

# (19) United States

## (12) Patent Application Publication (10) Pub. No.: US 2022/0361338 A1 HSU et al.

Nov. 10, 2022 (43) **Pub. Date:** 

### (54) SEMICONDUCTOR PACKAGE WITH STRESS REDUCTION DESIGN AND METHOD FOR FORMING THE SAME

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(21) Appl. No.: 17/396,253

(22) Filed: Aug. 6, 2021

### Related U.S. Application Data

(60) Provisional application No. 63/185,621, filed on May

#### **Publication Classification**

(51) Int. Cl. H05K 1/18 (2006.01)H05K 3/28 (2006.01)H01L 25/065 (2006.01)

(52)U.S. Cl. ..... H05K 1/181 (2013.01); H05K 3/284 CPC ...... (2013.01); H01L 25/0655 (2013.01); H01L 23/49811 (2013.01)

#### (57)ABSTRACT

A semiconductor package and a method of forming the same are provided. The semiconductor package includes a package substrate, a semiconductor device, an underfill element, and a groove. The semiconductor device is bonded to the surface of the package substrate through multiple electrical connectors. The underfill element is formed between the semiconductor device and the surface of the package substrate to surround and protect the electrical connectors. The underfill element includes a fillet portion that extends laterally beyond the periphery of the semiconductor device and is formed along the periphery of the semiconductor device. The groove is formed in the fillet portion and spaced apart from the periphery of the semiconductor device.

