




Stoplamps

Special Tool(s)

 <p>ST1137-A</p>	73III Automotive Meter 105-R0057 or equivalent
 <p>ST2834-A</p>	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
 <p>ST2574-A</p>	Flex Probe Kit 105-R025C or equivalent

Principles of Operation

NOTE: The Smart Junction Box (SJB) is also known as the Generic Electronic Module (GEM).

The [SJB](#) monitors the input from the stoplamp switch. When the brake pedal is applied, voltage is routed to the [SJB](#). The [SJB](#) then supplies voltage to the rear lamps and the high mounted stoplamp.

The turn and hazard lamp functions override the rear stoplamp function.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Stoplamp switch 	<ul style="list-style-type: none"> • Bussed Electrical Center (BEC) fuse: <ul style="list-style-type: none"> ■ 59 (30A) (RH stoplamps) ■ 63 (30A) (LH stoplamps) ■ 67 (30A) (high mounted stoplamp) • Smart Junction Box (SJB) fuse 15 (10A) (stoplamp switch) • Wiring, terminals or connectors • Bulb(s) • SJB

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

NOTE: Make sure the headlamp switch is in the OFF position.

NOTE: Make sure the multifunction switch is in the LOW BEAM position.

4. **NOTE:** Make sure to use the latest scan tool software release.

If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).

5. **NOTE:** The Vehicle Communication Module (VCM) LED prove-out confirms power and ground from the [DLC](#) are provided to the [VCM](#).

If the scan tool does not communicate with the [VCM](#):

- Check the [VCM](#) connection to the vehicle.
- Check the scan tool connection to the [VCM](#).
- Refer to [Section 418-00](#), No Power To The Scan Tool, to diagnose no power to the scan tool.

6. If the scan tool does not communicate with the vehicle:

- Verify the ignition key is in the ON position.
- Verify the scan tool operation with a known good vehicle.
- Refer to [Section 418-00](#) to diagnose no response from the PCM.

7. Carry out the network test.

- If the scan tool responds with no communication for one or more modules, refer to [Section 418-00](#).
- If the network test passes, retrieve and record the continuous memory DTCs.

8. Clear the continuous DTCs and carry out the self-test diagnostics for the [SJB](#).

9. If the DTCs retrieved are related to the concern, go to the [Diagnostic Trouble Code \(DTC\) Chart](#) in this section. For all other DTCs, refer to the Diagnostic Trouble Code (DTC) Chart in [Section 419-10](#).

10. If no DTCs related to the concern are retrieved, GO to [Symptom Chart](#).

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none">• One or more stoplamps are inoperative	<ul style="list-style-type: none">• Fuse• Wiring, terminals or connectors• Stoplamp switch• Bussed Electrical Center (BEC)• Smart Junction Box (SJB)	<ul style="list-style-type: none">• GO to Pinpoint Test H.
<ul style="list-style-type: none">• The stoplamps are on continuously	<ul style="list-style-type: none">• Wiring, terminals or connectors• Stoplamp switch• SJB• PCM	<ul style="list-style-type: none">• GO to Pinpoint Test I.

Pinpoint Tests

Pinpoint Test H: One Or More Stoplamps Are Inoperative

Refer to Wiring Diagrams Cell [90](#), Turn Signal/Stop/Hazard Lamps for schematic and connector information.

Normal Operation

Voltage is supplied from the Bussed Electrical Center (BEC) to the Smart Junction Box (SJB) through circuits 1523 (DG), 905 (GY/LB), and 1052 (TN/BK) to power the LH and RH stoplamps, and the high mounted stoplamp.

The stoplamp switch is provided voltage through circuit 10 (LG/RD). When the brake pedal is applied, the stoplamp switch routes voltage to the [SJB](#) through circuit 511 (LG). The [SJB](#) then provides voltage to the stoplamps through circuits 1783 (RD/WH), 1374 (TN/LB), 1728 (LB/OG), and 1363 (WH/RD). Ground for the stoplamps is provided through circuit 1205 (BK).

