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(19) **United States**(12) **Patent Application Publication**  
**LIU et al.**(10) **Pub. No.: US 2023/0231554 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **METHOD OF OPERATING DECOUPLING SYSTEM, AND METHOD OF FABRICATING SAME**(71) Applicant: **TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.**, Hsinchu (TW)(72) Inventors: **Szu-Lin LIU**, Hsinchu (TW);  
**Yi-Hsiang WANG**, Hsinchu (TW);  
**Jaw-Juinn HORNG**, Hsinchu (TW)(21) Appl. No.: **18/182,831**(22) Filed: **Mar. 13, 2023****Related U.S. Application Data**

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(57)

**ABSTRACT**

A method (of decoupling from voltage variations in a first voltage drop between first and second reference voltage rails) includes: electrically coupling one or more components to form a decoupling capacitance (decap) circuit; electrically coupling one or more components to form a filtered biasing circuit; and making an unswitched series electrical coupling of the decap circuit and the filtered biasing circuit between the first and second reference voltage rails.

