Abstracts

Gallium Arsenide IMPATT Diodes at 20 GHz

M.G. Adlerstein, J.W. McClymonds and D. Masse. "Gallium Arsenide IMPATT Diodes at 20 GHz." 1982 MTT-S International Microwave Symposium Digest 82.1 (1982 [MWSYM]): 143-145.

High performance double-drift Read GaAs IMPATT diodes have yielded power levels of 4 W CW with 20 percent efficiency at 20 GHz with a junction temperature less than 250° C. In this paper we describe the profile, chip and thermal design of such diodes. It is shown that further improvements in thermal design should result in diodes giving up to 8W CW. Electrical series resistance and package parasitics are important parameters in determining the device performance and amplifier bandwidth. We show that there need not be a tradeoff between thermal and parasitic characteristics of a 20 GHz diode package.

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