DTC Description	Fault Trigger Conditions
<ul style="list-style-type: none"> B2044 — Left Rear Stop Lamp Circuit Short to Ground 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2046 — Right Rear Stop Lamp Circuit Short to Ground 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the RH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2048 — Left Rear Turn Lamp Circuit Short to Ground 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2049 — Left Rear Turn Lamp Circuit Open 	A continuous and on-demand DTC that sets when the SJB detects an open from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2050 — Right Rear Turn Lamp Circuit Short to Ground 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the RH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2051 — Right Rear Turn Lamp Circuit Open 	A continuous and on-demand DTC that sets when the SJB detects an open from the RH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2519 — High Mount Stop Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects an open or short to ground from the high mounted stoplamp voltage supply circuit.
<ul style="list-style-type: none"> B2527 — Left Rear Stop Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the LH rear lamp 2 voltage supply circuit.
<ul style="list-style-type: none"> B2528 — Left Rear Stop Lamp Circuit Short to Battery 	A continuous and on-demand DTC that sets when the SJB detects an open from the LH rear lamp 1 or lamp 2 voltage supply circuit.
<ul style="list-style-type: none"> B2529 — Left Rear Turn Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects an open or short to ground from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2533 — Right Rear Stop Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects a short to ground from the RH rear lamp 2 voltage supply circuit.
<ul style="list-style-type: none"> B2534 — Right Rear Stop Lamp Circuit Short to Battery 	A continuous and on-demand DTC that sets when the SJB detects an open from the RH rear lamp 1 or lamp 2 voltage supply circuit.

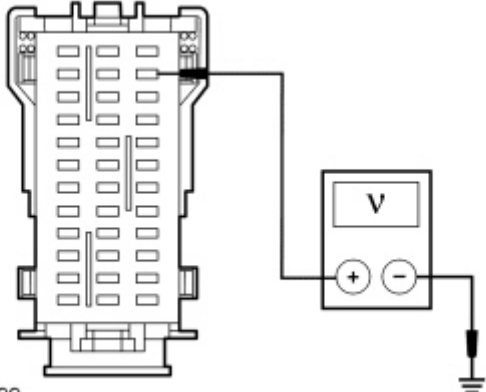
This pinpoint test is intended to diagnose the following:

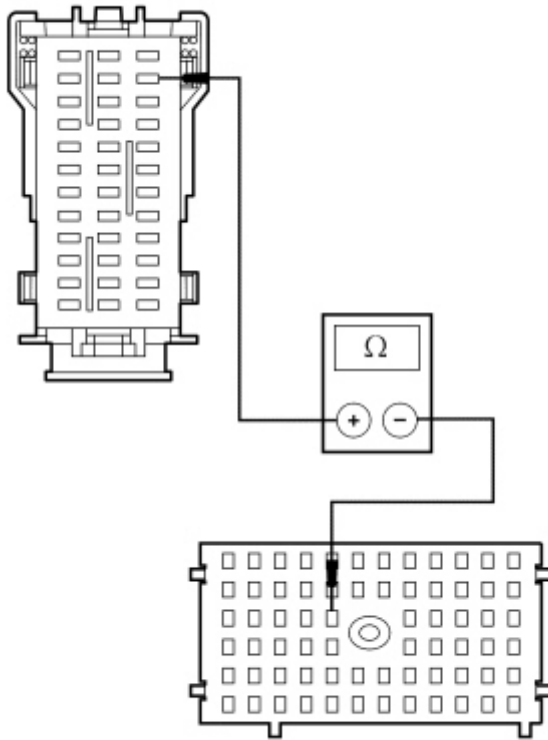
- Fuse
- Wiring, terminals or connectors
- Stoplamp switch
- [BEC](#)
- [SJB](#)

PINPOINT TEST H: ONE OR MORE STOPLAMPS ARE INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: Failure to disconnect the battery when instructed will result in false resistance readings. Refer to [Section 414-01](#).

