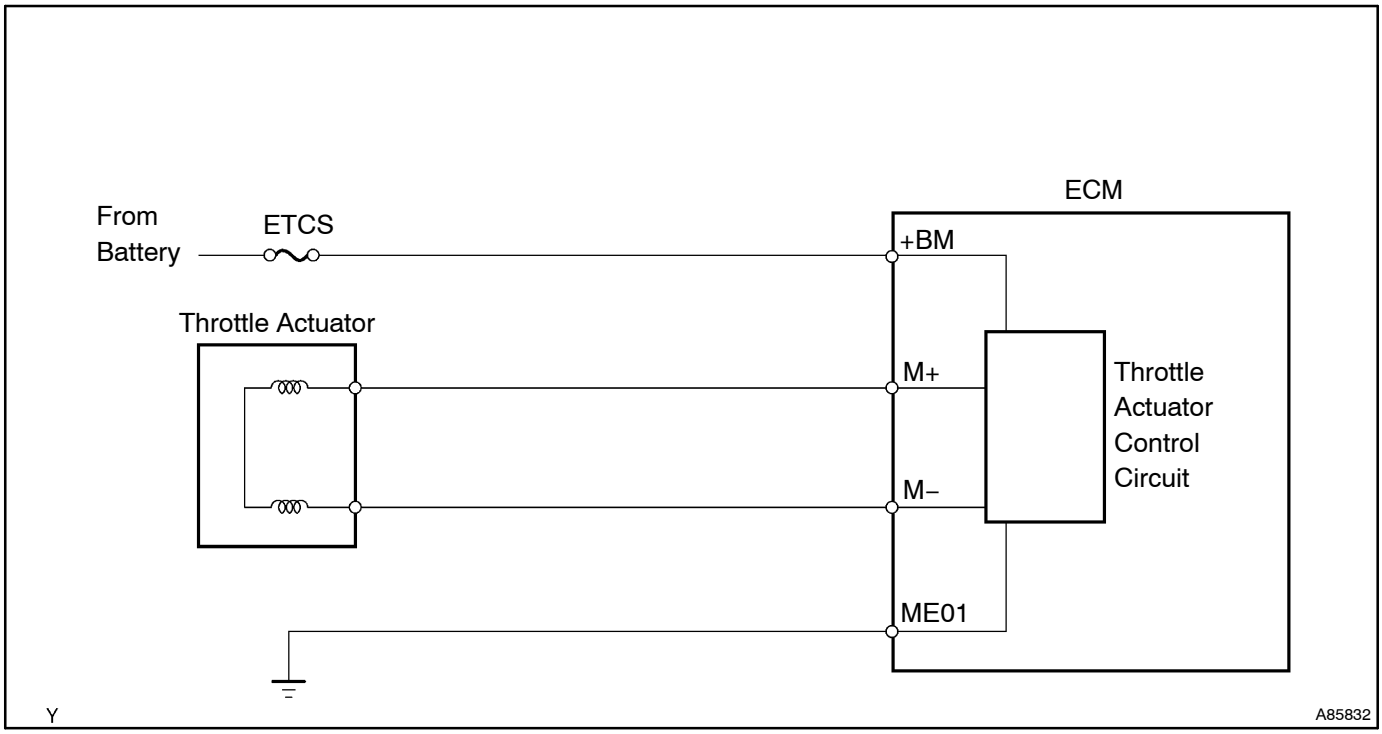
DTC	P2118	THROTTLE ACTUATOR CONTROL MOTOR CURRENT RANGE/PERFORMANCE

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 4V), 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 becomes unstable. For this reason, when the voltage is low, current to the motor is cut. If repairs are made and the system has returned to normal, turn the ignition switch OFF. Now the ECM will be able to restart the throttle actuator (motor).
HINT:
The ETCS does not use a throttle cable.



