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2009 FORD Mustang Convertible OEM Service and Repair Workshop Manual

Go to manual page

C1232B-17	V	Ground

- Measure and record: for 3.5L

Positive Lead	Measurement / Action	Negative Lead
C175B-2	V	Ground
C175B-16	V	Ground
C175B-17	V	Ground

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

Yes	GO to B9

No	REPAIR the affected circuit(s).

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

- **NOTE**

  Measure battery voltage at the battery.

  With the engine still running at idle, turn off all accessory loads, measure and record:

Positive Lead	Measurement / Action	Negative Lead

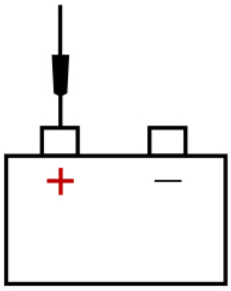
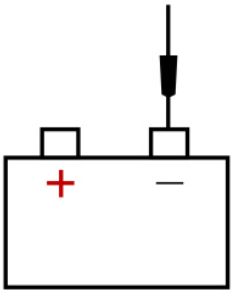
No	REPAIR the affected PCM (powertrain control module) ground circuit(s).

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

- **NOTE**

  Measure battery voltage at the battery.

  With the engine still running at idle, turn off all accessory loads.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
		

- Access the PCM (powertrain control module) and monitor the VPWR (Module Supply Voltage) (V) PID (parameter identification)
  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 (parameter identification) .

Does the PID (parameter identification) 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 (414-01 Battery, Mounting and Cables, General Procedures).

- damaged or bent pins – install new terminals/pins
- pushed-out pins – install new pins as necessary

- Reconnect the PCM (powertrain control module) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern,  Guided Routine available in the on-line Workshop Manual.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST C : GENERATOR OVER TEMPERATURE

Normal Operation and Fault Conditions
DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0A3B:00	Generator 'A' Over Temperature: No Sub Type Information	Sets in the PCM (powertrain control module) when generator over temperature is detected.

Possible Sources

- PCM (powertrain control module)

C1 PERFORM INSPECTION AND VERIFICATION

- Wiring, terminals or connectors

Visual Inspection and Pre-checks

- Inspect the FEAD (front end accessory drive) system. REFER to 303-05.
- Inspect for abnormal ignition-off current drain(s).
- Inspect the battery.
- Inspect the high current BJB (battery junction box) for loose, damaged or corroded connections.
- Verify the BJB (battery junction box) fuse F1 (125A).

NOTE

Make sure battery voltage is greater than 24 volts prior to and during this pinpoint test.

NOTE

Do not have a battery charger attached during vehicle testing.

D1 PERFORM INSPECTION AND VERIFICATION

- Perform Inspection and Verification procedure in this section.

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

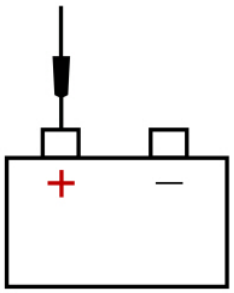
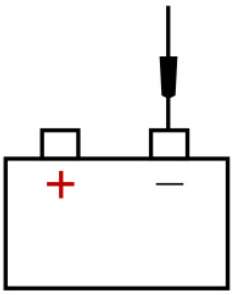
Yes	CORRECT the cause as necessary.

No	GO to D2

D2 MEASURE THE "B" SENSE VOLTAGE

- Ignition OFF.
- Disconnect generator C1251B .
- Ignition ON.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead

Positive Lead	Measurement / Action	Negative Lead
Battery positive (+) post 		Battery negative (-) post 

- Connect the load to each circuit and measure:

Positive Lead	Measurement / Action	Negative Lead
C1251B-1		Ground

Is the "B" sense voltage within ±0.5 volt of the recorded battery voltage?

