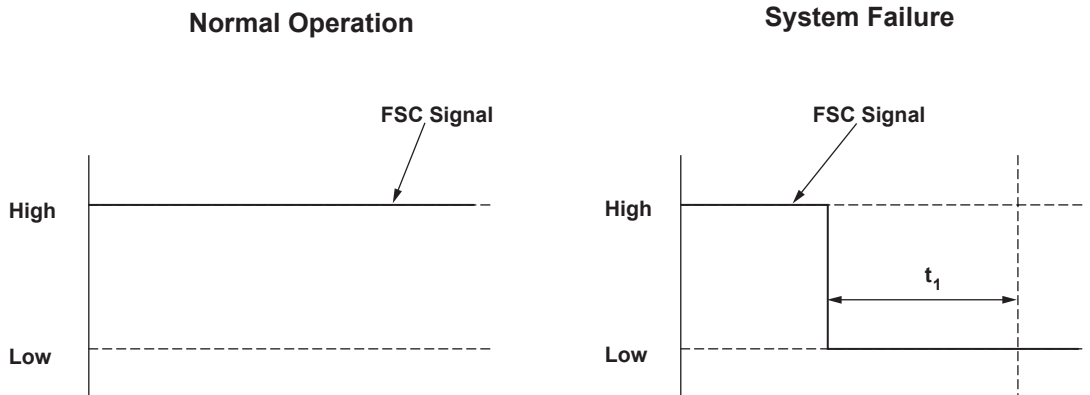


# Advanced Diagnostics

## DTC P1439 (41): Motor Drive Module (MDM) Short Circuit



P1439-0072

### General Description

If a short circuit appears in the three-phase coil of the integrated motor assist (IMA) motor when driving, the motor drive module (MDM) stops functioning and varies the flag short circuit (FSC) signals from a high level to a low level to protect itself. If the FSC signals stay at a low voltage level for a set time period ( $t_1$ ), the motor control module (MCM) detects a malfunction and stores a DTC.

### Monitor Execution, Sequence, Duration, DTC Type

Execution	Continuous
Sequence	None
Duration	0.6 second or more
DTC Type	One drive cycle, MIL ON, IMA system indicator ON

### Enable Conditions

Condition	Minimum	Maximum
MCM power-supply voltage	10.5 V	—
No active DTCs	MPI, MCM, U/V/W Phase Signal Circuit, MCM, IMA system, BCM, BC	

### Malfunction Threshold

The FSC signals stay at a low voltage level for at least 0.6 second.

### Driving Pattern

1. Start the engine.
2. Accelerate the vehicle to a speed of 40 mph (64 km/h) under the conditions in which the IMA battery charge gauge indicates 10 through 18 segments, so the IMA motor assist level gauge illuminates.
3. Decelerate gradually by applying the brakes.

## **Diagnosis Details**

### **Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the ECM memory.

### **Conditions for clearing the MIL**

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.