STRUCUTRE AND METHOD TO FABRICATE A PROTECTIVE SIDEWALL LINER FOR AN OPTICAL MASK

Abstract

Methods and structures for optical masks that have a liner on the trench sidewalls. An example structure embodiment comprises: a substrate having a first region, a second region and a third region; a first trench in the first region; a first region having a first thickness of a first material, the first material having a first amount of transmission of light at the wavelength, the second region having a second thickness of the first material, such that the second thickness is greater than the first thickness by a first difference, the first difference being equivalent to a phase shift of 180 degrees at the wavelength, and a third region located on the substrate, the third region having a third thickness of the first material, such that the third thickness is equal to or greater than the second thickness; a liner on the sidewalls of the trench.

Fig: 1F