Pinpoint Test

Special Tool(s)

	Flex Probe Kit NUD105-R025D or equivalent
	Fluke 77-IV Digital Multimeter FLU77-4 or equivalent
	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Pinpoint Test A: DTCs B1317, B1676 and/or P0563

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

NOTE: *DTC B1317 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if vehicle accessories have been operating for an extended period of time without the engine running.*

Normal Operation

With the engine running, the charging system supplies voltage to the battery and the vehicle electrical system through the battery B+ cable. The voltage that is supplied to the vehicle electrical system is used for the operation of the various vehicle systems and modules. Many modules monitor this voltage and if it rises above a calibrated set point, this DTC sets.

- DTC B1317 Battery Voltage High — Each module within the vehicle system monitors input voltage to the module. If the voltage rises above the module's calibrated set point (which varies by module), that module sets this DTC. This DTC may also be in memory as a Continuous Memory Diagnostic Trouble Code (CMDTC) if the vehicle has been recently jump started or has had a discharged battery.
- DTC B1676 Battery Pack Voltage Out of Range — Each module within the vehicle system monitors input voltage to the module. If the voltage rises above or drops below the modules calibrated set point, that module sets this DTC. This DTC may also be in memory (CMDTC) if the vehicle has been recently jump started or has had a discharged battery.
- DTC P0563 System Voltage High — If the module detects a voltage from the charging system higher than 15.2 volts, this DTC sets. This DTC does not set in the PCM unless vehicle speed is above 8 km/h (5 mph).

This pinpoint test is intended to diagnose the following:

- Fuses
- Wiring, terminals or connectors
- Engine, generator and battery grounds
- Battery
- Generator
- PCM

PINPOINT TEST A : DTCS B1317, B1676, P0563 AND/OR P0563

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.*

A1 CHECK BATTERY CONDITION

- Carry out the Battery — Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Section 414-01.

Does the battery pass the condition test?

Yes	GO to A2.
No	INSTALL a new battery. REFER to Section 414-01. CLEAR the DTCs. REPEAT the self-test. TEST the

	system for normal operation.

A2 RETRIEVE PCM DTCS

- Retrieve CMDTCs from all modules.

Do any charging system DTCs other than B1317, B1676 or P0563 exist?

Yes	REFER to the DTC Chart for the correct pinpoint test and DIAGNOSE those DTCs first.
No	GO to A3.

A3 MONITOR PCM PID GENERATOR VOLTAGE DESIRED (GENVDSD)

- Start the engine.
- **NOTE:** *Many of the PCM PIDs selected will be monitored later in this pinpoint test.*

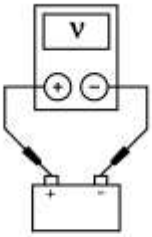
  Select and monitor the following PCM PIDs:
  - Generator Monitor (GENMON).
  - Generator Command (GENCMD).
  - Generator Voltage Desired (GENVDSD).
  - Module Supply Voltage (VPWR).
- Monitor the GENVDSD PID.

Does the GENVDSD PID indicate 15.1 volts or less?

Yes	GO to A4.
No	GO to A11.

A4 MONITOR PCM PID GENERATOR VOLTAGE DESIRED (GENVDSD)

- With the engine still running at idle, measure battery voltage and record.



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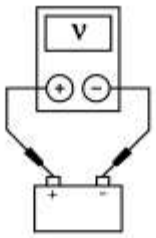
- Monitor the GENVDSD PID.

Is battery voltage within ±0.6 volts of the PID GENVDSD?

Yes	The fault is not present at this time. This may indicate an intermittent fault. CARRY OUT a Wiggle Test on the charging system circuits to try and RECREATE the concern. CHECK generator connections for corrosion, loose connections and/or bent terminals. REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	GO to A5.

A5 CHECK THE A SENSE VOLTAGE

- Ignition OFF.
- Disconnect: Generator C102A .
- Ignition ON.
- With ignition ON, measure battery voltage and record.



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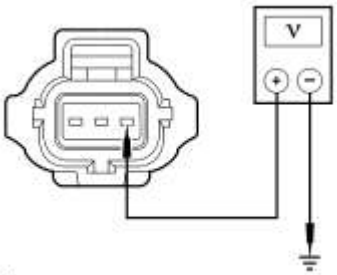
- Measure the voltage between generator C102A Pin 3, circuit SBB17 (RD), harness side and ground.



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Is the A sense voltage equal to battery voltage?

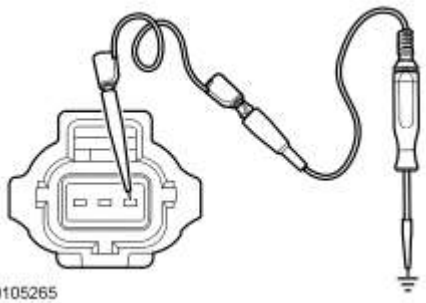
Yes	GO to A6.
No	VERIFYBattery Junction Box (BJB) fuse 17 (10A) is OK. If OK, REPAIR corroded or loose connections at the battery positive C1100C ,Battery Junction Box (BJB) C1035A, generator C102A and circuits SDC02 (RD) or SBB17 (RD). If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

A6 A SENSE CIRCUIT LOAD TEST

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *This step puts a load on the A sense circuit. If there are corroded or loose connections, loading the circuit may help show the fault. A 250-350 mA incandescent 12-volt test lamp is required for this step. This circuit will not be loaded properly using an LED-style test lamp.*

- Using a 12-volt test lamp connected to ground, check for voltage at generator C102A Pin 3, circuit SBB17 (RD), harness side.



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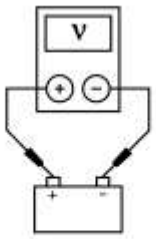
Does the test lamp illuminate?

Yes	GO to A7.
No	REPAIR corroded or loose connections at the battery positive C1100C ,Battery Junction Box (BJB) C1035A, generator C102A and circuits SDC02 (RD) or SBB17 (RD). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

A7 CHECK THE GENERATOR OUTPUT

- Connect: Generator C102A .
- Start the engine.
- Increase engine rpm until generator starts to generate output.
- With the engine running, measure battery voltage and record.



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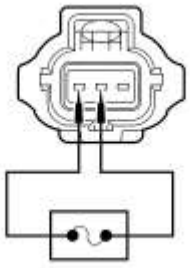
Is the voltage above 14.5 volts?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	GO to A8.

A8 MONITOR PCM PIDS GENERATOR COMMAND (GENCMD), GENERATOR MONITOR (GENMON) AND GENERATOR VOLTAGE DESIRED (GENVDSD)

- Ignition OFF.
- Disconnect: Generator C102A .
- Connect a fused jumper wire between generator C102A Pin 1, circuit CDC15 (VT), harness side and generator C102A Pin 2, circuit CDC10 (BU/OG), harness side.