DTC No.	DTC Detection Condition	Trouble Area
P2118	Open in ETCS power source (+BM) circuit (1 trip detection logic)	• Open in ETCS power source circuit • ETCS fuse • ECM

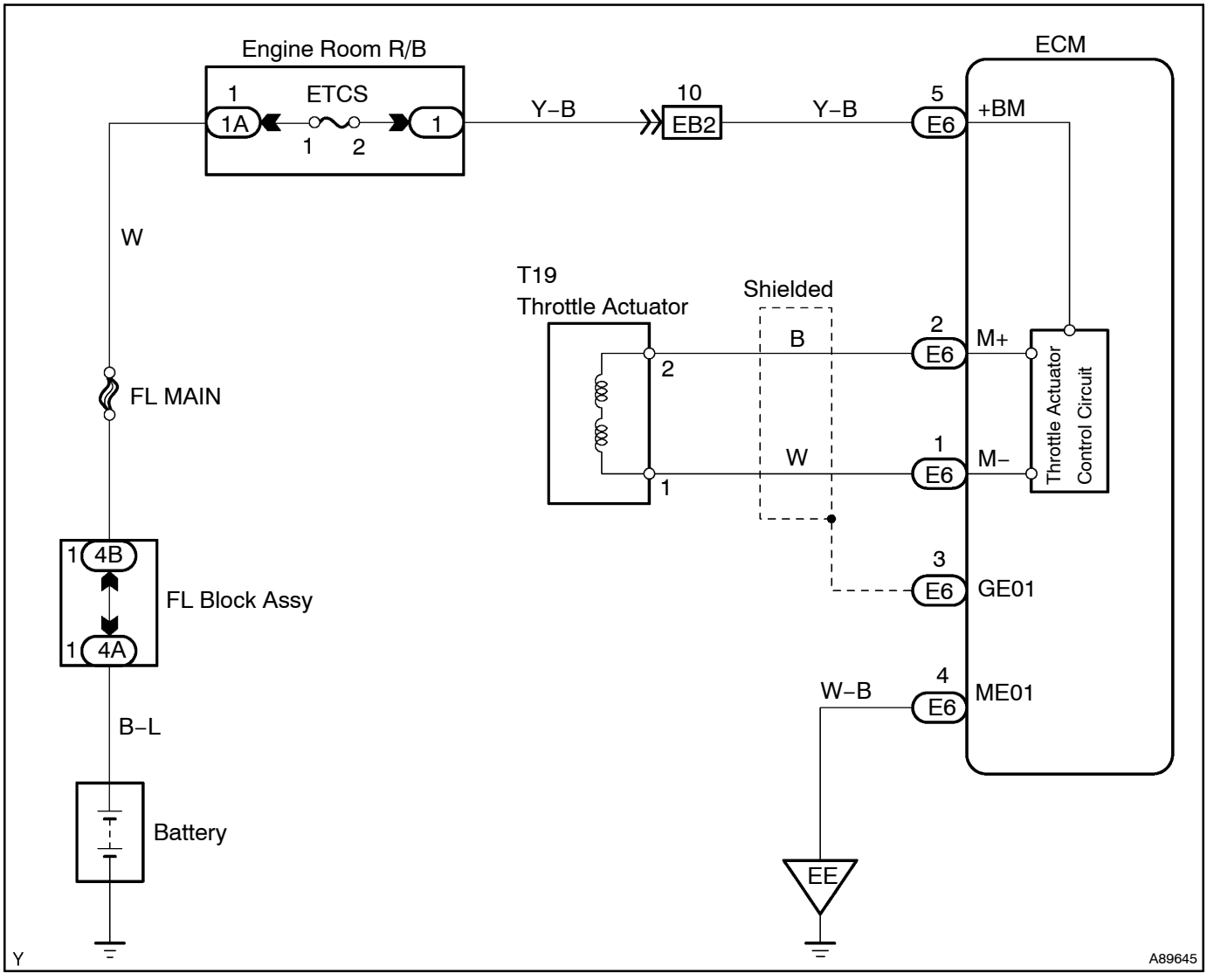
MONITOR DESCRIPTION

The ECM monitors the battery supply voltage applied to the throttle actuator.
When the power supply voltage (+BM) drops below 4 V for 0.8 seconds or more, the ECM interprets this as an open in the power supply circuit (+BM). The ECM illuminates the MIL and sets a DTC.
This monitor runs for 5 seconds (the first 5 seconds of engine idle) after the engine is started.

