SEMICONDUCTOR DEVICE AND METHOD FOR MANUFACTURING SAME

ABSTRACT

In the fabrication of semiconductor devices such as active matrix displays, the need to pattern resist masks in photolithography increases the number of steps in the fabrication process and the time required to complete them and consequently represents a substantial cost. This invention provides a method for forming an impurity region in a semiconductor layer 303 by doping an impurity element into the semiconductor layer self-aligningly using as a mask the upper layer (a second conducting film 306) of a gate electrode formed in two layers. The impurity element is doped into the semiconductor layer through the lower layer of the gate electrode (a first conducting film 305), and through a gate insulating film 304. By this means, an LDD region 313 of a GOLD structure is formed in the semiconductor layer 303.

(Fig. 7)

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