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(54) Title: LOW INDUCTANCE BOND-WIRELESS CO-PACKAGE FOR HIGH POWER DENSITY DEVICES, ESPECIALLY FOR IGBTs AND DIODES

(57) Abstract: A power semiconductor package that includes at least two semiconductor devices electrically coupled to one another through a common metallic web.



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AMENDED CLAIMS

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1. A power semiconductor package, comprising:
a metallic body having a web portion configured for electrical and mechanical coupling using a conductive adhesive to active electrodes of at least two semiconductor devices, and a connector portion extending from an edge of said web portion and including a connection surface to connect electrically said active electrodes of said semiconductor devices to an external conductive body through flip-mounting;
a first semiconductor die and a second semiconductor die electrically and mechanically coupled to said web portion;
a ceramic insulation body directly bonded at one surface thereof to a surface of said metallic body; and
another metallic body directly bonded to an other opposing surface of said ceramic insulation body.
2. The power semiconductor package of claim 1, wherein said metallic body and said another metallic body are comprised of copper.
3. The power semiconductor package of claim 2, wherein said ceramic insulation body is comprised of aluminum oxide.
4. The power semiconductor package of claim 1, wherein said connector is horseshoe shaped.
5. The power semiconductor package of claim 1, further comprising another connector extending from another edge of said web portion opposite said connector.
6. The power semiconductor package of claim 1, wherein said first semiconductor device is an IGBT.
7. The power semiconductor package of claim 1, wherein said second semiconductor device is a diode.

8. The power semiconductor package of claim 1, wherein said web portion is configured for electrical and mechanical connection using a conductive adhesive to an active electrode of another semiconductor device.

9. The power semiconductor package of claim 8, wherein said first semiconductor device is an IGBT and said second semiconductor device is a diode.

10. The power semiconductor package of claim 1, wherein said another metallic body is configured for electrical and mechanical connection using a conductive adhesive to an active electrode of another semiconductor device.

11. The power semiconductor package of claim 10, wherein said first semiconductor device is an IGBT and said second semiconductor device is a diode,

12. The power semiconductor package of claim 1, wherein said active electrode is an emitter electrode of an IGBT.

13. The power semiconductor package of claim 1, wherein said active electrode is a collector electrode of an IGBT.

14. The power semiconductor package of claim 1, wherein said active electrode is a gate electrode.