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Lee et al.

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(54) **MULTILAYER RIGID FLEXIBLE PRINTED CIRCUIT BOARD AND METHOD FOR MANUFACTURING THE SAME**

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

(72) Inventors: **Yang Je Lee**, Suwon-si (KR); **Dek Gin Yang**, Suwon-si (KR); **Dong Gi An**, Suwon-si (KR); **Jae Ho Shin**, Suwon-si (KR)

(73) Assignee: **Samsung Electro-Mechanics Co., Ltd.**, Suwon-si (KR)

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Foreign Application Priority Data

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H05K 3/06 (2006.01)

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CPC **H05K 3/06** (2013.01); **H05K 1/028** (2013.01); **H05K 1/0218** (2013.01); (Continued)

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CPC H05K 1/028; H05K 1/0218; H05K 1/09; H05K 3/4691; H05K 3/4644; H05K 3/386; H05K 2201/0154; H05K 2201/0707

See application file for complete search history.

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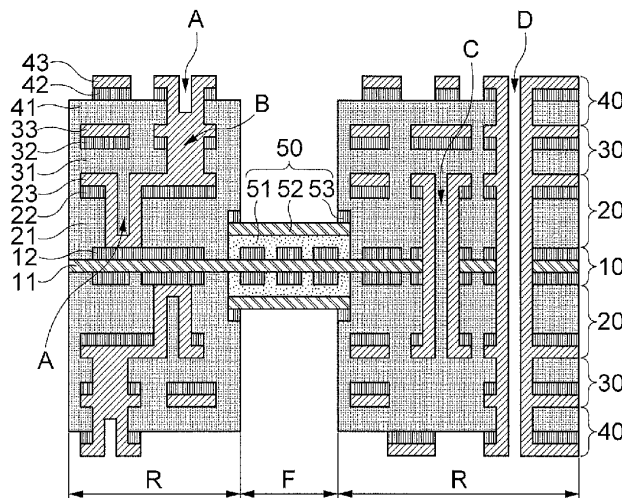
Primary Examiner — Hoa C Nguyen

(74) *Attorney, Agent, or Firm* — NSIP Law

(57) **ABSTRACT**

The present invention provides a multilayer rigid flexible printed circuit board including: a flexible region including a flexible film having a circuit pattern formed on one or both surfaces thereof and a laser blocking layer formed on the circuit pattern; and a rigid region formed adjacent to the flexible region and including a plurality of pattern layers on one or both surfaces of extended portions extended to both sides of the flexible film of the flexible region, and a method for manufacturing the same.

10 Claims, 8 Drawing Sheets



Related U.S. Application Data

continuation of application No. 15/398,803, filed on Jan. 5, 2017, now Pat. No. 10,368,445, which is a continuation of application No. 14/024,115, filed on Sep. 11, 2013, now Pat. No. 9,743,529, which is a continuation of application No. 12/923,994, filed on Oct. 19, 2010, now Pat. No. 8,558,116.

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- (52) **U.S. Cl.**
 CPC *H05K 1/0278* (2013.01); *H05K 1/09* (2013.01); *H05K 3/386* (2013.01); *H05K 3/4644* (2013.01); *H05K 3/4691* (2013.01); *H05K 3/0035* (2013.01); *H05K 3/281* (2013.01); *H05K 3/4652* (2013.01); *H05K 2201/0154* (2013.01); *H05K 2201/0187* (2013.01); *H05K 2201/0707* (2013.01); *H05K 2203/0554* (2013.01); *H05K 2203/1152* (2013.01); *Y10T 29/49128* (2015.01); *Y10T 29/49165* (2015.01)

