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(54) Title (EN): IGBT HALF-BRIDGE MODULE STRUCTURE

(54) Title (FR): STRUCTURE DE MODULE DE DEMI-PONT IGBT

(54) Title (ZH): 一种IGBT半桥模块结构

(57) Abstract:

(EN): An IGBT half-bridge module structure. A left IGBT chip (4) and a left FRD chip (5) are provided on a left DBC (2), the left IGBT chip (4) and the left FRD chip (5) are welded to the upper end of the left DBC (2) by means of a solder paste, a left G electrode signal terminal (6) is led out from the left IGBT chip (4), and a left E electrode signal terminal (7) is led out from the left FRD chip (5); and a right IGBT chip (8) and a right FRD chip (9) are provided on a right DBC (3), the right IGBT chip (8) and the right FRD chip (9) are welded to the upper end of the right DBC (3) by means of the solder paste, the right IGBT chip (8) is connected to the right FRD chip (9), and a right G electrode signal terminal (10) and a right E electrode signal terminal (11) are led out from the right IGBT chip (8). Said structure uses a bonding connection instead of a single-core copper conductor welding solution, reducing production difficulty, improving production efficiency, increasing current bearing capability of products, and enhancing the reliability of long-term use of the products.

(FR): L'invention concerne une structure de module de demi-pont IGBT. Une puce d'IGBT gauche (4) et une puce de FRD gauche (5) sont disposées sur un DBC gauche (2), la puce d'IGBT gauche (4) et la puce de FRD gauche (5) sont soudées au niveau de l'extrémité supérieure du DBC gauche (2) au moyen d'une pâte à souder, une borne de signal d'électrode G gauche (6) est sortie

de la puce d'IGBT gauche (4), et une borne de signal d'électrode gauche (7) est sortie de la puce de FRD gauche (5) ; et une puce d'IGBT droite (8) et une puce de FRD droite (9) sont disposées sur un DBC droit (3), la puce d'IGBT droite (8) et la puce de FRD droite (9) sont soudées au niveau de l'extrémité supérieure du DBC droit (3) au moyen de la pâte à souder, la puce d'IGBT droite (8) est connectée à la puce de FRD droite (9), et une borne de signal d'électrode G droite (10) et une borne de signal d'électrode E droite (11) sont sorties de la puce d'IGBT droite (8). Ladite structure utilise une connexion de liaison au lieu d'une solution de soudage de conducteur de cuivre à noyau unique, réduisant la difficulté de production, améliorant l'efficacité de production, augmentant la capacité de porteur de courant de produits, et améliorant la fiabilité d'utilisation à long terme des produits.

(ZH): 一种IGBT半桥模块结构,左路DBC(2)上设有左路IGBT芯片(4)和左路FRD芯片(5),左路IGBT芯片(4)和左路FRD芯片(5)通过锡膏焊接在左路DBC(2)上端,左路IGBT芯片(4)引出有左路G极信号端子(6),左路FRD芯片(5)引出有左路E极信号端子(7);右路DBC(3)上设有右路IGBT芯片(8)和右路FRD芯片(9),右路IGBT芯片(8)和右路FRD芯片(9)通过锡膏焊接在右路DBC(3)上端,右路IGBT芯片(8)和右路FRD芯片(9)连接,右路IGBT芯片(8)引出有右路G极信号端子(10)和右路E极信号端子(11)。该结构摒弃单芯铜导线焊接方案,采用键合打线连接,降低了生产难度,提高了生产效率,提升了产品电流承载能力,增强产品长期使用的可靠性。

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