Test Step	Result / Action to Take
<p>H1 DETERMINE IF ALL THE STOPLAMPS ARE INOPERATIVE</p> <ul style="list-style-type: none"> Ignition OFF. Apply the brake pedal and observe the rear lamps. Are all the stoplamps inoperative? 	<p>Yes GO to H2.</p> <p>No GO to H8.</p>
<p>H2 CHECK CIRCUIT 1523 (DG) FOR VOLTAGE</p> <ul style="list-style-type: none"> Disconnect: SJB C2280h. Measure the voltage between the SJB C2280h-11, circuit 1523 (DG), harness side and ground.  <p>N0053599</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? 	<p>Yes GO to H4.</p> <p>No VERIFY the BEC fuse 63 (30A) is OK. If OK, GO to H3. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short.</p>
<p>H3 CHECK CIRCUIT 1523 (DG) FOR AN OPEN</p> <ul style="list-style-type: none"> Disconnect: BEC C1035a. Measure the resistance between the SJB C2280h-11, circuit 1523 (DG), harness side and BEC C1035a-C5, circuit 1523 (DG), harness side. 	<p>Yes INSTALL a new BEC. TEST the system for normal operation.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p>

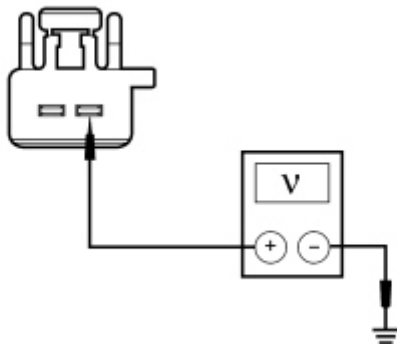


N0053600

- Is the resistance less than 5 ohms?

H4 CHECK CIRCUIT 10 (LG/RD) FOR VOLTAGE

- Connect: [SJB C2280h](#).
- Disconnect: Stoplamp Switch C2314.
- Measure the voltage between the stoplamp switch C2314-1, circuit 10 (LG/RD), harness side and ground.



N0037278

- Is the voltage greater than 10 volts?

Yes
GO to [H6](#).

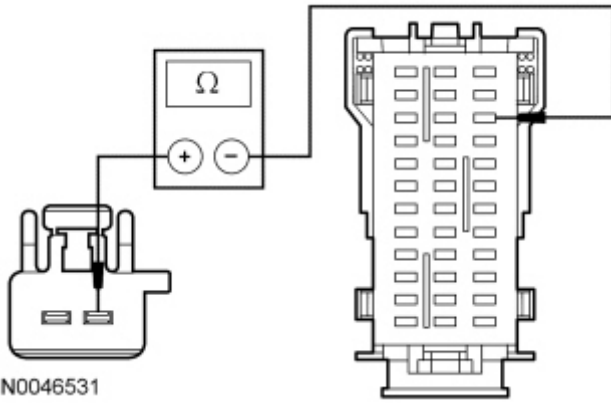
No
VERIFY the [SJB](#) fuse 15 (10A) is OK. If OK, GO to [H5](#). If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short.

H5 CHECK CIRCUIT 10 (LG/RD) FOR AN OPEN

- Disconnect: [SJB C2280h](#).
- Measure the resistance between the stoplamp switch C2314-1, circuit 10 (LG/RD), harness side and the [SJB C2280h-10](#), circuit 10 (LG/RD), harness side.

Yes
GO to [H13](#).

No
REPAIR the circuit. TEST the system for normal operation.

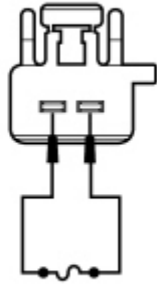


N0046531

- Is the resistance less than 5 ohms?

H6 BYPASS THE STOPLAMP SWITCH

- Connect a fused jumper wire between the stoplamp switch C2314-1, circuit 10 (LG/RD), harness side and the stoplamp switch C2314-2, circuit 511 (LG), harness side.



