Abstracts

GaAs/GaAlAs Heterojunction Bipolar Phototransistor for Monolithic Photoreceiver Operating at 140 Mbit/s (Dec. 1986 [T-MTT])

H. Wang, C. Bacot, C. Gerard, J.L. Lievin, C. Dubon-Chevallier, D. Ankri and A. Scavennec. "GaAs/GaAlAs Heterojunction Bipolar Phototransistor for Monolithic Photoreceiver Operating at 140 Mbit/s (Dec. 1986 [T-MTT])." 1986 Transactions on Microwave Theory and Techniques 34.12 (Dec. 1986 [T-MTT] (1986 Symposium Issue)): 1344-1348.

The development of optical transmission calls for sensitive and fast optoelectic transducers. With the advent of optical local area networks, hybrid transducers may no longer be appropriate, and monolithic emitters and receivers will be preferred. In this paper, we report on the first monolithic photoreceiver implemented with GaAs-GaAlAs bipolar devices. One phototransistor and two transistors are integrated, together with four resistors on a 0.5x0.5-mm² GaAs chip. The transimpedance receiver has a bandwidth of 80 MHz. Signal and noise power measurements indicate that for a digital signal at 140 Mbit/s, the minimum detectable power is 1 µW (-30 dBm).

❑ Return to main document.