Basic Families of Medium-power Soft-switched Isolated Bidirectional dc-dc Converters

This paper is concerned with the investigation of common medium-power isolated bidirectional dc-dc converters (IBDC) which are increasingly being used in many applications such as interfacing renewable energy resources to utility grid, hybrid electric vehicles and UPS systems. Although different varieties of IBDCs have been proposed by researchers, they can be conceptually classified into a few families. This paper provides an insight into the basic operation of each family by investigating the working principles of a representative member of each family. This helps in comparing different characteristics of each family and understanding their advantages and disadvantages for a certain application.

Keywords: bidirectional dc-dc converters

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