Glass, Frames and Mechanisms

DTC Chart: Front Controls Interface Module (FCIM)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

FCIM DTC Chart

DTC	Description	Action
B1C83:12	Rear Defog Relay: Circuit Short to Battery	GO to Pinpoint Test A
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	• If the rear window defrost is inoperative, GO to Pinpoint Test A • If the rear window defrost is always active, GO to Pinpoint Test B
All other Diagnostic Trouble Codes (DTCs)	-	Refer to the FCIM DTC chart in the appropriate 415-00 section.

DTC Chart: Driver Door Module (DDM)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

DDM DTC Chart

DTC	Description	Action
B1088:83	LIN Bus "B": Value of Signal Protection Calculation Incorrect	GO to Pinpoint Test C
B1088:87	LIN Bus "B": Missing Message	GO to Pinpoint Test C
B1189:29	Front Window Position Sensor: Signal Invalid	GO to Pinpoint Test C
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	GO to Pinpoint Test C
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	GO to Pinpoint Test C
B13F1:4B	Driver Power Window Motor: Over Temperature	CLEAR the DTC. WAIT 10 minutes to allow the window motor to cool. INITIALIZE the driver door window regulator motor. REFER to: Power Door Window Initialization (501-11 Glass, Frames and Mechanisms, General Procedures). VERIFY the DTC is no longer present. If the DTC returns, INSPECT the window seals, glass runs and window regulator for a binding condition. REPAIR as necessary.

DTC	Description	Action
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	GO to Pinpoint Test C
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	GO to Pinpoint Test C
U2013:24	Switch Pack: Signal Stuck High	CLEAR the DTC. TEST the system for normal operation from the master window control switch. If any individual switches within the master window control switch are inoperative or the DTC returns, INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

DTC Chart: Passenger Door Module (PDM)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

PDM DTC Chart

DTC	Description	Action
B1189:29	Front Window Position Sensor: Signal Invalid	GO to Pinpoint Test D
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	GO to Pinpoint Test D
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	GO to Pinpoint Test D
B13F2:4B	Passenger Power Window Motor: Over Temperature	CLEAR the DTC. TEST the system for normal operation. If the DTC returns, INSPECT the window seals, glass runs and window regulator for a binding condition. REPAIR as necessary.
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	GO to Pinpoint Test D
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	GO to Pinpoint Test D
U2002:24	Switch: Signal Stuck High	GO to Pinpoint Test D
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

Symptom Chart(s)

Symptom Chart: Glass, Frames and Mechanisms

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Symptom Chart

Condition	Possible Sources	Actions
The power sliding rear window is inoperative/does not operate correctly	• Refer to the Pinpoint Test	• GO to Pinpoint Test I
Both front door power windows are inoperative from the master window control switch	• Wiring, terminals or connectors • Master window control switch • DDM	• DIAGNOSE any related DDM Diagnostic Trouble Codes (DTCs) first. REFER to the DDM DTC Chart in this section. • If there are no related Diagnostic Trouble Codes (DTCs) present, INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
Both rear passenger power windows are inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test H
A single power window is inoperative/does not operate correctly -LH front	• Refer to the Pinpoint Test	• GO to Pinpoint Test C
A single power window is inoperative/does not operate correctly - RH front	• Refer to the Pinpoint Test	• GO to Pinpoint Test D
A single power window is inoperative/does not operate correctly - LH rear	• Refer to the Pinpoint Test	• GO to Pinpoint Test F
A single power window is inoperative/does not operate correctly - RH rear	• Refer to the Pinpoint Test	• GO to Pinpoint Test G
The one-touch up feature is inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test E
The global open function is inoperative	• RKE transmitter concern • Front door window(s) not initialized	• VERIFY the RKE lock/unlock function operates correctly using all of the RKE transmitters. To diagnose any inoperative RKE transmitters, REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing). • INITIALIZE the inoperative door window(s). REFER to: Power Door Window Initialization (501-11 Glass, Frames and Mechanisms, General Procedures).

Condition	Possible Sources	Actions
The defrost system is inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test A
The defrost system does not shut off automatically	• Refer to the Pinpoint Test	• GO to Pinpoint Test B
The defrost system does not respond to voice command only	• Refer to the Pinpoint Test	• VERIFY the rear window defrost operation using the instrument panel rear window defrost switch. If the rear window defrost is still inoperative, GO to Pinpoint Test A If the rear window defrost operates, DIAGNOSE the inoperative voice command system. Refer to the appropriate section in Group 415 for the procedure.
The defrost system does not respond to touchscreen command only	• Refer to the Pinpoint Test	• VERIFY the rear window defrost operation using the instrument panel rear window defrost switch. If the rear window defrost is still inoperative, GO to Pinpoint Test A If the rear window defrost operates, DIAGNOSE the inoperative touchscreen system. Refer to the appropriate section in Group 415 for the procedure.

Pinpoint Test(s)

The Defrost System is Inoperative

Refer to Wiring Diagrams Cell 56 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C83:12	Rear Defog Relay: Circuit Short to Battery	This DTC sets when the FCIM detects a short to voltage on the rear window defrost relay control circuit.
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	This DTC sets when the FCIM detects an open or short to ground on the rear window defrost relay control circuit.

Possible Causes

- Fuse
- Wiring, terminals or connectors
- Rear window defrost grid
- BJB
- FCIM

Visual Inspection and Diagnostic Pre-checks

- Verify BJB fuse 54 (40A) is OK.
- Inspect the rear window defrost grid and electrical connectors for damage.

PINPOINT TEST A : THE DEFROST SYSTEM IS INOPERATIVE

A1 CHECK THE REAR WINDOW DEFROST FUSE

- Ignition OFF.
- Inspect the BJB fuse 54 (40A).

Is the fuse OK?

