



Magnetic Coupled Sepic Rectifier with Voltage Multiplier using PID Controller for SMPS

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Abstract: This paper presents a new Magnetic coupled sepic rectifier for Switch mode power supply(SMPS).The proposed converter is designed in a bridge less configuration to attain low conduction losses .The use of voltage multiplier reduces the switch voltage stress .The proposed topology is operated in discontinuous conduction mode (DCM),it achieves unity power factor and low total harmonic distortion (THD) of the input current. The DCM operation gives additional advantages such as zero current turn-on in the power switches and simple control circuitry. The magnetic coupled sepic rectifier is simulated in open and closed loop using PID controller.The simulation results are verified experimentally.The proposed converter achieves high efficiency and high power density.

Keywords:Magnetic coupled sepic rectifier (MCSR),Switch mode power supply(SMPS), Total harmonic distortion (THD), Discontinuous conduction mode (DCM), PID controller.

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