

What is stray inductance extraction method?

We propose a stray inductance extraction method on power modules of the few-kilovolts/several-hundred-amperes class using only low voltages and low currents. The method incorporates a double-pulse generator, a level shifter, a switching device, and a load inductor.

Can stray inductance be extracted in a low voltage and low current environment?

However, the proposed method (Figure 2) has the great advantage of allowing for extracting the stray inductance in a low voltage and low current environment regardless of the rated voltage of the module because the module is measured in a turn-off state.

How does stray inductance affect a power module?

The stray inductance of a power module results in semiconductor breakdown caused by the overshoot voltage on turn-off transitions, which greatly affects both the system's safety and reliability and its efficiency due to the increase in switching energy loss [1 - 6].

How accurate are stray inductance values?

The obtained stray inductance values differed from the manufacturer-provided values by less than 1.65 nH, thus demonstrating the method's accuracy. The greatest advantage of the proposed approach is that high voltages or high currents are not required.

What is the stray inductance of a 1700 V/250 A SiC module?

Finally, Figure 9C shows the corresponding waveforms for a 1700 V/250 A SiC module from Rohm, with the measured di/dt , dt , and DV found to be 2.72 A, 40.98 ns, and 0.89 V, respectively, leading to a stray inductance of 13.41 nH.

How can a single-phase inverter charge/discharge a BES battery?

Aside from the proposed MIC algorithm and d-q current control for a single-phase inverter which are using flowchart decision logic for both the PV power system and the SOC of the battery storage system, the designed control circuit for charging/discharging of BES is achieved using a buck/boost converter with a DC-Bus capacitance of (10 μ F).

Fig 2: The typical I-V and power-voltage (P-V) curves are based on the cell model; P_{max} is the maximum power point, while I_{mp} is the current and V_{mp} is the voltage at ...

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1. Healthy motor 2. Bearing fault-inner race defect 3. Bearing fault -outer race defect 4. 1-Broken rotor bar 5. 3-Broken rotor bars Bearing defects shown in fig.4 (a) [8] were ...

Focusing on the shortcomings of the battery life cycle in traditional battery power supply modes of high-voltage transmission line online monitoring devices, this paper proposed ...

In order to realize an online power supply, this article develops an explicit design of induction power extraction technology combined with wireless power transmission (WPT) technology. ...

Aiming at the shortcoming of the battery life cycle in traditional battery power supply mode of online monitoring equipment of high voltage transmission line, the induction ...

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