Abstracts

GaAs/GaAlAs Heterojunction Bipolar Phototransistor for Monolithic Photoreceiver Operating at 140 Mbit/s (1986 [MWSYM])

H. Wang, C. Bacot, C. Chevalier and D. Ankri. "GaAs/GaAlAs Heterojunction Bipolar Phototransistor for Monolithic Photoreceiver Operating at 140 Mbit/s (1986 [MWSYM])." 1986 MTT-S International Microwave Symposium Digest 86.1 (1986 [MWSYM]): 717-719.

The first monolithic integrated photodetector-preamplifier implemented with GaAs-GaAIAs heterojunction phototransistor and transistors has been fabricated and tested. A heterojunction phototransistor (HPT), two heterojunction bipolar transistors (HBT's) and four resistors are integrated in a 0.5 x 0.5 mm² GaAs chip. The photoreceiver with a 26 kOmega external feedback resistor has a bandwidth of 80 MHz with a transimpedance gain of 7000V/A. The noise measurements indicate that a minimum detectable power of -30 dBm is obtained at 140 Mbit/s for an error rate of 10/sup -9/.

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