Abstract of Disclosure

TWO-STEP METHOD FOR ETCHING A FUSE WINDOW ON A SEMICONDUCTOR SUBSTRATE

A two-step method for etching a fuse window on a semiconductor substrate is provided. A semiconductor substrate having thereon a fuse interconnect-wire is formed in a dielectric film stack. The dielectric film stack includes a target dielectric layer overlying said fuse interconnect-wire, an intermediate dielectric layer and a passivation layer. A photoresist layer is formed on the passivation layer with an opening that defines said fuse window. A first dry etching process is performed to non-selectively etch the passivation layer and the intermediate dielectric layer through the opening thereby exposing the target dielectric layer. The thickness of the target dielectric layer after the first dry etching process is then measured. An APC-controlled second dry etching process is performed to etch a portion of the exposed target dielectric layer, thereby reliably forming the fuse window.

Figure 10