METHOD OF FORMING SHALLOW TRENCH

ISOLATION STRUCTURES FOR INTEGRATED CIRCUITS

ABSTRACT

A method of forming shallow trench isolation (STI) structures using a multi-step etch process is disclosed. The first etch step is performed by selectively etching the substrate at a substantially higher etching rate than the mask layer to form preliminary openings having steep taper angles. The second etch step is performed by non-selectively etching the substrate to deepen the preliminary openings to form STI gaps with substantially flat bottoms.

Fig. 2