ABSTRACT

A semiconductor device may include a peripheral circuit; a first gate structure disposed on the peripheral circuit; a second gate structure disposed on the first gate structure; a dielectric bonding structure extending between the first gate structure and the second gate structure; a first contact via extending through the first gate structure and extending into the dielectric bonding structure; a second contact via extending through the second gate structure and connected to the first contact via; and a peripheral circuit bonding structure electrically connecting the first contact via and the peripheral circuit to each other.

FIG. 1