

PINPOINT TEST B : SYSTEM VOLTAGE LOW OR BATTERY IS DISCHARGED

 *NOTE: Make sure battery voltage is greater than 12.2 volts prior to and during this pinpoint test.*

 *NOTE: Do not have a battery charger attached during vehicle testing.*

B1 PERFORM INSPECTION AND VERIFICATION

Perform Inspection and Verification procedure in this article.

Was an obvious cause for an observed or reported concern found?

Yes	CORRECT the cause as necessary.
No	GO to B2

B2 RETRIEVE DIAGNOSTIC TROUBLE CODES (DTCS)

Using a diagnostic scan tool, perform the PCM self-test.

Is DTC P0620, P0625 or P0626 present?

Yes	For DTC P0620, GO to Pinpoint Test F For Diagnostic Trouble Codes (DTCs) P0625 and P0626, GO to Pinpoint Test G
No	GO to B3

B3 CHECK THE GENERATOR CONNECTIONS

Ignition OFF.

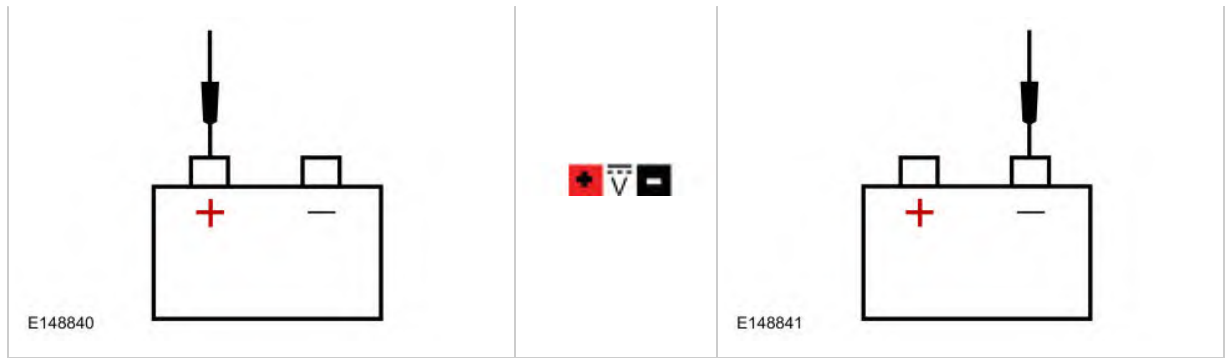
Disconnect all of the generator connectors and inspect for:

- corrosion (install new connector or terminals - clean module pins)
- damaged or bent pins - install new terminals/pins
- pushed-out pins - install new pins as necessary

Reconnect the generator connectors. Make sure they seat and latch correctly.

Measure and record:

Positive Lead	Measurement / Action	Negative Lead
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Measure:

Positive Lead	Measurement / Action	Negative Lead
C102C-1		Ground

Is the voltage within 0.5 volt of the recorded battery voltage?

Yes	GO to B4
No	TIGHTEN or INSTALL a new generator B+ nut as needed. REFER to: Generator - 5.0L 32V Ti-VCT . VERIFY high current BJB MEGA fuse (275A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the OEM ELECTRICAL WIRING DIAGRAM INTRODUCTION to identify the possible causes of the circuit short.

B4 CHECK THE VOLTAGE DROP IN THE GENERATOR B+ CIRCUIT

Start the engine.

With the engine running at idle, headlamps on and blower on high, measure:

Positive Lead	Measurement / Action	Negative Lead
C102C-1		

Perform a wiggle test of the generator wiring and connections while measuring voltage drop.

