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2012 FORD Mondeo Hatchback OEM Service and Repair Workshop Manual

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No	GO to AG2

AG2 CLEAR THE BECM (BATTERY ENERGY CONTROL MODULE) DTCS AND REPEAT THE SELF TEST

- Ignition ON.
- Using a diagnostic scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) U301B:00 or U301C:00 present?

Yes	GO to AG6

No	GO to AG3

AG3 TEST SYSTEM WITH A KNOWN GOOD EVSE (ELECTRIC VEHICLE SUPPLY EQUIPMENT) CONNECTED TO THE VEHICLE

- Ignition OFF.
- CONNECT a known good EVSE to a AC (alternating current) power outlet and the vehicle charge port.
- Wait 1 minute.
- Ignition ON.
- Using a diagnostic scan tool, perform SOBDM (secondary on-board diagnostic control module A) self-test.

Is DTC (diagnostic trouble code) U301B:00 or U301C:00 present?

Yes	GO to AG4

No	The concern is not present at this time.

AG4 CHECK FOR SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) DTCS

No	REPAIR the circuit.

AG6 CHECK THE WAKEUP CIRCUIT VOLTAGE

- Ignition OFF.
- Disconnect high voltage battery C144 .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)		Ground

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)		Ground

Is voltage within 0.5V of the voltage measured at the 12V battery with the ignition ON and 0V with the ignition OFF?

Yes	GO to AG15

No	GO to AG7

AG7 CHECK THE WAKEUP CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect SOBDMC (secondary on-board diagnostic control module C) C3471A .
- Disconnect GFM2 (generic function module 2) C3003A (vehicles equipped with dual chargers ONLY) .

AG9 CHECK THE WAKEUP CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C199A-J1	Ω	C144-1 (female side)

Is the resistance less than 3 ohms?

Yes	GO to AG10

No	REPAIR the circuit.

AG10 CHECK THE WAKEUP VOLTAGE WITH THE SOBDMC (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE C) CONNECTED

- Connect SOBDMC (secondary on-board diagnostic control module C) C3471A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

No	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, INSTALL a new SOBDM (secondary on-board diagnostic control module A) . REFER to: Secondary On-Board Diagnostic Control Module A (SOBDM) - Electric (414-03B High Voltage Battery Charging System, Removal and Installation).

AG12 CHECK THE WAKEUP VOLTAGE WITH THE SOBDM (SECONDARY ON-BOARD DIAGNOSTIC CONTROL MODULE A) CONNECTED

- Connect SOBDM (secondary on-board diagnostic control module A) C1821A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

Is voltage within 0.5V of the voltage measured at the 12V battery with the ignition ON and 0V with the ignition OFF?

Yes	For vehicles equipped with a secondary charger, GO to AG13 Otherwise, GO to AG14

No	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

	REFER to: Generic Function Module 2 (GFM2) - Electric (414-03B High Voltage Battery Charging System, Removal and Installation).

AG14 CHECK THE WAKEUP VOLTAGE WITH THE PCM (POWERTRAIN CONTROL MODULE) CONNECTED

- Connect PCM (powertrain control module) C1915B .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C144-1 (female side)	V	Ground

Is voltage within 0.5V of the voltage measured at the 12V battery with the ignition ON and 0V with the ignition OFF?

Yes	GO to AG15

No	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, 

		CASE GROUND

Is the resistance greater than 10,000 ohms?

Yes	GO to AG17

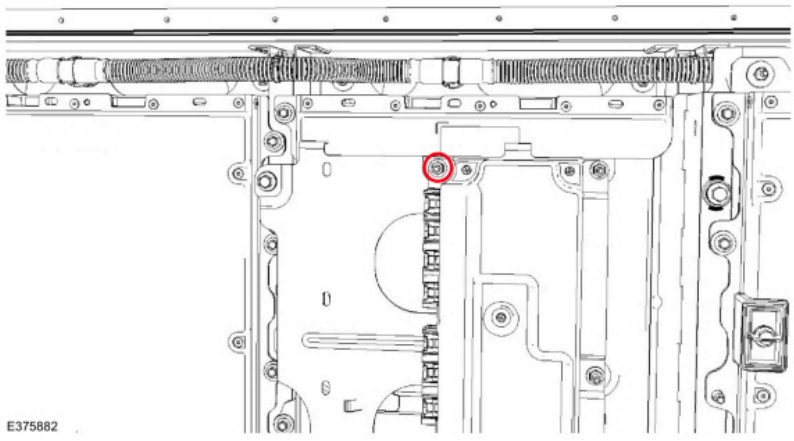
No	GO to AG16

AG16 CONFIRM THE LOCATION OF THE GROUNDED CIRCUIT

- Disconnect BECM (battery energy control module) low voltage inline C4239 .
- Measure:

NOTE

Any of the BECM (battery energy control module) bracket mounting nuts or high voltage battery pack case can be utilized for case ground.

Positive Lead	Measurement / Action	Negative Lead
C4816A-4	Ω	 CASE GROUND

	(414-03A High Voltage Battery, Mounting and Cables, Removal and Installation).

