A METHOD OF MANUFACTURING A SEMICONDUCTOR DEVICE

ABSTRACT OF THE DISCLOSURE

TFT structures optimal for driving conditions of a pixel portion and driving circuits are obtained using a small number of photo masks. First through third semiconductor films are formed on a first insulating film. First shape first, second, and third electrodes are formed on the first through third semiconductor films. The first shape first, second, third electrodes are used as masks in first doping treatment to form first concentration impurity regions of one conductivity type in the first through third semiconductor films. Second shape first, second, and third electrodes are formed from the first shape first, second, and third electrodes. A second concentration impurity region of the one conductivity type which overlaps the second shape second electrode is formed in the second semiconductor film in second doping treatment. Also formed in the second doping treatment are third concentration impurity regions of the one conductivity type which are placed in the first and second semiconductor films. Fourth and Fifth concentration impurity regions having the other conductivity type that is opposite to the one conductivity type are formed in the third semiconductor film in third doping treatment.

(Figures 3A and 3B)