Yes	GO to A2
No	REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

A2 CHECK THE REAR WINDOW DEFROST GRID VOLTAGE

- Ignition OFF.
- Disconnect: Heated Rear Window Element (RH) C3368B.
- Start the engine.
- Activate the rear window defrost switch.
- Measure:

REAR WINDOW DEFROST GRID	

Positive Lead	Measurement / Action	Negative Lead
C3368B-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to A3
No	GO to A4

A3 CHECK THE REAR WINDOW DEFROST GRID GROUND

- Ignition OFF.
- Disconnect: Heated Rear Window Element (LH) C3368A.
- Measure:

REAR WINDOW DEFROST GRID	

Positive Lead	Measurement / Action	Negative Lead
C3368A-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	CARRY OUT the Grid Wire Test. REFER to Grid Wire Test. REPAIR the rear window defrost grid, INSTALL a new rear window glass sliding panel or INSTALL a new rear window glass assembly as necessary. REFER to: Rear Window Glass Sliding Panel (501-11 Glass, Frames and Mechanisms, Removal and Installation). REFER to: Fixed Glass (501-11 Glass, Frames and Mechanisms, General Procedures).
No	REPAIR the circuit.

A4 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR VOLTAGE

- Ignition OFF.
- Disconnect: FCIM C2402A.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2402A-7	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to A6
No	GO to A5

A5 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BJB C1035B.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2402A-7	Ω	C1035B-23

Is the resistance less than 3 ohms?

Yes	INSTALL a new BJB.
No	REPAIR the circuit.

A6 CHECK THE REAR WINDOW DEFROST RELAY OPERATION

NOTE: *If the jumper wire fuse blows when it is connected, refer to the Wiring Diagrams manual to identify the possible causes of the circuit short to voltage.*

- Ignition OFF.
- Connect a fused jumper wire:

Positive Lead	Measurement / Action	Negative Lead
C2402A-7		Ground

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3368B-1	V	Ground

Is the voltage greater than 11 volts?

Yes	REMOVE the fused jumper wire. GO to A8
No	REMOVE the fused jumper wire. GO to A7

A7 CHECK THE REAR WINDOW DEFROST RELAY OUTPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-17	Ω	C3368B-1

Is the resistance less than 3 ohms?

Yes	GO to A8
No	REPAIR the circuit.

A8 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the FCIM connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins as necessary
  - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connectors and all previously disconnected rear window defrost system 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 for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, Click here to access Guided Routine (FCIM).
No	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.

The Defrost System Does Not Shut Off Automatically

Refer to Wiring Diagrams Cell 56 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	This DTC sets when the FCIM detects an open or short to ground on the rear window defrost relay control circuit.

Possible Causes

- Wiring, terminals or connectors
- BJB
- FCIM

PINPOINT TEST B : THE DEFROST SYSTEM DOES NOT SHUT OFF AUTOMATICALLY

B1 CHECK THE REAR WINDOW DEFROST GRID VOLTAGE

- Ignition OFF.
- Disconnect: FCIM C2402A.
- Disconnect: Heated Rear Window Element (RH) C3368B.
- Start the engine.
- Measure:

REAR WINDOW DEFROST GRID	

Positive Lead	Measurement / Action	Negative Lead
C3368B-1		Ground

Is any voltage present?

Yes	GO to B2
No	GO to B4

B2 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: BJB C1035B.
- Measure:

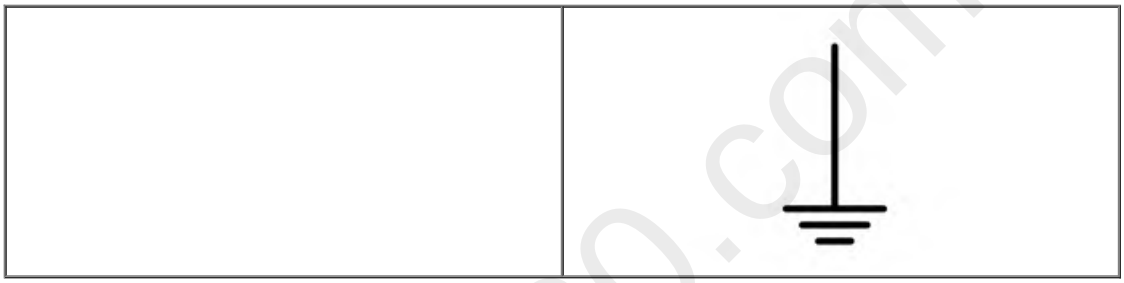
Positive Lead	Measurement / Action	Negative Lead
C1035B-23	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B3
No	REPAIR the circuit.

B3 CHECK THE REAR WINDOW DEFROST RELAY OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE

- Measure:



Positive Lead	Measurement / Action	Negative Lead
Rear Window Defrost Relay, socket pin 2	V	Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	INSTALL a new BJB.

B4 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Disconnect and inspect all the FCIM connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins as necessary
  - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connectors and all previously disconnected rear window defrost system 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 for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, Click here to access Guided Routine (FCIM).
No	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.

A Single Power Window Is Inoperative/Does Not Operate Correctly - LH Front

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1088:83	LIN Bus "B": Value of Signal Protection Calculation Incorrect	This DTC sets when the DDM has received invalid data from the master window control switch.
B1088:87	LIN Bus "B": Missing Message	This DTC sets when the DDM has lost communication from the master window control switch.
B1189:29	Front Window Position Sensor: Signal Invalid	This DTC sets when the DDM detects a difference with one or both of the Hall-effect sensor circuit(s). When this DTC is present, the front window only operates in short steps.
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	This DTC sets when the DDM detects the UP relay (integral to the DDM) is stuck or a short to voltage is present in the UP window motor circuit. When this DTC is present, the front window does not operate.
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	This DTC sets when the DDM detects the DOWN relay (integral to the DDM) is stuck or a short to voltage is present in the DOWN window motor circuit. When this DTC is present, the front window does not operate.
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	This DTC sets when the DDM detects a short to ground in the Hall-effect sensor power supply circuit. When this DTC is present, the front window only operates in short steps.
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	This DTC sets when the DDM detects a short to voltage or open in the Hall-effect sensor power supply circuit. When this DTC is present, the front window only operates in short steps.

