Diffusion Barrier For Damascene Structures

ABSTRACT

A damascene structure for semiconductor devices is provided. In an embodiment, the damascene structure includes trenches formed over vias that electrically couple the trenches to an underlying conductive layer such that the trenches have varying widths. The vias are lined with a first barrier layer. The first barrier layers along the bottom of vias are removed such that a recess formed in the underlying conductive layer. The recesses formed along the bottom of vias are such that the recess below narrower trenches is greater than the recess formed below wider trenches. In another embodiment, a second barrier layer may then be formed over the first barrier layer. In this embodiment, a portion of the conductive layer may be interposed between the first barrier layer and the second barrier layer.

[FIG. 2a]