

ABSTRACT OF THE DISCLOSURE

A substrate has a bonding region and a sensing region. A first dielectric layer is formed overlying the substrate and has a dielectric island surrounded by a ring-shaped trench. A first conductive layer is formed in the ring-shaped trench of the first dielectric layer. A passivation layer is formed overlying the first dielectric layer and has an opening, in which the opening corresponds to the bonding region and the sensing region and exposes the dielectric island and a part of the first conductive layer. A second conductive layer covers the opening of the passivation layer and is electrically connected to the first conductive layer.