

A systematic way for calculating the losses of high switching frequency inverter is presented. The losses of each component in the inverter are thoroughly analyzed.

The proposed algorithms calculate the losses of the insulated gate bipolar transistors (IGBTs) and the freewheeling diodes in the inverter bridge, as well as the losses of the impedance...

Power Loss Equations for a 3-phase inverter ... TI Information - Selective Disclosure 1

The losses in an inverter do affect the efficiency as well as the thermal design of the switches used. These losses consist of the conduction and switching losses [2].

Enhancing the longevity of high-voltage traction inverters is critical for the reliability of future electric vehicles. This paper presents innovative damage mitigation strategies targeting converter ...

This paper addresses that gap by providing both a comprehensive overview and a detailed analysis of the underlying modulation-induced loss mechanisms. Specifically, it characterizes time-harmonic losses in the ...

Together with the high current density, ultra-low saturation voltage drop and superior parallel performance, Discrete products has increased power density by more than 20%.

Power losses at switching for an IGBT for given current and voltage waveforms can be split into three phases, as seen in Figure 2 [17], [18]. The total power losses include static and switching losses in IGBT and in the ...

The process of selecting the topology, components and operating parameters (voltage, current and switching frequency) of an inverter is highly affected by the anticipated inverter losses.

exhibits 10-30% lower conduction losses (depending on the modulation index) than a BM3-BIMI. To compare systems with different semiconductor materials, i.e., a two-level (2L) silicon carbide (SiC) inverter and BIMIs ...

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