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Accession number:20112814143367

Title:Low noise amplification at 0.67 THz using 30 nm InP HEMTs

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Source title:IEEE Microwave and Wireless Components Letters

Abbreviated source title:IEEE Microwave Compon. Lett.

Volume:21

Issue:7

Issue date:July 2011

Publication year:2011

Pages:368-370

Article number:5784355

Language:English

ISSN:15311309

CODEN:IMWCBJ

Document type:Journal article (JA)

Publisher:Institute of Electrical and Electronics Engineers Inc., 445 Hoes Lane / P.O. Box 1331, Piscataway, NJ 08855-1331, United States

Abstract: In this letter, low noise amplification at 0.67 THz is demonstrated for the first time. A packaged InP High Electron Mobility Transistor (HEMT) amplifier is reported to achieve a noise figure of 13 dB with an associated gain greater than 7 dB at 670 GHz using a high fMAX InP HEMT transistors in a 5 stage coplanar waveguide integrated circuit. A 10-stage version is also reported to reach a peak gain of 30 dB. These results indicate that InP HEMT integrated circuits can be useful at frequencies approaching a terahertz.

Number of references:7