

Abstract

The terahertz band requires high-power sources. The AlGaIn/GaN HEMT is one option for amplifying frequencies within the terahertz spectrum. To achieve the required operating frequency, the device is miniaturized. A T-gate structure is utilized to minimize parasitic capacitances and high gate resistances. In this work, experiments are conducted to fabricate T-gates with a foot length of less than 100 nm and a maximum foot/wing ratio. For this purpose, resists for a trilayer process were calibrated to obtain the isofocal dose. T-gates with a gate length of up to 60 nm were produced. For larger foot lengths of 70 to 90 nm, a foot/wing ratio of 1:7 to 1:8 was also achieved. The results can be expanded, improved, and stabilized through follow-up experiments.