N0037280

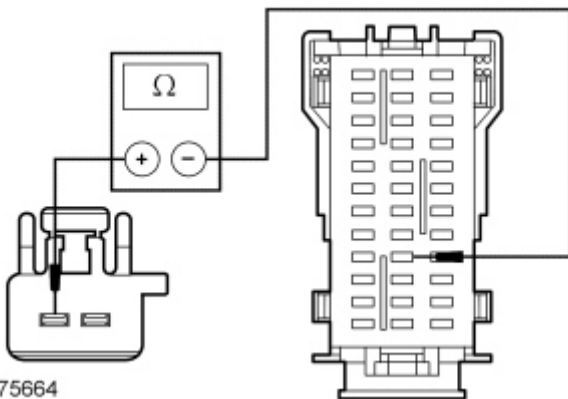
- Do the stoplamps illuminate?

Yes
REMOVE the jumper wire. INSTALL a new stoplamp switch. REFER to [Stoplamp Switch](#) in this section. TEST the system for normal operation.

No
REMOVE the jumper wire. GO to [H7](#).

H7 CHECK CIRCUIT 511 (LG) FOR AN OPEN

- Disconnect: [SJB](#) C2280h.
- Measure the resistance between the stoplamp switch C2314-2, circuit 511 (LG), harness side and the [SJB](#) C2280h-16, circuit 511 (LG), harness side.



N0075664

- Is the resistance less than 5 ohms?

Yes
GO to [H13](#).

No
REPAIR the circuit. TEST the system for normal operation.

H8 CHECK THE VOLTAGE TO THE [SJB](#)

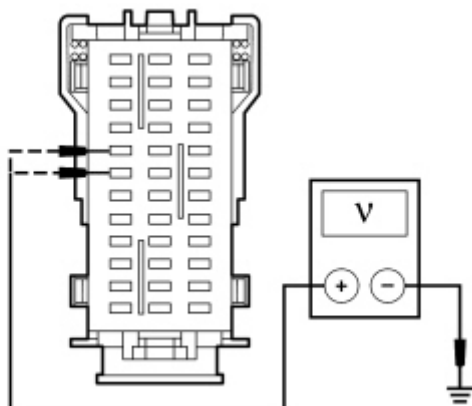
- Ignition OFF.
- Disconnect: [SJB](#) C2280h.
- Measure the voltage between the [SJB](#), harness side and ground as follows:



Yes
GO to [H10](#).

No
VERIFY the [BEC](#) fuses 59

Connector-Pin	Circuit
C2280h-31	905 (GY/LB)
C2280h-32	1052 (TN/BK)



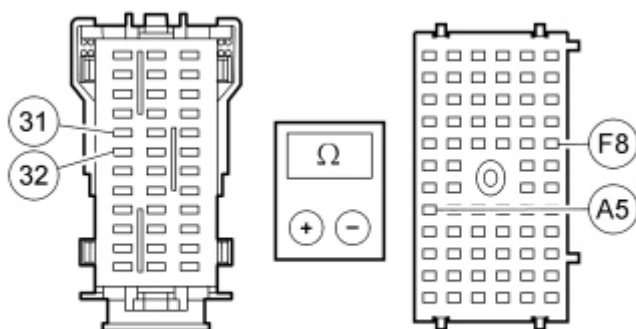
- Are the voltages greater than 10 volts?

(30A) and 67 (30A) are OK. If OK, GO to [H9](#). If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short.

H9 CHECK THE VOLTAGE SUPPLY CIRCUITS TO THE [SJB](#) FOR AN OPEN

- Disconnect: [BEC](#) C1035a.
- Measure the resistance between the [SJB](#), harness side and the [BEC](#), harness side as follows:

SJB Connector-Pin	BEC Connector-Pin	Circuit
C2280h-31	C1035a-F8	905 (GY/LB)
C2280h-32	C1035a-A5	1052 (TN/BK)



N0088245

- Are the resistances less than 5 ohms?

