

Internal resistance of battery cabinet 1





Overview

The internal resistance of a battery cell is a measure of the resistance to the flow of current within the cell. It is typically expressed in units of ohms (Ω). Internal resistance can be thought of as a measure of th.

What is the internal resistance of a battery?

Although batteries' internal resistance would ideally be zero, internal resistance exists due to a variety of factors. Internal resistance increases as a battery degrades. On battery cell production lines, defective cells are detected by comparing the internal resistance of tested cells to that of known-good reference cells.

What if the internal resistance of a battery cell is not provided?

If the internal resistance of the battery cell is not provided by the manufacturer, as we'll see in this article, using the discharge characteristics of the battery cell, we can calculate the internal resistance of the battery cell, for a specific state of charge value.

How does internal resistance affect the performance of a battery cell?

The internal resistance of a cell can affect its performance and efficiency, and it is typically higher at higher current densities and lower temperatures. The open circuit voltage E [V] of a battery cell is the voltage of the cell when it is not connected to any external load.

How to calculate the internal resistance of a battery cell?

We aim to calculate the internal resistance of the cell at approximately 47 % state of charge (SoC). Step 1. Calculate the discharge capacity of the battery cell for 47 % SoC. Since the nominal capacity of the battery cell is 3200 mA, which corresponds to 100% SoC, at 47% SoC, the battery cell capacity would be: $0.47 \cdot 3200 = 1504 \text{ mAh} \cong 1500 \text{ mAh}$



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