ADVANCED DAMASCENE-PLANAR STACK CAPACITOR FABRICATION METHOD

ABSTRACT OF THE DISCLOSURE

Capacitor storage charge can be increased by increasing storage node area. A high aspect surface ratio stack capacitor is produced without increasing overall cell dimensions. The node is formed with layers of low doped and high doped concentration borophosphosilicate glass which is deposited by a single process step with precise nanometer dimensions, are selectively etched so that either doped or undoped layers will have a higher etch rate. This etching creates finger-like projections in the node, which provide for greater surface area using a very simplified process requiring fewer processing steps.

Fig. 1