Possible Causes

- Wiring, terminals or connectors
- Master window control switch
- Driver door window regulator motor
- DDM

Visual Inspection and Diagnostic Pre-checks

- Verify BCM fuse 2 (10A) and 6 (10A) are OK.

PINPOINT TEST C : A SINGLE POWER WINDOW IS INOPERATIVE/DOES NOT OPERATE CORRECTLY- LH FRONT

C1 CHECK FOR DDM (DRIVER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform DDM self-test.

Are any DDM Diagnostic Trouble Codes (DTCs) present?

Yes	For DTC C1B14:11, GO to C10 For DTC B1189:29 or C1B14:15, GO to C7 For DTC B12C5:71 or B12C8:71, GO to C3 For DTC B1088:83 and B1088:87, GO to C15 For all other Diagnostic Trouble Codes (DTCs), REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).
No	GO to C2

C2 CHECK THE FRONT LEFT DOOR WINDOW SWITCH PARAMETER IDENTIFICATIONS (PIDS)

- Access the DDM and monitor the FRT_WIND_UP PID
- Access the DDM and monitor the FRT_WIND_DOWN PID
- While pressing and releasing the driver door window control switch in the up and down positions, monitor the PIDs.

Does the PID status agree with the driver door window control switch as it is pressed and released?

Yes	GO to C3
No	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

C3 CHECK FOR A SHORT TO VOLTAGE IN THE WINDOW UP/DOWN CIRCUITS

- Ignition OFF.
- Disconnect: Driver Door Window Regulator Motor C518.
- Disconnect: DDM C501A.
- Ignition ON.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C518-1	V	Ground
C518-4	V	Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to C4

C4 CHECK FOR A SHORT TO GROUND IN THE WINDOW UP/DOWN CIRCUITS

- Ignition OFF.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C518-1	Ω	Ground
C518-4	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C5
No	REPAIR the circuit in question.

C5 CHECK FOR AN OPEN IN THE WINDOW UP/DOWN CIRCUITS

- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C518-1	Ω	C501A-13
C518-4	Ω	C501A-14

Are the resistances less than 3 ohms?

Yes	GO to C6
No	REPAIR the circuit in question.

C6 CHECK THE DDM (DRIVER DOOR MODULE) OUTPUT

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *Because the power window motor electrical connector (Hall-effect sensor input) is disconnected, the DDM only activates the window output for approximately .5 seconds then turns off.*

- Connect: DDM C501A.
- Connect:

DRIVER DOOR WINDOW REGULATOR MOTOR

Positive Lead	Measurement / Action	Negative Lead
C518-1		C518-4

- Ignition ON.
- Activate the driver door window control switch in the up and down positions while observing the test light.

Does the test light momentarily illuminate when the driver door window control switch is activated in both up and down positions?

Yes	INSTALL a new driver door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	GO to C22

C7 CHECK THE HALL-EFFECT POWER AND RETURN CIRCUITS

- Ignition OFF.
- Disconnect: Driver Door Window Regulator Motor C518.
- Ignition ON.
- Connect:

DRIVER DOOR WINDOW REGULATOR MOTOR

Positive Lead	Measurement / Action	Negative Lead
C518-3	V	C518-6

Is the voltage greater than 11 volts?

Yes	GO to C12
No	GO to C8

C8 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: DDM C501A.
- Ignition ON.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C518-3	V	Ground

Does the test light illuminate?

Yes	REPAIR the circuit.
No	GO to C9

C9 CHECK FOR AN OPEN IN THE HALL-EFFECT POWER AND RETURN CIRCUITS

- Ignition OFF.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C518-3	Ω	C501A-16
C518-6	Ω	C501A-22

Are the resistances less than 3 ohms?

Yes	GO to C22
No	REPAIR the circuit in question.

C10 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: DDM C501A.
- Measure:

DRIVER DOOR MODULE (DDM)	

Positive Lead	Measurement / Action	Negative Lead
C501A-16	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to C22
No	GO to C11

C11 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO GROUND WITH THE POWER WINDOW MOTOR DISCONNECTED

- Disconnect: Driver Door Window Regulator Motor C518.
- Measure:

DRIVER DOOR MODULE (DDM)	

Positive Lead	Measurement / Action	Negative Lead
C501A-16	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new driver door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit.

C12 CHECK FOR A SHORT TO VOLTAGE IN THE HALL-EFFECT SIGNAL CIRCUITS

- Ignition OFF.
- Disconnect: DDM C501A.
- Ignition ON.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	

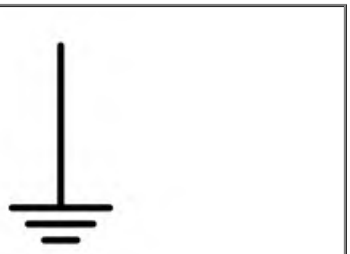
Positive Lead	Measurement / Action	Negative Lead
C518-2	V	Ground
C518-5	V	Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to C13

C13 CHECK FOR A SHORT TO GROUND IN THE HALL-EFFECT SIGNAL CIRCUITS

- Ignition OFF.
- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C518-2	Ω	Ground
C518-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C14
No	REPAIR the circuit in question.

C14 CHECK FOR AN OPEN IN THE HALL-EFFECT SIGNAL CIRCUITS

- Measure:

DRIVER DOOR WINDOW REGULATOR MOTOR	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C518-2	Ω	C501A-21
C518-5	Ω	C501A-11

Are the resistances less than 3 ohms?

Yes	INSTALL a new driver door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to C22
No	REPAIR the circuit in question.

C15 CHECK FOR VOLTAGE TO THE MASTER WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: Master Window Control Switch C504 (regular cab) or C535 (Super Cab and Crew Cab).
- Ignition ON.
- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C504-1		Ground
C504-2		Ground

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C535-9		Ground
C535-10		Ground

Are the voltages greater than 11 volts?

