ABSTRACT OF THE DISCLOSURE

SEMICONDUCTOR SUBSTRATES INCLUDING INPUT/OUTPUT REDISTRIBUTION USING WIRE BONDS AND ANISOTROPICALLY CONDUCTIVE FILM, METHODS OF FABRICATION AND ASSEMBLIES INCLUDING SAME

Methods and apparatus for eliminating wire sweep and shorting while avoiding the use of under-bump metallization and high cost attendant to the use of conventional redistribution layers. An anisotropically conductive (z-axis) conductive layer in the form of a film or tape is applied to the active surface of a die and used as a base for conductive redistribution bumps formed on the anisotropically conductive layer, bonded to the ends of conductive columns thereof and wire bonded to the bond pads of the die. Packages so formed may be connected to substrates either with additional wire bonds extending from the conductive redistribution bumps to terminal pads or by flip-chip bonding using conductive bumps formed on the conductive redistribution bumps to connect to the terminal pads. The acts of the methods may be performed at the wafer level. Semiconductor die assemblies using the present invention are also disclosed.

[FIG. 12]