Abstracts

Low Power Consumption InAlAs-InGaAs-InP HBT SPDT PIN Diode X-Band Switch

K.W. Kobayashi, L.T. Tran, S. Bui, J.R. Velebir, A.K. Oki and D.C. Streit. "Low Power Consumption InAlAs-InGaAs-InP HBT SPDT PIN Diode X-Band Switch." 1993 Microwave and Guided Wave Letters 3.10 (Oct. 1993 [MGWL]): 384-386.

The results of the first monolithic SPDT X-band PIN diode switch fabricated with InAlAs-InGaAs HBT's lattice matched to InP is reported. The InP-based HBT PIN diode switch achieves similar performance to a GaAs implementation but with half the power consumption. The insertion loss is 0.89 dB and the off-isolation is > 35 dB at 10 GHz. The IP3 is 29.6 dBm while the total power consumption is 10.2 mW. Monolithic integration of PIN diodes with an InP-based HBT process provides monolithic switch functions for use in microwave and millimeter-wave communication systems.

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