

Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2010 FORD Mustang Convertible OEM Service and Repair Workshop Manual

[Go to manual page](#)

Charging system warning indicator is never or always ON	Refer to the Pinpoint Test	GO to Pinpoint Test O
---	----------------------------	---------------------------------------

Pinpoint Tests

PINPOINT TEST A : SYSTEM VOLTAGE HIGH SYSTEM VOLTAGE HIGH

NOTE

DTC (diagnostic trouble code) P0563 can be set if the vehicle has been recently jump started or the battery has been recently charged. 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.

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

Normal Operation and Fault Conditions With the engine running, the charging system supplies voltage to the battery and the vehicle electrical system through the high current BJB (battery junction box) and 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 or below their calibrated setpoints, a DTC (diagnostic trouble code) sets. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0563:00	System Voltage High: No Sub Type Information	This DTC (diagnostic trouble code) sets in the PCM (powertrain control module) when the PCM (powertrain control module) detects voltage from the charging system greater than 15.9 volts with vehicle speed above 8 km/h (5 mph).
BCM (body control module) B11D9:09	Vehicle Battery: Component Failures	A continuous and on-demand DTC (diagnostic trouble code) that sets in the BCM (body control module) if the BCM (body control module) detects higher or Lower than expected battery voltage on the voltage supply input circuit.
BCM (body control module) B11D9:17	Vehicle Battery: Circuit Voltage Above Threshold	A continuous and on-demand DTC (diagnostic trouble code) that sets in the BCM (body control module) if the BCM (body control module) detects higher than expected battery voltage on the voltage supply input circuit.

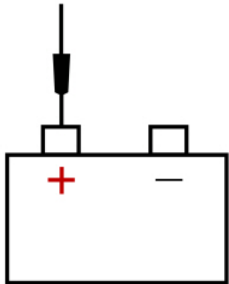

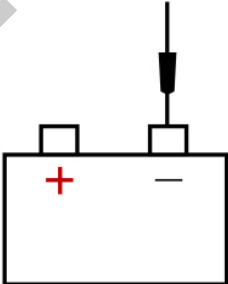
Possible Sources

Yes	GO to A3
------------	--------------------------

No	GO to A10
-----------	---------------------------

A3 COMPARE THE GENERATOR VOLTAGE DESIRED (GENVDSD) PID (PARAMETER IDENTIFICATION) WITH BATTERY VOLTAGE

- With the engine still running at idle, measure and record:


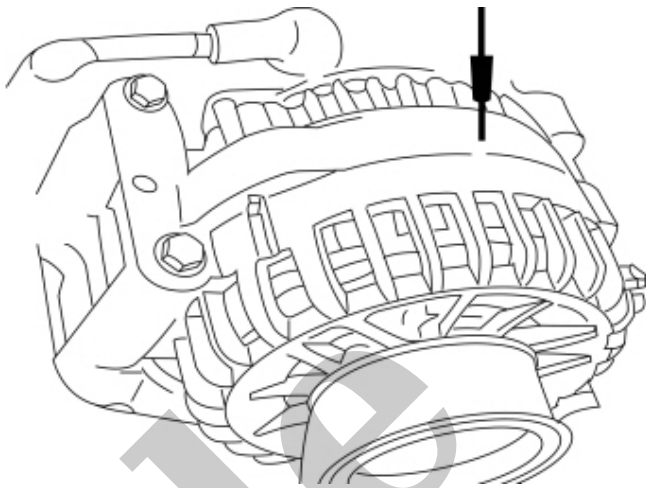
Positive Lead	Measurement / Action	Negative Lead
		

- Using a diagnostic scan tool, Access the PCM (powertrain control module) and monitor the GENVDSD (Generator Voltage Desired) (V) PID (parameter identification)

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

Yes	The system is operating correctly at this time. The concern may have been caused by an intermittently loose or corroded connector. ADDRESS the root cause of any connector or pin issues.
------------	---

No	GO to A4
-----------	--------------------------

Positive Lead	Measurement / Action	Negative Lead
C102B-1		

Is the recorded battery voltage within +/- above 0.5 volt of the PID (parameter identification) ?

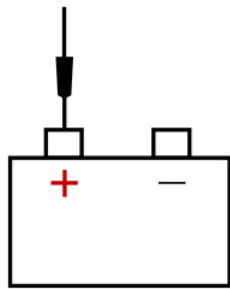
Yes	GO to A6
------------	--------------------------

No	<p>INSTALL a new generator.</p> <p>REFER to: Generator - 2.7L EcoBoost (238kW/324PS) (414-02 Generator and Regulator, Removal and Installation).</p> <p>REFER to: Generator - 3.5L EcoBoost (BM) (414-02 Generator and Regulator, Removal and Installation).</p>
-----------	--

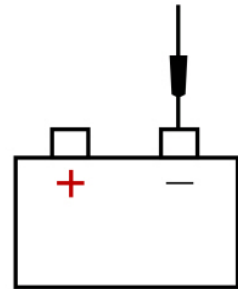
A6 CHECK THE GENERATOR OUTPUT

- Increase the engine rpm, While still commanding GENVDSD (V) PID to 14 Volts.
- With the engine running, measure and record:

Positive Lead	Measurement / Action	Negative Lead



V



- Using a diagnostic scan tool, view PCM (powertrain control module) PID (parameter identification) .
- 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?

Yes

The system is operating correctly at this time. Check for loose wiring.

