

Abstract

Method for manufacturing a high-resistivity semiconductor-on-insulator substrate

The invention relates to a method for manufacturing a high-resistivity semiconductor-on-insulator substrate comprising the steps of a) forming a dielectric layer 2 and a semiconductor layer 3 over a high-resistivity substrate 1, such that the dielectric layer 2 is arranged between the high-resistivity substrate 1 and the semiconductor layer 3; b) forming a hard mask or resist 4 over the semiconductor layer 3, wherein the hard mask or resist 4 has at least one opening 5 at a predetermined position; c) forming at least one doped region 7 in the high-resistivity substrate 1 by ion implantation of an impurity element through the at least one opening 5 of the hard mask or resist 4, the semiconductor layer 3 and the dielectric layer 2; d) removing the hard mask or resist 4; and e) forming a radiofrequency, RF, circuit in and/or on the semiconductor layer 3 at least partially overlapping the at least one doped region 7 in the high-resistivity substrate 1.

Fig. 3