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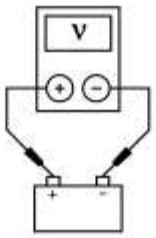
- Start the engine.
- Monitor the GENVDSD, GENMON and GENCMD PIDs.
- Using the active command, set GENVDSD PID to 14 volts.

Does the GENCMD PID read within 5% of GENMON PID?

Yes	GO to A9.
No	GO to A11.

A9 COMPARE PCM MODULE SUPPLY VOLTAGE (VPWR) PID TO BATTERY VOLTAGE

- With the engine still running at idle, measure the battery voltage at the battery and monitor the PCM VPWR PID.



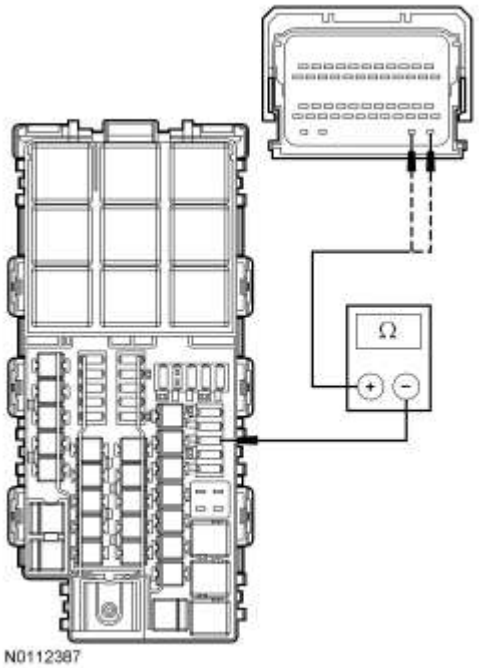
AJ0210-A

Does PCM VPWR PID accurately display battery voltage within ±0.5 volt?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	GO to A10.

A10 CHECK PCM SUPPLY VOLTAGE CIRCUITS

- Ignition OFF.
- Remove the fused jumper wire from C102A.
- Disconnect: Battery Junction Box Fuse 47 (15A) .
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the connector pins for damage. Measure resistance between BJB fuse 47 (15A) output side and:
  - For 5.0L and 5.4L, PCM C175B Pin 67, circuit CBB47 (GN/BU), harness side.
  - For 5.0L and 5.4L, PCM C175B Pin 68, circuit CBB47 (GN/BU), harness side.
  - For 3.7L, PCM C1381B Pin 67, circuit CBB47 (GN/BU), harness side.
  - For 3.7L, PCM C1381B Pin 68, circuit CBB47 (GN/BU), harness side.



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Are the resistances less than 0.5 ohm?

Yes	GO to A11.
No	REPAIR high resistance or loose connections in the affected circuit(s). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

A11 CHECK FOR CORRECT PCM OPERATION

- Ignition OFF.
- Check the PCM harness and component side connectors for:
  - corrosion.
  - pushed-out pins and terminals.
  - damaged pins and terminals.
- Connect the PCM and generator, make sure the connectors seat correctly.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test B: DTC P0532, B1318 and/or B1676

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

NOTE: *DTCs B1318 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if vehicle accessories have been operating for an extended period of time without the engine running.*

Normal Operation

With the engine running, the charging system supplies voltage to the battery and the vehicle electrical system through the battery B+ cable. The voltage that is supplied to the vehicle electrical system is used for the operation of the vehicle and the various modules. Many modules monitor this voltage and if it drops below a calibrated set point, a DTC will be set.

- DTC P0562 System Voltage Low — Each module within the vehicle system monitors input voltage to the module. If the voltage drops below the modules calibrated set point (which varies between modules), that module sets this DTC.
- DTC B1318 Battery Voltage Low — Each module within the vehicle system monitors input voltage to the module. If the voltage drops below the modules calibrated set point (which varies between modules), that module sets this DTC.
- DTC B1676 Battery Pack Voltage Out of Range — Each module within the vehicle system monitors input voltage to the module. If the voltage rises above or drops below the modules calibrated set point that module sets this DTC. This DTC may also be set if the vehicle has been recently jump started or has had a discharged battery.

This pinpoint test is intended to diagnose the following:

- Circuit high resistance
- Engine, generator and battery grounds
- Positive battery cable
- Battery
- High ignition-off current drain(s)
- Generator clutch (If equipped)
- Generator

PINPOINT TEST B : PINPOINT TEST B: DTC P0532, B1318 AND/OR B1676

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 CHECK THE BATTERY CONDITION

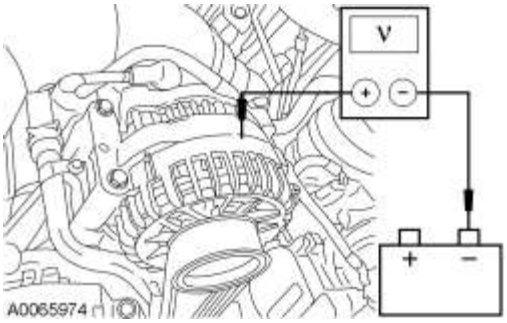
- Carry out the Battery — Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Section 414-01.

Does the battery pass the condition test?

Yes	GO to B2.
No	INSTALL a new battery. REFER to Section 414-01. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

B2 CHECK THE VOLTAGE DROP IN THE VEHICLE GROUNDS

- Start the engine.
- With the engine running at idle, headlamps on and heater blower set to high, measure the voltage drop between the generator housing and the negative battery terminal.

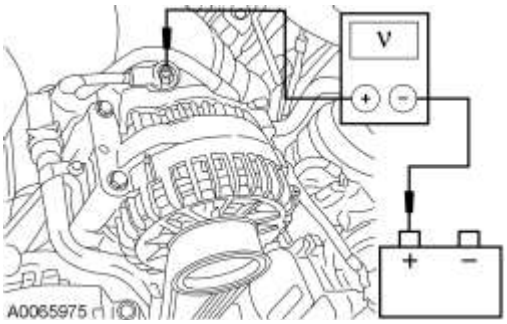


Is the voltage drop less than 0.25 volt (250 mV)?

Yes	GO to B3.
No	INSPECT for and REPAIR any corrosion or looseness in the engine ground, generator ground or the battery ground. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

B3 CHECK THE VOLTAGE DROP IN THE GENERATOR B+ CIRCUIT

- With the engine running at idle, headlamps on and blower set to high measure the voltage drop:
  - For 3.7L, between generator B+ C102B, circuit SBF01 (RD) and the positive battery terminal.
  - For 5.0L and 5.4L, between generator B+ C102C, circuit SBF01 (RD) and the positive battery terminal.



Is the voltage drop less than 0.5 volt?