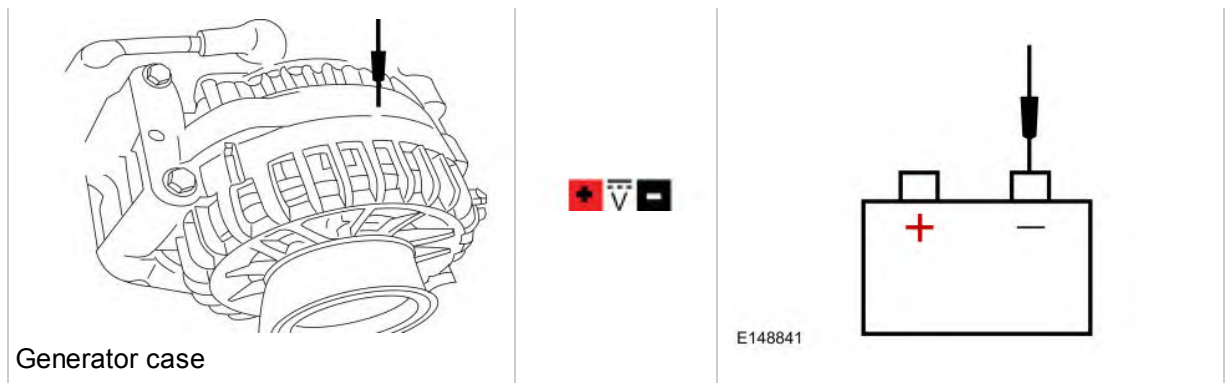
Is the voltage drop less than 0.5 volt?

Yes	GO to B5
No	INSPECT and REPAIR any corrosion in the generator B+ circuit or positive battery cable connections.

B5 CHECK THE VOLTAGE DROP IN THE VEHICLE GROUNDS

With the engine running at idle, headlamps on and heater blower on high, measure:

Positive Lead	Measurement / Action	Negative Lead



Is the voltage drop less than 0.5 volt?

Yes	GO to B6
No	INSPECT and REPAIR the engine ground, generator ground or the battery ground for corrosion.

B6 MONITOR THE GENERATOR VOLTAGE DESIRED (GENVDSD) PID (PARAMETER IDENTIFICATION) WHILE COMMANDED

Using a diagnostic scan tool, view the PCM GENVDSD PID.

Using a diagnostic scan tool active command, set the PCM PID GENVDSD to 14 volts.

With the engine running at idle, measure battery and record:

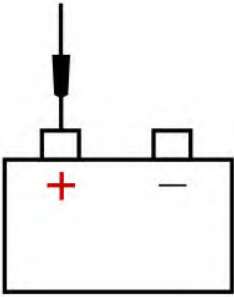
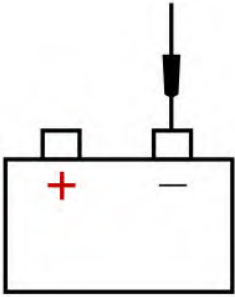
Positive Lead	Measurement / Action	Negative Lead

Is the recorded battery voltage within ± 0.5 volt of the PID?

Yes	GO to B7
No	With automatic transmission, INSTALL a new generator. REFER to: Generator - 5.0L 32V Ti-VCT . With manual transmission, GO to B11

B7 COMPARE THE PCM (POWERTRAIN CONTROL MODULE) SUPPLY VOLTAGE (VPWR) PID (PARAMETER IDENTIFICATION) TO BATTERY VOLTAGE

With the engine running at idle, headlamps on and blower on high, measure and record:

Positive Lead	Measurement / Action	Negative Lead
 E148840		 E148841

Using a diagnostic scan tool, view the PCM PID VPWR.

Does the PID accurately display battery voltage within ± 0.5 volt of the recorded battery voltage?

Yes	GO to B8
No	REPAIR high resistance or loose connections in the affected PCM power circuit(s).

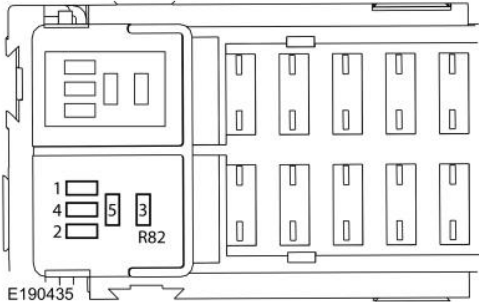
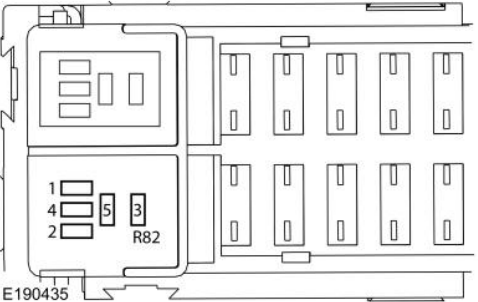
B8 CHECK PCM (POWERTRAIN CONTROL MODULE) SUPPLY VOLTAGE CIRCUITS

Ignition OFF.

Disconnect BJB PCM power relay.

