

Normal Operation and Fault Conditions

The IPMA supplies voltage and ground to the camera windshield defrost heater. The IPMA uses input from the front camera and the ambient air temperature data from the PCM to command the heater on and off. The heater may be commanded on if the ambient temperature is below 41 °F (5 °C).

Possible Causes

- Wiring, terminals or connectors
- Camera windshield defrost heater
- IPMA (integral to the interior rear view mirror)

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B12D8:11	Mirror Heater Output: Circuit Short To Ground	An on-demand and continuous memory DTC that sets in the IPMA if an excessive current draw is detected on the heater output circuit.
B12D8:13	Mirror Heater Output: Circuit Open	An on-demand and continuous memory DTC that sets in the IPMA if a lower than expected current draw is detected on the heater output circuit.

Visual Inspection and Diagnostic Pre-Checks

Inspect the integrity of the wiring, terminals and connectors on the jumper harness between the vehicle harness and the camera windshield defrost heater.

DIAGNOSIS AND TESTING > LANE KEEPING SYSTEM > PINPOINT TESTS > PINPOINT TEST C : DTC (DIAGNOSTIC TROUBLE CODE) B12D8:11, DTC (DIAGNOSTIC TROUBLE CODE) B12D8:13 > PINPOINT TEST C : DTC (DIAGNOSTIC TROUBLE CODE) B12D8:11, DTC (DIAGNOSTIC TROUBLE CODE) B12D8:13



NOTE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)



NOTE: Before replacing the camera windshield defrost heater or IPMA for a camera windshield defrost heater concern, verify the integrity of the wiring, connectors and terminals on the camera windshield defrost heater jumper harness.

C1 CHECK FOR RECORDED DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE IPMA (IMAGE PROCESSING MODULE A) SELF-TEST

Ignition ON.

Using a diagnostic scan tool, perform the IPMA self-test.

Is DTC B12D8:11 or DTC B12D8:13 present?

Yes	For DTC B12D8:11, GO to C2 For DTC B12D8:13, GO to C5
No	The system is operating correctly at this time. INSPECT the connectors, wiring and the camera windshield defrost heater for damage or poor connections.

C2 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) B12D8:11 WITH THE HEATER DISCONNECTED

Ignition OFF.

Disconnect: Camera Windshield Defrost Heater C9048A and C9048B .

Ignition ON.

Using a diagnostic scan tool, clear the IPMA Diagnostic Trouble Codes (DTCs).

Perform the IPMA self-test.

Is DTC B12D8:11 present?

Yes	GO to C3
No	INSTALL a new camera windshield defrost heater. REFER to: Image Processing Module A (IPMA) Camera Heated Windshield Element .

C3 CHECK THE HEATER OUTPUT CIRCUIT FOR A SHORT TO GROUND

Ignition OFF.

Disconnect: Interior Rear View Mirror C9012 .

Measure:

Positive Lead	Measurement / Action	Negative Lead
C9012-11	Ω	Ground

Is the resistance greater than 10, 000 ohms?

Yes	GO to C4
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No	REPAIR the circuit.
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C4 CHECK THE HEATER CIRCUITS FOR A SHORT TOGETHER

Measure:

Positive Lead	Measurement / Action	Negative Lead
C9012-11	Ω	C9012-14

Is the resistance greater than 10, 000 ohms?

Yes	GO to C7
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No	REPAIR the circuits.
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C5 CHECK FOR DTC B12D8:11 WITH THE HEATER CIRCUITS JUMPERED TOGETHER

Ignition OFF.

Disconnect: Camera Windshield Defrost Heater C9048A and C9048B .

Connect:

Lead 1	Measurement / Action	Lead 2
C9048A-1		C9048B-1

Ignition ON.

Using a diagnostic scan tool, clear the IPMA Diagnostic Trouble Codes (DTCs).

Perform the IPMA self-test.

Is DTC B12D8:11 present?

Yes	REMOVE the fused jumper wire. INSTALL a new camera windshield defrost heater. REFER to: Image Processing Module A (IPMA) Camera Heated Windshield Element .
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No	REMOVE the fused jumper wire. GO to C6
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C6 CHECK THE HEATER CIRCUITS FOR AN OPEN

Ignition OFF.

Disconnect: Interior Rear View Mirror C9012 .

Measure: