

INTERCONNECT STRUCTURE AND METHOD OF MANUFACTURING A DAMASCENE STRUCTURE

ABSTRACT

An interconnect structure is provided, including a layer of dielectric material having at least one opening and a first barrier layer on sidewalls defining the opening. A ruthenium-containing second barrier layer overlays the first barrier layer, the second barrier layer having a ruthenium zone, a ruthenium oxide zone, and a ruthenium-rich zone. The ruthenium zone is interposed between the first barrier layer and the ruthenium oxide zone. The ruthenium oxide zone is interposed between the ruthenium zone and the ruthenium-rich zone.

Figure 1