METHOD TO FORM A CONTACT HOLE

Abstract

A example method of forming of a contact hole by removing residue and oxide spacer beside a nitride spacer after a CF containing etch. We provide a gate structure with nitride spacers on the sidewalls of the gate. We provide a dielectric layer (oxide) over the substrate and gate structure. We form a contact photoresist pattern over the oxide dielectric layer. We etch the oxide dielectric layer using fluorocarbons (CxFy) to form contact openings and residual spacer. The photoresist is striped. Preferably, a NF_3 and N_2 and H_2 plasma treatment is performed to deposit a byproducts layer over the residual spacer. The byproducts layer and residual spacer are removed preferably using one of the following processes: (1) heat (2) DI rinse or (3) IR or UV radiation.

Figure 1