

ABSTRACT

An Electro-Static Discharge (ESD) protection circuit and a semiconductor device are provided. The ESD protection circuit is electrically connected to a first pad and a second pad. The ESD protection circuit includes an ESD transistor having a control terminal, a first terminal electrically connected to the first pad, a second terminal electrically connected to the second pad, and a substrate terminal; and an electro-static pulse detection circuit having an upper terminal electrically connected to the first pad, a lower terminal electrically connected to the second pad, and an output terminal electrically connected to the control terminal and the substrate terminal. The present application has the advantages that false start of the ESD protection circuit is avoided, and the delay time is prolonged by using the electro-static pulse detection circuit, so that the ESD transistor fully discharges electro-static charges. Furthermore, the control terminal of the ESD transistor is short-circuited with the substrate terminal, which increases the potential of the substrate terminal, and then the electro-static charges can be quickly discharged by the ESD transistor, thereby enhancing the discharge capacity of the electro-static charge of the ESD protection circuit.