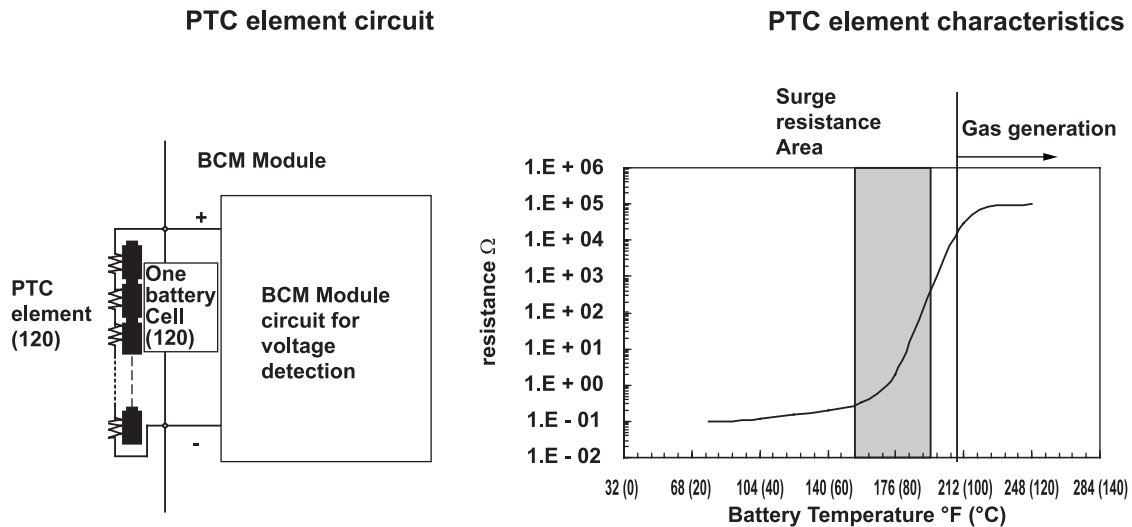


Advanced Diagnostics

DTC P1449 (73): Battery Cell Overheating



P1449-0072

General Description

The 120 cells are connected in series in the high voltage battery for the IMA (integrated motor assist) system, and every cell has a PTC element. Serially connected cells enable the BCM (battery condition monitor) module to detect a change in resistance (PTC+side to ground, the BCM module detected voltage) when one or more monitoring cells' temperature is beyond a set value. Consequently, overheating is detected even, if only one of cells is malfunctioning. If the BCM module detected voltage is a set value or more for at least a specified time period, a malfunction in the battery is detected and a DTC is stored.

NOTE: The PTC element has characteristics as shown in the graph (the resistance increases at a faster rate within a certain range), so it is used to detect that a monitored object temperature is beyond a specified value.

Monitor Execution, Sequence, Duration, DTC Type

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, IMA system indicator ON

Enable Conditions

Condition	Minimum	Maximum
BCM module power-supply voltage	7.5 V	—
No active DTCs	Battery cell temperature signal circuit, BCM	

Malfunction Threshold

BCM module detected voltage is 3.5 V or more for at least 2 seconds.

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.