

A bidirectional inverter with high frequency isolated transform

Abstract

There is a growing interest to develop renewable energy, particularly the solar energy to meet the growing energy demand. In this paper, a bidirectional photovoltaic (PV) inverter using high frequency (HF) transformer is proposed. The HF transformer provides electrical isolation between the DC supply and AC output. Besides, by using minimum power switches at the active rectifier on the secondary side of HF transformer, the system has low switching losses. Therefore, the proposed inverter has advantages of reliable, lightweight, low cost and increased efficiency. A prototype inverter is implemented using a low cost microcontroller and laboratory experiments are carried out to verify the system viability.