

<b>DTC</b>	<b>P2118</b>	<b>THROTTLE ACTUATOR CONTROL MOTOR CURRENT RANGE/PERFORMANCE</b>
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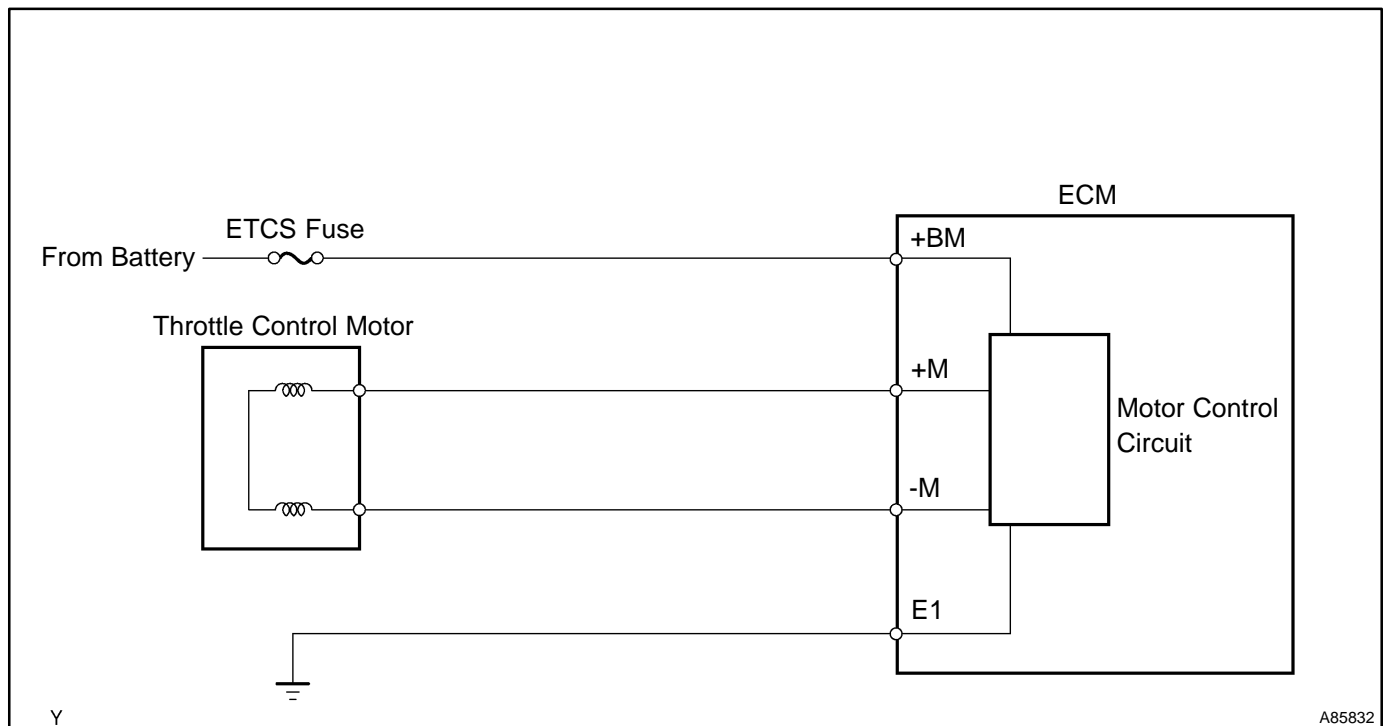
## CIRCUIT DESCRIPTION

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 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 power switch OFF. The ECM then allows current to flow to the motor and the motor can be restarted.

**HINT:**

This Electrical Throttle Control System (ETCS) does not use a throttle cable.



DTC No.	DTC Detection Condition	Trouble Area
P2118	Open in ETCS power source circuit	<ul style="list-style-type: none"> <li>• Open in ETCS power source circuit</li> <li>• ETCS fuse</li> <li>• ECM</li> </ul>

## 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 there is an open in the power supply circuit. A DTC is set and the MIL is turned on.

## FAIL SAFE

If the Electronic Throttle Control System (ETCS) has 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 to drive.

If the accelerator pedal is depressed firmly and slowly, the vehicle can be driven slowly.

If a "pass" condition is detected and then the power switch is turned OFF, the fail-safe operation will stop and the system will return to normal condition.

