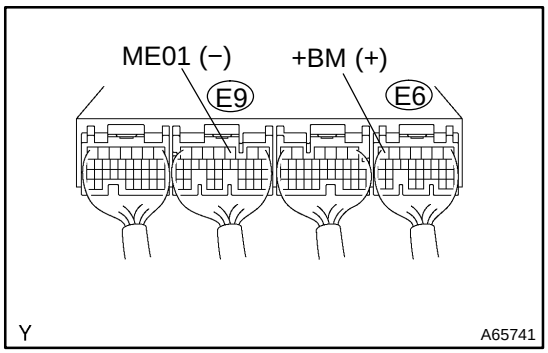


(a) Remove the ETCS fuse from the engine room J/B.
(b) Check the resistance of the ETCS fuse.
Standard: Below 1 Ω

NG → **REPLACE FUSE**

OK

2	INSPECT ECM (+BM VOLTAGE)



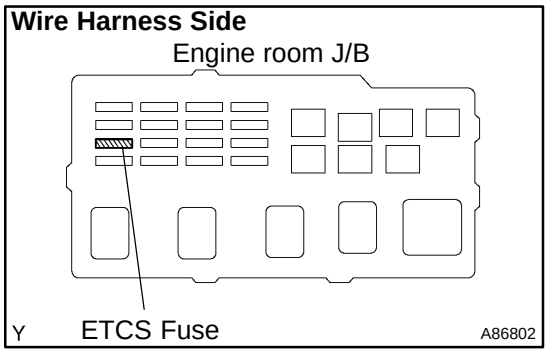
(a) Check the voltage of the ECM connectors.
Standard:

Tester Connection	Specified Condition
E6−7 (+BM) − E9−3 (ME01)	9 to 14 V

OK → **REPLACE ECM (See page 10−9)**

NG

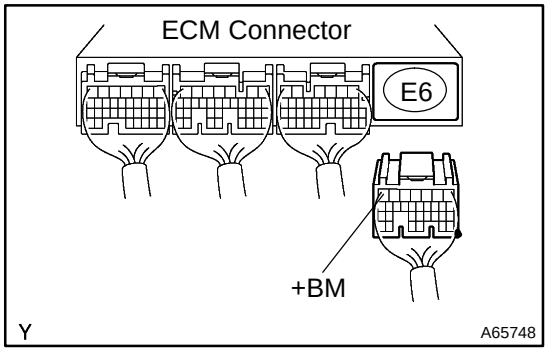
3 CHECK WIRE HARNESS (ECM − ETCS FUSE, ETCS FUSE − BATTERY)

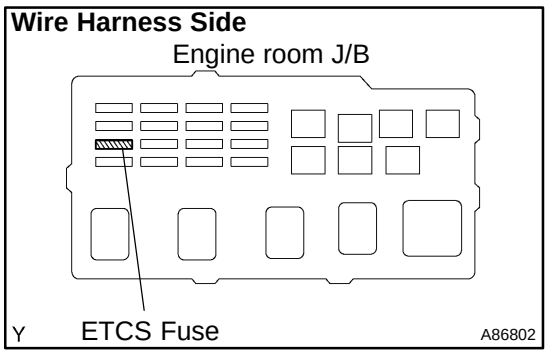


(a) Check the wire harness between the ETCS fuse and ECM.
(1) Remove the ETCS fuse from the engine room J/B.
(2) Disconnect the E6 ECM connector.
(3) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
J/B ETCS fuse terminal 2 − E6−7 (+BM)	Below 1 Ω
J/B ETCS fuse terminal 2 or E6−7 (+BM) − Body ground	10 kΩ or higher





(b) Check the wire harness between the ETCS fuse and battery.
(1) Remove the ETCS fuse from the engine room J/B.
(2) Disconnect the battery positive cable.
(3) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
Battery positive cable − J/B ETCS fuse terminal 1	Below 1 Ω
Battery positive cable or J/B ETCS fuse terminal 1 − Body ground	10 kΩ or higher

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

OK

CHECK ENGINE ROOM J/B