DTC	P2118	Throttle Actuator Control Motor Current Range / Performance

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

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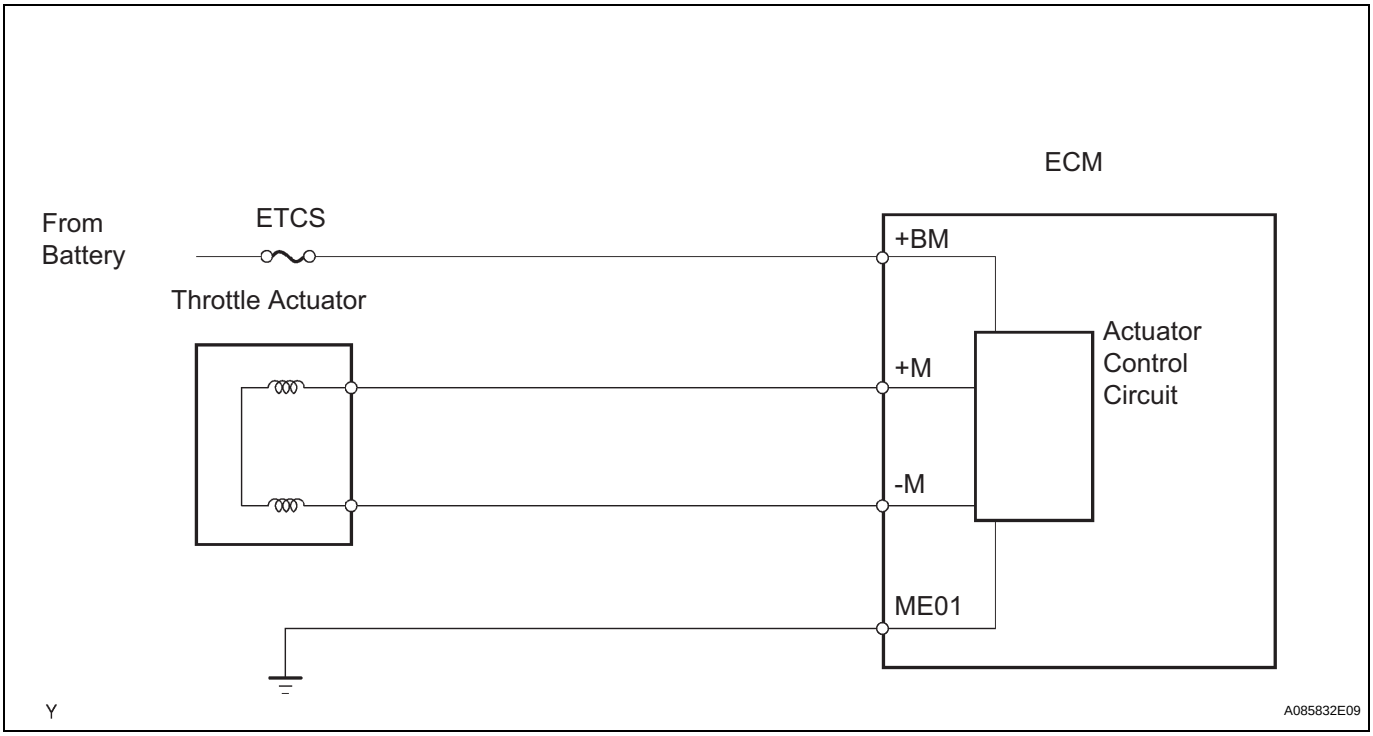

HINT:
This ETCS does not use a throttle cable.

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 actuator. 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 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 then 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

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TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	None
Battery voltage	More than 8 V

