Abstract

This paper presents a comparative evaluation of five topologies of single-phase AC-DC boost converters having power factor correction (PFC). These converter topologies are evaluated on the basis of performance and their salient features are discussed to analyze their applicability. The techniques not only help to develop a deeper understanding of these converters but also to evaluate performance and feasibility of control strategies and topological features without fabrication of an actual system. This paper also describes techniques for minimizing the input current distortion of current-controlled single-phase boost rectifiers. Performance of these converters is simulated and conformity of these converters is shown to relevant international standards. This work aims to provide an exposure of PFC converters to researchers and application engineers dealing with power quality issues.

Reference

Harmonic Optimization by Single Phase Improved Power Quality AC-DC Power Factor Corrected Converters


Index Terms

Power Electronics

Ac-Dc Power

Converter