Yes	GO to B4.
No	VERIFY the High Current Battery Junction Box (BJB) 200A fuse is OK. If OK, INSPECT for and REPAIR any corrosion or looseness in circuit SBF01 (RD), High-Current Battery Junction Box (BJB) C1617A, generator B+ C102B or C102C and positive battery cable connections. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation. If fuse is not OK, INSPECT and REPAIR the cause of the circuit short before replacing the High Current Battery Junction Box (BJB) .

B4 CHECK FOR CURRENT DRAINS

- Carry out the Battery — Drain Testing. Refer to Section 414-01.

Are any circuits causing excessive current drains?

Yes	REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	**For 3.7L manual transmission**, CARRY OUT the Generator Clutch component test in this section. If the generator clutch tests OK, CHECK with the customer to determine if any electrical system(s) may have been accidently left on. If nothing unusual is found, CLEAR the DTCs. REPEAT the self-test. TEST the

	system for normal operation. GO to Pinpoint Test D to continue diagnosis of the charging system. **For all others**, no problems found at this time. CHECK with the customer to determine if any electrical system(s) may have been accidently left on. If nothing unusual is found, CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation. GO to Pinpoint Test D to continue diagnosis of the charging system.

Pinpoint Test C: DTC P0620

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

Normal Operation

The PCM monitors the generator output via the GENMON circuit. The PCM uses the GENCOM circuit to command the generator to either increase or decrease output. If the GENCOM circuit (generator control circuit) or the A sense circuit is open or shorted to ground, the PCM will be unable to control the generators output. When the engine rises above approximately 2,000 rpm, the generator defaults to a steady voltage of approximately 13.5 volts and the PCM sends a request to the Instrument Cluster (IC) to illuminate the charging system warning indicator.

- DTC P0620 Generator Control Circuit — If the GENCOM circuit or A sense circuit are open or shorted to ground the PCM sets this DTC.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Generator
- PCM

PINPOINT TEST C : DTC P0620

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.*

C1 CHECK THE BATTERY CONDITION

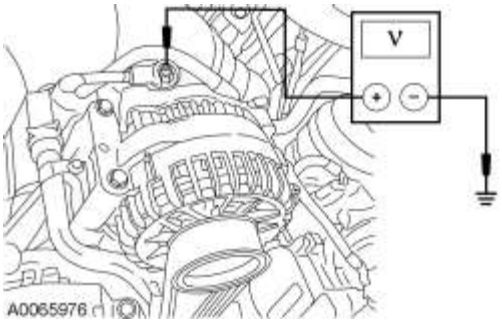
- Carry out the Battery — Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Section 414-01.

Does the battery pass the condition test?

Yes	GO to C2.
No	INSTALL a new battery. REFER to Section 414-01. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C2 CHECK THE GENERATOR B+ CONNECTION

- Ignition OFF.
- Disconnect: Generator C102A . Inspect generator C102A for bent and/or pushed out pins.
- Inspect generator B+ connection:
  - For 3.7L, C102B, circuit SBF01 (RD). Connection should be tight.
  - For 5.0L and 5.4L, C102C, circuit SBF01 (RD). Connection should be tight.
- Measure the voltage between ground and
  - For 5.0L and 5.4L, generator C102C, circuit SBF01 (RD).
  - For 3.7L, generator C102B, circuit SBF01 (RD).

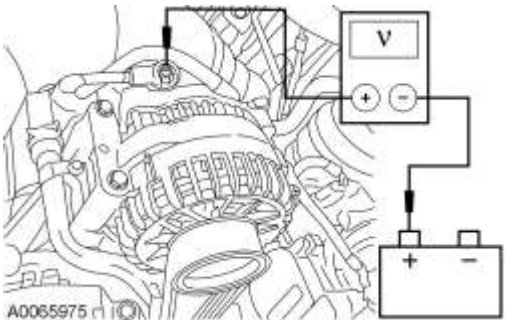


Are the generator and High Current BJB connections tight and does the generator B+ measure battery voltage?

Yes	GO to C3.
No	VERIFY the High Current Battery Junction Box (BJB) 200A fuse is OK. If OK, INSPECT for and REPAIR any corrosion or looseness in circuit SBF01 (RD), High-Current Battery Junction Box (BJB) C1617A, generator B+ C102B or C102C and positive battery cable connections. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation. If fuse is not OK, INSPECT and REPAIR the cause of the circuit short before replacing the High Current Battery Junction Box (BJB) .

C3 CHECK THE VOLTAGE DROP IN THE B+ CIRCUIT

- Ignition OFF.
- Connect: Generator C102A .
- Start the engine.
- With the engine running at idle, headlamps on and blower set to high measure the voltage drop:
  - For 5.0L and 5.4L, between generator C102C, circuit SBF01 (RD) and the positive battery terminal.
  - For 3.7L, between generator C102B, circuit SBF01 (RD) and the positive battery terminal.



Is the voltage drop less than 0.5 volt?

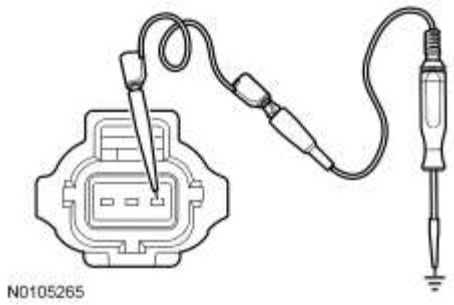
Yes	GO to C4.
No	INSPECT for and REPAIR any corrosion in the B+ circuit SBF01 (RD), High Current Battery Junction Box (BJB) C1617A, generator B+ C102B or C102C and positive battery cable connections. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C4 A SENSE CIRCUIT LOAD TEST

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *This step puts a load on the A sense circuit. If there are corroded or loose connections, loading the circuit may help show the fault. A 250-350 mA incandescent 12-volt test lamp is required for this step. This circuit will not be loaded properly using an LED-style test lamp.*

- Ignition OFF.
- Disconnect: Generator C102A .
- Ignition ON.
- Using a 12-volt test lamp connected to ground, check for voltage at generator C102A Pin 3, circuit SBB17 (RD), harness side.



Does the test lamp illuminate?

Yes	GO to C5.
No	VERIFYBJB fuse 17 (10A) is OK. If OK, REPAIR circuit SBB17 (RD). If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C5 CHECK THE GENERATOR COMMAND LINE FAULT (GENCMD_LF) PID

- Connect: Generator C102A . Connector should be installed correctly and tight.
- Start the engine.
- **NOTE:** *Many of the PCM PIDs selected will be monitored later in this pinpoint test.*

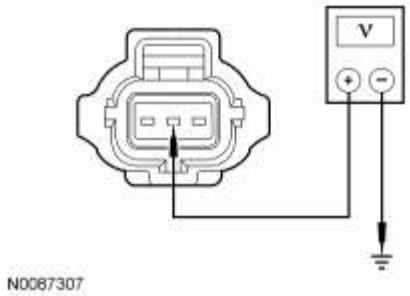
  Select and monitor the following PCM PIDs:
  - Generator Monitor (GENMON).
  - Generator Command (GENCMD).
  - Generator Command Line Fault (GENCMD_LF).
- With the engine still running at idle, monitor the GENCMD_LF PID.

