Abstracts

Two Ka-band quasi-optical amplifier arrays (Dec. 1999 [T-MTT])

T. Marshall, M. Forman and Z. Popovic. "Two Ka-band quasi-optical amplifier arrays (Dec. 1999 [T-MTT])." 1999 Transactions on Microwave Theory and Techniques 47.12 (Dec. 1999 [T-MTT] (Special Issue on 1999 International Microwave Symposium)): 2568-2573.

Repeatability of performance, thermal properties, and effects of biasing are studied on two Ka-band quasi-optical slot-antenna amplifier arrays, fabricated with commercial monolithic microwave integrated circuits (MMIC's) on aluminum-nitride substrates. The unit cells are arranged in a 6/spl times/6 triangular lattice to suppress sidelobes. The amplifier arrays have small-signal gains relative to a free-space through of 2.1 dB at 31.02 GHz and 6.5 dB at 31.40 GHz. The average small-signal gain contributed by the MMIC's is 10 dB. In saturation, the arrays deliver 89 W effective isotropic radiated power (EIRP) or 0.3 W output power at 30.40 GHz and 145 W EIRP or 0.5 W output power at 31.15 GHz.

❑ Return to main document.