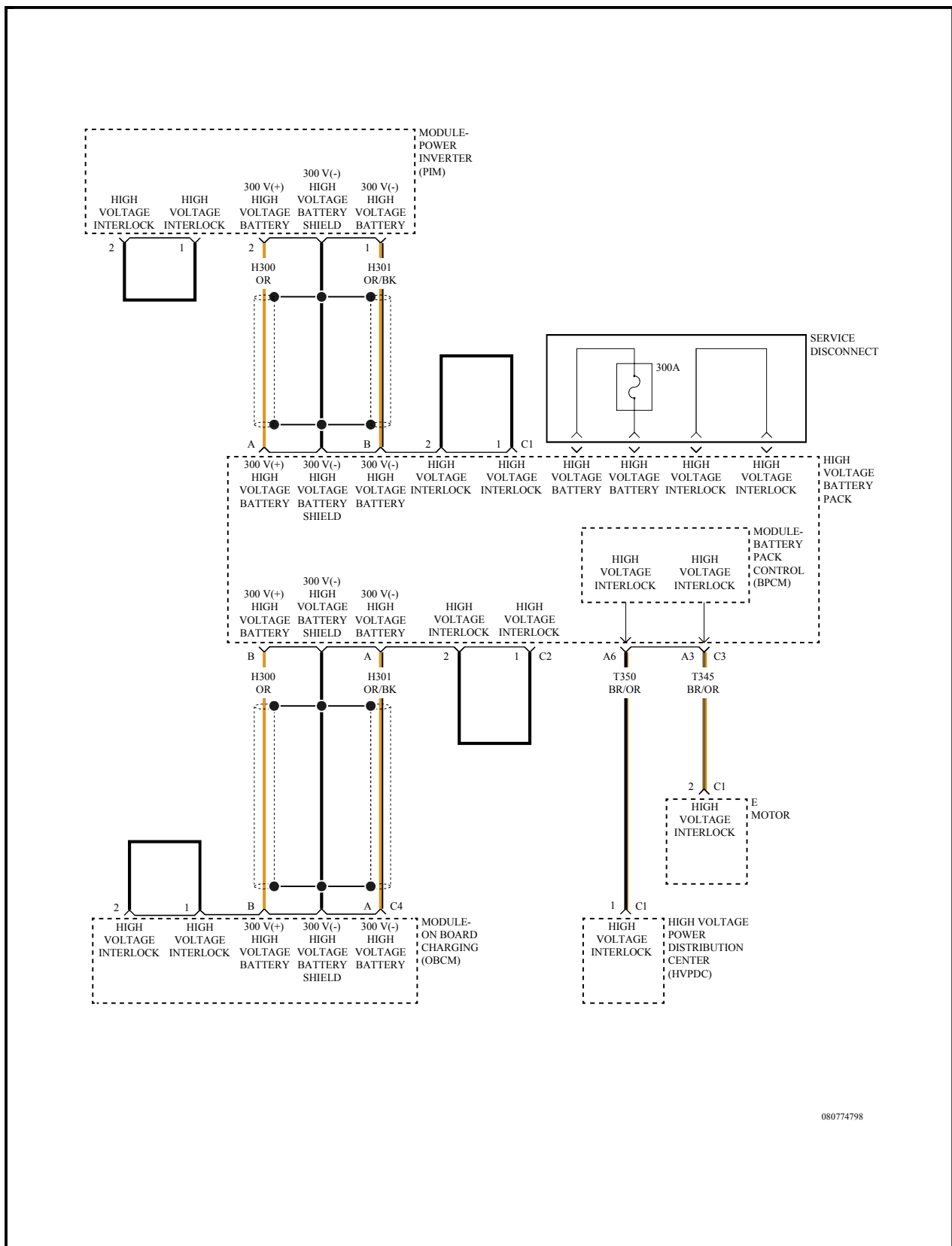


28 - DTC-Based Diagnostics / MODULE, Battery Pack Control (BPCM) / Diagnosis and Testing

## **P0E2E-00-BATTERY CHARGER FUSE**

For a complete wiring diagram, refer to the Wiring Information.



## Theory of Operation

The Battery Pack Control Module (BPCM) is contained within the High Voltage Battery Pack. The BPCM provides battery management and system functionality in conjunction with Cell Supervision Circuits (CSCs) that monitor and balance the battery cells. The CSCs are also located within the High Voltage Battery Pack. The BPCM is the High Voltage Interlock (HVIL) power source and communicates with the vehicle via CAN-C

bus. The main functions of the BPCM are high-voltage bus and pre-charge contactor control, battery pack current, voltage and temperature sensing, CAN communication, fault detection and reporting.

