

Status and Trends of Power Devices

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Abstract

Advances in power semiconductor technology have improved the efficiency, size, weight and cost of power electronic systems. Power integrated circuits have been developed for the use of power converters for portable, automotive and aerospace applications. New materials (SiC and GaN) have been introduced for advanced applications. They increase the output power density per area or per volume, reduce the consumption of natural resources, and increase the efficiency of electric systems. Especially the effects of SiC devices are dramatic. The paper reviews the state of these devices in terms of higher voltages, higher power density, and better switching performance.

Keywords: Electronics, power technology, power device, classification, methodology, SiC, GaN, reliability

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