Abstracts

A low phase-error 44-GHz HEMT attenuator

L. Sjogren, D. Ingram, M. Biedenbender, R. Lai, B. Allen and K. Hubbard. "A low phase-error 44-GHz HEMT attenuator." 1998 Microwave and Guided Wave Letters 8.5 (May 1998 [MGWL]): 194-195.

Radio frequency (RF) subsystems for emerging millimeter-wave applications require monolithic microwave integrated circuit (MMIC) attenuators with constant phase over the attenuation range. In this work, we present the results for a 44 GHz stepped attenuator implemented in high electron mobility transistor (HEMT) MMIC technology. Use of a switched-path topology provides a high attenuation range (>30 dB) with good phase flatness (<7/spl deg/ p-p) and return loss (>14.5 dB) over the attenuation range. The same design topology should be well suited for other frequencies throughout the upper microwave and lower millimeter-wave range.

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