



US 20240178749A1

(19) **United States**(12) **Patent Application Publication**
Cheng et al.(10) **Pub. No.: US 2024/0178749 A1**(43) **Pub. Date: May 30, 2024**(54) **VOLTAGE CONVERTOR MODULE
INCLUDING A LEAD-FRAME, A UNITARY
BARE DIE AND A MOLDING BODY**(71) Applicant: **CYNTEC CO., LTD.**, Hsinchu (TW)(72) Inventors: **Chih-Tai Cheng**, Hsinchu (TW);
Pei-Yuan Chen, Hsinchu (TW)(73) Assignee: **CYNTEC CO., LTD.**, Hsinchu (TW)(21) Appl. No.: **18/516,826**(22) Filed: **Nov. 21, 2023****Related U.S. Application Data**(60) Provisional application No. 63/427,895, filed on Nov.
24, 2022.**Publication Classification**(51) **Int. Cl.**
H02M 3/00 (2006.01)
H02M 3/158 (2006.01)
(52) **U.S. Cl.**
CPC **H02M 3/003** (2021.05); **H02M 3/1582**
(2013.01)(57) **ABSTRACT**

A voltage convertor module includes a lead-frame, a unitary bare die and a molding body. The lead-frame can have a plurality of electrodes including an input voltage electrode, an output voltage electrode, a ground electrode and a controlling electrode. The unitary bare die is disposed only on the lead-frame, where a plurality of pads of the unitary bare die are electrically connected to the electrodes of the lead-frame correspondingly. The unitary bare die includes the plurality of pads, a buck controller block, a first switching unit block, a second switching unit block, a feedback unit block and a plurality of routing structures.

