

# (19) United States

# (12) Patent Application Publication (10) Pub. No.: US 2024/0213796 A1 **SEIKE**

## (43) **Pub. Date:**

Jun. 27, 2024

## (54) **SEMICONDUCTOR DEVICE**

(71) Applicant: **ROHM CO., LTD.**, Kyoto (JP)

(72) Inventor: Takeshi SEIKE, Kyoto (JP)

(21) Appl. No.: 18/394,415

(22) Filed: Dec. 22, 2023

(30)Foreign Application Priority Data

Dec. 27, 2022 (JP) ...... 2022-210811

## **Publication Classification**

(51) Int. Cl. H02J 7/34 (2006.01)H02H 9/04 (2006.01)H03K 5/22 (2006.01) (52) U.S. Cl. CPC ...... H02J 7/345 (2013.01); H02H 9/046 (2013.01); H03K 5/22 (2013.01)

(57) ABSTRACT

A semiconductor device includes: a capacitor connection terminal configured to enable an external connection of a capacitor; a charger configured to charge the capacitor; an ESD protector connected to the capacitor connection terminal; and a current injector including a same component which is the same as the ESD protector and is configured to inject a current based on a leakage current flowing through the same component into a charging path where charging is performed by the charger.

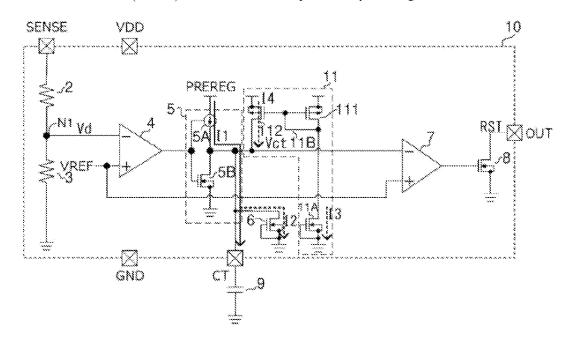


FIG. 4

