

Abstract

A semiconductor device has a substrate with a stiffening layer disposed over the substrate. The substrate has a circular shape or rectangular shape. A plurality of semiconductor die is disposed over a portion of the substrate while leaving an open area of the substrate devoid of the semiconductor die. The open area of the substrate devoid of the semiconductor die includes a central area or interstitial locations among the semiconductor die. The semiconductor die are disposed around a perimeter of the substrate. An encapsulant is deposited over the semiconductor die and substrate. The substrate is removed and an interconnect structure is formed over the semiconductor die. By leaving the predetermined areas of the substrate devoid of semiconductor die, the warping effect of any mismatch between the CTE of the semiconductor die and the CTE of the encapsulant on the reconstituted wafer after removal of the substrate is reduced.

(Fig 7a)