Full Paper

ANALYSIS OF SINGLE ENDED PRIMARY INDUCTANCE CONVERTER (SEPIC) EFFICIENCY AND LOSSES

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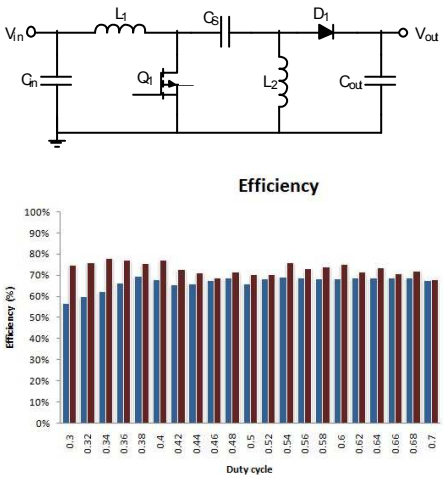
Graphical abstract



Abstract

This paper presents a comprehensive analysis of single-ended primary-inductance converter (SEPIC) efficiency and losses.The target application is a maximum power point tracking (MPPT) for solar photovoltaic application, which demands a high efficiency DC/DC converter topology. Carefully taken care of two predominantly losses in the converter; switching losses and conduction losses, the study presents theoretical justification, simulation analysis and experimental verification.

Keywords: SEPIC, DC/DC Converter, MPPT, Efficiency analysis, Conduction losses

Abstrak

This paper presents a comprehensive analysis of single-ended primary-inductance converter (SEPIC) efficiency and losses.The target application is a maximum power point tracking (MPPT) for solar photovoltaic application, which demands a high efficiency DC/DC converter topology. Carefully taken care of two predominantly losses in the converter; switching losses and conduction losses, the study presents theoretical justification, simulation analysis and experimental verification.

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