Abstracts

A 78-114 GHz monolithic subharmonically pumped GaAs-based HEMT diode mixer

Yuh-Jing Hwang, Chun-Hsien Lien, Huei Wang, M.W. Sinclair, R.G. Gough, H. Kanoniuk and Tah-Hsiung Chu. "A 78-114 GHz monolithic subharmonically pumped GaAs-based HEMT diode mixer." 2002 Microwave and Wireless Components Letters 12.6 (Jun. 2002 [MWCL]): 209-211.

A W-band subharmonically pumped (SHP) diode mixer is designed for fixed LO frequency operation. It is fabricated on a 4-mil substrate using 0.15 /spl mu/m GaAs PHEMT MMIC process. The on-wafer measurement results show that the conversion loss is about 10 to 14 dB across the W band, as a 10 dBm 48 GHz LO signal is pumped. To our knowledge, this is the state-of-the-art result on low-conversion-loss wideband MMIC SHP diode mixer. The packaged module measurement shows a similar result. Both the simulation and measurement results are shown to be in good agreement.

❑ Return to main document.