Abstracts

28-39 GHz Distributed Harmonic Generation on a Soliton Nonlinear Transmission Line

E. Carman, K. Giboney, M. Case, M. Kamegawa, R. Yu, K. Abe, M.J.W. Rodwell and J. Franklin. "28-39 GHz Distributed Harmonic Generation on a Soliton Nonlinear Transmission Line." 1991 Microwave and Guided Wave Letters 1.2 (Feb. 1991 [MGWL]): 28-31.

A second-harmonic generation is reported in the 26-40 GHz band through soliton propagation on a GaAs monolithic nonlinear transmission line. At 20 dBm input power, a 20-diode structure attained <12 db conversion loss for input frequencies from 13.5-18 GHz, with 9.3 dB minimum conversion loss, while a 10-diode structure attained <12 dB loss, 14-19.5 GHz (7.3 dB minimum). With reduction of conductor skin losses, broadband operation and peak conversion efficiencies approaching -3 dB are attainable.

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