Abstracts

Planar Amplifier Array with Improved Bandwidth Using Folded-Slots

H.S. Tsai, M.J.W. Rodwell and R.A. York. "Planar Amplifier Array with Improved Bandwidth Using Folded-Slots." 1994 Microwave and Guided Wave Letters 4.4 (Apr. 1994 [MGWL]): 112-114.

Active antennas on semiconductor substrates often suffer limited bandwidth. We report on a relatively broadband quasi-optical amplifier cell and 4x4 array using folded-slot antennas, suitable for monolithic power combining. Two orthogonally polarized cpw-fed folded slots are coupled to the input and output ports of a simple resistive feedback MESFET amplifier. The peak effective isotropic power gain in the transmission mode is 11 dB @ 4.3 GHz with 10% bandwidth for the single cell, a factor-of-ten improvement in bandwidth over a similar amplifier cell using patch antennas, and 32 dB @ 4.24 GHz with 8% bandwidth for the array.

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