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Platinized or PZT Coated Product Specifications

Product: PZT or PNZT Coated Wafers with Platinum Bottom Electrodes

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Description:
The product starts with a silicon wafer with 0.5µ of thermal silicon dioxide on its surface. The customer may specify the wafer type for purchase by Radiant or the customer may supply the wafers. Otherwise, Radiant generally uses 550µ thick <100> boron doped silicon wafers with 10Ω-cm resistivity. Radiant deposits a 400Å layer of titanium dioxide on the surface of the silicon dioxide followed by 1500Å of pure platinum. The platinum is not patterned. Radiant then deposits either 20/80 PZT up to 3700Å thickness or 4% niobium doped 20/80 PZT (PNZT) up to 1µ thickness on the platinum surface using an MOD technique. PNZT sintering takes place at 650°C.

The customer may elect to supply wafers having mechanical features in or under the silicon surface. The primary requirement is that the surface of the wafer be silicon dioxide. The maximum temperature seen by the wafers during processing is 850°C.

It is possible to deposit the platinum/PZT or platinum/PNZT on both sides of double side polished wafers. In this case, the bottom electrode is deposited on both sides first followed by the PNZT on one side and closing with the PNZT on the other.

Thin silicon wafers may be used in place of the standard 550µ thick silicon wafers but allowances must be made for breakage during processing.