192
Accession number:20115014599026
Title:Parametric instability in the resonance detector of terahertz radiation based on FET with cylindrical gate electrode
Authors:Arsenin, A.V. (0); Gladun, A.D. (0); Leiman, V.G. (0); Semenenko, V.L. (0); Ryzhii, V.I. (0)
Corresponding author:Arsenin, A.V.
Source title:Journal of Communications Technology and Electronics
Abbreviated source title:J. Commun. Technol. Electron.
Volume:56
Issue:10
Issue date:October 2011
Publication year:2011
Pages:1242-1248
Language:English
ISSN:10642269
CODEN:JTELEJ
Document type:Journal article (JA)
Publisher:Maik Nauka-Interperiodica Publishing, Profsoyuznaya Ul 90, Moscow, 117997, Russia
Abstract:A possibility of the parametric instability in the resonance detector of the modulated terahertz radiation is analyzed. The detector represents a system of capacitively coupled plasma and mechanical resonators. A layer of 2D electron gas with a relatively high electron mobility and a cylindrical gate electrode that is fixed at the ends serve as the first and second resonators, respectively. The method of coupled oscillations is used to obtain the dependence of the minimum threshold pump power of the plasma circuit that corresponds to the excitation of the parametric instability on the main geometrical and electric parameters of the system.
Number of references:20