Method for Reducing UBM Undercut in Metal Bump Structures

ABSTRACT

A method of forming a device includes providing a wafer including a substrate; and forming an under-bump metallurgy (UBM) layer including a barrier layer overlying the substrate and a seed layer overlying the barrier layer. A metal bump is formed directly over a first portion of the UBM layer, wherein a second portion of the UBM layer is not covered by the metal bump. The second portion of the UBM layer includes a seed layer portion and a barrier layer portion. A first etch is performed to remove the seed layer portion, followed by a first rinse step performed on the wafer. A second etch is performed to remove the barrier layer portion, followed by a second rinse step performed on the wafer. At least a first switch time from the first etch to the first rinse step and a second switch time from the second etch to the second rinse step is less than about 1 second.

FIG. 1