277.
标题: Investigation of high-frequency small-signal characteristics of FETs/HEMTs
作者: Starikov, E (Starikov, E.); Shiktorov, P (Shiktorov, P.); Gruzinskis, V (Gruzinskis, V.)
来源出版物: SEMICONDUCTOR SCIENCE AND TECHNOLOGY 卷: 27 期: 4 文献号: 045008 DOI: 10.1088/0268-1242/27/4/045008 出版年: APR 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: 37
摘要: Hydrodynamic calculations of the components of small-signal admittance and impedance matrix are performed for InGaAs HEMT. Modifications of high-frequency small-signal response spectra in going (i) from ungated to gated structures and (ii) from a thermally equilibrium state without a stream to a nonequilibrium state with the stream of carriers in the FET/HEMT channel are considered. The main attention is paid to the spectral behaviour of the admittance and impedance in the THz frequency range related to the excitation of 2D and 3D plasma oscillations in the gated and ungated regions of the conducting channel of FET/HEMT, respectively. Accompanied effects related to plasma phenomena such as the competition of 2D and 3D plasma oscillations, amplification of 3D and Dyakonov-Shur instability of 2D plasma oscillations and resonant detection of external THz action are discussed.
入藏号: WOS:000301883000009
语种: English
文献类型: Article
KeyWords Plus: ELECTRON-MOBILITY TRANSISTORS; TERAHERTZ RADIATION; SEMICONDUCTOR-DEVICES; EQUIVALENT-CIRCUIT; TIME MECHANISMS; PLASMA-WAVES; DC CURRENT; NOISE; GENERATION; MESFETS
地址: [Starikov, E.; Shiktorov, P.; Gruzinskis, V.] Ctr Phys Sci & Technol, Inst Semicond Phys, LT-01108 Vilnius, Lithuania
通讯作者地址: Starikov, E (通讯作者),Ctr Phys Sci & Technol, Inst Semicond Phys, A Gostauto 11, LT-01108 Vilnius, Lithuania
电子邮件地址: janc@pav.pfi.lt
出版商: IOP PUBLISHING LTD
出版商地址: TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND
Web of Science 分类: Engineering, Electrical & Electronic; Materials Science, Multidisciplinary; Physics, Condensed Matter
学科类别: Engineering; Materials Science; Physics
IDS 号: 913MV
ISSN: 0268-1242
29 字符的来源出版物名称缩写: SEMICOND SCI TECH
ISO 来源出版物缩写: Semicond. Sci. Technol.
来源出版物页码计数: 12