Does the GENMON_LF PID indicate a fault?

Yes	GO to C6.
No	GO to C9.

C6 CHECK THE GENERATOR COMMAND CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Generator C102A .
- Ignition ON.
- Measure the voltage between generator C102A Pin 2, circuit CDC10 (BU/OG), harness side and ground.

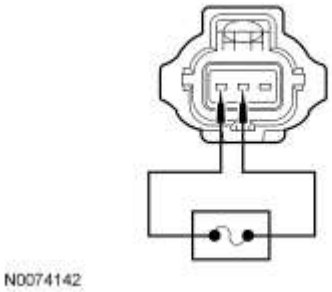


Does voltage read 1 volt or less?

Yes	GO to C7.
No	GO to C11.

C7 COMPARE THE PCM PIDS GENERATOR MONITOR (GENMON) AND GENERATOR COMMAND (GENCMD)

- Connect a fused jumper wire between generator C102A Pin 1, circuit CDC15 (VT), harness side and generator C102A Pin 2, circuit CDC10 (BU/OG), harness side.



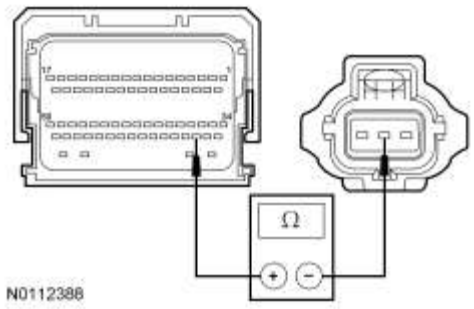
- Start the engine.
- Monitor the GENMON and GENCMD PIDs while performing a Wiggle Test on the generator harness.

Does the GENMON PID read within 5% of the GENCMD PID?

Yes	GO to C8.
No	GO to C12.

C8 CHECK THE GENERATOR COMMAND CIRCUIT FOR DAMAGE OR AN OPEN

- Ignition OFF.
- Remove the fused jumper wire from C102A .
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the following harness connectors for damaged or pushed-out pins:
  - Generator C102A Pin 2, circuit CDC10 (BU/OG).
  - For 5.0L and 5.4L, PCM C175B Pin 53, circuit CDC10 (BU/OG), harness side.
  - For 3.7L, PCM C1381B Pin 53, circuit CDC10 (BU/OG), harness side.
- Measure the resistance between generator C102A Pin 2, circuit CDC10 (BU/OG), harness side and:
  - For 5.0L and 5.4L, PCM C175B Pin 53, circuit CDC10 (BU/OG), harness side.
  - For 3.7L, PCM C1381B Pin 53, circuit CDC10 (BU/OG), harness side.

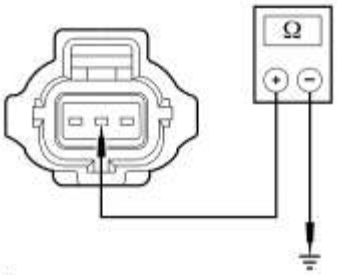


Are the connectors and pins free of damage and is the resistance less than 0.5 ohms?

Yes	GO to C9.
No	REPAIR circuit CDC10 (BU/OG). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C9 CHECK THE GENERATOR COMMAND CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: Generator C102A (if not previously disconnected) .
- Measure the resistance between the generator C102A Pin 2, circuit CDC10 (BU/OG), harness side and ground.



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Is the resistance greater than 10,000 ohms?

Yes	GO to C10.
No	REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C10 CHECK THE CHARGING SYSTEM CIRCUITS FOR INTERMITTENT FAULTS

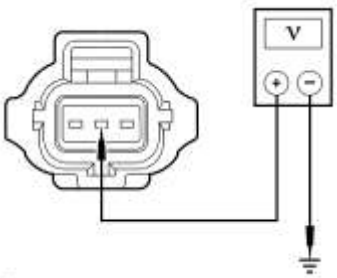
- Connect: Generator C102A .
- Connect: (5.0L, 5.4L) PCM C175B .
- Connect: (3.7L) PCM C1381B .
- Ignition ON.
- Clear all DTCs.
- Start the engine and let the engine run for 5 minutes.
- Retrieve Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Did any charging system DTC get stored into memory?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	The fault is not present at this time. This may indicate an intermittent fault. CARRY OUT a Wiggle Test on the charging system circuits to try and RECREATE the concern. CHECK generator connections for corrosion, loose connections and/or bent terminals. REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

C11 CHECK THE GENERATOR COMMAND CIRCUIT AND PCM FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Ignition ON.
- Measure the voltage between generator C102A Pin 2, circuit CDC10 (BU/OG), harness side and ground.



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Is any voltage present?

Yes	REPAIR circuit CDC10 (BU/OG). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the

	system for normal operation.

C12 INSPECT GENERATOR CIRCUITS

- Ignition OFF.
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the following connector pins for damage and/or corrosion:
  - Generator C102A Pin 1, circuit CDC15 (VT).
  - Generator C102A Pin 2, circuit CDC10 (BU/OG).
  - For 5.0L and 5.4L, PCM C175B Pin 50, circuit GD119 (BK/BU).
  - For 5.0L and 5.4L, PCM C175B Pin 69, circuit GD119 (BK/BU).
  - For 5.0L and 5.4L, PCM C175B Pin 70, circuit GD119 (BK/BU).
  - For 3.7L, PCM C1381B Pin 50, circuit GD119 (BK/BU).
  - For 3.7L, PCM C1381B Pin 69, circuit GD119 (BK/BU).
  - For 3.7L, PCM C1381B Pin 70, circuit GD119 (BK/BU).

Are the connectors OK?

Yes	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	REPAIR high resistance or loose connections in the affected circuit(s). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

Pinpoint Test D: DTCs P0625 and P0626

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

Normal Operation

The PCM monitors the generator output via the GENMON circuit (generator field terminal circuit). If the PCM cannot read the GENMON circuit due to an open or short to ground, when the engine rises above approximately 2,000 rpm, the generator defaults to a steady voltage of approximately 13.5 volts and the PCM sends a request to the Instrument Cluster (IC) to illuminate the charging system warning indicator.

- DTC P0625 Generator Field Terminal Circuit Low — If the GENMON circuit is shorted to ground or the A sense is open, the PCM sets this DTC. This DTC can also be set by a faulty PCM or generator.
- DTC P0626 Generator Field Terminal Circuit High — If the GENMON circuit is open or shorted to power, the PCM sets this DTC. This DTC can also be set by a poor engine ground or faulty PCM or generator.

