



US 20240215148A1

(19) **United States**(12) **Patent Application Publication**
HASHIMOTO et al.(10) **Pub. No.: US 2024/0215148 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **CONNECTOR AND METHOD FOR
MANUFACTURING SAME**(71) Applicant: **I-PEX INC.**, Kyoto-shi (JP)(72) Inventors: **Yoichi HASHIMOTO**, Machida-shi
(JP); **Sho SUZUKI**, Machida-shi (JP);
Shogo MATSUO, Machida-shi (JP)(21) Appl. No.: **18/597,652**(22) Filed: **Mar. 6, 2024****Related U.S. Application Data**(63) Continuation of application No. 17/598,639, filed on
Sep. 27, 2021, now Pat. No. 11,956,886, filed as
application No. PCT/JP2020/015421 on Apr. 3, 2020.**Foreign Application Priority Data**

Apr. 3, 2019 (JP) 2019-071593

Publication Classification(51) **Int. Cl.**
H05K 1/02 (2006.01)
G02B 6/42 (2006.01)
H01R 13/6581 (2006.01)
(52) **U.S. Cl.**
CPC **H05K 1/0209** (2013.01); **G02B 6/4268**
(2013.01); **G02B 6/428** (2013.01); **H01R**
13/6581 (2013.01)(57) **ABSTRACT**

A connector includes: a circuit board; a first heat transfer material arranged on a principal surface of the circuit board; a first shell having an end mated with a mating connector in a state in which the terminal end portion of the circuit board protrudes from the end, and includes an opposite opposed to at least a part of a target region which is a region other than the terminal end portion, covers at least a part of the target region, and is conductive; a second shell connected to an end of the first shell, covers at least a part of the target region of the principal surface, and is thermally conductably connected to the circuit board in contact with the first heat transfer material; and a third shell engaged with the second shell, covers at least a part of the target region of a principal surface, and is conductive.

