Contact Formation for a Semiconductor Device

ABSTRACT

An improved method of forming a contact hole 122 through an insulating layer 112 is disclosed herein. In one embodiment, a first mask layer 110 (e.g., polysilicon or photoresist) is formed over the insulating layer 112. The first mask layer 110 is patterned and etched to expose a portion of the insulating layer 112. The exposed portion of the insulating layer 112 is then etched to form a contact hole having a bottom surface and an inner side surface. A sidewall mask layer 120 (or sidewall pipe 120) is formed along the inner surface of the contact hole. The bottom surface of the contact hole is then etched using the sidewall mask layer 120 as an etch mask to form a contact hole 122. Finally, the contact hole can be filled with a conductive material.

Figure 3