WAFER INTERGRATED RIGID SUPPORT RING

ABSTRACT

A shadow mask (34') for depositing solder bumps includes additional dummy holes (50) located adjacent to holes corresponding to most of the perimeter chips of the wafer. The additional dummy holes (50) provide more uniform plasma etching of contacts of the wafer (24), improve etching of contacts (20) of perimeter chips (22), and lower contact resistance of contacts (20) of the perimeter chips(22). The extra holes (50) also provide solder bumps (32') outside the perimeter chips (22) that can be used to support a second shadow mask (60) for deposition of an additional material, such as tin, on the reflowed solder bumps for mounting the chips on a plastic substrate at low temperature. An improved mask to wafer alignment aid is formed from standard solder bumps. The improved alignment aid avoids damage to test probes and provides improved course alignment.

FIG 2b