Abstracts

Millimeter-Wave Silicon IMPATT Sources and Combiners for the 110-260-GHz Range (Dec. 1981 [T-MTT])

K. Chang, W.F. Thrower and G.M. Hayashibara. "Millimeter-Wave Silicon IMPATT Sources and Combiners for the 110-260-GHz Range (Dec. 1981 [T-MTT])." 1981 Transactions on Microwave Theory and Techniques 29.12 (Dec. 1981 [T-MTT] (1981 Symposium Issue)): 1278-1284.

This paper reports recent progress in CW and pulsed silicon IMPATT sources in the 110-260-GHz frequency range. Pulsed output power levels of 3, 1.3, and 0.7 W, and CW output power levels of 110, 60, and 25 mW have been consistently achieved from single-drift IMPATT diodes at 140, 170, and 217 GHz, respectively. A Read-type IMPATT diode that generated good output power over a wide frequency range was fabricated. A bridged double-quartz standoff package was developed and successfully used for the entire frequency range. Power combiners at center frequencies of 140 and 217 GHz were developed with peak output power of 9.2 and 1 W, respectively.

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