ABSTRACT

A power management integrated circuit includes a buck converter that includes a first metal oxide semiconductor field effect transistor (MOSFET) having a first conductivity type and a second MOSFET having a second conductivity type. The first MOSFET includes transistor sets that are two-dimensionally arranged. Each transistor set includes source regions, drain regions, and gate electrodes between the source regions and the drain regions. Each source region and each drain region includes an impurity region having the first conductivity type, and each source region further includes segment regions having the second conductivity type. A first source region is spaced apart from a second source region in a first direction, and a number of the segment regions in the first source region is different from a number of the segment regions in the second source region.

FIG. 10