

US 20240235547A9

(19) United States

(12) Patent Application Publication COOK et al.

(10) Pub. No.: US 2024/0235547 A9

(48) **Pub. Date:** Jul. 11, 2024 CORRECTED PUBLICATION

(54) POWER TRANSMISSION GATE USING CHARGE PUMP

(71) Applicant: Murata Manufacturing Co., Ltd., Kyoto (JP)

(72) Inventors: Aaron COOK, Windham, NH (US);

David J. PERREAULT, Cambridge, MA (US); John R. HOVERSTEN,

Arlington, MA (US)

(73) Assignee: Murata Manufacturing Co., Ltd.,

Kyoto (JP)

(21) Appl. No.: 18/465,384

(22) Filed: Sep. 12, 2023

Prior Publication Data

- (15) Correction of US 2024/0137018 A1 Apr. 25, 2024 See (22) Filed.
- (65) US 2024/0137018 A1 Apr. 25, 2024

Related U.S. Application Data

(60) Provisional application No. 63/380,612, filed on Oct. 24, 2022.

Publication Classification

(51) Int. Cl. *H03K 17/687* (2006.01) *H02M 3/07* (2006.01)

(57) ABSTRACT

Described is a power transmission gate which includes a charge pump, an NMOS transistor, and a gate driver circuit configured to power (or bias or "drive") a gate of the NMOS transistor. With this arrangement, a power transmission gate capable of achieving substantially the same resistance provided by prior art power transmission gates while having a footprint of just over one NMOS size unit is provided.