This pinpoint test is intended to diagnose the following:

- Fuse
- High Current Battery Junction Box (BJB) (if equipped)
- Wiring, terminals or connectors
- Engine, generator and battery grounds
- Battery
- Generator
- PCM

PINPOINT TEST D : DTCS P0625 AND P0626

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.*

D1 CHECK THE BATTERY CONDITION

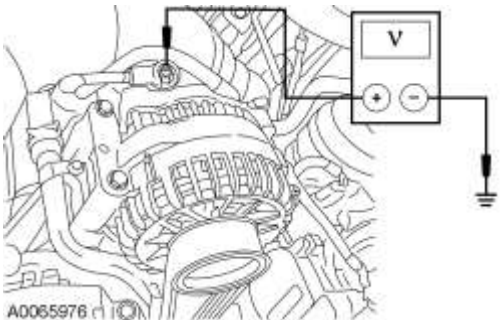
- Carry out the Battery — Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Section 414-01.

Does the battery pass the condition test?

Yes	GO to D2.
No	INSTALL a new battery. REFER to Section 414-01. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D2 CHECK THE HIGH CURRENT BATTERY JUNCTION BOX AND GENERATOR B+ CONNECTION

- Ignition OFF.
- Inspect the high current Battery Junction Box (BJB) C1617A. Connector should be tight.
- Inspect generator B+ connection:
  - For 3.7L, C102B, circuit SBF01 (RD). Connection should be tight.
  - For 5.0L and 5.4L, C102C, circuit SBF01 (RD). Connection should be tight.
- Measure the voltage between the generator B+ connection, circuit SBF01 (RD) and ground.

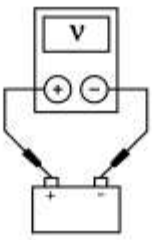


Are the generator and High Current BJB connections tight and does the generator B+ measure battery voltage?

Yes	GO to D3.
No	VERIFY the high current BJB 200A fuse is OK. If OK, INSPECT and REPAIR any corrosion or looseness in circuit SBF01 (RD), high current BJB C1617A, generator B+ C102B or C102C and positive battery cable connections. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation. If not OK, INSPECT and REPAIR the cause of the circuit short before replacing the high current BJB .

D3 CHECK THE A SENSE VOLTAGE

- Disconnect: Generator C102A .
- Ignition ON.
- Measure battery voltage and record.



- Measure the voltage between generator C102A Pin 3, circuit SBB17 (RD), harness side and ground.

Is the A sense voltage equal to battery voltage?

Yes	GO to D4.
No	VERIFYBattery Junction Box (BJB) fuse 17 (10A) is OK. If OK, REPAIR corroded or loose connections at the battery positive C1100C ,Battery Junction Box (BJB) C1035A, generator C102A and circuits SDC02 (RD) or SBB17 (RD). If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D4 MONITOR THE PCM PID GENERATOR MONITOR (GENMON)

- Ignition OFF.
- Connect: Generator C102A .
- Ignition ON.
- **NOTE:** *Many of the PCM PIDs selected will be monitored later in this pinpoint test.*

  Select and monitor the following PCM PIDs:
  - Generator Monitor (GENMON).
  - Generator Command (GENCMD).
  - Generator Voltage Desired (GENVDSD).
  - Engine Revolutions Per Minute (RPM).
  - Module Supply Voltage (VPWR).
- Monitor the GENMON PID.

Does the GENMON PID read 0%?

Yes	GO to D5.
No	GO to D10.

D5 MONITOR THE PCM PIDS GENERATOR MONITOR (GENMON) AND GENERATOR VOLTAGE DESIRED (GENVDSD) WITH THE ENGINE RUNNING AND NO LOADS

- Start the engine and turn all electrical accessories (lights, blower motor, etc.) off.
- With the engine at idle, wait at least 15 seconds for the GENVDSD PID to increase to greater than 13 volts.
- Monitor PID GENMON at idle.
- Increase the engine rpm to 3,000 rpm.
- Monitor PID GENMON at 3,000 rpm.

Does the GENMON PID read between 3% and 98% at engine idle speed and at 3,000 rpm?

Yes	GO to D6.
No	GO to D11.

D6 MONITOR THE PCM PIDS GENERATOR MONITOR (GENMON), GENERATOR VOLTAGE DESIRED (GENVDSD) WITH THE ENGINE AT IDLE LOADS ON

- Decrease the engine speed to 500 rpm using active command PID RPM and monitor PIDs.
- **NOTE:** *On vehicles with low electrical loads, it is necessary to make sure that all of the vehicle's electrical loads are turned on to determine the maximum GENMON PID value. The GENMON PID value may not reach between the desired 95%-98% on a low load vehicle with minimal electrical accessories. As long as the GENMON PID increases significantly with all of the electrical loads on, answer YES to the question below.*

  Determine the maximum GENMON PID value by lowering engine idle rpm to 500 rpm or less using output state control PID RPM and turn on all electrical accessories until the module supply voltage (VPWR) PID is less than the GENVDSD PID by at least 0.7 volt. Under this condition the GENMON PID should read between 95% and 98%.

Does the GENMON PID read between 95% and 98%?

Yes	GO to D7.
No	GO to D11.

D7 MONITOR THE PCM PIDS GENERATOR MONITOR (GENMON), MODULE SUPPLY VOLTAGE (VPWR) AND GENERATOR VOLTAGE DESIRED (GENVDSD) WITH THE ENGINE AT 3,000 RPM

- Increase the engine speed to 3,000 rpm and monitor PIDs.
- **NOTE:** *If GENMON PID does not remain below 85%, make sure that the battery is at an acceptable state of charge and that all electrical accessories are off.*

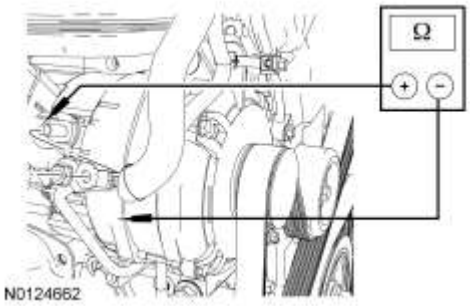
  Monitor PIDs VPWR, GENVDSD and GENMON.

Does the VPWR PID remain within ±0.5 volt of the GENVDSD PID when the GENMON PID is less than 85%?

Yes	GO to D8.
No	GO to D11.

D8 CHECK THE GENERATOR B+ RESISTANCE

- Ignition OFF.
- **NOTE:** *Failure to disconnect the battery will result in false resistance readings.*
  Disconnect the battery. Refer to Section 414-01.
- Disconnect: Generator C102B (3.7L) or Generator C102C (5.0L/5.4L) .
- Measure the resistance between generator C102B, component side and the generator housing.



