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(19) **United States**(12) **Patent Application Publication****KIM et al.**(10) **Pub. No.: US 2023/0230856 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SEMICONDUCTOR DEVICE AND METHOD FOR MAKING THE SAME**(71) Applicant: **STATS ChipPAC Pte. Ltd.**, Singapore (SG)(72) Inventors: **YoungSang KIM**, Gyeonggi-do (KR); **JiEun KWON**, Incheon (KR); **JiSik MOON**, Incheon (KR)(21) Appl. No.: **18/154,024**(22) Filed: **Jan. 12, 2023**(30) **Foreign Application Priority Data**

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(57)

**ABSTRACT**

A method for making a semiconductor device is provided. The method includes: providing a package including: a substrate including a first surface and a second surface opposite to the first surface; a first electronic component mounted on the first surface of the substrate; a second electronic component mounted on the second surface; and a contact pad formed on the second surface of the substrate, wherein the contact pad is outside of a projection of the second electronic component on the second surface of the substrate; and a first encapsulant disposed on the first surface of the substrate and covering the first electronic component; forming a second encapsulant over and around the second electronic component, wherein the contact pad is exposed from the second encapsulant; planarizing the second encapsulant to expose the second electronic component; and forming a bump on the contact pad of the second surface of the substrate.