- **When Monitored:**

During battery charging. System voltage between 9v and 16v.

- **Set Condition:**

The Battery Pack Control Module (BPCM) detects the difference between the battery pack voltage and the on-board charging voltage to be greater than a calibrated threshold. The EVS lamp does not illuminate for this fault but charging is disabled.

### Possible Causes

HIGH VOLTAGE BATTERY PACK CHARGER FUSE

**WARNING:** On vehicles equipped with the high voltage system, you must thoroughly read and follow all High Voltage Safety procedures. In addition, before performing any diagnostic or service procedure near a high voltage component, you must perform the High Voltage Power Down. Failure to follow these instructions may result in possible serious or fatal injury .

([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)) to perform the High Voltage Power Down procedure.

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. ([Refer to Refer to 28 - DTC-Based Diagnostics/MODULE, Battery Pack Control \(BPCM\) /Standard Procedure](#)).

## 1. CHECK FOR VOLTAGE BETWEEN THE (H300) POSITIVE AND (H301) NEGATIVE HIGH VOLTAGE CIRCUITS AT THE HIGH VOLTAGE BATTERY PACK

1. Turn the ignition off.
2. Perform the High Voltage Power Down procedure. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
3. Unlock and disconnect the C1 high-voltage harness connector from the High Voltage Battery Pack. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
4. Unlock and disconnect the C2 high-voltage harness connector from the High Voltage Battery Pack. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
5. Measure the voltage between the (H300) High Voltage Battery positive circuit connector terminal (A), and the (H301) High Voltage Battery negative circuit connector terminal (B) at the C1 high-voltage connector socket on the High Voltage Battery Pack.

### Is there any voltage present?

#### Yes

- There should not be voltage present at the high-voltage connector when powered down. Replace the High Voltage Battery Pack in accordance with the Service Information. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Battery System/BATTERY, High-Voltage/Removal](#)).
- Perform the BATTERY PACK CONTROL MODULE (BPCM) VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Battery Pack Control \(BPCM\) /Standard Procedure](#)).

No

- Go To [2](#)

## 2.CHECK (H300) POSITIVE AND (H301) NEGATIVE HIGH VOLTAGE CIRCUITS FOR AN OPEN/HIGH RESISTANCE WITHIN THE HIGH VOLTAGE BATTERY PACK

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1. Measure the resistance of the (H301) High Voltage Battery positive circuit between connector terminal (B) at the C1 high-voltage connector socket and connector terminal (A) at the C2 high-voltage connector socket on the High Voltage Battery Pack.
2. Measure the resistance of the (H300) High Voltage Battery negative circuit between connector terminal (A) at the C1 high-voltage connector socket and connector terminal (B) at the C2 high-voltage connector socket on the High Voltage Battery Pack.

### **Is the resistance below 5.0 Ohms?**

Yes

- Go To [3](#)

No

- The internal Battery Pack Charger Fuse is open. Replace the High Voltage Battery Pack in accordance with the Service Information. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Battery System/BATTERY, High-Voltage/Removal](#)).
- Perform the BATTERY PACK CONTROL MODULE (BPCM) VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Battery Pack Control \(BPCM\) /Standard Procedure](#)).

## 3.ACTIVE DTC

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1. Connect and lock the C1 high-voltage harness connector to the High Voltage Battery Pack. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
2. Connect and lock the C2 high-voltage harness connector to the High Voltage Battery Pack. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
3. Perform the High Voltage Power Up procedure. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Control System/Standard Procedure](#)).
4. Turn the ignition on.
5. With the scan tool, record and erase BPCM DTCs.
6. Turn the ignition off. Wait 3 minutes.
7. Turn the ignition on. Wait 3 minutes.
8. With the scan tool, read DTCs.

### **Is the status Active for this DTC?**

Yes

- Replace the High Voltage Battery Pack in accordance with the Service Information. ([Refer to 12 - Electric Powertrain System/Electric Vehicle Battery System/BATTERY, High-Voltage/Removal](#)).
- Perform the BATTERY PACK CONTROL MODULE (BPCM) VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Battery Pack Control \(BPCM\) /Standard Procedure](#)).

**No**

- The condition or conditions that originally set this DTC are not present at this time. Perform the INTERMITTENT CONDITION diagnostic procedure. [\(Refer to 28 - DTC-Based Diagnostics/MODULE, Battery Pack Control \(BPCM\) /Standard Procedure\)](#).