

DTC B2645

SIE-ID = 1967846 Owner = dmcgre01 LMD = 13-aug-2007 LMB = tdedvu01

Diagnostic Instructions

- Perform the Diagnostic System Check – Vehicle on page 6-60 prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis on page 6-57 for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions on page 6-58 provides an overview of each diagnostic category.

DTC Descriptors

DTC B2645 03: Ambient Light Sensor Circuit Below Threshold

DTC B2645 07: Ambient Light Sensor Circuit Above Threshold

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ambient Light Sensor Signal Circuit	B2645 03	B2645 07	B2645 07	—
Ambient Light Sensor Ground	—	B2645 07	—	—

Circuit/System Description

The ambient light sensor is used to monitor outside lighting conditions. The body control module (BCM) provides a 5-volt reference signal to the ambient light sensor. The sensor is a variable resistor, its resistance changes as outside lighting conditions changes. With the headlamp switch in the AUTO position, the BCM monitors the sensor signal circuit to determine if the outside lighting conditions are correct for either daytime running lamps (DRL) or headlamp low beam operation. In daylight conditions, the BCM will command the DRLs ON. In low light conditions, the BCM will command the low beam headlamps ON.

Conditions for Running the DTC

- a) The ignition is ON.
- b) The headlamp switch in the AUTO position.

Conditions for Setting the DTC

B2645 03

The DTC will set when the BCM detects the ambient light sensor signal voltage is below 0.196 volts.

B2645 07

The DTC will set when the BCM detects the ambient light sensor signal voltage is above 4.9 volts.

Action Taken When the DTC Sets

The BCM defaults to low light status and commands the low beam headlamps ON.

Conditions for Clearing the DTC

A history DTC will clear once 100 consecutive malfunction-free ignition cycles have occurred.

Circuit/System Testing

- 1) Ignition OFF, disconnect the harness connector at the ambient light sensor.
- 2) Ignition OFF, test for less than 5 ohms between the appropriate ground circuit listed below and ground.
 - a) Terminal B (with C67)
 - b) Terminal C (with CJ2)If greater than the specified range, test the ground circuit for an open/high resistance.
- 3) Ignition ON, verify the scan tool Ambient Light Sensor parameter is greater than 4.65 volts.
If less than the specified range, test the signal circuit for a short to ground.
If the circuit tests normal, replace the BCM.
- 4) Install a 3A fused jumper wire between the appropriate signal circuit and the ground listed below. Verify the scan tool Ambient Light Sensor

parameter is less than 0.196 volts.

- a) Terminal A and terminal B (with C67)
- b) Terminal D and terminal C (with CJ2)

If greater than the specified range, test the signal circuit for a short to voltage or an open/high resistance. If the circuit tests normal, replace the BCM.

- 5) If all circuits test normal, test or replace the ambient light sensor.

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