ABSTRACT

BI-LAYER RESIST PROCESS FOR DUAL DAMASCENE

The current invention teaches the use of e-beam patterning techniques for forming contact and via holes of diameter less than about 0.15 microns down to 0.05 microns. E-beam lithography has higher resolution (down to 30-50 nanometers) as compared to 130-150 nanometer when using deep ultra violet (DUV) photolithography patterning techniques. In addition the invention uses a mix and match approach by employing a conventional I-line, or deep UV, resist to form the trench pattern and e-beam lithography tools to form the contact and vial hole patterns. A simplified process scheme is developed where contact/via holes are formed first on solvent developable e-beam resist and the trench pattern is formed on aqueous developable photoresist coated on top of the e-beam resist.

FIGURE 5 IS SUGGESTED FOR PUBLICATION