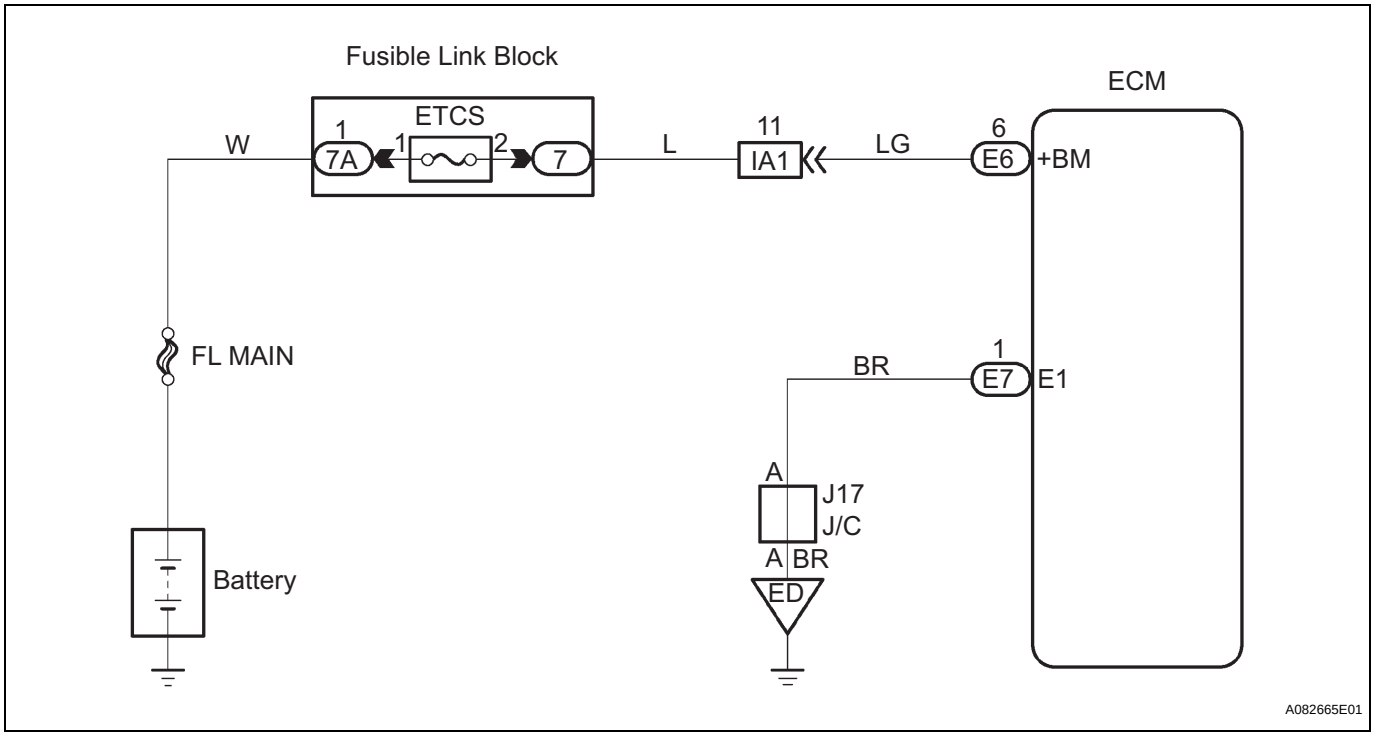
TYPICAL MALFUNCTION THRESHOLDS

Throttle actuator power supply voltage	Less than 4 V

COMPONENT OPERATING RANGE

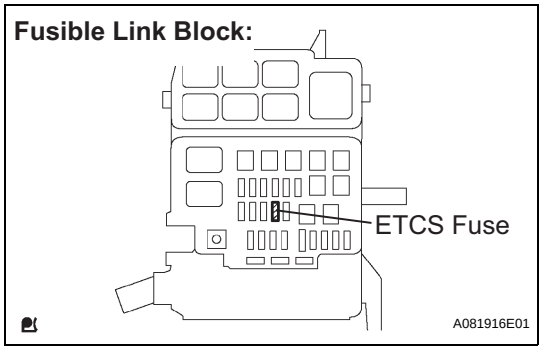
Throttle actuator power supply voltage	9 to 14 V

WIRING DIAGRAM



HINT:
Read freeze frame data using the intelligent tester or the OBD II scan tool. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. 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)

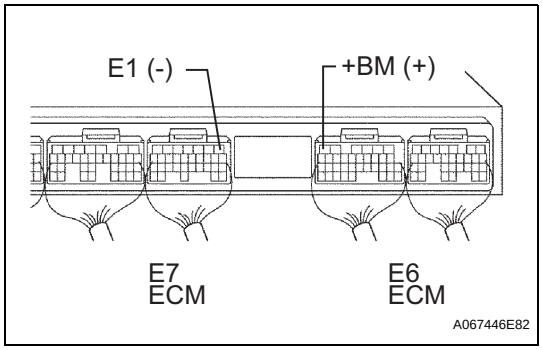


(a) Remove the ETCS fuse from the fusible link block.
(b) Measure the resistance of the ETCS fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

2 INSPECT ECM (+BM VOLTAGE)



(a) Measure the voltage of the ECM connectors.
Standard voltage

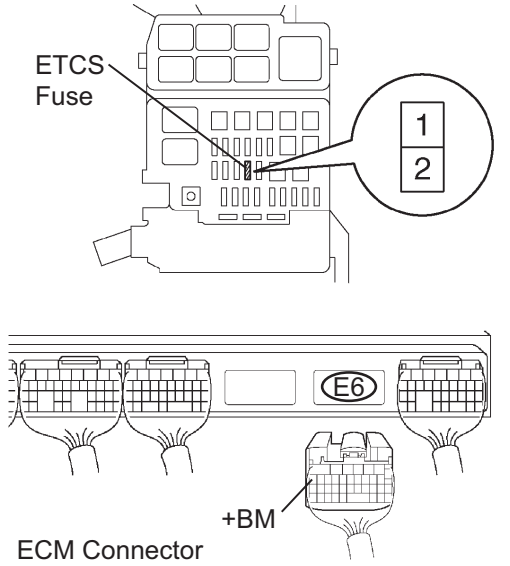
Tester Connection	Specified Condition
E6-6 (+BM) - E7-1 (E1)	9 to 14 V

OK → **REPLACE ECM**

NG

3	CHECK HARNESS AND CONNECTOR (ECM - ETCS FUSE, ETCS FUSE - BATTERY)

Fusible Link Block:



(a) Check the harness and the connector between the ETCS fuse and ECM.
  (1) Remove the ETCS fuse from the fusible link block.
  (2) Disconnect the E6 ECM connector.
  (3) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
ETCS fuse terminal 2 - E6-6 (+BM)	Below 1 Ω
ETCS fuse terminal 2 or E6-6 (+BM) - Body ground	10 kΩ or higher

(b) Check the harness and the connector between the ETCS fuse and battery.
  (1) Remove the ETCS fuse from the fusible link block.
  (2) Disconnect the battery's positive cable.
  (3) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
Battery positive cable - ETCS fuse terminal 1	Below 1 Ω
Battery positive cable or ETCS fuse terminal 1 - Body ground	10 kΩ or higher

(c) Reinstall the ETCS fuse.
(d) Reconnect the ECM connector.

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

OK

CHECK AND REPLACE FUSIBLE LINK BLOCK ASSEMBLY

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