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(54) **SEMICONDUCTOR DEVICE AND METHOD OF FORMING THE SAME**

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ABSTRACT

A semiconductor device includes a substrate, a gate trench in the substrate, a gate insulating film in the gate trench, a titanium nitride (TiN)-lower gate electrode film on the gate insulating film, the titanium nitride (TiN)-lower gate electrode film including a top surface, a first side surface, and a second side surface opposite the first side surface, a polysilicon-upper gate electrode film on the titanium nitride (TiN)-lower gate electrode film, and a gate capping film on the polysilicon-upper gate electrode film. A center portion of the top surface of the titanium nitride (TiN)-lower gate electrode film overlaps a center portion of the polysilicon-upper gate electrode film in a direction that is perpendicular to a top surface of the substrate, and each of the first side surface and the second side surface of the titanium nitride (TiN)-lower gate electrode film is connected to the gate insulating film.

