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(57) **ABSTRACT**

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A semiconductor device includes a first transistor that flows a current to a load, a current generation circuit that outputs a current corresponding to a power consumption of the first transistor, a temperature sensor, a resistor-capacitor network coupled between the current generation circuit and the temperature sensor and an overheat detection circuit coupled to a connection point of the current generation circuit and the resistor-capacitor network, wherein the resistor-capacitor network comprises a resistor and a capacitor corresponding to a thermal resistance and a thermal capacitance between the first transistor and the temperature sensor.