Yes	GO to C17
No	VERIFY BCM fuse 2 (10A) and 6 (10A) are OK. If OK, GO to C16 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

C16 CHECK THE MASTER WINDOW CONTROL SWITCH VOLTAGE CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM C2280C.
- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	BODY CONTROL MODULE (BCM)

Positive Lead	Measurement / Action	Negative Lead
C504-1	Ω	C2280C-21
C504-2	Ω	C2280C-30

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	BODY CONTROL MODULE (BCM)

Positive Lead	Measurement / Action	Negative Lead
C535-9	Ω	C2280C-30
C535-10	Ω	C2280C-21

Is the resistance less than 3 ohms?

Yes	GO to C23
No	REPAIR the circuit in question.

C17 CHECK THE MASTER WINDOW CONTROL SWITCH GROUND CIRCUIT

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

- Ignition ON.
- For regular cab, connect:

MASTER WINDOW CONTROL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C504-2		C504-4

- For Super Cab or Crew Cab, connect:

MASTER WINDOW CONTROL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C535-9		C535-11

Does the test light illuminate?

Yes	GO to C19
No	GO to C18

C18 CHECK THE MASTER WINDOW CONTROL SWITCH GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: DDM C501A.
- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C504-4	Ω	C501A-17

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C535-11	Ω	C501A-17

Is the resistance less than 3 ohms?

Yes	GO to C22
No	REPAIR the circuit.

C19 CHECK THE MASTER WINDOW CONTROL SWITCH LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: DDM C501A.
- Ignition ON.
- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C504-3		Ground

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C535-1		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to C20

C20 CHECK THE MASTER WINDOW CONTROL SWITCH LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C504-3	Ω	Ground

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	

Positive Lead	Measurement / Action	Negative Lead
C535-1	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to C21
No	REPAIR the circuit.

C21 CHECK THE MASTER WINDOW CONTROL SWITCH LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- For regular cab, measure:

MASTER WINDOW CONTROL SWITCH	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C504-3	Ω	C501A-5

- For Super Cab or Crew Cab, measure:

MASTER WINDOW CONTROL SWITCH	DRIVER DOOR MODULE (DDM)

Positive Lead	Measurement / Action	Negative Lead
C535-1	Ω	C501A-5

Is the resistance less than 3 ohms?

Yes	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). CLEAR the Diagnostic Trouble Codes (DTCs). TEST the system for normal operation. If the concern is still present, GO to C22
No	REPAIR the circuit.

C22 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DDM connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins as necessary
  - pushed-out pins - install new pins as necessary
- Reconnect the DDM connectors. Make sure they seat and latch correctly.
- Reconnect all previously disconnected connectors.
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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 DDM. REFER to DDM (419-10 Multifunction Electronic Modules, Removal and Installation).
No	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.

C23 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the BCM connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins as necessary
  - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors. Make sure they seat and latch correctly.
- Reconnect all previously disconnected connectors.
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, Click here to access Guided Routine (BCM).
No	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.

A Single Power Window Is Inoperative/Does Not Operate Correctly - RH Front

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1189:29	Front Window Position Sensor: Signal Invalid	This DTC sets when the PDM detects a difference with one or both of the Hall-effect sensor circuit(s). When this DTC is present, the front window only operates in short steps.
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	This DTC sets when the PDM detects the UP relay (integral to the PDM) is stuck or a short to voltage is present in the UP window motor circuit. When this DTC is present, the front window does not operate.
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	This DTC sets when the PDM detects the DOWN relay (integral to the PDM) is stuck or a short to voltage is present in the DOWN window motor circuit. When this DTC is present, the front window does not operate.
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	This DTC sets when the PDM detects a short to ground in the Hall-effect sensor power supply circuit. When this DTC is present, the front window only operates in short steps.
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	This DTC sets when the PDM detects a short to voltage or an open in the Hall-effect sensor power supply circuit. When this DTC is present, the front window only operates in short steps.
U2002:24	Switch: Signal Stuck High	This DTC sets when the PDM detects the window control switch is stuck in the UP or DOWN position or a short to ground is present on the input circuit for greater than 10 seconds.

Possible Causes

- Wiring, terminals or connectors
- Master window control switch
- Passenger door window control switch
- Passenger door window regulator motor
- PDM

PINPOINT TEST D : A SINGLE POWER WINDOW IS INOPERATIVE/DOES NOT OPERATE CORRECTLY - RH FRONT

D1 CHECK FOR PDM (PASSENGER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform PDM self-test.

Are any PDM Diagnostic Trouble Codes (DTCs) present?

Yes	For DTC C1B14:11, GO to D17 For DTC B1189:29 or C1B14:15, GO to D14 For DTC B12C5:71 or B12C8:71, GO to D10 For DTC U2002:24, GO to D6 For all other Diagnostic Trouble Codes (DTCs), REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).
No	GO to D2

D2 CHECK THE WINDOW OPERATION FROM THE PASSENGER DOOR WINDOW CONTROL SWITCH

- Attempt to operate the RH door window from the passenger door window control switch.

Does the RH door window operate correctly from the passenger door window control switch?

Yes	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	GO to D3

D3 CHECK THE PASSENGER DOOR WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: Passenger Door Window Control Switch C604.
- Carry out the passenger door window control switch component test.
  Refer to Wiring Diagrams Cell 149 for schematic and connector information.

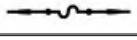
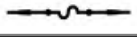
Did the passenger door window control switch pass the component test?

Yes	GO to D4
No	INSTALL a new passenger door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

D4 CHECK THE WINDOW CONTROL SWITCH UP/DOWN CIRCUITS

- Ignition ON.
- Connect a fused jumper wire temporarily while observing the window operation:

WINDOW CONTROL SWITCH, RIGHT FRONT	

Positive Lead	Measurement / Action	Negative Lead
C604-3 (DOWN)		Ground
C604-2 (UP)		Ground

Does the window operate upward and downward when the fused jumper wire is in place?

