Evaluation of various leakage current paths with different switching conditions

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Abstract
The Photovoltaic (PV) panel is the arrangement of solar cells that becoming famous in the world for commercial electric power market via transformer-less topology. However, non-existing galvanic isolation is the biggest problem occurred in the whole system and is known as leakage issue. In this paper, different paths of leakage current were analyzed with various wave shapes and ranges. Furthermore, it was also verified using DC decoupling and AC decoupling with full bridge rectifier. Moreover, the EMC filter and high range load were used to evaluate the performance. Moreover, here also shown the transfer function of EMC filter with its simulated figure. © 2014 IEEE.

Author keywords
AC decoupling, DC coupling, EMC filter, Leakage current (LC), Pulse Width Modulation (PWM)

Indexed keywords
Engineering controlled terms: Bridge circuits, Counting circuits, Electromagnetic compatibility, Leakage currents, Modulation, Power markets, Solar cells, Solar power generation, Voltage control

DC coupling, DC-decoupling, Electric power markets, Full bridge rectifier, Galvanic isolation, High ranges, Photovoltaic panels, Switching conditions

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