Yes	GO to D4

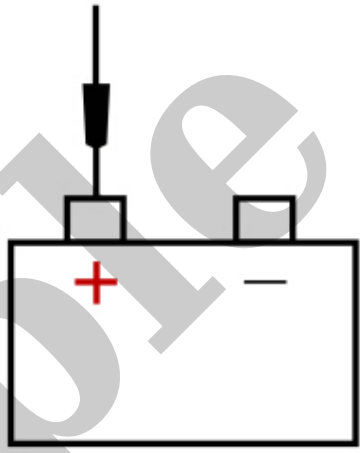
No	VERIFY the BJB (battery junction box) fuse 25 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

D4 CHECK THE GENERATOR CONNECTIONS

- Ignition OFF.
- Disconnect Generator C1251B .
- Disconnect Generator C1251A .
- 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

D5 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
C1251A-1	V	Battery (+) positive terminal pole side 

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

Is the voltage drop less than 0.5 volt?

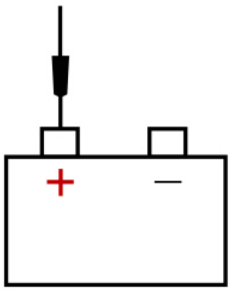
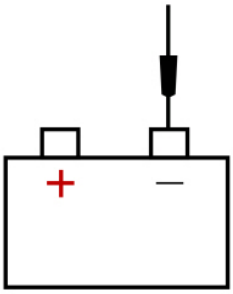
Yes	GO to D6

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

D6 CHECK THE VOLTAGE DROP IN THE VEHICLE GROUNDS

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

Positive Lead	Measurement / Action	Negative Lead

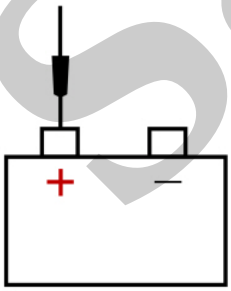
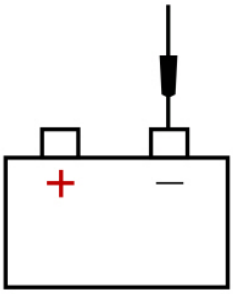
Is the recorded battery voltage within ±0.5 volt of the PID (parameter identification) ?

Yes	GO to D8

No	GO to D12

D8 COMPARE THE SUPPLY VOLTAGE (VPWR) PID (PARAMETER IDENTIFICATION) TO BATTERY VOLTAGE

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

Positive Lead	Measurement / Action	Negative Lead
		

- Access the PCM (powertrain control module) and monitor the VPWR (Module Supply Voltage) (V) PID (parameter identification)

Does the PID (parameter identification) accurately display battery voltage within ±0.5 volt of the recorded battery voltage?

Is the voltage drop less than 0.5 volt?

Yes	GO to D11

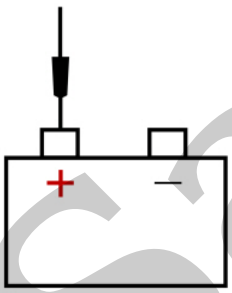
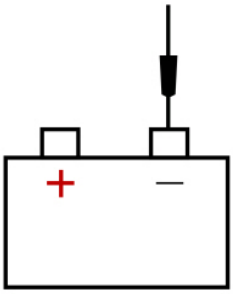
No	REPAIR the affected the DC (direct current) / AC (alternating current) ground circuit.

D11 MONITOR THE SUPPLY VOLTAGE (VPWR) PID (PARAMETER IDENTIFICATION)

- **NOTE**

  Measure battery voltage at the battery.

  With the engine still running at idle, turn off all accessory loads.
- Measure and record:

Positive Lead	Measurement / Action	Negative Lead
		

- Access the PCM (powertrain control module) and monitor the VPWR (Module Supply Voltage) (V) PID (parameter identification)
  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 (parameter identification) .

Does the PID (parameter identification) 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

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW the TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern,  Guided Routine available in the on-line Workshop Manual.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST E : SECONDARY GENERATOR OVER TEMPERATURE

Normal Operation and Fault Conditions
DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P2D59:00	Generator 'B' Over Temperature: No Sub Type Information	Sets in the PCM (powertrain control module) when secondary generator over temperature is detected.

Possible Sources

- PCM (powertrain control module)

E1 PERFORM INSPECTION AND VERIFICATION

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Using a diagnostic scan tool, perform the PCM (powertrain control module) self-test and DIAGNOSE any cooling fan Diagnostic Trouble Codes (DTCs).