Abstracts

Chip Level IMPATT Combining at 40 GHz (Dec. 1981 [T-MTT])

C.T. Rucker, J.W. Amoss and G.N. Hill. "Chip Level IMPATT Combining at 40 GHz (Dec. 1981 [T-MTT])." 1981 Transactions on Microwave Theory and Techniques 29.12 (Dec. 1981 [T-MTT] (1981 Symposium Issue)): 1266-1271.

Results with series and series-parallel connections of CW 40-GHz IMPATT diodes on diamond are discussed. The effects of device and circuit losses on the efficiency are treated. Device loss associated with the stabilizing capacitors appears likely as the major factor limiting the combining efficiency. Maximum combining efficiency of 82 percent has been demonstrated for two diodes connected in series. The multichip geometries utilize Raytheon gallium arsenide CW double-drift diode chips and are essentially scaled versions of successful X-band geometries previously reported by the authors.

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