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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0360185 A1**
(43) **Pub. Date: Nov. 10, 2022**(54) **ISOLATED MULTI-PHASE DC/DC
CONVERTER WITH REDUCED QUANTITY
OF BLOCKING CAPACITORS**(71) Applicant: **Delta Electronics, Inc.**, Taipei (TW)(72) Inventors: **Jong Woo Kim**, Cary, NC (US); **Peter
Mantovanelli Barbosa**, Cary, NC (US)(21) Appl. No.: **17/812,360**(22) Filed: **Jul. 13, 2022****Related U.S. Application Data**(63) Continuation of application No. 17/106,343, filed on
Nov. 30, 2020, now Pat. No. 11,404,966.**Publication Classification**(51) **Int. Cl.**
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1/0043 (2021.05); **H02M 3/01** (2021.05)(57) **ABSTRACT**

The present disclosure provides an isolated multi-phase DC/DC converter with a reduced quantity of blocking capacitors. In one aspect, the converter includes a multi-phase transformer having a primary circuit and a secondary circuit magnetically coupled to the primary circuit, the primary circuit having a first quantity of terminals, and the secondary circuit having a second quantity of terminals; a third quantity of blocking capacitors, each being electrically connected in series to a respective one of the terminals of the primary circuit; and a fourth quantity of blocking capacitors, each being electrically connected in series to a respective one of the terminals of the secondary circuit. The third quantity is one less than the first quantity. The fourth quantity is one less than the second quantity.

