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(54) **POWER SEMICONDUCTOR DEVICE WITH VOLTAGE CLAMP CIRCUIT**

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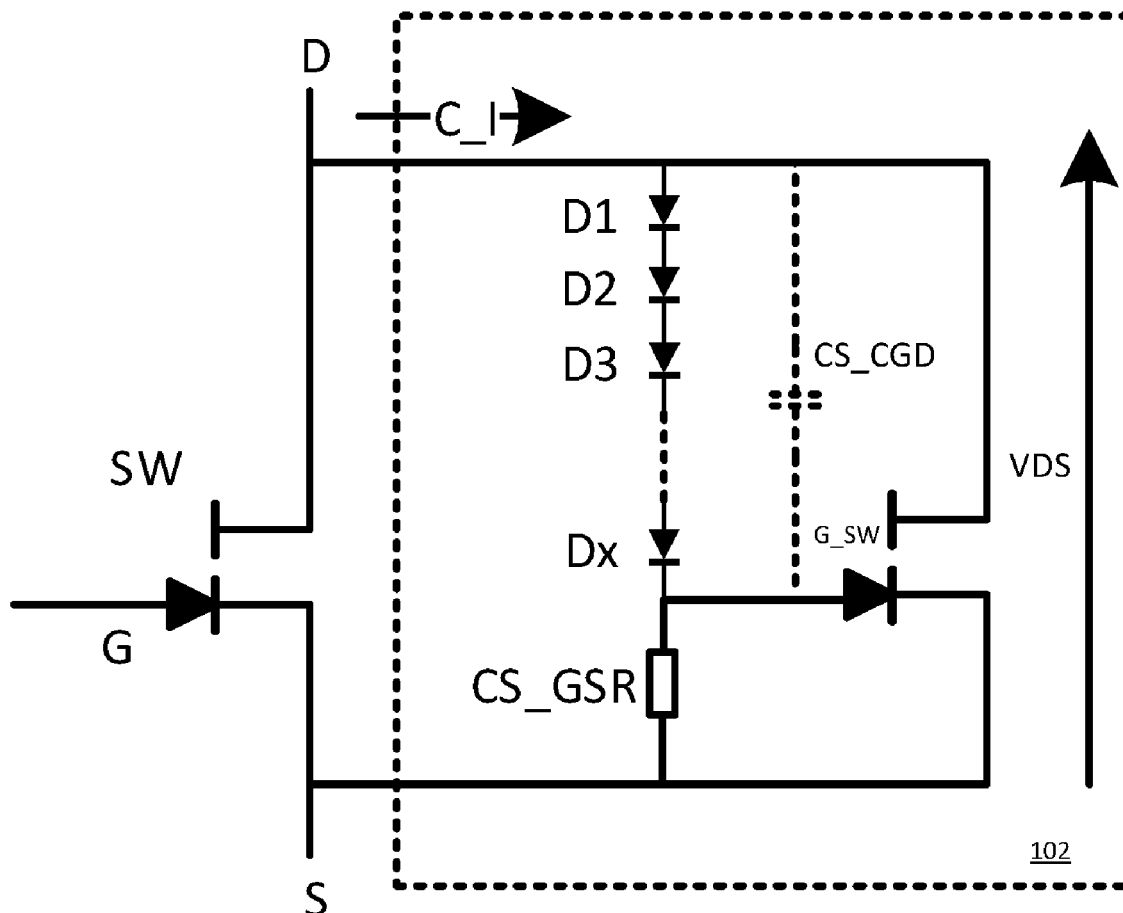
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ABSTRACT

A power semiconductor device includes: a main power switch having a drain, source, and gate; and a voltage clamp circuit in parallel with the main power switch and having a clamp voltage less than a breakdown voltage of the main power switch. The voltage clamp circuit includes: a pulldown switch having a normally-on gate electrically connected to the source of the main power switch; a plurality of series-connected diodes electrically connected between the drain of the main power switch and a drain of the pulldown switch; a voltage clamp device electrically connected between a source of the pulldown switch and the source of the main power switch; and a second power switch having a normally-off gate electrically connected to the drain of the pulldown switch, a drain electrically connected to the drain of the main power switch, and a source electrically connected to the source of the pulldown switch.

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