Yes	GO to D5
No	GO to D9

D5 CHECK THE WINDOW CONTROL SWITCH RETURN CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: PDM C652A.
- Measure:

WINDOW CONTROL SWITCH, RIGHT FRONT	PASSENGER DOOR MODULE (PDM)

Positive Lead	Measurement / Action	Negative Lead
C604-1	Ω	C652A-17

Is the resistance less than 3 ohms?

Yes	GO to D22
No	REPAIR the circuit.

D6 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U2002:24 WITH THE WINDOW SWITCH DISCONNECTED

- Ignition OFF.
- Disconnect: Passenger Door Window Control Switch C604.
- Ignition ON.
- Using a diagnostic scan tool, repeat the PDM self-test.

Is DTC U2002:24 still present?

Yes	GO to D7
No	INSTALL a new passenger door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

D7 CHECK THE WINDOW CONTROL SWITCH CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: PDM C652A.
- Measure:

PASSENGER DOOR MODULE (PDM)	

Positive Lead	Measurement / Action	Negative Lead
C652A-8	Ω	Ground
C652A-9	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D22
No	GO to D8

D8 CHECK THE WINDOW CONTROL SWITCH CIRCUITS FOR A SHORT TO GROUND WITH THE WINDOW CONTROL SWITCH DISCONNECTED

- Disconnect: Passenger Door Window Control Switch C604.
- Measure:

PASSENGER DOOR MODULE (PDM)	

Positive Lead	Measurement / Action	Negative Lead
C652A-8	Ω	Ground
C652A-9	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	INSTALL a new passenger door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit in question.

D9 CHECK THE WINDOW CONTROL SWITCH CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: PDM C652A.
- Measure:

WINDOW CONTROL SWITCH, RIGHT FRONT	PASSENGER DOOR MODULE (PDM)

Positive Lead	Measurement / Action	Negative Lead
C604-2	Ω	C652A-8
C604-3	Ω	C652A-9

Are the resistances less than 3 ohms?

Yes	GO to D10
No	REPAIR the circuit in question.

D10 CHECK FOR A SHORT TO VOLTAGE IN THE WINDOW UP/DOWN CIRCUITS

- Ignition OFF.
- Disconnect: PDM C652A (if not previously disconnected).
- Disconnect: Passenger Door Window Regulator Motor C608.
- Ignition ON.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C608-1	V	Ground
C608-4	V	Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to D11

D11 CHECK FOR A SHORT TO GROUND IN THE WINDOW UP/DOWN CIRCUITS

- Ignition OFF.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C608-1	Ω	Ground
C608-4	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D12
No	REPAIR the circuit in question.

D12 CHECK FOR AN OPEN IN THE WINDOW UP/DOWN CIRCUITS

- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	PASSENGER DOOR MODULE (PDM)

Positive Lead	Measurement / Action	Negative Lead
C608-1	Ω	C652A-13
C608-4	Ω	C652A-14

Are the resistances less than 3 ohms?

Yes	GO to D13
No	REPAIR the circuit in question.

D13 CHECK THE PDM (PASSENGER DOOR MODULE) OUTPUT

NOTICE: The following step uses a test light to simulate normal circuit loads. Use only the test light recommended in the Special Tools table at the beginning of this section. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: *Because the power window motor electrical connector (Hall-effect sensor input) is disconnected, the PDM only activates the window output for approximately .5 seconds then turns off.*

- Ignition OFF.
- Connect: PDM C652A.
- Connect:

PASSENGER DOOR WINDOW REGULATOR MOTOR

Positive Lead	Measurement / Action	Negative Lead
C608-1		C608-4

- Ignition ON.
- Activate the passenger door window control switch in the up and down positions while observing the test light.

Does the test light momentarily illuminate when the window control switch is activated in both up and down positions?

Yes	INSTALL a new passenger door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	GO to D22

D14 CHECK THE HALL-EFFECT POWER AND RETURN CIRCUITS

- Ignition OFF.
- Disconnect: Passenger Door Window Regulator Motor C608.
- Ignition ON.
- Connect:

PASSENGER DOOR WINDOW REGULATOR MOTOR

Positive Lead	Measurement / Action	Negative Lead
C608-3		C608-6

Is the voltage greater than 11 volts?

Yes	GO to D19
No	GO to D15

D15 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: PDM C652A.
- Ignition ON.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C608-3	V	Ground

Does the test light illuminate?

Yes	REPAIR the circuit.
No	GO to D16

D16 CHECK FOR AN OPEN IN THE HALL-EFFECT POWER AND RETURN CIRCUITS

- Ignition OFF.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	PASSENGER DOOR MODULE (PDM)

Positive Lead	Measurement / Action	Negative Lead
C608-3	Ω	C652A-16
C608-6	Ω	C652A-22

Are the resistances less than 3 ohms?

Yes	GO to D22
No	REPAIR the circuit in question.

D17 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: PDM C652A.
- Measure:

PASSENGER DOOR MODULE (PDM)	

Positive Lead	Measurement / Action	Negative Lead
C652A-16	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to D22
No	GO to D18

D18 CHECK THE HALL-EFFECT POWER CIRCUIT FOR A SHORT TO GROUND WITH THE PASSENGER DOOR WINDOW REGULATOR MOTOR DISCONNECTED

- Disconnect: Passenger Door Window Regulator Motor C608.
- Measure:

PASSENGER DOOR MODULE (PDM)	

Positive Lead	Measurement / Action	Negative Lead
C652A-16	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new passenger door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit.

D19 CHECK FOR A SHORT TO VOLTAGE IN THE HALL-EFFECT SIGNAL CIRCUITS

- Ignition OFF.
- Disconnect: PDM C652A.
- Ignition ON.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C608-2		Ground
C608-5		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to D20

D20 CHECK FOR A SHORT TO GROUND IN THE HALL-EFFECT SIGNAL CIRCUITS

- Ignition OFF.
- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	

Positive Lead	Measurement / Action	Negative Lead
C608-2	Ω	Ground
C608-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D21
No	REPAIR the circuit in question.

