



US00D577691S

(12) **United States Design Patent**
Ohsawa et al.

(10) **Patent No.:** **US D577,691 S**
(45) **Date of Patent:** **** Sep. 30, 2008**

(54) **GROOVES FORMED AROUND A SEMICONDUCTOR DEVICE ON A CIRCUIT BOARD**

(75) Inventors: **Tetsuya Ohsawa**, Ibaraki (JP); **Emiko Tani**, Ibaraki (JP)

(73) Assignee: **Nitto Denko Corporation**, Osaka (JP)

(**) Term: **14 Years**

(21) Appl. No.: **29/303,833**

(22) Filed: **Feb. 19, 2008**

Related U.S. Application Data

(62) Division of application No. 29/240,188, filed on Oct. 11, 2005, now Pat. No. Des. 566,060.

(30) **Foreign Application Priority Data**

Apr. 13, 2005 (JP) 2005-010991
Apr. 13, 2005 (JP) 2005-010992
Apr. 13, 2005 (JP) 2005-010995

(51) **LOC (8) Cl.** **13-03**

(52) **U.S. Cl.** **D13/182**

(58) **Field of Classification Search** D13/182,
D13/158-177; 336/200; 324/754; D1/106;
D19/10; 361/813

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,676,748 A * 7/1972 Kobayashi et al. 361/813

D279,670 S * 7/1985 Lukits D13/182
D288,556 S * 3/1987 Wallgren D13/182
D295,401 S * 4/1988 Klees D13/182
5,008,614 A * 4/1991 Shreeve et al. 324/754
D318,271 S * 7/1991 Hasegawa et al. D13/182
D319,629 S * 9/1991 Hasegawa et al. D13/182
D374,541 S * 10/1996 Garza D1/106
5,969,590 A * 10/1999 Gutierrez 336/200
6,114,937 A * 9/2000 Burghartz et al. 336/200
D487,430 S * 3/2004 Asaka et al. D13/182
D510,103 S * 9/2005 Allard et al. D19/10

* cited by examiner

Primary Examiner—Daniel Bui

Assistant Examiner—Thomas J Johannes

(74) *Attorney, Agent, or Firm*—Osha • Liang LLP

(57) **CLAIM**

The ornamental design for grooves formed around a semiconductor device on a circuit board, as shown and described.

DESCRIPTION

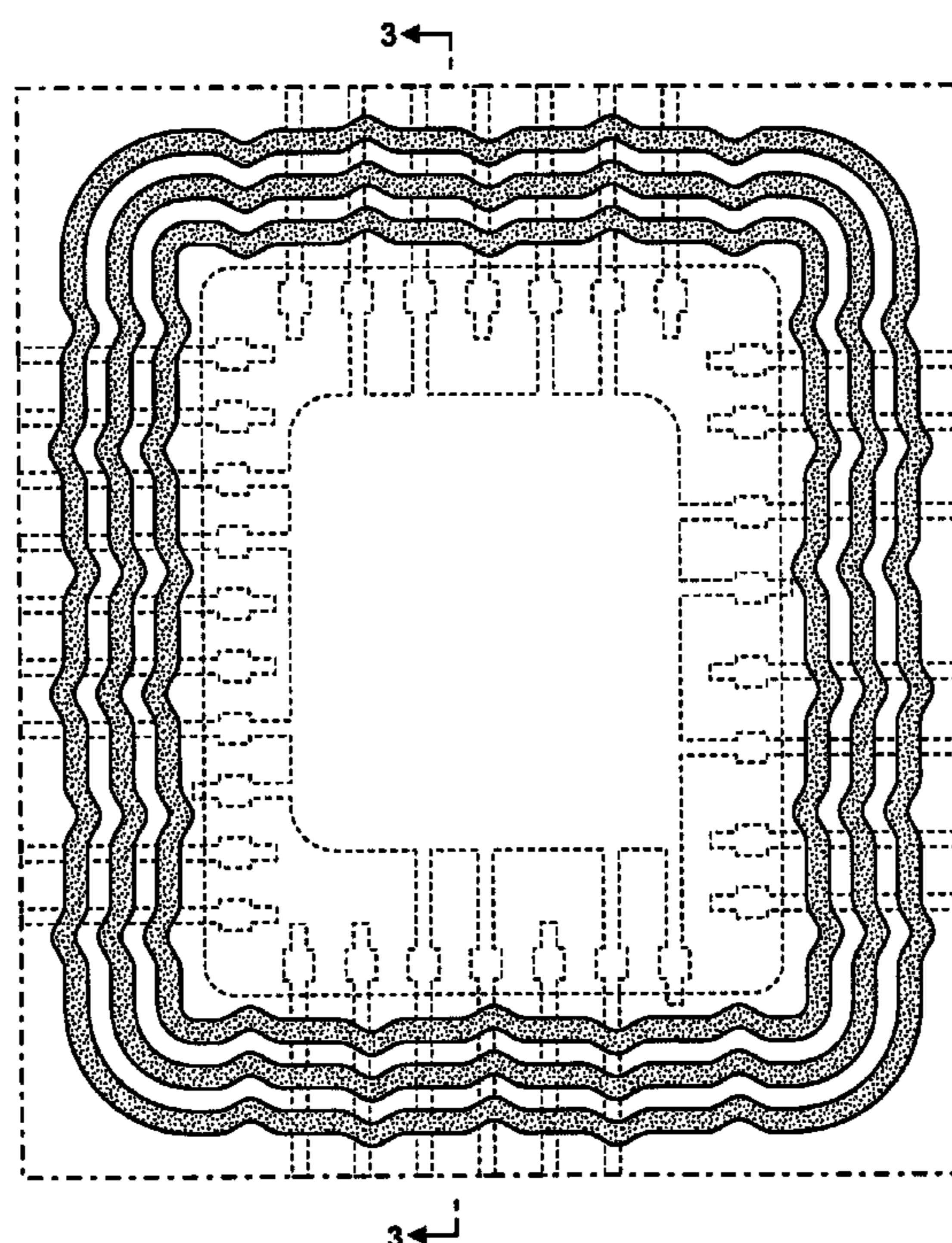
FIG. 1 shows a plan view of grooves formed around a semiconductor device on a circuit board showing our new design.

