

Abstract

METHOD FOR FORMING A THIN-FILM, ELECTRICALLY BLOWABLE FUSE WITH A REPRODUCIBLE BLOWING WATTAGE

A method for forming a thin film, electrically blowable fuse with reproducible blowing wattage using a sacrificial metal patch over a fuse dielectric layer and two etch processes; wherein the first etch process is selective to the metal patch and the second etch process is selective to the fuse dielectric layer. A fuse element, having an element width, is formed over a semiconductor structure, and a fuse dielectric layer is formed over the fuse element. A sacrificial metal patch is formed on the fuse dielectric layer; wherein the patch width being greater than the fuse element width. A second dielectric layer is formed on the sacrificial metal patch, and additional metal layers and dielectric layers may be formed over the second dielectric layer, but only the dielectric layers will remain over the fuse element. The second dielectric layer and any overlying dielectric layers are patterned to form a fuse window opening, having a width greater than the sacrificial metal patch, using a first fuse window etch selective to the sacrificial metal patch. Then, the sacrificial metal patch is etched through the fuse window opening using a second fuse window etch selective to the fuse dielectric layer, leaving a reproducible thickness of the fuse dielectric layer overlying the fuse element; thereby providing a reproducible blowing wattage.

(FIGURE 1 IS SUGGESTED FOR PUBLICATION)