No	GO to AG18

AG18 CONFIRM LOCATION OF THE OPEN CIRCUIT

- Disconnect BECM (battery energy control module) low voltage inline C4239 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4816A-4	Ω	C4239-13 (female side)

Is the resistance greater less than 3 ohms?

Yes	INSTALL a new high voltage battery connector assembly. REFER to: High Voltage Battery Connector Assembly - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation). Re-install the high voltage battery cover and the high voltage battery. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures). Clear the BECM (battery energy control module) DTC's. Repeat the self-test.

No	INSTALL a new wiring harness. REFER to: High Voltage Battery Wiring Harness - Electric (414-03A High Voltage Battery, Mounting and Cables, Removal and Installation). Re-install the high voltage battery cover and the high voltage battery. Repower the high voltage system. REFER to: High Voltage System De-energizing - Electric (414-03A High Voltage Battery, Mounting and Cables, General Procedures). Clear the BECM (battery energy control module) DTC's. Repeat the self-test.

BECM (battery energy control module) P0E1F:00	Hybrid/EV Battery Pack Coolant Pump 'A' Control Circuit Driver Current/Temperature Too High: No Sub Type Information	This DTC (diagnostic trouble code) sets when the feedback signal the BECM (battery energy control module) receives from the high voltage battery coolant pump indicates the coolant pump over temperature or internal error has occurred.
BECM (battery energy control module) P2B29:00	Hybrid/EV Battery Pack Coolant Pump 'A' Overspeed /Air in System: No Sub Type Information	This DTC (diagnostic trouble code) sets when the feedback signal the BECM (battery energy control module) receives from the high voltage battery coolant pump indicates the coolant pump dry-run error has occurred.
BECM (battery energy control module) P2CF3:00	Hybrid/EV Battery Pack Coolant Pump 'A' Underspeed: No Sub Type Information	This DTC (diagnostic trouble code) sets when the feedback signal the BECM (battery energy control module) receives from the high voltage battery coolant pump indicates the coolant pump impeller speed below minimum speed error has occurred.

Possible Sources

- Wiring, terminals or connectors
- Low coolant level or air in the coolant system
- High voltage battery coolant pump
- BCMC (body control module C)
- BECM (battery energy control module)

AH1 ACTIVE COMMAND THE COOLANT PUMP AND PERFORM THE BECM (BATTERY ENERGY CONTROL MODULE) SELF TEST

- Ignition ON.
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.
- RECORD the Diagnostic Trouble Codes (DTCs).
- Using the scan tool, clear the BECM (battery energy control module) Diagnostic Trouble Codes (DTCs).
- Access the BECM (battery energy control module) and control the COOL_PMP_A_CMD (Coolant Pump - A- Control Speed - Commanded) (%) PID (parameter identification)
- Using the scan tool, active command the coolant pump to 100% for a minimum of 5 minutes. Confirm if the affected coolant pump is running by feeling the pump for vibration if the affected coolant pump is accessible.
- Using a diagnostic scan tool, perform BECM (battery energy control module) self-test.

Is DTC (diagnostic trouble code) U3012:00, P0C48:00, P0C49:00, P0C4A:00, P0C4B:00, P0CFF:00, P0E1F:00, P2B29:00 and/or P2CF3:00 present, or is the coolant pump not running?

- Using a diagnostic scan tool, perform the cooling system fill routine and verify if the affected coolant pump is running by feeling the pump for vibration.
  REFER to: Electrified Drivetrain Cooling System Draining, Vacuum Filling and Bleeding (302-03A Electrified Drivetrain Cooling, General Procedures).

Is the coolant pump running?

Yes	For Diagnostic Trouble Codes (DTCs) P0C48:00, P0C49:00, P0C4A:00, P0C4B:00, P0CFF:00, P2CF3:00 or if the coolant pump is not running, GO to AH4 For DTC (diagnostic trouble code) P2B29:00, REPEAT pinpoint test AG3, if the DTC (diagnostic trouble code) is still present, INSTALL a new high voltage battery coolant pump. REFER to: High Voltage Battery Coolant Pump (302-03A Electrified Drivetrain Cooling, Removal and Installation). GO to AH12 For DTC (diagnostic trouble code) P0E1F:00, INSTALL a new high voltage battery coolant pump. REFER to: High Voltage Battery Coolant Pump (302-03A Electrified Drivetrain Cooling, Removal and Installation). GO to AH12

No	The repair is complete.

AH4 CHECK THE HIGH VOLTAGE BATTERY COOLANT PUMP AND HIGH VOLTAGE BATTERY ELECTRICAL CONNECTORS

- Disconnect High Voltage Battery Coolant Pump C1721 .
- Disconnect High Voltage Battery C144 .
- Inspect for:
  - corrosion
  - damaged or bent pins
  - pushed-out pins

Are any concerns present?

Yes	REPAIR the wiring and/or connector concern. Clear the BECM (battery energy control module) DTC's. Repeat the self-test.