Abstracts

A low loss, 5.5 GHz-20 GHz monolithic balun

M.N. Tutt, H.Q. Tserng and A. Ketterson. "A low loss, 5.5 GHz-20 GHz monolithic balun." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 933-936.

A low-loss monolithic Marchand balun has been designed and fabricated using polyimide as the inter-metal dielectric. The measured return loss is less than -10 dB from 5.5 GHz to 28 GHz. The balun loss is less than 0.7 dB over the 6 GHz to 21 GHz operating band. This is the lowest loss ever reported for such a balun. The excellent loss is the result of using a relatively thick polyimide layer (10 /spl mu/m) as the inter-metal dielectric. This balun has been applied to HBT and pHEMT amplifiers with second harmonic components suppressed >40 dB, even in compression, demonstrating very good push-pull operation.

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