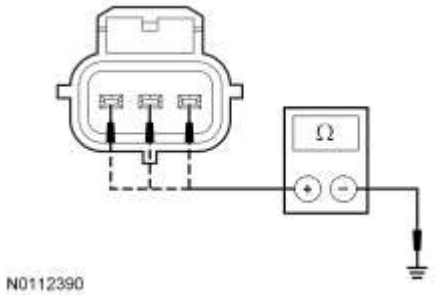
Is the resistance greater than 10,000 ohms?

Yes	GO to D9.
No	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D9 CHECK THE RESISTANCE OF THE VOLTAGE REGULATOR INTERNAL CIRCUITS TO GROUND

- Disconnect: Generator C102A .
- Measure the resistance between generator C102A, component side and ground. Refer to the following table.

Pin	Expected Resistance
1	Greater than 10K ohms
2	Greater than 10K ohms
3	Greater than 10K ohms



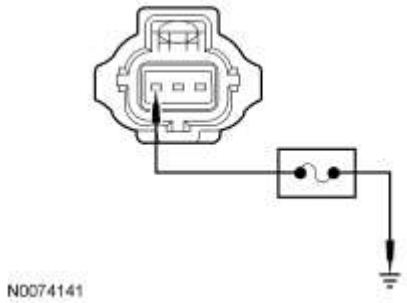
Are the resistance values as indicated?

Yes	The fault is not present at this time. This may indicate an intermittent fault. CARRY OUT a Wiggle Test on the charging system circuits to try and RECREATE the concern. CHECK generator connections for corrosion, loose connections and/or bent terminals. REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

No	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D10 CHECK THE PCM PID GENERATOR MONITOR (GENMON) INPUT TO THE PCM

- Ignition OFF.
- Disconnect: Generator C102A .
- Connect a fused jumper wire between generator C102A Pin 1, circuit CDC15 (VT), harness side and ground.



- Ignition ON.
- Monitor the GENMON PID while performing a Wiggle Test on the generator wiring harness.

Does the GENMON PID read 0%?

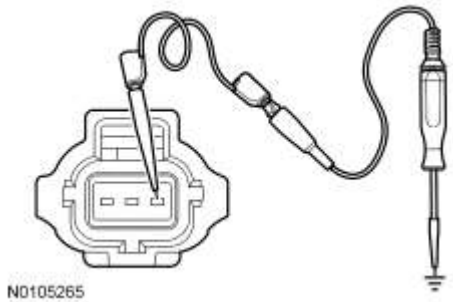
Yes	GO to D14.
No	GO to D15.

D11 A SENSE CIRCUIT LOAD TEST

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *This step puts a load on the A sense circuit. If there are corroded or loose connections, loading the circuit may help show the fault. A 250-350 mA incandescent 12-volt test lamp is required for this step. This circuit will not be loaded properly using an LED-style test lamp.*

- Ignition OFF.
- Disconnect: Generator C201A (if not previously disconnected) .
- Ignition ON.
- Using a 12-volt test lamp connected to ground, check for voltage at generator C102A Pin 3, circuit SBB17 (RD), harness side.



Does the test lamp illuminate?

Yes	GO to D12.
No	VERIFYBattery Junction Box (BJB) fuse 17 (10A) is OK. If OK, REPAIR corroded or loose connections at the battery positive C1100C ,Battery Junction Box (BJB) C1035A, generator C102A or circuits SDC02 (RD) or SBB17 (RD). If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D12 B+ CIRCUIT LOAD TEST

NOTE: *This step puts a load on the B+ circuit. If there are corroded or loose connections, loading the circuit may help show the fault. A glass bulb style test lamp is required for this step. This circuit will not be loaded properly using an LED-style test lamp.*

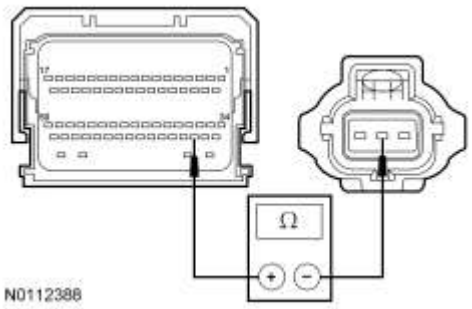
- Ignition OFF.
- Disconnect: (3.7L) Generator C102B .
- Disconnect: (5.0L, 5.4L) Generator C102C .
- Using a 12-volt test lamp connected to ground, check for voltage at generator C102B Pin 1 (3.7L) or C102C Pin 1 (5.0L, 5.4L), circuit SBF01 (RD), harness side.

Does the test lamp illuminate?

Yes	GO to D13.
No	REPAIR circuit SBF01 (RD) for high resistance. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D13 CHECK THE GENERATOR COMMAND CIRCUIT FOR DAMAGE OR AN OPEN

- Ignition OFF.
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the following harness connectors for damaged or pushed-out pins:
  - Generator C102A Pin 2, circuit CDC10 (BU/OG).
  - For 5.0L and 5.4L, PCM C175B Pin 53, circuit CDC10 (BU/OG).
  - For 3.7L, PCM C1381B Pin 53, circuit CDC10 (BU/OG).
- Measure the resistance between generator C102A Pin 2, circuit CDC10 (BU/OG), harness side and:
  - For 5.0L and 5.4L, PCM C175B Pin 53, circuit CDC10 (BU/OG), harness side.
  - For 3.7L, PCM C1381B Pin 53, circuit CDC10 (BU/OG), harness side.

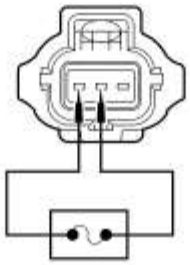


Are the connectors and pins free of damage and is the resistance less than 0.5 ohm?

Yes	GO to D14.
No	REPAIR circuit CDC10 (BU/OG). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D14 COMPARE THE PCM PIDS GENERATOR MONITOR (GENMON) AND GENERATOR COMMAND (GENCMD)

- Connect: (5.0L, 5.4L) PCM C175B .
- Connect: (3.7L) PCM C1381B .
- Connect a fused jumper wire between generator C102A Pin 1, circuit CDC15 (VT), harness side and generator C102A Pin 2, circuit CDC10 (BU/OG), harness side.



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- Key ON Engine OFF (KOEO) .
- Monitor the GENMON and GENCMD PIDs while performing a Wiggle Test on the generator wiring harness.

Does the GENMON PID read within 5% of the GENCMD PID?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	GO to D16.

D15 INSPECT GENERATOR CIRCUITS

- Ignition OFF.
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the following connector pins for damage and/or corrosion:
  - generator C102A Pin 1, circuit CDC15 (VT).
  - For 5.0L and 5.4L, PCM C175B Pin 14, circuit CDC15 (VT).
  - For 3.7L, PCM C1381B Pin 14, circuit CDC15 (VT).

