This Sheet Has Been Replaced



LOCAL INTERCONNECTS AND METHOD FOR MAKING ELECTRICAL LOCAL INTERCONNECTS

ABSTRACT OF THE DISCLOSURE

A method for producing an interconnect on a semiconductor device has silicon containing conductive surfaces and dielectric surfaces. The process includes forming separate regions of a blanket first refractory metal silicide on the silicon containing conductive surfaces, the first refractory metal silicide being composed of a first refractory metal and silicon from the surfaces, forming a blanket second refractory metal layer over the device, forming a blanket α-Si layer over the second refractory metal layer, forming a mask over the device to pattern an interconnect between the separate regions, then etching away the unwanted portions of the refractory metal layers and the α-Si layer, performing a rapid thermal annealing process on the device forming a low resistance refractory metal silicide between the α-Si layer and the second refractory metal layer, and then etching away the unwanted portions of the refractory metal layers that are not covered by the refractory metal silicide.