

Halftone Phase Shift Photomask Blank

ABSTRACT

5 A halftone phase shift photomask blank has on a transparent substrate, a first film
serving as a halftone phase shift film, a second film serving as a light shielding film, a third
film serving as a hard mask film, and a fourth film. The first and third films are formed of
silicon-containing materials which are resistant to chlorine base dry etching and removable
by fluorine base dry etching. The second and fourth films are formed of silicon-free,
10 chromium-containing materials which are resistant to fluorine base dry etching and
removable by chlorine base dry etching.

Fig. 1A