

DTC

P2118

Throttle Actuator Control Motor Current Range / Performance

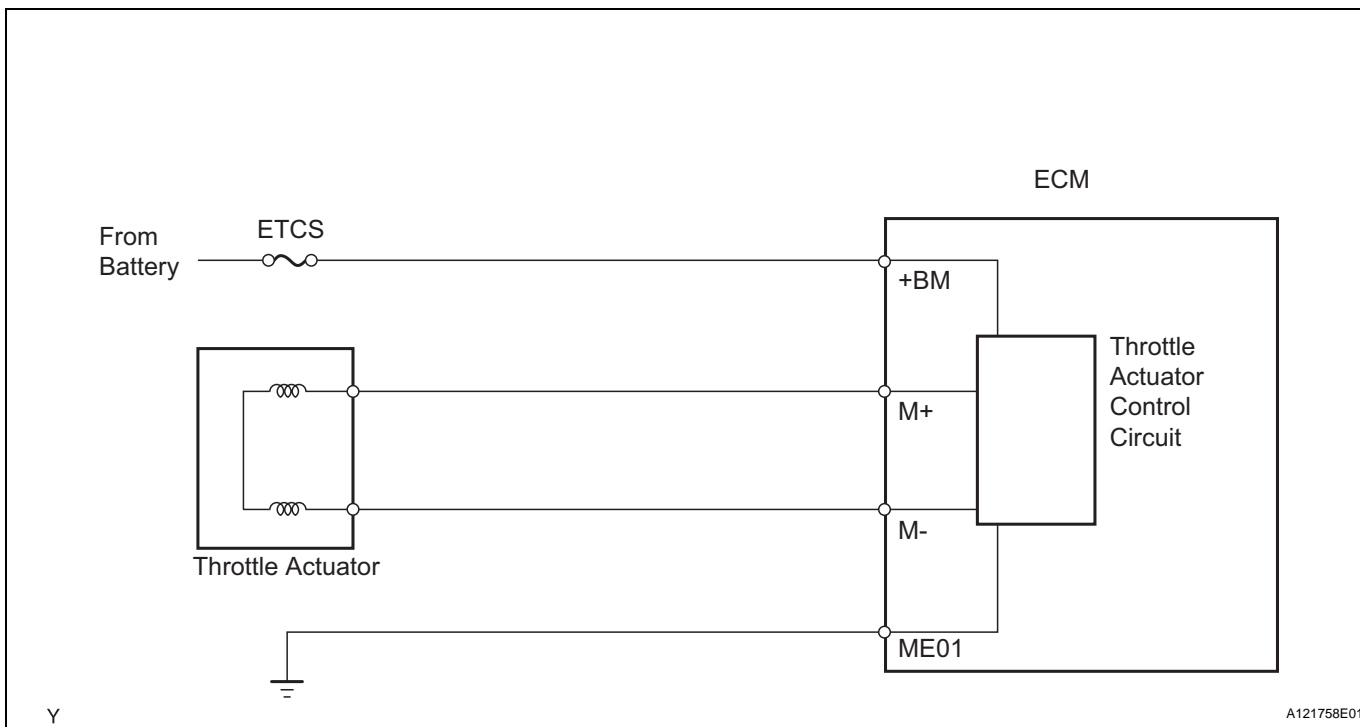
DESCRIPTION

The ETCS (Electronic Throttle Control System) has a dedicated power supply circuit. The voltage (+BM) is monitored and when it is low (less than 4 V), the ECM determines that there is a malfunction in the ETCS and cuts off the current to the throttle actuator.

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

HINT:

The ETCS does not use a throttle cable.



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DTC No.	DTC Detection Conditions	Trouble Areas
P2118	Open in Electronic Throttle Control System (ETCS) power source (+BM) circuit (1 trip detection logic)	<ul style="list-style-type: none"> 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 the DTC.

If the malfunction is not repaired successfully, the DTC is set 5 seconds after the engine is next started.

