Abstract

SEMICONDUCTOR DEVICE WITH PROTECTIVE STRUCTURE AROUND SEMICONDUCTOR DIE FOR LOCALIZED PLANARIZATION OF INSULATING LAYER

A semiconductor wafer contains a plurality of semiconductor die separated by a saw street. A contact pad is formed over an active surface of the semiconductor die. A protective pattern is formed over the active surface of the semiconductor die between the contact pad and saw street of the semiconductor die. The protective pattern includes a segmented metal layer or plurality of parallel segmented metal layers. An insulating layer is formed over the active surface, contact pad, and protective pattern. A portion of the insulating layer is removed to expose the contact pad. The protective pattern reduces erosion of the insulating layer between the contact pad and saw street of the semiconductor die. The protective pattern can be angled at corners of the semiconductor die or follow a contour of the contact pad. The protective pattern can be formed at corners of the semiconductor die.
(Fig. 7a)