D21 CHECK FOR AN OPEN IN THE HALL-EFFECT SIGNAL CIRCUITS

- Measure:

PASSENGER DOOR WINDOW REGULATOR MOTOR	PASSENGER DOOR MODULE (PDM)

Positive Lead	Measurement / Action	Negative Lead
C608-2	Ω	C652A-21
C608-5	Ω	C652A-11

Are the resistances less than 3 ohms?

Yes	INSTALL a new passenger door window regulator motor. REFER to: Front Door Window Regulator and Motor - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to D22
No	REPAIR the circuit in question.

D22 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PDM connectors.
- Repair:
  - corrosion (install new connector or terminals - clean module pins)
  - damaged or bent pins - install new terminals/pins as necessary
  - pushed-out pins - install new pins as necessary
- Reconnect the PDM connectors. Make sure they seat and latch correctly.
- Reconnect all previously disconnected connectors.
- Ignition ON.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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 PDM. REFER to PDM (419-10 Multifunction Electronic Modules, Removal and Installation).
No	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.

The One-Touch Up Feature Is Inoperative

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

Possible Causes

- Window regulator motor not initialized
- Window control switch
- DDM
- PDM

PINPOINT TEST E : THE ONE-TOUCH UP FEATURE IS INOPERATIVE

E1 INITIALIZE THE SUSPECT POWER WINDOW
• Carry out the initialization procedure on the suspect power window. REFER to: Power Door Window Initialization (501-11 Glass, Frames and Mechanisms, General Procedures). **Is the one-touch up feature operating correctly?**

Yes	The system is operating normally at this time. The window lost initialization.
No	If the one-touch up feature is inoperative for the LH front window, INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). TEST the system for normal operation. If the concern is still present, INSTALL a new DDM. REFER to DDM (419-10 Multifunction Electronic Modules, Removal and Installation). If the one-touch up feature is inoperative for the RH front window, INSTALL a new window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). TEST the system for normal operation. If the concern is still present, INSTALL a new PDM. REFER to PDM (419-10 Multifunction Electronic Modules, Removal and Installation).

A Single Power Window Is Inoperative/Does Not Operate Correctly - LH Rear

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Master window control switch
- LH rear door window control switch
- LH rear door window regulator motor

Visual Inspection and Diagnostic Pre-checks

- Verify the lock-out switch is in the UNLOCK position.

PINPOINT TEST F : A SINGLE POWER WINDOW IS INOPERATIVE/DOES NOT OPERATE CORRECTLY - LH REAR

F1 CHECK THE LH (LEFT-HAND) REAR DOOR WINDOW OPERATION FROM THE MASTER WINDOW CONTROL SWITCH

- Ignition ON.
- Attempt to operate the LH rear door window from the master window control switch.

Does the LH rear door window operate correctly from the master window control switch?

Yes	GO to F2
No	GO to F3

F2 CHECK THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH LOCK-OUT CIRCUIT FEED FOR VOLTAGE

- Ignition OFF.
- Disconnect: LH Rear Door Window Control Switch C701.
- Ignition ON.
- Make sure the window lock-out switch is in the UNLOCK position.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	

Positive Lead	Measurement / Action	Negative Lead
C701-5	V	Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new LH rear door window control switch. For Super Cab, REFER to: Rear Door Window Control Switch - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Control Switch - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit.

F3 CHECK THE LH (LEFT-HAND) REAR DOOR WINDOW OPERATION FROM LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH

- Make sure the window lock-out switch is in the UNLOCK position.
- Attempt to operate the LH rear door window from the LH rear door window control switch.

Does the LH rear door window operate when using the LH rear door window control switch?

Yes	GO to F4
No	GO to F6

F4 CHECK THE WINDOW CONTROL SWITCH UP/DOWN CIRCUITS

- Ignition OFF.
- Disconnect: Master Window Control Switch C535.
- Ignition ON.
- Connect fused jumper wires temporarily while observing the window operation:

MASTER WINDOW CONTROL SWITCH

Lead	Measurement / Action	Lead
C535-17 (DOWN)		C535-9
C535-18 (UP)		C535-9

Does the window operate upward and downward when the fused jumper wires are in place?

Yes	REMOVE the jumper wires. INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REMOVE the jumper wires. GO to F5

F5 CHECK THE WINDOW CONTROL CIRCUITS FOR AN OPEN BETWEEN THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH AND THE MASTER WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: LH Rear Door Window Control Switch C701.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	MASTER WINDOW CONTROL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C701-6	Ω	C535-18
C701-7	Ω	C535-17

Are the resistances less than 3 ohms?

Yes	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit in question.

F6 CHECK THE HIGH CURRENT POWER TO THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH FOR AN OPEN

- Ignition OFF.
- Disconnect: LH Rear Door Window Control Switch C701.
- Ignition ON.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	

Positive Lead	Measurement / Action	Negative Lead
C701-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to F7
No	REPAIR the circuit.

F7 CHECK THE GROUND TO THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH FOR AN OPEN

- Ignition OFF.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	

Positive Lead	Measurement / Action	Negative Lead
C701-3	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to F8
No	REPAIR the circuit.

F8 CHECK THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH

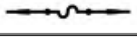
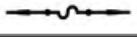
- Ignition ON.
- To attempt to move the window upward, connect fused jumper wires temporarily while observing the window operation:

REAR DOOR WINDOW CONTROL SWITCH LH

Positive Lead	Measurement / Action	Negative Lead
C701-1		C701-4
C701-3		C701-8

- To attempt to move the window downward, connect fused jumper wires temporarily while observing the window operation:

REAR DOOR WINDOW CONTROL SWITCH LH

Positive Lead	Measurement / Action	Negative Lead
C701-1		C701-8
C701-3		C701-4

Does the window operate upward and downward when the fused jumper wires are in place?

