



(19) **United States**

(12) **Patent Application Publication**
JEON et al.

(10) **Pub. No.: US 2024/0215158 A1**

(43) **Pub. Date: Jun. 27, 2024**

(54) **PRINTED CIRCUIT BOARD AND MANUFACTURING METHOD THEREOF**

(71) Applicant: **SAMSUNG ELECTRO-MECHANICS CO., LTD.,**
Suwon-si (KR)

(72) Inventors: **Mi Jeong JEON**, Suwon-si (KR);
Hyun Seok YANG, Suwon-si (KR);
Tae Hee YOO, Suwon-si (KR); **Chan Jin PARK**, Suwon-si (KR)

(73) Assignee: **SAMSUNG ELECTRO-MECHANICS CO., LTD.,**
Suwon-si (KR)

(21) Appl. No.: **18/209,616**

(22) Filed: **Jun. 14, 2023**

(30) **Foreign Application Priority Data**
Dec. 22, 2022 (KR) 10-2022-0181410

Publication Classification
(51) **Int. Cl.**
H05K 1/03 (2006.01)
H05K 3/00 (2006.01)
H05K 3/40 (2006.01)
(52) **U.S. Cl.**
CPC *H05K 1/0306* (2013.01); *H05K 3/0017* (2013.01); *H05K 3/4038* (2013.01); *H05K 2201/0338* (2013.01); *H05K 2203/0186* (2013.01); *H05K 2203/0315* (2013.01); *H05K 2203/0582* (2013.01); *H05K 2203/072* (2013.01); *H05K 2203/0723* (2013.01)
(57) **ABSTRACT**
A printed circuit board includes a first insulating layer, a first metal layer disposed on the first insulating layer and including a first oxidation region on a side surface thereof, and a second metal layer disposed on the first metal layer. A method of manufacturing a printed circuit board includes forming a first metal layer on a first insulating layer, forming a second metal layer on a portion of the first metal layer, oxidizing another portion of the first metal layer to form a first oxidation region, and removing at least a portion of the first oxidation region.