FAIL–SAFE

If the ETCS has a malfunction, the ECM shuts off current to the throttle actuator. 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.

WIRING DIAGRAM

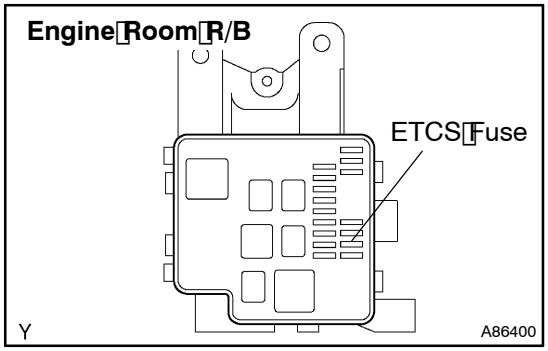


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the Intelligent Tester II. 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	INSPECT FUSE (ETCS)



(a) Remove the ETCS fuse from the engine room Relay Block (R/B).

(b) Measure the resistance of the ETCS fuse.

Standard: Below 1 Ω

If the fuse is open, replace the fuse.

NG → **CHECK FOR SHORT IN ALL HARNESS AND COMPONENTS CONNECTED FUSE**

OK

2	READ VALUE OF INTELLIGENT TESTER II (+BM VOLTAGE)

(a) Connect the Intelligent tester II to the DLC3.

(b) Turn the ignition switch ON.

(c) Enter the following menus: Enter/ Diagnosis/ OBD·MOBD/ Power train/ Engine and ECT/ Data List/ All Data/ +BM Voltage.

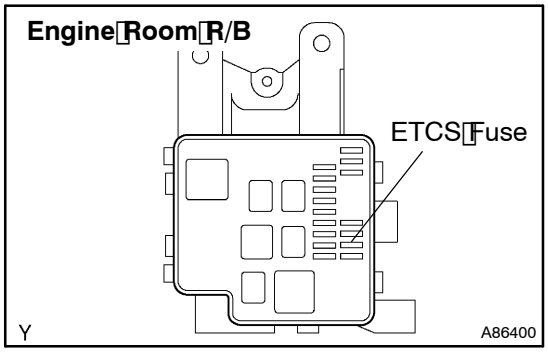
(d) Read the +BM Voltage.

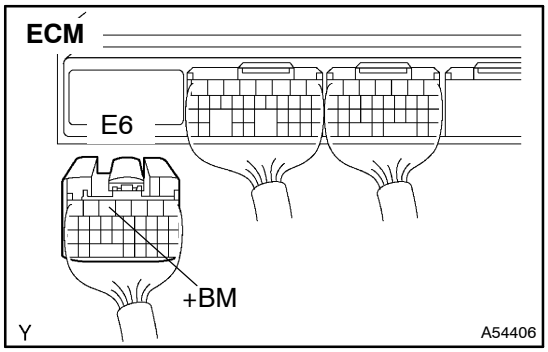
Standard: 9 to 14 V

OK → **CHECK FOR INTERMITTENT PROBLEM (see page 05–11)**

NG

3	CHECK WIRE HARNESS (ECM – BATTERY – ETCS FUSE)





Check the wire harness between the ETCS fuse, the battery positive terminal and the ECM.

(1) Remove the ETCS fuse from the engine room R/B.
(2) Disconnect the E6 ECM connector.
(3) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
R/B ETCS fuse terminal 1 – Battery positive terminal	Below 1 Ω
R/B ETCS fuse terminal 1 or Battery positive terminal – Body ground	10 kΩ or higher
R/B ETCS fuse terminal 2 – E6–5 (+BM)	Below 1 Ω
R/B ETCS fuse terminal 2 or E6–5 (+BM) – Body ground	10 kΩ or higher

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

OK

REPLACE ECM (See page 10–21)