Yes	INSTALL a new LH rear door window control switch. For Super Cab, REFER to: Rear Door Window Control Switch - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Control Switch - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	GO to F9

F9 CHECK FOR AN OPEN BETWEEN THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH AND THE WINDOW MOTOR

- Disconnect: LH Rear Door Window Regulator Motor C703.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	REAR DOOR WINDOW REGULATOR MOTOR LH

Positive Lead	Measurement / Action	Negative Lead
C701-8	Ω	C703-1
C701-4	Ω	C703-2

Are the resistances less than 3 ohms?

Yes	INSTALL a new LH rear door window regulator motor. For Super Cab, REFER to: Rear Door Window Regulator and Motor - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Regulator and Motor - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit in question.

A Single Power Window Is Inoperative/Does Not Operate Correctly - RH Rear

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Master window control switch
- RH rear door window control switch

- RH rear door window regulator motor

Visual Inspection and Diagnostic Pre-checks

- Verify the lock-out switch is in the UNLOCK position.

PINPOINT TEST G : A SINGLE POWER WINDOW IS INOPERATIVE/DOES NOT OPERATE CORRECTLY - RH REAR

G1 CHECK THE RH (RIGHT-HAND) REAR DOOR WINDOW OPERATION FROM THE MASTER WINDOW CONTROL SWITCH

- Ignition ON.
- Attempt to operate the RH rear door window from the master window control switch.

Does the RH rear door window operate correctly from the master window control switch?

Yes	GO to G2
No	GO to G3

G2 CHECK THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH LOCK-OUT CIRCUIT FEED FOR VOLTAGE

- Ignition OFF.
- Disconnect: RH Rear Door Window Control Switch C801.
- Ignition ON.
- Make sure the window lock-out switch is in the UNLOCK position.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH RH	

Positive Lead	Measurement / Action	Negative Lead
C801-5	V	Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new RH rear door window control switch. For Super Cab, REFER to: Rear Door Window Control Switch - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Control Switch - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit.

G3 CHECK THE RH (RIGHT-HAND) REAR DOOR WINDOW OPERATION FROM RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH

- Make sure the window lock-out switch is in the UNLOCK position.
- Attempt to operate the RH rear door window from the RH rear door window control switch.

Does the RH rear door window operate when using the RH rear door window control switch?

Yes	GO to G4
No	GO to G6

G4 CHECK THE WINDOW CONTROL SWITCH UP/DOWN CIRCUITS

- Ignition OFF.
- Disconnect: Master Window Control Switch C535.
- Ignition ON.
- Connect fused jumper wires temporarily while observing the window operation:

MASTER WINDOW CONTROL SWITCH

Lead	Measurement / Action	Lead
C535-14 (DOWN)		C535-9
C535-13 (UP)		C535-9

Does the window operate upward and downward when the fused jumper wires are in place?

Yes	REMOVE the jumper wires. INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REMOVE the jumper wires. GO to G5

G5 CHECK THE WINDOW CONTROL CIRCUITS FOR AN OPEN BETWEEN THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH AND THE MASTER WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: RH Rear Door Window Control Switch C801.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH RH	MASTER WINDOW CONTROL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C801-6	Ω	C535-13
C801-7	Ω	C535-14

Are the resistances less than 3 ohms?

Yes	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit in question.

G6 CHECK THE HIGH CURRENT POWER TO THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH FOR AN OPEN

- Ignition OFF.
- Disconnect: RH Rear Door Window Control Switch C801.
- Ignition ON.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH RH	

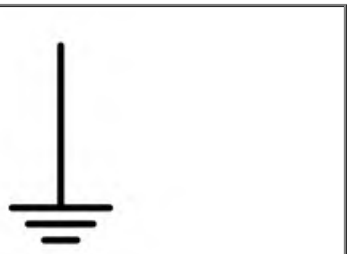
Positive Lead	Measurement / Action	Negative Lead
C801-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to G7
No	REPAIR the circuit.

G7 CHECK THE GROUND TO THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH FOR AN OPEN

- Ignition OFF.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH RH	

Positive Lead	Measurement / Action	Negative Lead
C801-3	Ω	Ground

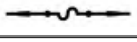
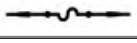
Is the resistance less than 3 ohms?

Yes	GO to G8
No	REPAIR the circuit.

G8 CHECK THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH

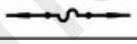
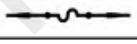
- Ignition ON.
- To attempt to move the window upward, connect fused jumper wires temporarily while observing the window operation:

REAR DOOR WINDOW CONTROL SWITCH RH

Positive Lead	Measurement / Action	Negative Lead
C801-1		C801-4
C801-3		C801-8

- To attempt to move the window downward, connect fused jumper wires temporarily while observing the window operation:

REAR DOOR WINDOW CONTROL SWITCH RH

Positive Lead	Measurement / Action	Negative Lead
C801-1		C801-8
C801-3		C801-4

Does the window operate upward and downward when the fused jumper wires are in place?

Yes	INSTALL a new RH rear door window control switch. For Super Cab, REFER to: Rear Door Window Control Switch - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Control Switch - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	GO to G9

G9 CHECK FOR AN OPEN BETWEEN THE RH (RIGHT-HAND) REAR DOOR WINDOW CONTROL SWITCH AND THE WINDOW MOTOR

- Disconnect: RH Rear Door Window Regulator Motor C803.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH RH	REAR DOOR WINDOW REGULATOR MOTOR RH

Positive Lead	Measurement / Action	Negative Lead
C801-8	Ω	C803-1
C801-4	Ω	C803-2

Are the resistances less than 3 ohms?

Yes	INSTALL a new RH rear door window regulator motor. For Super Cab, REFER to: Rear Door Window Regulator and Motor - Super Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). For Crew Cab, REFER to: Rear Door Window Regulator and Motor - Crew Cab, Vehicles With: Rear Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit in question.

Both Rear Passenger Power Windows Are Inoperative

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

Possible Causes

- Circuit breaker
- Wiring, terminals or connectors
- Master window control switch

Visual Inspection and Diagnostic Pre-checks

- Verify the lock-out switch is in the UNLOCK position.

