Abstracts

Novel BiCMOS compatible, short channel LDMOS technology for medium voltage RF and power applications (2002 Vol. I [MWSYM])

A. Litwin, Z. Bengtsson and J. Olsson. "Novel BiCMOS compatible, short channel LDMOS technology for medium voltage RF and power applications (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 35-38 vol.1.

We describe a very short channel, 0.15 /spl mu/m, LDMOS transistor, with a breakdown voltage of up to 45 V, manufactured in a standard 0.35 /spl mu/m BiCMOS process. At 1900 MHz and a 12 V supply voltage the 0.4 mm gate width device gives 100 mW output power P/sub 1/ /sub dB/ at a drain efficiency of 43%. It has a transducer power gain of more than 20 dB and a current gain cutoff frequency, f/sub T/, of 13 GHz. The maximum available gain cutoff frequency, f/sub MAX/, is 27 GHz. The LDMOS process module does not affect the performance or models of other devices. We present for the first time a simple way to create high voltage, high performance LDMOS transistors for RF power amplifier use even in a very downscaled silicon technology.

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