



2015, Chapter 6, pag. 254-203

THz Electronics

Feiginov Michael, Gonzalo Ramón, Maestrojuán Itziar, Cojocari Oleg, Hoefle Matthias, Limiti Ernesto

<https://doi.org/10.1002/9781118920411.ch6>

Abstract

Several key topics in THz electronics are discussed. We describe the operating principles, limitations, and state of the art of resonant tunnelling diodes (RTDs) and THz RTD oscillators. Furthermore, THz fundamental or sub harmonic flip chip Schottky diode mixer configurations are described. Different measurement techniques are commented and their properties are outlined. The chapter also relates the use of advanced mixer configurations. Fabrication technologies for Schottky diode based structures for THz wave applications are included together with the low barrier Schottky diode characterization for millimetre wave detector design. Finally, LNAs for sub millimeter waves are discussed, including up to date design approaches and resulting performance, with emphasis on the necessary technological modification to extend MMIC approaches toward the THz region.