## MONITOR STRATEGY

Related DTCs	P2118: Throttle actuator motor power supply line range check (low voltage)
Required sensors/components	Throttle actuator motor
Frequency of operation	Continuous
Duration	0.8 second
MIL operation	Immediately
Sequence of operation	None

## TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not present	See page 05-20
Actuator power	ON
Battery voltage	8 V or more

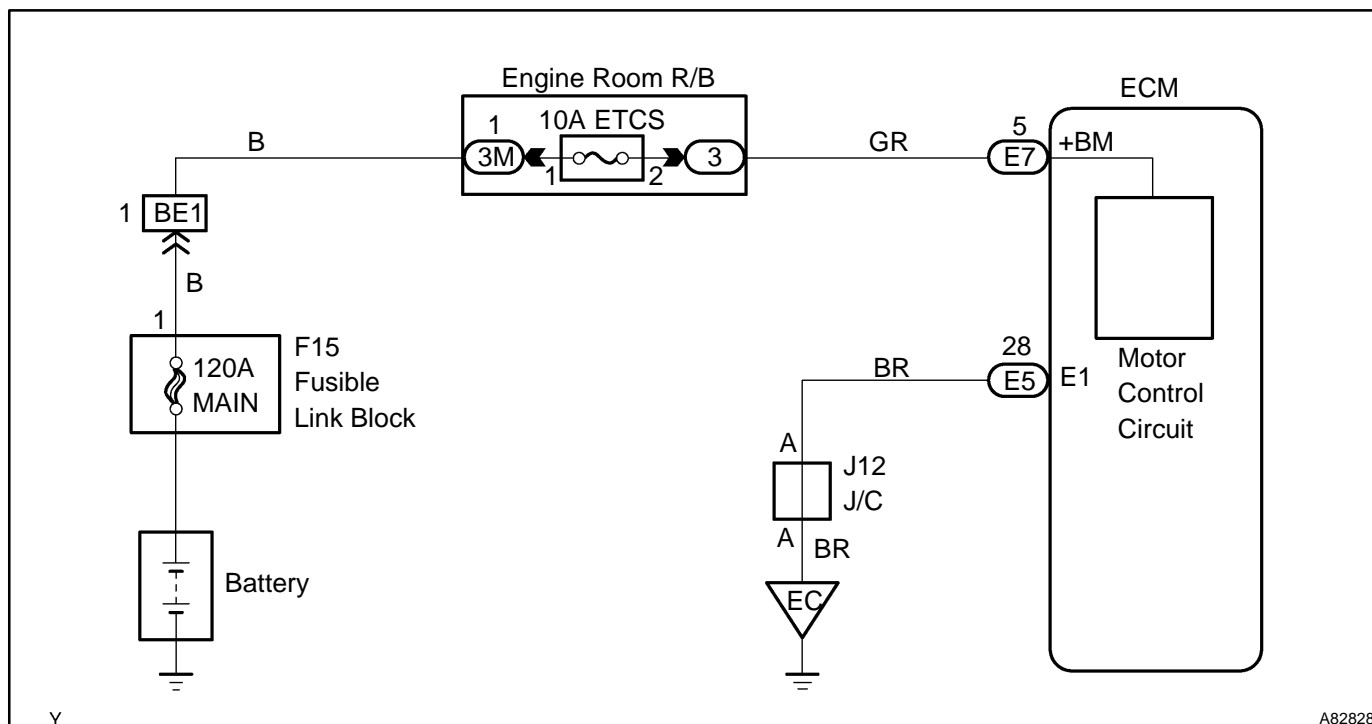
## TYPICAL MALFUNCTION THRESHOLDS

Throttle actuator motor power supply voltage	Less than 4 V
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## COMPONENT OPERATING RANGE

Throttle actuator motor power supply voltage	9 to 14 V
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## WIRING DIAGRAM