Are the connectors OK?

Yes	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	REPAIR the affected circuit(s). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

D16 INSPECT PCM CIRCUITS

- Ignition OFF.
- Disconnect: (5.0L, 5.4L) PCM C175B .
- Disconnect: (3.7L) PCM C1381B .
- Inspect the following connector pins for damage and/or corrosion:
  - generator C102A Pin 2, circuit CDC10 (BU/OG).
  - generator C102A Pin 1, circuit CDC15 (VT).
  - For 5.0L and 5.4L, PCM C175B Pin 53, circuit CDC10 (BU/OG).
  - For 5.0L and 5.4L, PCM C175B Pin 14, circuit CDC15 (VT).

    For 3.7L, PCM C1381B Pin 53, circuit CDC10 (BU/OG).
  - For 3.7L, PCM C1381B Pin 14, circuit CDC15 (VT).

Are the connectors OK?

Yes	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	REPAIR the affected circuit(s). CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation

Pinpoint Test E: DTC P065B

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

Normal Operation

The PCM monitors the generator output via the GENMON circuit. The signal that is monitored by the PCM on the GENMON circuit is a controlled frequency range. If the signal is outside of this prescribed range, the PCM is be unable to read the signal. When the engine rises above approximately 2,000 rpm, the generator defaults to a steady voltage of approximately 13.5 volts and the PCM sends a request to the Instrument Cluster (IC) to illuminate the charging system warning indicator lamp.

- DTC P065B (Generator Control Circuit Range/Performance) — The PCM sets this DTC if the input frequency is continuously less than 80 Hz or more than 200 Hz. Additionally, if the signal shows a faulted condition that is happening in a fluctuating manner, the PCM tracks the fluctuations between faulted and normal conditions. This DTC can also set if the fluctuations occur frequently within a short amount of time.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Generator
- PCM

PINPOINT TEST E : DTC P065B

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

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

E1 CHECK THE BATTERY CONDITION

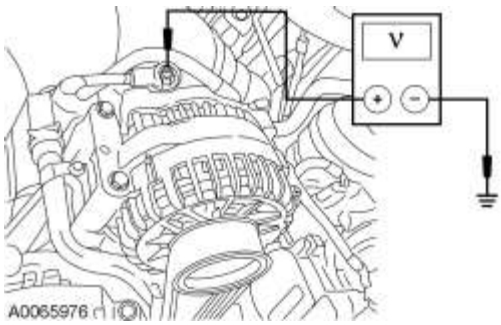
- Carry out the Battery — Condition Test to determine if the battery can hold a charge and is OK for use. Refer to Section 414-01.

Does the battery pass the condition test?

Yes	GO to E2.
No	INSTALL a new battery. REFER to Section 414-01. CLEAR theDTCs . REPEAT the self-test. TEST the system for normal operation.

E2 CHECK THE GENERATOR B+ CONNECTION

- Ignition OFF.
- Disconnect: Generator C102A . Inspect generator C102A for bent and/or pushed out pins.
- Inspect the High Current Battery Junction Box (BJB) C167A for corrosion and make sure the connector is tight.
- Inspect generator B+ connection:
  - For 3.7L, C102B, circuit SBF01 (RD). Connection should be tight.
  - For 5.0L and 5.4L, C102C, circuit SBF01 (RD). Connection should be tight.
- Measure the voltage between ground and
  - For 5.0L and 5.4L, generator C102C, circuit SBF01 (RD).
  - For 3.7L, generator C102B, circuit SBF01 (RD).



Are the generator and High Current Battery Junction Box (BJB) connections clean and tight and does the generator B+ connection measure battery voltage?

Yes	GO to E3.

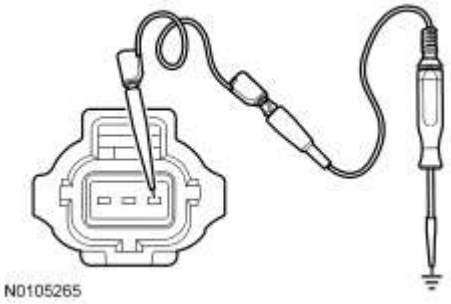
No	VERIFY the High Current Battery Junction Box (BJB) 200A fuse is OK. If OK, INSPECT for and REPAIR any corrosion or looseness in circuit SBF01 (RD), High-Current Battery Junction Box (BJB) C1617A, generator B+ C102B or C102C and positive battery cable connections. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation. If fuse is not OK, INSPECT and REPAIR the cause of the circuit short before replacing the High Current Battery Junction Box (BJB) .

E3 A SENSE CIRCUIT LOAD TEST

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *This step puts a load on the A sense circuit. If there are corroded or loose connections, loading the circuit may help show the fault. A 250-350 mA incandescent 12-volt test lamp is required for this step. This circuit will not be loaded properly using an LED-style test lamp.*

- Ignition ON.
- Using a 12-volt test lamp connected to ground, check for voltage at generator C102A Pin 3, circuit SBB17 (RD), harness side.



Does the test lamp illuminate?

Yes	GO to E4.
No	VERIFYBJB fuse 17 (10A) is OK. If OK, REPAIR circuit SBB17 (RD). If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

E4 CHECK THE GENERATOR MONITOR FREQUENCY (GENMON_HZ) PID

- Ignition OFF.
- Connect: Generator C102A . Connector should be installed correctly and tight.
- Start the engine.
- **NOTE:** *Many of the PCM PIDs selected are monitored later in this pinpoint test.*

  Select and monitor the following PCM PIDs .
  - Generator Voltage Desired (GENVDSD).
  - Generator Monitor Frequency (GENMON_HZ).
- Monitor the GENMON_HZ PID.

Does the PID read between 80-200 Hz?

Yes	GO to E8.
No	GO to E5.

E5 CHECK THE PCM GENERATOR MONITOR FREQUENCY (GENMON_HZ) PID WITH GENERATOR C102A DISCONNECTED

- Ignition OFF.
- Disconnect: Generator C102A .
- Start the engine.
- Monitor the GENMON_HZ PID.

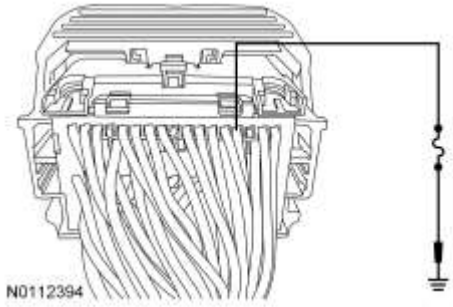
Does the PID read between 0-2 Hz?

Yes	GO to E7.
No	GO to E6.

