

ABSTRACT

CONTACT STRUCTURE FOR SEMICONDUCTOR DEVICES

5 A semiconductor device has a substrate of one type of semiconductor material, such as silicon. A contact structure is formed on the substrate, and the contact structure is formed of a compound of a metal and a second type of semiconductor material, such as germanium. The contact structure according to embodiments of the present invention include a semiconductor material which a
10 different semiconductor material forming the substrate. Higher or lower barrier height is obtained by embodiment of the invention. A method for forming a contact structure in which a substrate of one type of semiconductor material is provided. A layer of another different semiconductor material is formed on the substrate. A layer of metal is then formed on the layer of the other different
15 semiconductor material. Upon annealing, a contact structure is formed on the substrate, which is a compound of the metal and the other different semiconductor material, onto the substrate.

(Fig. 1)