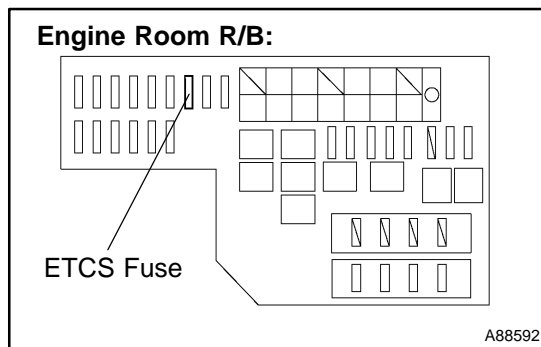


## INSPECTION PROCEDURE

### HINT:

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



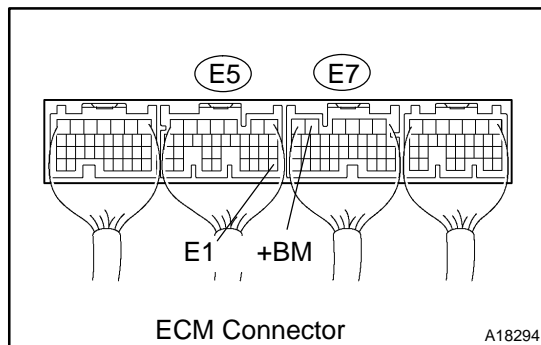
- (a) Remove the ETCS fuse from the engine room R/B.
- (b) Check the resistance of the ETCS fuse.  
**Standard: Below 1  $\Omega$**
- (c) Reinstall the ETCS fuse.

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**CHECK FOR SHORT IN ALL HARNESSES AND COMPONENTS CONNECTED FUSE**

OK

### 2 INSPECT ECM(+BM VOLTAGE)



- (a) Measure the voltage between the specified terminals of the E5 and E7 ECM connectors.

**Standard:**

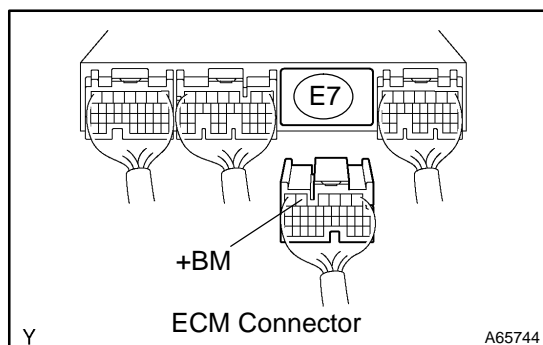
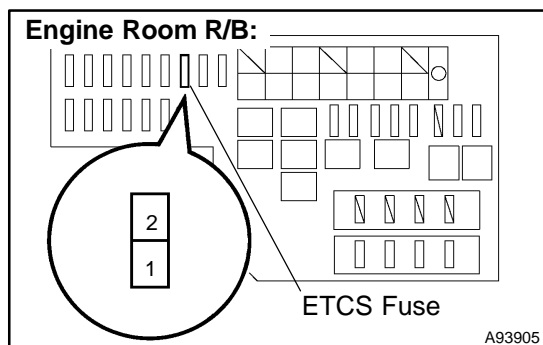
Tester Connection	Specified Condition
+BM (E7-5) - E1 (E5-28)	9 to 14 V

OK

**REPLACE ECM (See page 10-24 )**

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



- (a) Check the harness and the connectors between the ETCS fuse and the ECM connector.
- (1) Remove the ETCS fuse from the engine room R/B.
  - (2) Disconnect the E7 ECM connector.
  - (3) Check the resistance between the wire harness side connectors.

#### Standard (Check for open):

Tester Connection	Specified Condition
ETCS fuse (2) - +BM (E7-5)	Below 1 $\Omega$

#### Standard (Check for short):

Tester Connection	Specified Condition
ETCS fuse (2) or +BM (E7-5) - Body ground	10 k $\Omega$ or higher

- (4) Reinstall the ETCS fuse.
  - (5) Reconnect the ECM connector.
- (b) Check the harness and the connectors between the ETCS fuse and the battery.
- (1) Remove the ETCS fuse from the engine room R/B.
  - (2) Disconnect the positive battery terminal.
  - (3) Check the resistance between the wire harness side connectors.

#### Standard (Check for open):

Tester Connection	Specified Condition
Battery positive terminal - ETCS fuse (1)	Below 1 $\Omega$

#### Standard (Check for short):

Tester Connection	Specified Condition
Battery positive terminal or ETCS fuse (1) - Body ground	10 k $\Omega$ or higher

- (4) Reinstall the ETCS fuse.
- (5) Reconnect the positive battery terminal.

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**REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

### CHECK AND REPLACE FUSIBLE LINK BLOCK ASSY