No

GO to [A8](#)

A8 CHECK PCM (POWERTRAIN CONTROL MODULE) SUPPLY VOLTAGE CIRCUITS

- Turn the headlamps and heater blower off.
- Ignition OFF.
- Disconnect for 2.7L engine PCM (powertrain control module) C1232B .
- Disconnect for 3.5L engine PCM (powertrain control module) C175B .
- Connect a fused jumper wire:


Positive Lead	Measurement / Action	Negative Lead
2.7L engine C1232B-74 PCMPR		Ground
3.5L engine C175B-74 PCMPR		Ground


A9 CHECK PCM (POWERTRAIN CONTROL MODULE) GROUND FOR HIGH RESISTANCE

- Turn the headlamps and heater blower off.
- Ignition OFF.
- Disconnect for 2.7L engine PCM (powertrain control module) C1232B .
- Disconnect for 3.5L engine PCM (powertrain control module) C175B .
- Ignition ON.
- Measure: for 2.7L engine

Positive Lead	Measurement / Action	Negative Lead
C1232B-47		Ground
C1232B-61		Ground
C1232B-62		Ground
C1232B-46		Ground
C1232B-76		Ground
C1232B-77		Ground

- Measure: for 3.5L engine

Positive Lead	Measurement / Action	Negative Lead
C175B-46		Ground

Yes	<p>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,</p> <div data-bbox="271 340 454 394">  </div> <p>Guided Routine available in the on-line Workshop Manual.</p>
No	<p>The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.</p>

PINPOINT TEST B : SYSTEM VOLTAGE LOW OR BATTERY IS DISCHARGED

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

Normal Operation and Fault Conditions With the engine running, the charging system supplies voltage to the battery and the vehicle electrical system through the high current BJB (battery junction box) and battery B+ cable. The PCM (powertrain control module) monitors this B+ voltage through PCM (powertrain control module) VPWR or FPPWR circuits. If the charging system voltage drops 1.5 volts or more below the generator voltage desired (GENVDSD), the DTC (diagnostic trouble code) sets and the charging system MIL illuminates after 30 seconds. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0562:00	System Voltage Low: No Sub Type Information	If voltage drops 1.5 volts or more below the generator voltage desired (calculated by the PCM (powertrain control module)), this DTC (diagnostic trouble code) sets after 30 seconds.
PCM (powertrain control module) P065B:00	Generator 'A' Control Circuit Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) sets when the generator reports an internal regulator failure.
PCM (powertrain control module)	Generator 'A' Mechanical Performance: No Sub Type	This DTC (diagnostic trouble code) sets by a defective OAD pulley, slipping belt or defective

No	GO to B2
----	--------------------------

B2 RETRIEVE DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, perform the PCM (powertrain control module) self-test.

Is DTC (diagnostic trouble code) P065B, P065C, U012D or U042E present?


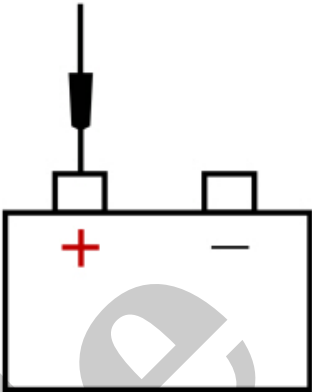
Yes	<p>P065B and P065C are present, GO to Pinpoint Test F</p> <p>If P065B is present without P065C, INSTALL a new generator.</p> <p>REFER to: Generator - 2.7L EcoBoost (238kW/324PS) (414-02 Generator and Regulator, Removal and Installation).</p> <p>REFER to: Generator - 3.5L EcoBoost (BM) (414-02 Generator and Regulator, Removal and Installation).</p> <p>If P065C is present without P065B, GO to Pinpoint Test F If U012D or U042E is present, GO to Pinpoint Test G</p>
-----	---

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
---------------	-------------------------	---------------

Positive Lead	Measurement / Action	Negative Lead
C102B-1 Generator (B+)		Battery positive (+) post side. 

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

Is the voltage drop less than 0.5 volt?

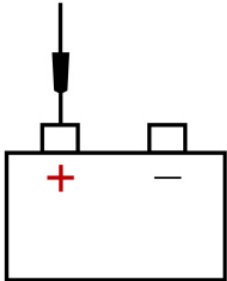

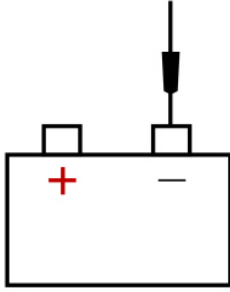
Yes	GO to B5
------------	--------------------------

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 still running at idle, headlamps on and heater blower on high, measure:

Positive Lead	Measurement / Action	Negative Lead
---------------	----------------------	---------------

		<p>Battery negative (-) post side.</p> 
---	---	--

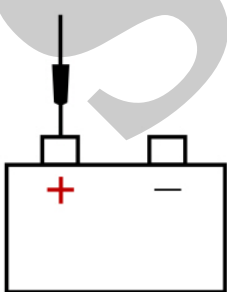

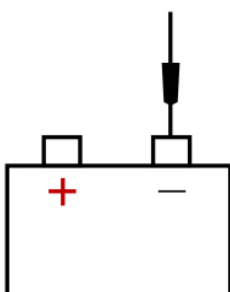
Is the recorded battery voltage within ± 0.5 volt of the PID (parameter identification) ?

Yes	GO to B7
-----	--------------------------

No	GO to B11
----	---------------------------

B7 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
		<p>Battery negative (-) post side.</p> 

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