FIG. 2 shows an enlarged view of the claimed portion identified by the area boxed by the dot-dash line in FIG. 1; and,

FIG. 3 shows an enlarged sectional view along the line III—III in FIG. 2.

The special dot-dash broken line defines the boundary of the claimed design; the gray stippling indicates the surface of the groove bed; the broken lines show unclaimed subject matter forming no part of the claimed design.

1 Claim, 3 Drawing Sheets



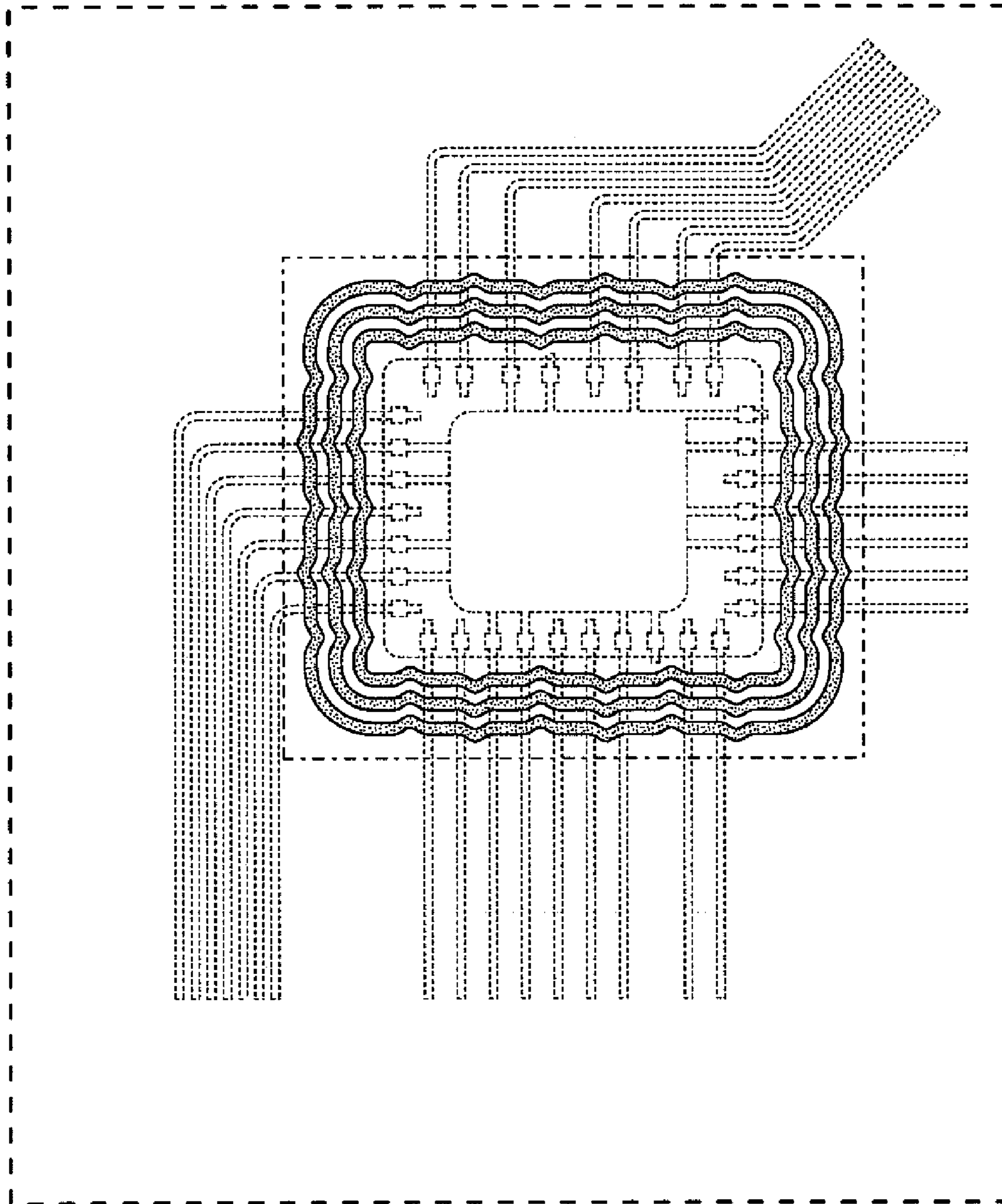


FIG. 1

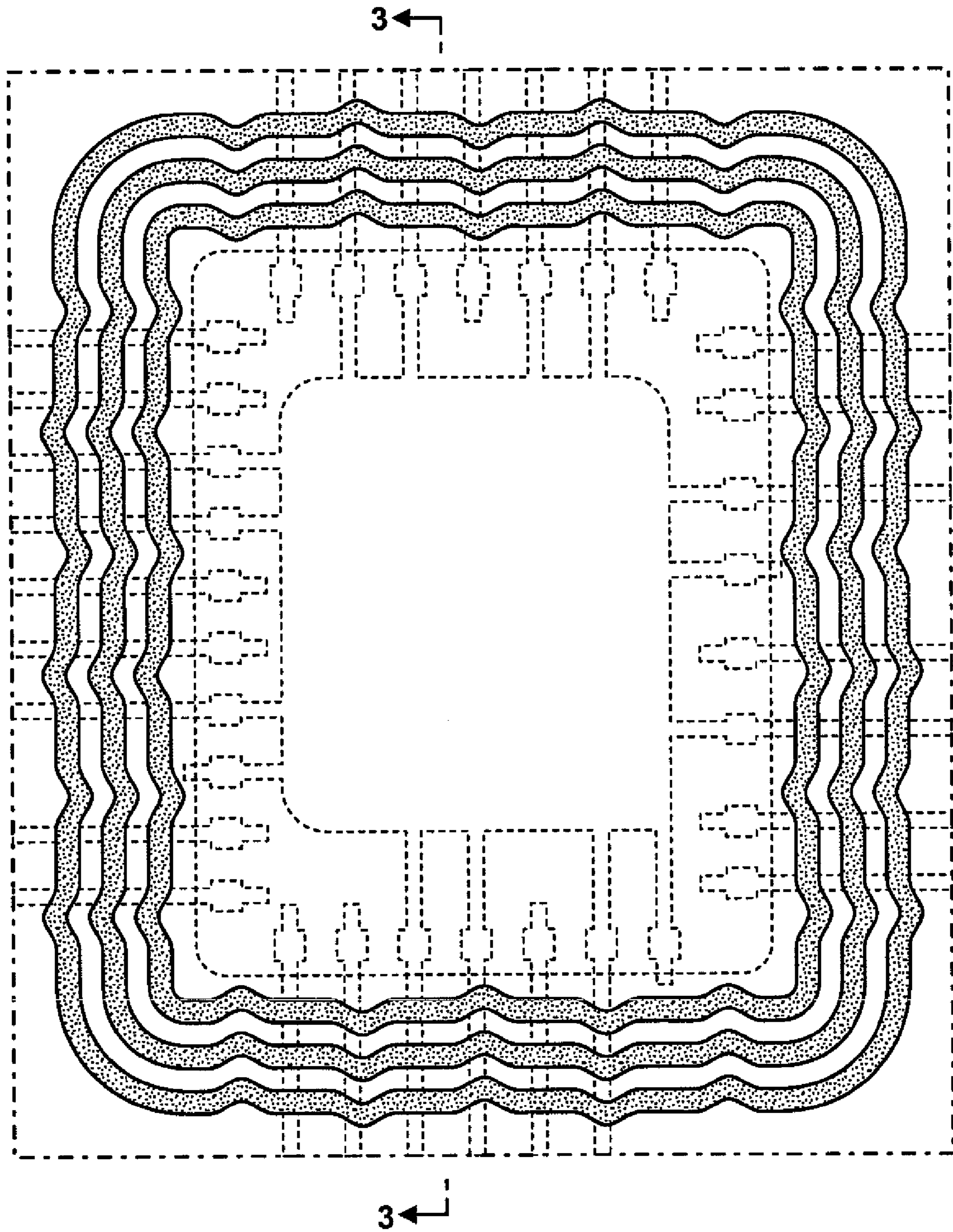


FIG. 2



FIG. 3