



(10) Pub. No.: US 2024/0235553 A9  
(48) Pub. Date: Jul. 11, 2024  
CORRECTED PUBLICATION

## Publication Classification

(51) **Int. Cl.**  
*H03K 19/0185* (2006.01)  
*H03K 3/356* (2006.01)

(52) **U.S. Cl.**  
CPC ..... *H03K 19/018571* (2013.01); *H03K 3/356113* (2013.01)

(57) **ABSTRACT**

(22) Filed: **Jul. 11, 2023**

### Prior Publication Data

(15) Correction of US 2024/0137023 A1 Apr. 25, 2024  
See (22) Filed.  
See (30) Foreign Application Priority Data.

(65) US 2024/0137023 A1 Apr. 25, 2024

(30) **Foreign Application Priority Data**

Oct. 21, 2022 (KR) ..... 10-2022-0136545  
Jan. 18, 2023 (KR) ..... 10-2023-0007105

A level shifter includes: an input circuit receiving an input signal swinging between a reference voltage and a first power supply voltage having a level higher than a level of the reference voltage; an output circuit outputting an output signal swinging between a second power supply voltage having a level higher than the level of the first power supply voltage and a third power supply voltage having a level higher than the level of the second power supply voltage; and a tolerant circuit connected between the input circuit and the output circuit, and configured to limit an output voltage of the input circuit to a range between the reference voltage and the second power supply voltage.

400