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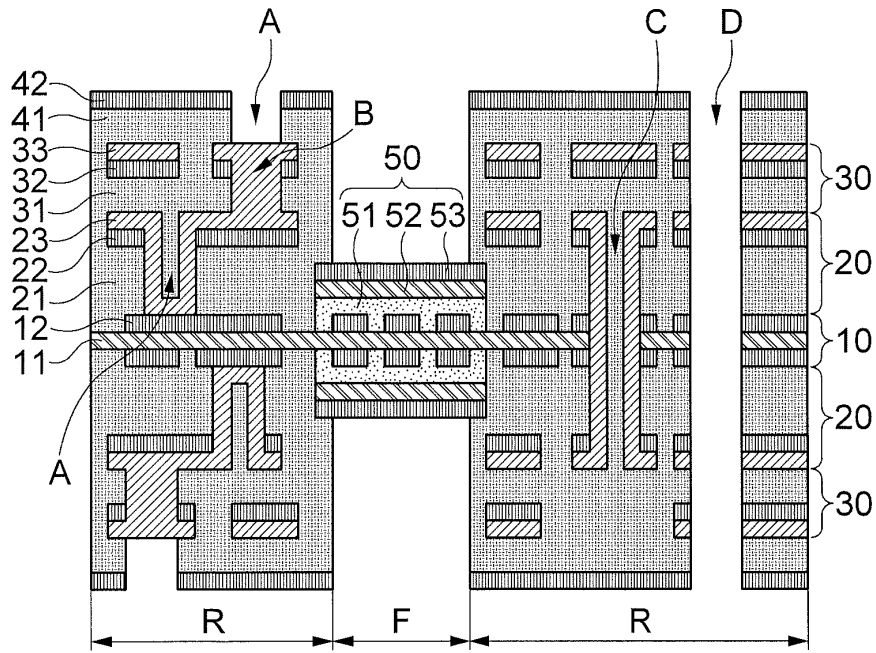
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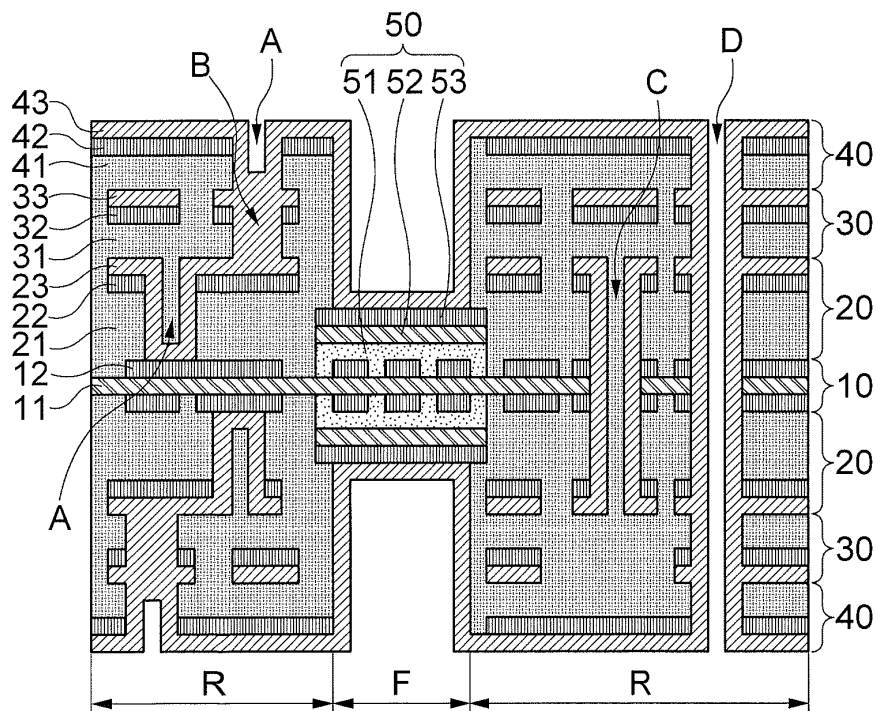
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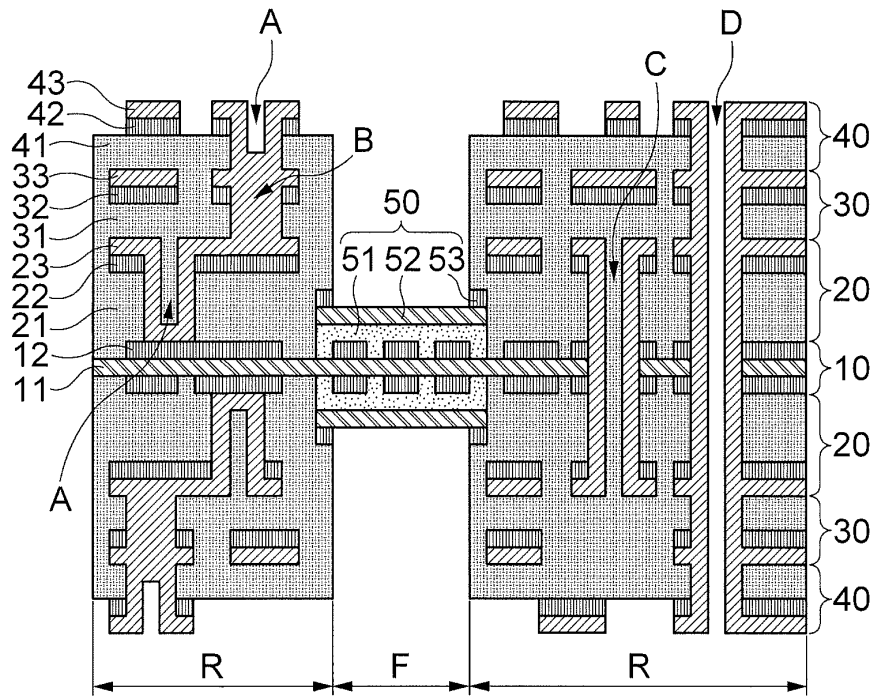
[FIG. 1]