E6 CHECK GENERATOR CIRCUITRY

- Ignition OFF.
- **NOTICE: This pinpoint test step directs testing circuits using a back-probe method. Use the special back-probe tool specified in the tool list in this section. Do not force test leads or other probes into connectors. Adequate care must be exercised to avoid connector terminal damage while making sure that good electrical contact is made with the circuit or terminal. Failure to follow these instructions may cause damage to wiring, terminals, or connectors and subsequent electrical faults.**

  With the PCM connected, connect a fused jumper wire between ground and:
  - For 5.0L and 5.4L, PCM C175B Pin 14, circuit CDC15 (VT), harness side.
  - For 3.7L, PCM C1381B Pin 14, circuit CDC15 (VT), harness side.



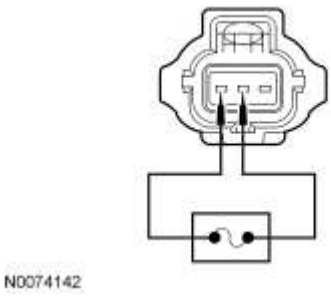
- Start the engine.
- Monitor the GENMON_HZ PID

Does the PID read 0 Hz?

Yes	INSPECT the harness for wire to wire shorts or insulation chaffing, mis-pinned connectors and correct wire colors and REPAIR generator circuit CDC15 (VT) as needed. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

E7 MONITOR THE PCM PID GENERATOR MONITOR FREQUENCY (GENMON_HZ) WHILE ACTIVATING THE GENERATOR VOLTAGE DESIRED (GENVDSD) PID

- Ignition OFF.
- Connect a fused jumper wire between generator C102A Pin 1, circuit CDC15 (VT), harness side and generator C102A Pin 2, circuit CDC10 (BU/OG), harness side.



- Start the engine.
- Monitor the GENMON_HZ PID.

Does the GENMON_HZ PID read between 120-130 Hz?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	INSTALL a new PCM. REFER to Section 303-14. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

E8 CHECK THE PCM GENERATOR COMMAND LINE FAULT (GENCMD_LF) PID

- With the engine running and all selectable loads OFF, monitor the PCM PID GENCMD_LF.

Does the PCM PID GENCMD_LF fluctuate from YES FAULT to NO FAULT?

Yes	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.
No	The fault is not present at this time. This may indicate an intermittent fault. CARRY OUT a wiggle test on the charging system circuits to try and RECREATE the concern. CHECK the generator and High Current BJB connections for corrosion, loose connections and/or bent terminals. REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test. TEST the system for normal operation.

Pinpoint Test F: The Generator is Noisy

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

Normal Operation

The generator is belt-driven by the engine accessory drive system. There are 2 sources of generator noise: bearing noise and electrical fault noise. A generator with certain types of diode or stator failures may also produce an audible noise.

This pinpoint test is intended to diagnose the following:

- Accessory drive belt
- Loose bolts/brackets
- Generator clutch (3.7L manual transmission only)
- Generator

PINPOINT TEST F : THE GENERATOR IS NOISY

F1 CHECK FOR ACCESSORY DRIVE BELT NOISE AND LOOSE MOUNTING BRACKETS

- Ignition OFF.
- Check the accessory drive belt and tensioner for damage and correct installation. Refer to Section 303-05.
- Check the accessory mounting brackets and generator pulley for looseness or misalignment.

Is the accessory drive OK?

Yes	GO to F2.
No	REPAIR as necessary. REFER to Section 303-05 for diagnosis and testing of the accessory drive system. TEST the system for normal operation.

F2 CHECK THE GENERATOR MOUNTING

- Check the generator mounting for loose bolts or misalignment.

Is the generator mounted correctly?

Yes	GO to F3.
No	REPAIR as necessary. TEST the system for normal operation.

F3 CHECK THE GENERATOR FOR MECHANICAL NOISE
• With the engine running, use a stethoscope or equivalent listening device to probe the generator and the accessory drive area for unusual mechanical noise. **Is the generator the noise source?**

Yes	**For 3.7L manual transmission**, CARRY OUT the Generator Clutch component test in this section. If the generator clutch tests OK, INSTALL a new generator. REFER to Generator — 3.7L in this section. **For all others**, INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. DTCs.
No	REFER to Section 303-00 to diagnose the source of the engine noise.

Pinpoint Test G: Radio Interference

Refer to Wiring Diagrams Cell 12, Charging System for schematic and connector information.

Normal Operation

The generator radio suppression equipment reduces interference transmitted through the speakers by the vehicle electrical system.

This pinpoint test is intended to diagnose the following:

- Generator
- Wiring, terminals or connectors
- In-vehicle entertainment system

PINPOINT TEST G : RADIO INTERFERENCE

NOTE: *If the OEM audio unit has been replaced with an aftermarket unit, the vehicle may not pass this test. Return the vehicle to OEM condition before following this pinpoint test.*
NOTE: *If the engine is operated at greater than 2,000 rpm momentarily, the generator self-excites. Make sure when the generator is disconnected the engine rpm stays below 2,000 rpm. If it does rise above 2,000 rpm, turn the ignition to the off position and start the test over again.*
NOTE: *Inspect for any aftermarket accessories that have been added to the vehicle. Check the wiring for these accessories and be sure they have not been attached to the generator circuits and are positioned away from the generator wiring.*
G1 VERIFY THE GENERATOR IS THE SOURCE OF THE RADIO INTERFERENCE
• Start the engine and allow the engine to idle. • Tune the audio unit to a station where the interference is present. • Ignition OFF. • Disconnect: Generator C102B (3.7L) or Generator C102C (5.0L/5.4L) . • Start the engine and allow the engine to idle, determine if the interference is still present. **Is the interference present with the generator disconnected?**

Yes	REFER to Section 415-00 for diagnosis and testing of the in-vehicle entertainment system.
No	INSTALL a new generator. Refer to Generator — 3.7L, Generator — 5.0L or Generator — 5.4L (4V) in this section. TEST the system for normal operation.

Component tests

Generator Clutch

1. **NOTE:** *This procedure only applies to the 3.7L manual transmission.*

   Remove the generator. For additional information, refer to Generator — 3.7L in this section.

2. Using a small screwdriver or similar tool, insert the tool through the rubber button on the center of the pulley cap and pry off the cap. Discard the cap. A new cap must be installed if the clutch is OK.

3. Using a 17 mm hex tool bit (such as a Snap-on® SAM17E2 or equivalent) and socket wrench, insert the 17 mm hex tool bit into the end of the clutch shaft.

4. While holding the clutch pulley firmly by hand, turn the clutch shaft clockwise. The shaft should rotate smooth and freely. If the shaft rotation is rough or seized, install a new generator clutch. Refer to Clutch in this section.

5. While holding the clutch pulley firmly by hand, turn the clutch shaft counterclockwise. There should be some resistance (a spring feel). If the shaft rotates freely, install a new generator clutch. Refer to Clutch in this section.