PINPOINT TEST H : BOTH REAR PASSENGER POWER WINDOWS ARE INOPERATIVE

H1 CHECK THE HIGH CURRENT POWER TO THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: LH Rear Door Window Control Switch C701.
- Ignition ON.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	

Positive Lead	Measurement / Action	Negative Lead
C701-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to H3
No	GO to H2

H2 CHECK FOR A SHORT TO GROUND IN THE HIGH CURRENT POWER CIRCUIT TO THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: BCM Circuit Breaker 38 (30A).
- Install a fused jumper wire in place of BCM Circuit Breaker 38 (30A).
- Connect: LH Rear Door Window Control Switch C701.
- Ignition ON.
- Attempt to operate each individual rear door power window in both directions from each of the rear passenger door switches.

Did the jumper wire fuse open during the test?

Yes	REMOVE the fused jumper wire. REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.
No	If the rear power windows operated correctly with the fused jumper wire in place, INSTALL a new circuit breaker. If the rear power windows did not operate with the fused jumper wire in place, REPAIR the circuit for an open.

H3 CHECK FOR AN OPEN IN THE LOW CURRENT POWER TO THE LH (LEFT-HAND) REAR DOOR WINDOW CONTROL SWITCH

- Ignition OFF.
- Measure:

REAR DOOR WINDOW CONTROL SWITCH LH	MASTER WINDOW CONTROL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C701-5	Ω	C535-5

Is the resistance less than 3 ohms?

Yes	INSTALL a new master window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	REPAIR the circuit.

The Power Sliding Rear Window is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell 100 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

Possible Causes

- Fuse
- BJB
- Wiring, terminals or connectors
- Power sliding rear window switch
- Power sliding rear window motor

Visual Inspection and Diagnostic Pre-checks

- Verify BJB fuse 66 (30A) is OK.
- Verify BCM fuse 23 (10A) is OK.

PINPOINT TEST I : THE POWER SLIDING REAR WINDOW IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

I1 CHECK FOR VOLTAGE TO THE POWER SLIDING REAR WINDOW MOTOR

- Ignition OFF.
- Disconnect: Power Sliding Rear Window Motor C3145.
- Ignition ON.
- **NOTE:** *The voltage being measured changes polarity depending upon which direction the switch is activated.*

  While pressing the power sliding rear window switch in the OPEN and CLOSE positions, measure:

Positive Lead	Measurement / Action	Negative Lead
C3145-1		C3145-2

Is the voltage greater than 11 volts when the power sliding rear window switch is operated in both directions?

Yes	INSTALL a new power sliding rear window motor. REFER to: Rear Sliding Window Motor (501-11 Glass, Frames and Mechanisms, Removal and Installation).
No	VERIFY BJB fuse 66 (30A) is OK. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. If OK, GO to I2

I2 CHECK THE POWER SLIDING REAR WINDOW RELAY GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BJB C1035B.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-11	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to I3
No	REPAIR the circuit.

I3 CHECK THE POWER SLIDING REAR WINDOW SWITCH INPUT

- Ignition ON.
- While pressing and holding the power sliding rear window switch in the OPEN position, measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-21		C1035B-11

- While pressing and holding the power sliding rear window switch in the CLOSE position, measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-14		C1035B-11

Is the voltage greater than 11 volts when the power sliding rear window switch is pressed in the OPEN and CLOSE positions?

Yes	GO to I6
No	GO to I4

I4 CHECK THE VOLTAGE SUPPLY CIRCUIT TO THE POWER SLIDING REAR WINDOW SWITCH FOR AN OPEN

- Ignition OFF.
- Disconnect: Power Sliding Rear Window Switch C980.
- Ignition ON.
- Measure:

POWER SLIDING WINDOW SWITCH, REAR	

Positive Lead	Measurement / Action	Negative Lead
C980-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to I5
No	VERIFY BCM fuse 23 (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.

I5 CHECK FOR AN OPEN BETWEEN THE POWER SLIDING REAR WINDOW RELAYS AND THE POWER SLIDING REAR WINDOW SWITCH

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-21	Ω	C980-3

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-14	Ω	C980-2

Are the resistances less than 3 ohms?

Yes	INSTALL a new power sliding rear window switch. REFER to: Overhead Console (501-12 Instrument Panel and Console, Removal and Installation).
No	REPAIR the circuit in question.

I6 CHECK FOR AN OPEN BETWEEN THE POWER SLIDING REAR WINDOW RELAYS AND THE POWER SLIDING REAR WINDOW MOTOR

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-9	Ω	C3145-1

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1035B-16	Ω	C3145-2

Are the resistances less than 3 ohms?

Yes	INSTALL a new BJB.
No	REPAIR the circuit in question.

Component Test- Grid Wire Test

1. Using a bright lamp in the vehicle, inspect the grid wire from the exterior. A broken grid wire appears as a brown spot.
2. Run the engine at idle. Activate the rear window defrost switch. The indicator light should come on.

3. Working in the vehicle with a voltmeter, contact the broad red-brown stripes of the rear glass window (positive lead to B+ side and the negative lead to ground side). The meter should read 10-13 volts. A lower voltage reading indicates a loose ground connection.

4. Contact a good ground point with the negative lead of the meter. The voltage reading should not change.

5. With the negative lead of the meter grounded, touch each grid line of the heated rear window glass at its midpoint with the positive lead. A reading of approximately 6 volts indicates the line is good. A reading of 0 volt indicates the line is broken between the midpoint and the B+ side of the grid line. A reading of 12 volts indicates the circuit is broken between the midpoint of the grid line and ground.

6. Pinpointing the exact position of the break can be accomplished (if the voltmeter reads 0 volt when the midpoint of the grid line is touched with the positive lead of the voltmeter) by moving the positive lead of the voltmeter toward the B+ side of the grid line and touching the grid line until the voltmeter reads 12 volts. If the voltmeter reads 12 volts when the midpoint of the grid line is touched with the positive lead of the voltmeter, simply move the positive lead of the voltmeter toward the ground connection of the grid line and touch the grid line until the voltmeter reads 0 volt.
