

Power HEMTs Transistors for Radar Applications

Authors : A. boursali, A. Guen Bouazza, M. Khaouani, Z. Kourdi, B. Bouazza

Abstract : This paper presents the design, development and characterization of the devices simulation for X-Band Radar applications. The effect of an InAlN/GaN structure on the RF performance High Electron Mobility Transistor (HEMT) device. Systematic investigations on the small signal as well as power performance as functions of the drain biases are presented. Were improved for X-band applications. The Power Added Efficiency (PAE) was achieved over 23% for X-band. The developed devices combine two InAlN/GaN HEMTs of 30nm gate periphery and exhibited the output power of over 50W. An InAlN/GaN HEMT with 30nm gate periphery was developed and exhibited the output power of over 120W.

Keywords : InAlN/GaN, HEMT, RF analyses, PAE, X-Band, radar

Conference Title : ICMON 2015 : International Conference on Microelectronics, Optoelectronics and Nanoelectronic Engineering

Conference Location : Barcelona, Spain

Conference Dates : August 17-18, 2015