ABSTRACT

The present disclosure relates to a semiconductor device and method of operating the same. A semiconductor device includes: a charge pump circuit configured to generate an output voltage by pumping an input voltage according to first and second main clocks, a voltage detection circuit configured to generate a comparison signal by comparing the output voltage with a reference voltage, and a driving control circuit configured to selectively invert first and second external clocks at a start time of an activation period of the comparison signal to receive the inverted clocks as first and second internal clocks, to generate the first and second main clocks according to the first and second internal clocks during the activation period of the comparison signal while controlling a transition order so that the second main clock transitions after the first main clock transitions, and to store logic levels of the first and second main clocks as first and second preliminary clocks, respectively, at an end time of an activation period of the comparison signal.

FIG. 10