Abstracts

Planar C-band DC-DC converter

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In this paper, we present a DC-DC converter which operates at a microwave frequency. The converter consists of a Class-E switched-mode microwave amplifier which performs the DC-AC conversion, and two half-wave diode rectifier outputs. The class-E MESFET amplifier has a maximum power-added efficiency (PAE) of 86%, corresponding drain efficiency of 95% and 120 mW of output power at 4.5 GHz. The diode rectifier has a conversion efficiency of 91% and an overall efficiency of 77%. The DC-DC converter is planar and compact, with no magnetic components, and with an overall DC-DC conversion efficiency of 50%. The DC input is 3 V, and the output voltage across a 115 /spl Omega/ load is 2 V.

❑ Return to main document.