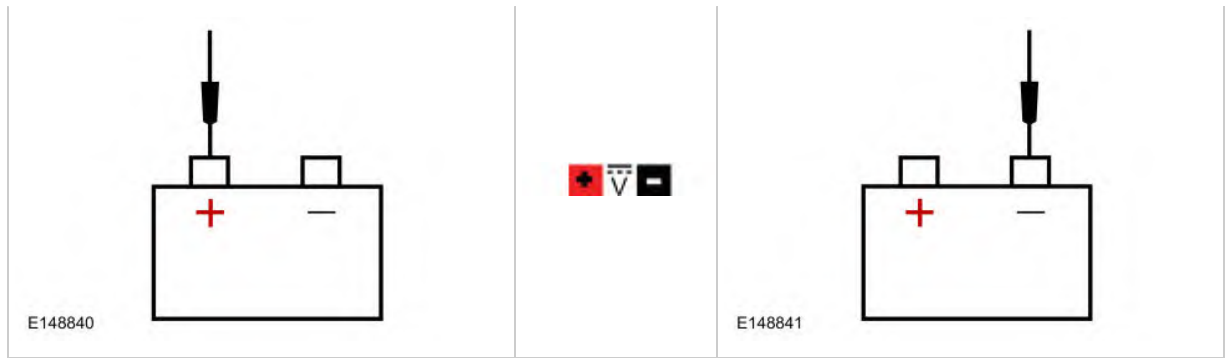
Disconnect PCM C175B .

Connect a fused jumper wire:

Positive Lead	Measurement / Action	Negative Lead
 E190435 BJB PCM Relay pin 3		 E190435 BJB PCM Relay pin 5

Measure and record:

Positive Lead	Measurement / Action	Negative Lead
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NOTE: The following step will load test the circuit. A headlamp bulb would be an effective load. To avoid connector terminal damage, use the Flex Probe Kit for connector connections.

Connect the load to a suitable ground connection.

Connect the load to each circuit and measure:

Positive Lead	Measurement / Action	Negative Lead
C175B-97		Ground
C175B-99		Ground

Are the voltages within 0.5 volt of the recorded battery voltage?

Yes	REMOVE the fused jumper wire. GO to B9
No	REPAIR the affected circuit(s).

NOTE: The following step will load test the circuit. A headlamp bulb would be an effective load. To avoid connector terminal damage, use the Flex Probe Kit for connector connections.

B9 CHECK PCM (POWERTRAIN CONTROL MODULE) GROUND FOR HIGH RESISTANCE

Connect the load to a suitable 12 volt power connection.

Connect the load to each circuit and measure:

Positive Lead	Measurement / Action	Negative Lead
C175B-5		Ground
C175B-100		Ground
C175B-102		Ground
C175B-103		Ground

Is the voltage drop less than 0.5 volt?

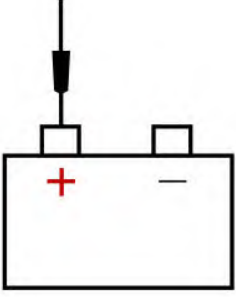
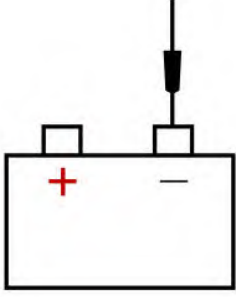
Yes	GO to B10
No	REPAIR the affected circuit(s).

B10 MONITOR THE SUPPLY VOLTAGE (VPWR) PID (PARAMETER IDENTIFICATION)

 **NOTE:** Measure battery voltage at the battery.

With the engine running at idle, turn off all accessory loads.

Measure and record:

Positive Lead	Measurement / Action	Negative Lead
 E148840		 E148841

Using a diagnostic scan tool, view PCM PID VPWR and record.

Momentarily accelerate the engine to Wide Open Throttle (WOT) and release. Repeat this step 4-5 times while continuing to monitor the PID.

Does the PID stay within 0.5 volt of the recorded battery voltage when the engine Revolutions Per Minute (RPM) are increased?

Yes	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. INSPECT and REPAIR any connector or pin issues found. If no connector or pin issues are found, Perform the battery drain test. REFER to: Battery Drain Check .
No	GO to B12

B11 CHECK GENERATOR CLUTCH OPERATION

Ignition OFF.

Perform the generator clutch component test .

Is the generator clutch OK?