Critical Mode Photovoltaic Inverter

Overview

This paper explores a CRM-based full-bridge inverter with bipolar pulse-width modulation (PWM) in detail. Also, how CRM operations affect leakage current is analyzed, and a new switching modulation strategy is introduced to minimize the leakage current. Critical condition mode (CRM) operation with wide-bandgap (WBG) devices has been deemed a reasonable solution for high frequency applications by achieving zero voltage switching (ZVS). Also. In photovoltaic (PV) system applications, due to the relatively large area of the PV panel, large parasitic capacitance exists between the PV panel and the earth. This parasitic capacitance, combined with the power converter, the grounded power grid and the earth, forms a closed electrical loop. Abstract—In this paper, a new critical-conduction-mode (CRM)-based modulation is proposed for three-phase inverters. In three-phase string PV.

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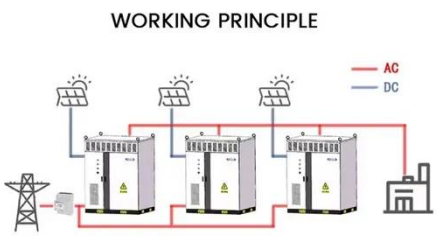

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