ABSTRACT

STACKED LDD HIGH FREQUENCY LDMOSFET

A novel silicon RF LDMOSFET structure based on the use of a stacked LDD, is disclosed. The LDD has been modified from a single layer of N type material to a stack of three layers. These are upper and lower N type layers with a P type layer between them. The upper N type layer is heavily doped to reduce the on-resistance of the device, while the lower N type layer is lightly doped to reduce the output capacitance, thereby improving the high frequency performance. The middle P layer is heavily doped which allows it to bring about pinch-off of the two N layers, thereby raising the device's breakdown voltage. A process for manufacturing the device, as well as experimental data concerning its performance are also given.

(FIGURE 2 IS SUGGESTED FOR PUBLICATION)