

Table captions

Table I. Functions of critical parameters for GaN.

Table II. Comparison of 300 K semiconductor material properties.

Table III. Sample structures of the high electron mobility transistors and Hall measurement.

Table IV. Carrier concentrations and mobility for n-GaN, n-AlGaN used in metallization study.

Table V. The specific contact resistivity of Ti/Al/Ni/Au contact on **n-GaN** under different annealing temperatures in N₂ ambient for 30 sec.

Table VI. The specific contact resistivity of Ti/Al/Ni/Au contact on **n-AlGaN** under different annealing temperatures in N₂ ambient for 30 sec.

Table VII. The specific contact resistivity of Ti/Al/Pt/Au contact on n-AlGaN at 950 °C in N₂ atmosphere after different annealing times.

Table VIII. The specific contact resistivity of Ohmic contacts after various annealing conditions.

Table IX. The diode characteristics of WN_x/GaN and TiWN_x/GaN after various annealing temperatures.