Yes
INSTALL a new [BEC](#).
CLEAR the DTCs. REPEAT the self-test.

No
REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.

H10 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

- Disconnect: Inoperative Stoplamp.
- Disconnect: Negative Battery Cable.
- Measure the resistance between the inoperative stoplamp, harness side and ground as follows:

Inoperative Stoplamp	Connector-Pin	Circuit
High mounted stoplamp	C475-1	1205 (BK)
LH rear lamp 1	C4112-1	1205 (BK)
LH rear lamp 2	C4113-1	1205 (BK)

Yes
GO to [H11](#).

No
REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

RH rear lamp 1	C4114-1	1205 (BK)
RH rear lamp 2	C4115-1	1205 (BK)

- Is the resistance less than 5 ohms?

H11 CHECK THE STOPLAMP VOLTAGE SUPPLY CIRCUIT FOR A SHORT TO GROUND

- Disconnect: [SJB](#) C2280d.
- Measure the resistance between the inoperative stoplamp, harness side and ground as follows:

Inoperative Stoplamp	Connector-Pin	Circuit
High mounted stoplamp	C475-2	1374 (TN/LB)
LH rear lamp 1	C4112-3	1783 (RD/WH)
LH rear lamp 2	C4113-3	1783 (RD/WH)
RH rear lamp 1	C4114-3	1783 (RD/WH)
RH rear lamp 2	C4115-3	1783 (RD/WH)

- Is the resistance greater than 10,000 ohms?

Yes
GO to [H12](#).

No
REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.

H12 CHECK THE STOPLAMP VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Measure the resistance between the inoperative stoplamp, harness side and the [SJB](#), harness side as follows:

Inoperative Stoplamp Connector-Pin/Circuit	SJB Connector-Pin/Circuit
High mounted stoplamp C475-2	C2280d-39
1374 (TN/LB)	1374 (TN/LB)
LH rear lamp 1 C4112-3	C2280d-14
1783 (RD/WH)	1363 (WH/RD)
LH rear lamp 2 C4113-3	C2280d-18
1783 (RD/WH)	1728 (LB/OG)
RH rear lamp 1 C4114-3	C2280d-47
1783 (RD/WH)	1783 (RD/WH)
RH rear lamp 2 C4115-3	C2280d-40
1783 (RD/WH)	1783 (RD/WH)

- Is the resistance less than 5 ohms?

Yes
GO to [H13](#).

No
REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.

H13 CHECK FOR CORRECT [SJB](#) OPERATION

- Disconnect all the [SJB](#) connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the [SJB](#) connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes
INSTALL a new [SJB](#). REFER to [Section 419-10](#). 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-

Pinpoint Test I: The Stoplamps Are On Continuously

Refer to Wiring Diagrams Cell [90](#), Turn Signal/Stop/Hazard Lamps for schematic and connector information.

Normal Operation

When the brake pedal is applied, the stoplamp switch routes voltage to the Smart Junction Box (SJB) through circuit 511 (LG). Voltage is also routed to the PCM through circuit 599 (PK/LG). The [SJB](#) then provides voltage to the stoplamps through circuits 1783 (RD/WH), 1374 (TN/LB), 1728 (LB/OG), and 1363 (WH/RD). Ground for the stoplamps is provided through circuit 1205 (BK).

DTC Description	Fault Trigger Conditions
<ul style="list-style-type: none"> B1485 — Brake Pedal Input Short to Battery 	An on-demand DTC that sets when the SJB detects a short to voltage from the stoplamp switch input.
<ul style="list-style-type: none"> B2049 — Left Rear Turn Lamp Circuit Open 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2051 — Right Rear Turn Lamp Circuit Open 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the RH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2519 — High Mount Stop Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the high mounted stoplamp voltage supply circuit.
<ul style="list-style-type: none"> B2528 — Left Rear Stop Lamp Circuit Short to Battery 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the LH rear lamp 1 or lamp 2 voltage supply circuit.
<ul style="list-style-type: none"> B2529 — Left Rear Turn Lamp Circuit Failure 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the LH rear lamp 1 voltage supply circuit.
<ul style="list-style-type: none"> B2534 — Right Rear Stop Lamp Circuit Short to Battery 	A continuous and on-demand DTC that sets when the SJB detects a short to voltage from the RH rear lamp 1 or lamp 2 voltage supply circuit.