MONITOR STRATEGY

Related DTCs	P2118: Throttle actuator power supply
Required Sensors/Components (Main)	Throttle actuator, throttle valve, ETCS fuse
Required Sensors/Components (Related)	None
Frequency of Operation	Continuous
Duration	0.8 seconds

MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever following DTCs not present	None
Battery voltage	More than 8 V

TYPICAL MALFUNCTION THRESHOLDS

Throttle actuator power supply voltage (+BM)	Less than 4 V
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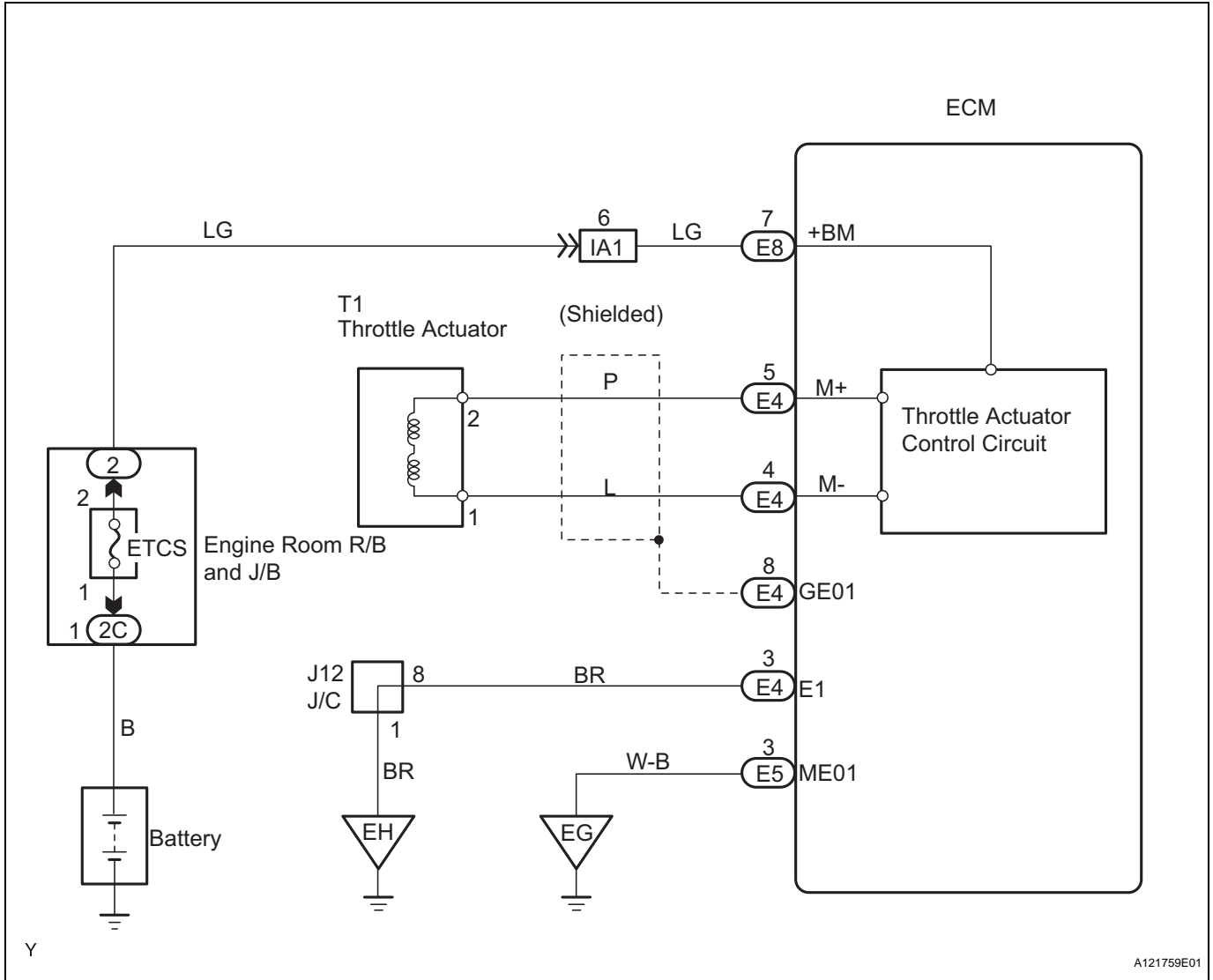
COMPONENT OPERATING RANGE

Throttle actuator power supply voltage	9 to 14 V
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FAIL-SAFE

When this DTC, as well as other DTCs relating to ETCS (Electronic Throttle Control System) malfunctions, is set, the ECM enters fail-safe mode. During fail-safe mode, the ECM cuts the current to the throttle actuator off, and the throttle valve is returned to a 6.5° throttle angle by 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 allow the vehicle to continue at a minimal speed. If the accelerator pedal is depressed firmly and gently, the vehicle can be driven slowly. Fail-safe mode continues until a pass condition is detected, and the ignition switch is then turned to OFF.

