

WAFER LEVEL PACKAGE STRUCTURE, AND SENSOR DEVICE OBTAINED
FROM THE SAME PACKAGE STRUCTURE

ABSTRACT

A wafer level package structure with a plurality of compact sensors such as acceleration sensors and gyro sensors is provided. This package structure is
5 composed of a semiconductor wafer with plural sensor units, and a pair of package wafers bonded to both surfaces of the semiconductor wafer. Each of the sensor units has a frame having an opening, a movable portion held in the opening to be movable relative to the frame, and a detecting portion for outputting an electric signal according to a positional displacement of the
10 movable portion. Since the semiconductor wafer is bonded to each of the package wafers by a solid-phase direct bonding without diffusion between a surface-activated region formed on the frame and a surface-activated region formed on the package wafer, it is possible to prevent that variations in sensor characteristics occur due to residual stress at the bonding interface.

(Figs. 2A & 2B)