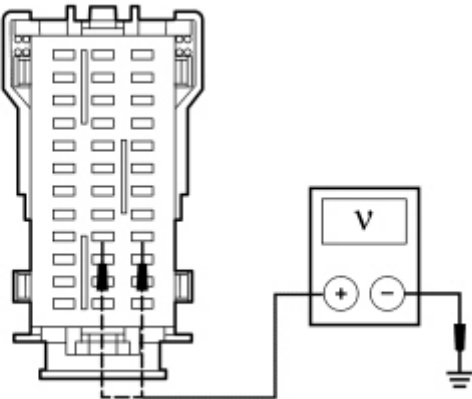
This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Stoplamp switch
- [SJB](#)
- PCM

PINPOINT TEST I: THE STOPLAMPS ARE ON CONTINUOUSLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step	Result / Action to Take
I1 USE THE RECORDED DTCs FROM THE SJB SELF-TEST	
<ul style="list-style-type: none"> Ignition OFF. Retrieve the recorded results from the SJB self-test. Was DTC B1485 present? 	<p>Yes GO to I2.</p> <p>No GO to I5.</p>
I2 CHECK THE STOPLAMP SWITCH	
<ul style="list-style-type: none"> Disconnect: Stoplamp Switch C2314. Do the stoplamps continue to illuminate? 	<p>Yes GO to I3.</p>

	<p>No INSTALL a new stoplamp switch. REFER to Stoplamp Switch in this section. CLEAR the DTCs. REPEAT the self-test.</p>
I3 CHECK THE PCM	
<ul style="list-style-type: none"> • Disconnect: PCM C175b. • Do the stoplamps continue to illuminate? 	<p>Yes GO to 14.</p> <p>No GO to 16.</p>
I4 CHECK CIRCUITS 511 (LG) AND 599 (PK/LG) FOR A SHORT TO VOLTAGE	
<ul style="list-style-type: none"> • Disconnect: SJB C2280h. • Measure the voltage between the SJB C2280h-16, circuit 511 (LG), harness side and ground; and between the SJB C2280h-4, circuit 599 (PK/LG), harness side and ground.  <p>N0046536</p> <ul style="list-style-type: none"> • Is any voltage present? 	<p>Yes REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to 17.</p>
I5 CHECK CIRCUITS 1363 (WH/RD), 1728 (LB/OG), 1783 (RD/WH) AND 1374 (TN/LB) FOR A SHORT TO VOLTAGE	
<ul style="list-style-type: none"> • Disconnect: SJB C2280d. • Do any stoplamps continue to illuminate? 	<p>Yes For the high mounted stoplamp, REPAIR circuit 1374 (TN/LB). CLEAR the DTCs. REPEAT the self-test.</p> <p>For the LH rear stoplamp 1, REPAIR circuit 1363 (WH/RD). CLEAR the DTCs. REPEAT the self-test.</p> <p>For the LH rear stoplamp 2, REPAIR circuit 1728 (LB/OG). CLEAR the DTCs. REPEAT the self-test.</p> <p>For either RH rear stoplamp 1 or 2, REPAIR circuit 1783 (RD/WH). CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to 17.</p>
I6 CHECK FOR CORRECT PCM OPERATION	

- Disconnect all the PCM connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the PCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes

INSTALL a new PCM. REFER to [Section 303-14](#). CLEAR the DTCs. REPEAT the self-test.

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.

I7 CHECK FOR CORRECT [SJB](#) OPERATION

- Disconnect all the [SJB](#) connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the [SJB](#) connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

Yes

INSTALL a new [SJB](#). REFER to [Section 419-10](#). 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.