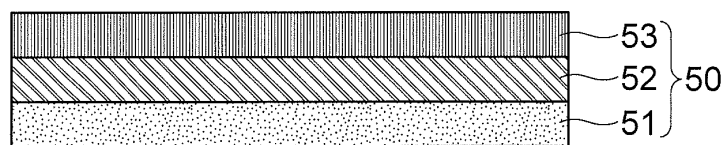
[FIG. 2]



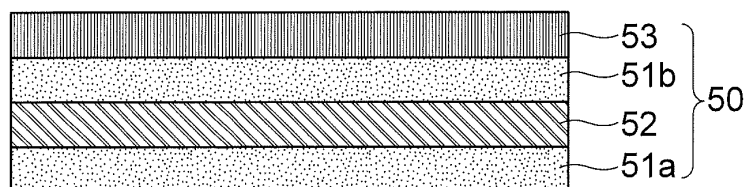
[FIG. 3]



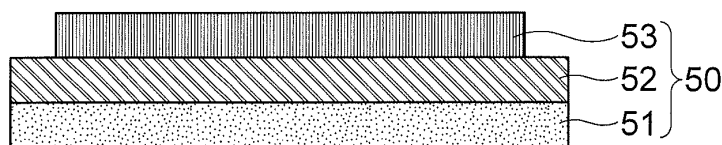
[FIG. 4A]



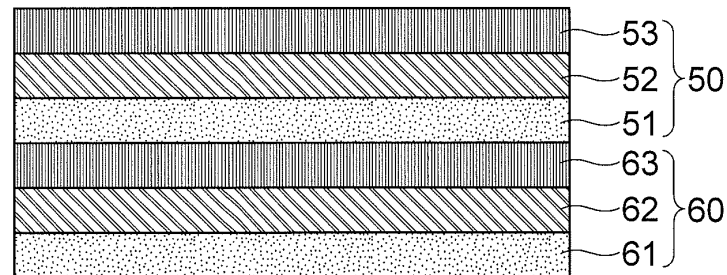
[FIG. 4B]



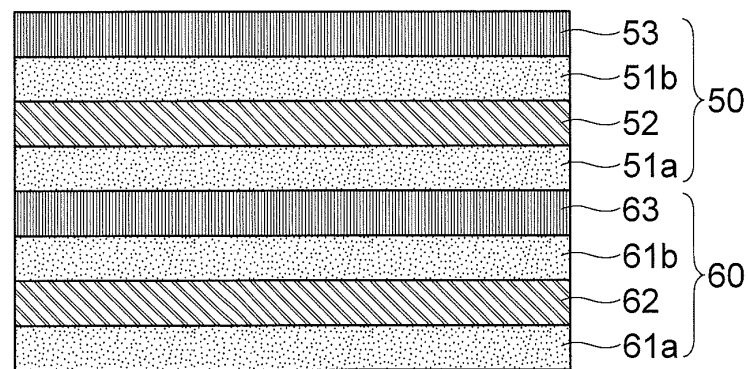
[FIG. 5]



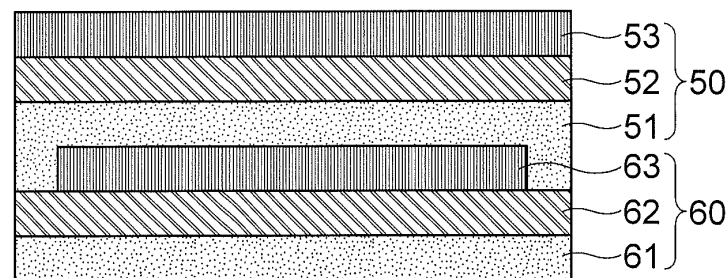
[FIG. 6A]



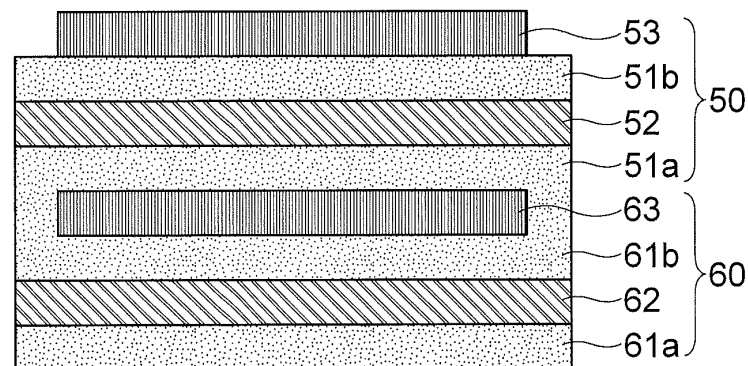
[FIG. 6B]



[FIG. 7A]



[FIG. 7B]



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