

Simulation of Surge Protection for a Direct Current Circuit

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Abstract : In this paper, the performance of a simple surge protection for a direct current circuit was simulated. The protection circuit was developed from modified electric macro models of a gas discharge tube and a transient voltage suppressor diode. Moreover, a combination wave generator circuit was used as source of energy surges. The simulations showed that the circuit presented ensures immunity corresponding with test level IV of the IEC 61000-4-5:2014 international standard. The developed circuit can be modified to meet the requirements of any other equipment to be protected. Similarly, the parameters of the combination wave generator can be changed to provide different surge amplitudes.

Keywords : combination wave generator, IEC 61000-4-5, Pspice simulation, surge protection

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