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Model Year Start: 2014	Model: IS250	Prod Date Range: [04/2013 - 08/2015]
Title: 4GR-FSE ENGINE CONTROL: SFI SYSTEM: P2118; Throttle Actuator Control Motor Current Range / Performance; 2014 - 2015 MY IS250 [04/2013 - 08/2015]		

DTC	P2118	Throttle Actuator Control Motor Current Range / Performance
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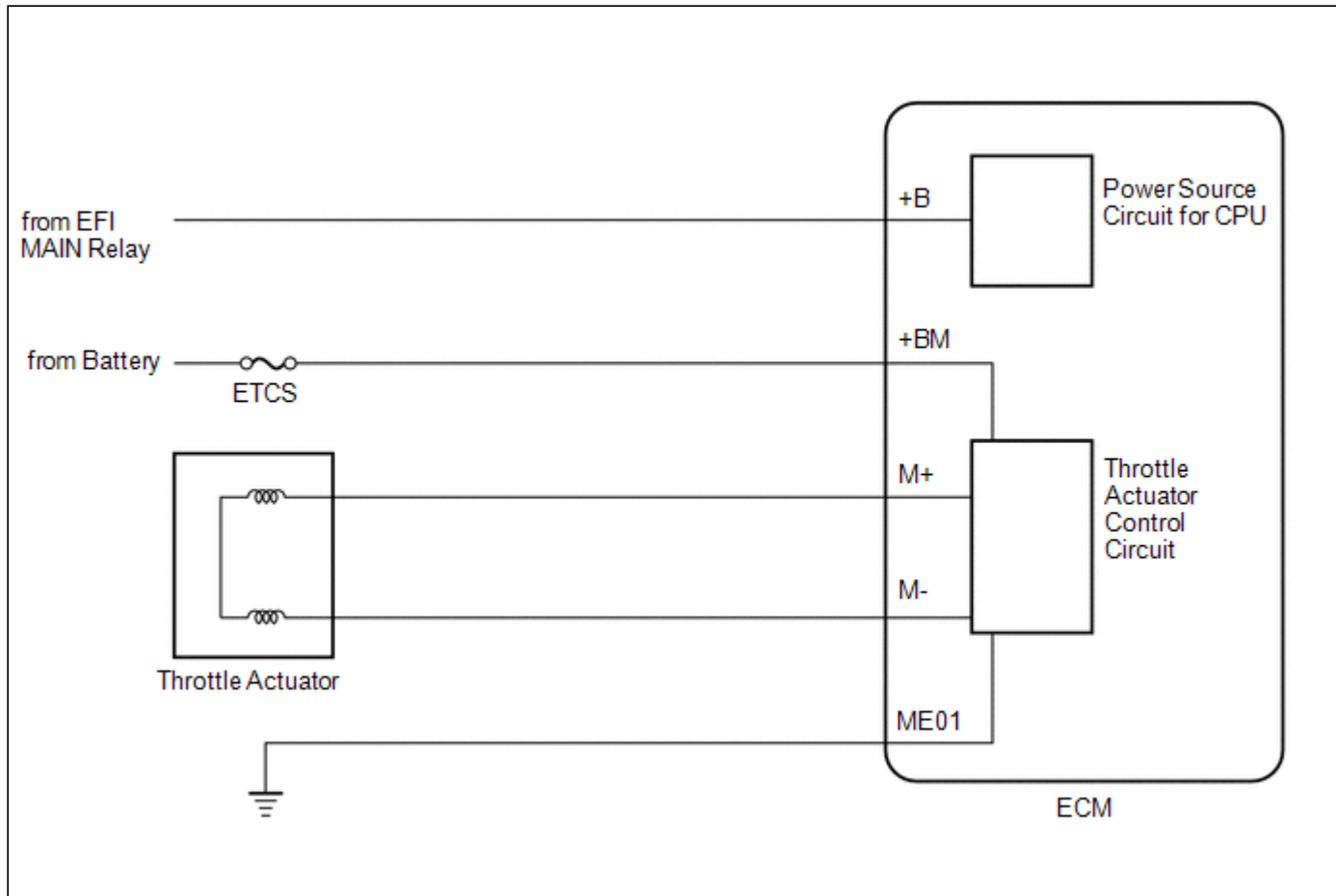
DESCRIPTION

The 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 electronic throttle control system and cuts off the current to the throttle actuator.

