SEMICONDUCTOR DEVICE EMPLOYING AN EXTENSION SPACER AND A METHOD OF FORMING THE SAME

ABSTRACT OF THE DISCLOSURE

A semiconductor device formed on a semiconductor substrate and a method of forming the same. In one embodiment, the semiconductor device includes a gate over the semiconductor substrate and a dielectric liner on a sidewall of the gate. The semiconductor device also includes an extension spacer adjacent and extending laterally beyond the dielectric liner along the semiconductor substrate. The semiconductor device further includes a source/drain located below an upper surface of the semiconductor substrate and adjacent a channel region under the gate. The source/drain extends under the dielectric liner and the extension spacer. The semiconductor device still further includes a silicide region over a portion of the source/drain and extending laterally beyond the extension spacer along the semiconductor substrate. Thus, the extension spacer is interposed between the dielectric liner and the silicide region located over a portion of the source/drain.

Figure 7