173
标题: L-g=100 nm InAs PHEMTs on InP substrate with record high frequency response
作者: Kim, DH (Kim, D. -H.); Chen, P (Chen, P.); Kim, TW (Kim, T. -W.); Urteaga, M (Urteaga, M.); Brar, B (Brar, B.)
来源出版物: ELECTRONICS LETTERS 卷: 48 期: 21 页: 1352-1353 DOI: 10.1049/el.2012.2699 出版年: OCT 11 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 10
摘要: A report is presented on 100 nm and 200 nm InAs PHEMTs on an InP substrate with a record f(T) performance. This result was obtained by reducing a parasitic delay associated with the extrinsic gate capacitances of the device, as well as by using an InAs sub-channel to improve carrier transport properties. In particular, a 100 nm InAs PHEMT exhibits excellent performance, such as g(m,max) = 2 S/mm, f(T) = 421 GHz and f(max) = 620 GHz at V-DS = 0.7 V. The device also shows a well-balanced f(T) and f(max) in excess of 400 GHz, even at V-DS = 0.5 V. In addition, the device gains about 70 % improvement in f(T) as L-g shrinks down from 200 to 100 nm. The results obtained in this work should make this technology of great interest to a multiplicity of applications and guide a realistic path in trying to achieve a 1 THz f(T) from III-V HEMTs in the future.
入藏号: WOS:000309961500025
语种: English
文献类型: Article
KeyWords Plus: CUTOFF FREQUENCY; HEMTS; GHZ
地址: [Kim, T. -W.] SEMATECH, Albany, NY 12203 USA
[Kim, D. -H.; Chen, P.; Urteaga, M.; Brar, B.] Teledyne Sci Co, Thousand Oaks, CA 91360 USA
通讯作者地址:
电子邮件地址: vtsrc3@gmail.com
出版商: INST ENGINEERING TECHNOLOGY-IET
出版商地址: MICHAEL FARADAY HOUSE SIX HILLS WAY STEVENAGE, HERTFORD SG1 2AY, ENGLAND
Web of Science 类别: Engineering, Electrical & Electronic
研究方向: Engineering
IDS 号: 022LS
ISSN: 0013-5194
29 字符的来源出版物名称缩写: ELECTRON LETT
ISO 来源出版物缩写: Electron. Lett.
来源出版物页码计数: 2