

ABSTRACTMETHOD OF MANUFACTURING A POWER DIODE

The all epitaxial process starts with a high resistivity silicon substrate (10). Alternating layers (14-24) of silicon and silicon-germanium are epitaxially grown on the substrate under conditions which create a region with misfit dislocations. A low resistivity silicon layer (28) is then grown over the region. The material is inverted such that the high resistivity layer (10) can be used to form the base of the device. The thickness of the high resistivity layer is adjusted to equal the width of the base of the semiconductor device to be fabricated.

Fig. 1