WIRING DIAGRAM



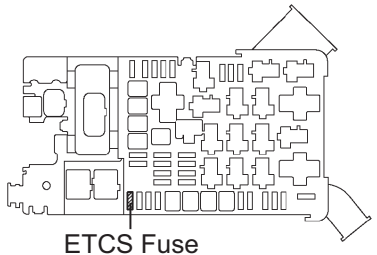
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HINT:

Read freeze frame data using an intelligent tester. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, 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)

Engine Room R/B:

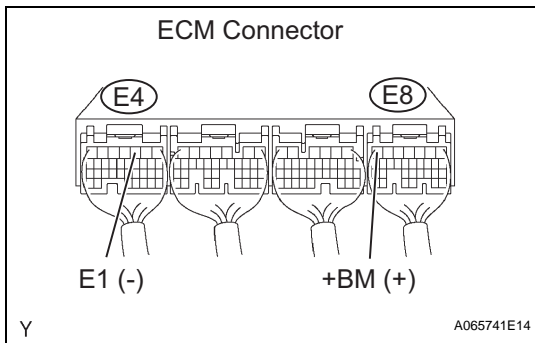


- (a) Remove the ETCS fuse from the engine room R/B.
- (b) Check the ETCS fuse resistance.
Standard Resistance:
Below 1 Ω
- (c) Reinstall the ETCS fuse.

NG CHECK FOR SHORT IN ALL HARNESS AND COMPONENTS CONNECTED TO FUSE

OK

2 INSPECT ECM (+BM VOLTAGE)



(a) Measure the voltage between the terminals of the ECM connectors.

Standard Voltage

Tester Connections	Specified Conditions
+BM (E8-7) - E1 (E4-3)	9 to 14 V

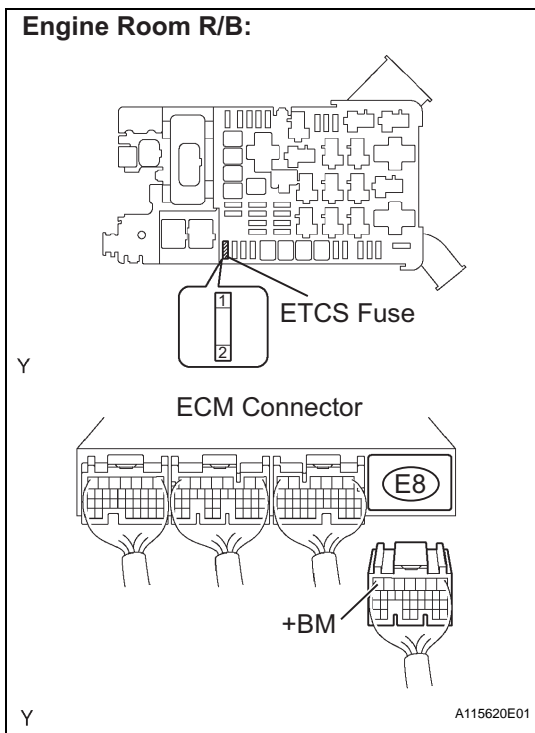
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CHECK FOR INTERMITTENT PROBLEMS

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



(a) Check the harness and connector between the ETCS fuse and ECM.

- (1) Remove the ETCS fuse from the engine room R/B.
- (2) Disconnect the E8 ECM connector.
- (3) Check the resistance.

Standard Resistance (Check for open)

Tester Connections	Specified Conditions
ETCS fuse (2) - +BM (E8-7)	Below 1 Ω

Standard Resistance (Check for short):

Tester Connections	Specified Conditions
ETCS fuse (2) or +BM (E8-7) - Body ground	10 kΩ or higher

- (4) Reinstall the ETCS fuse.
- (5) Reconnect the ECM connector.

(b) Check the harness and connector between the ETCS fuse and positive battery cable.

- (1) Remove the ETCS fuse from the engine room R/B.
- (2) Disconnect the positive battery cable.
- (3) Check the resistance.

Standard Resistance (Check for open)

Tester Connections	Specified Conditions
Positive battery cable - ETCS fuse (1)	Below 1 Ω

Standard Resistance (Check for short)

Tester Connections	Specified Conditions
Positive battery cable or ETCS fuse (1) - Body ground	10 kΩ or higher

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

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REPAIR OR REPLACE HARNESS OR
CONNECTOR

OK

REPLACE ECM