

Wiring Structure to Minimize Stress Induced Void Formation

ABSTRACT OF THE DISCLOSURE

A wiring structure with improved resistance to void formation and a method of making the same are described. The wiring structure has a first conducting layer that includes a large area portion which is connected to an end of a protrusion with a plurality of “n” overlapping segments and at least one bending portion. The other end of the protrusion is connected to the bottom of a via which has an overlying second conducting layer. A bend is formed by overlapping the ends of two adjacent segments at an angle between 45° and 135°. The protrusion may also include at least one extension at a segment end beyond a bend. A bending portion and extension are used as bottlenecks to delay the diffusion of a vacancy from the large area portion to the vicinity of the via and is especially effective for copper interconnects or in a via test structure.

Figure 4