When the voltage becomes unstable, the electronic throttle control system 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 engine switch off. The ECM then allows the current to flow to the throttle actuator so that it can be restarted.

HINT:

The electronic throttle control system does not use a throttle cable.



DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY
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DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY
P2118	Throttle Actuator Control Motor Current Range / Performance	An open in the electronic throttle control system power source (+BM) circuit (1 trip detection logic).	<ul style="list-style-type: none"> • Open in electronic throttle control system power source circuit • Battery • Battery terminals • ETCS fuse • ECM 	Comes on	DTC stored

MONITOR DESCRIPTION

The ECM monitors the battery supply voltage applied to the throttle actuator.

When the power supply voltage (+BM) is less than 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 stores this DTC.

MONITOR STRATEGY

Related DTCs	P2118: Electronic throttle actuator power supply line range check (low voltage)
Required Sensors/Components (Main)	Throttle actuator Throttle valve (throttle body with motor assembly) ETCS fuse
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	0.8 seconds
MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

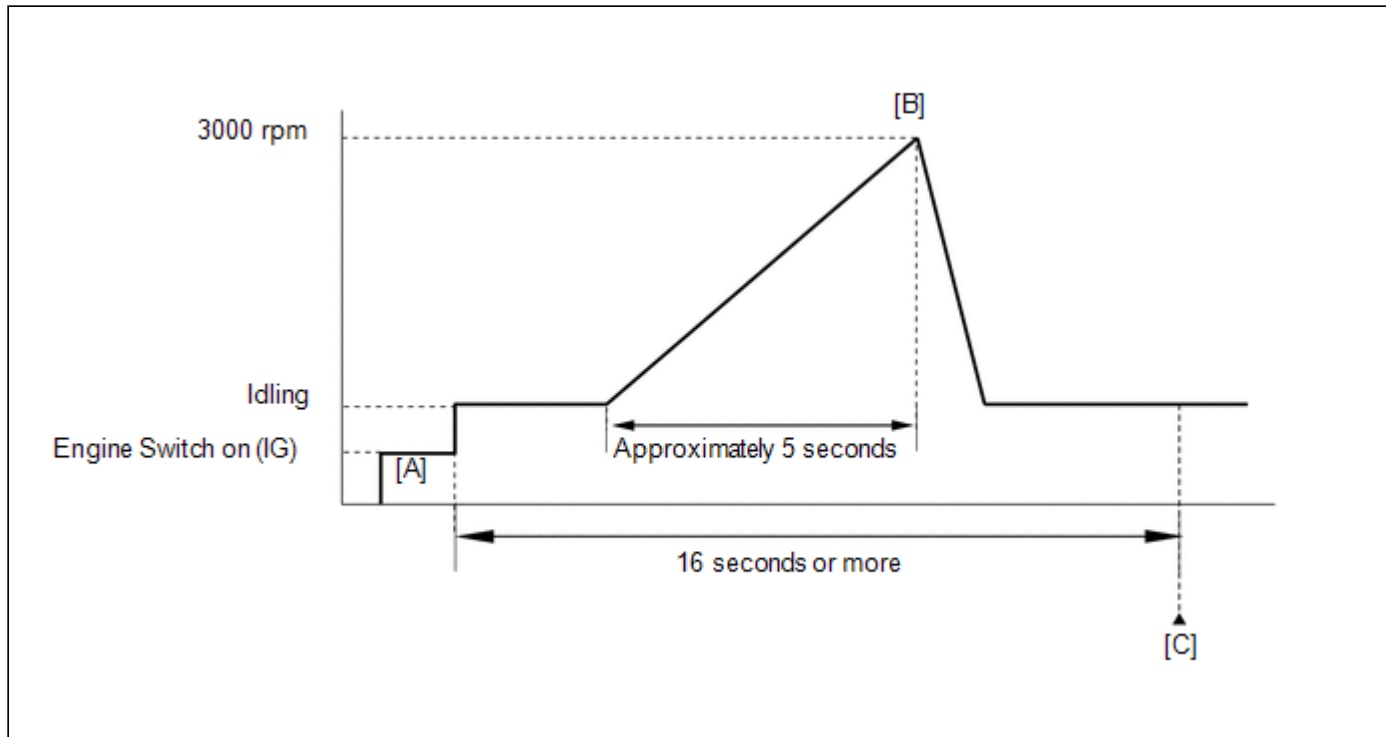
Monitor runs whenever the following DTCs are not stored	None
Both of the following conditions are met	-
Command to electronic throttle actuator power	On
Battery voltage	8 V or higher

TYPICAL MALFUNCTION THRESHOLDS

Electronic throttle actuator power supply voltage	Less than 4 V
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COMPONENT OPERATING RANGE

CONFIRMATION DRIVING PATTERN



1. Connect the Techstream to the DLC3.
2. Turn the engine switch on (IG) and turn the Techstream on.
3. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
4. Turn the engine switch off and wait for at least 30 seconds.
5. Turn the engine switch on (IG) and turn the Techstream on [A].
6. Start the engine.
7. Slowly depress the accelerator pedal, raise the engine speed to approximately 3000 rpm over approximately 5 seconds, and then idle the engine [B].
8. Check that 16 seconds or more have elapsed since the engine was started.
9. Enter the following menus: Powertrain / Engine and ECT / Trouble Codes [C].
10. Read the pending DTCs.

HINT:

- If a pending DTC is output, the system is malfunctioning.
 - If a pending DTC is not output, perform the following procedure.
11. Enter the following menus: Powertrain / Engine and ECT / Utility / All Readiness.
 12. Input the DTC: P2118.
 13. Check the DTC judgment result.

TECHSTREAM DISPLAY	DESCRIPTION
NORMAL	<ul style="list-style-type: none"> ◦ DTC judgment completed ◦ System normal
ABNORMAL	<ul style="list-style-type: none"> ◦ DTC judgment completed ◦ System abnormal

TECHSTREAM DISPLAY	DESCRIPTION
INCOMPLETE	<ul style="list-style-type: none"> ◦ DTC judgment not completed ◦ Perform driving pattern after confirming DTC enabling conditions
N/A	<ul style="list-style-type: none"> ◦ Unable to perform DTC judgment ◦ Number of DTCs which do not fulfill DTC preconditions has reached ECU memory limit

HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE or N/A, perform steps [B] and [C] again.

14. If no pending DTC is output, perform a universal trip and check for permanent DTCs.

Click here [INFO](#)

HINT:

- If a permanent DTC is output, the system is malfunctioning.
- If no permanent DTC is output, the system is normal.

FAIL-SAFE

When any of these DTCs or other DTCs relating to Electronic Throttle Control System (ETCS) malfunctions are stored, the ECM enters fail-safe mode. During fail-safe mode, the ECM cuts the current to the throttle actuator, and the throttle valve is returned to a 6° throttle valve opening 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 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 engine switch is then turned off.

WIRING DIAGRAM

Refer to DTC P2102.

Click here [INFO](#)

CAUTION / NOTICE / HINT

NOTICE:

Inspect the fuses for circuits related to this system before performing the following procedure.

HINT:

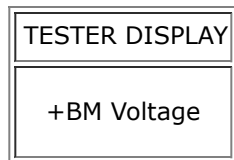
Read freeze frame data using the Techstream. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air fuel ratio was lean or rich, and other data from the time the malfunction occurred.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (+BM VOLTAGE)
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- (a) Connect the Techstream to the DLC3.
- (b) Turn the engine switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Powertrain / Engine and ECT / Data List / Gas Throttle / +BM Voltage.

Powertrain > Engine > Data List



- (e) Read the value displayed on the Techstream.

RESULT	PROCEED TO
Less than 4 V	A
11 to 14 V	B

B **CHECK FOR INTERMITTENT PROBLEMS**

A



2.	CHECK HARNESS AND CONNECTOR (ECM - BATTERY, BODY GROUND)
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- (a) Disconnect the ECM connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F1-1 (+BM) - Body ground	Always	11 to 14 V

- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F2-5 (ME01) - Body ground	Always	Below 1 Ω
F4-1 (E1) - Body ground	Always	Below 1 Ω

OK **REPLACE ECM**

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

