Atty. Docket No. MIT-001-RX1

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE REEXAMINATION APPL'N OF: :

Joseph BERNSTEIN et al. : GROUP ART UNIT:

APPLICATION NO: New Reexam. Request :

FILED: March 30, 2011 : EXAMINER:

FOR: LASER-INDUCED CUTTING OF METAL INTERCONNECT

I hereby certify that this document is being transmitted to the USPTO or deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 14, 2011.

By: /Jennie Heaton/
Jennie Heaton

CORRECTED PRE-AMENDMENT UNDER 37 C.F.R. 1.530

Mail Stop: *Ex Parte* Reexam
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

SIR:

Prior to the re-examination of the above-identified application, Patentees submit herewith the following amendments to the claims. This corrected Pre-Amendment replaces the Amendment previously filed on March 30, 2011.

DOCKET ALARM
Find authenticated court documents without watermarks at docketalarm.com.

Amendments to the Claims

3. (Amended) [The] A method for cutting a link between interconnected circuits[of claim 1], comprising the following steps:

directing a laser upon an electrically-conductive cutlink pad conductively bonded between a first electrically-conductive line and a second electrically-conductive line on a substrate, the cut-link pad having substantially less thermal resistance per unit length than each of the first and second lines, wherein the width of the cut-link pad is at least ten percent greater than the width of each of the first and second electrically-conductive lines; and

maintaining the laser upon the cut-link pad until the laser infuses sufficient energy into the cut-link pad to break the conductive link across the cut-link pad between the pair of electrically-conductive lines, wherein the electrically-conductive cut-link pad has an inner surface facing the substrate and an opposing outer surface facing away from the substrate, the first and second electrically-conductive lines extending from the inner surface into the substrate.

4. (Original) The method of claim 3, wherein the laser beam extends across the entirety of the cut-link pad when the laser is directed upon the cut-link pad.

6. (Amended) The method of claim [1]3, wherein the width of the cut-link pad is at least twenty-five percent greater than the width of each of the first and second electrically-conductive lines.

7. (Amended) The method of claim [1]3, wherein the width of the cut-link pad is at least fifty percent greater than the width of each of the first and second electrically-conductive lines.

DOCKET ALARM Find authenticated court documents without watermarks at docketalarm.com.

8. (Amended) The method of claim 7, wherein the cut-link pad [is comprised of] comprises a composition substantially identical to the composition of the first and second electrically-conductive lines.

11. (Original) A method for cutting a link between interconnected circuits comprising the following steps:

directing a laser upon an electrically-conductive cut-link pad conductively bonded between a first electrically-conductive line and a second electrically-conductive line on a substrate, the cut-link pad having substantially less thermal resistance per unit length than each of the first and second lines, wherein the cut-link pad is formed of a material that has greater thermal conductivity than the material that forms each of the first and second electrically-conductive lines; and

maintaining the laser upon the cut-link pad until the laser infuses sufficient energy into the cut-link pad to break the conductive link across the cut-link pad between the pair of electrically-conductive lines.

13. (Amended) The method of claim [1]3, wherein a passivative layer covers the cut-link pad.

14. (Original) A method for cutting a link between interconnected circuits comprising the following steps:

directing a laser upon an electrically-conductive cut-link pad conductively bonded between a first electrically-conductive line and a second electrically-conductive line on a substrate, the cut-link pad having substantially less thermal resistance per unit length than each of the first and second lines, wherein the cut-link pad is covered with a passivative layer that is harder than the substrate; and

DOCKET ALARM
Find authenticated court documents without watermarks at docketalarm.com.

maintaining the laser upon the cut-link pad until the laser infuses sufficient energy into the cut-link pad to break the conductive link across the cut-link pad between the pair of electrically-conductive lines.

15. (Amended) The method of claim 14, wherein the passivation layer [is] comprises [of] silicon nitride.

17. (Amended) [The] A method for cutting a link between interconnected circuits[of claim 1], comprising the following steps:

directing a laser upon an electrically-conductive cutlink pad conductively bonded between a first electrically-conductive line and a second electrically-conductive line on a substrate, the cut-link pad having substantially less thermal resistance per unit length than each of the first and second lines, wherein the width of the cut-link pad is at least ten percent greater than the width of each of the first and second electrically-conductive lines; and

maintaining the laser upon the cut-link pad until the laser infuses sufficient energy into the cut-link pad to break the conductive link across the cut-link pad between the pair of electrically-conductive lines, wherein a passivative layer covers the cut-link pad, and the electrically-conductive cut-link pad has an inner surface facing the substrate and an opposing outer surface facing away from the substrate, the first and second electrically-conductive lines extending from the inner surface into the substrate.

18. (Original) The method of claim 17, wherein the laser beam extends across the entirety of the cut-link pad when the laser is directed upon the cut-link pad.

DOCKET ALARM Find authenticated court documents without watermarks at docketalarm.com.

21. (Amended) The method of claim 13, wherein the cut-link pad [is comprised of] comprises a material with greater thermal conductivity than the material comprising each of the first and second electrically-conductive lines.

22. (New) The method of claim 21, wherein the cut-link pad comprises aluminum.

23. (New) The method of claim 3, wherein the cut-link pad has a greater cross-sectional area than the first and second electrically-conductive lines, wherein the cross-sectional area of the cut-link pad is the product of a width and a height of the cut-link pad, the first and second electrically-conductive lines comprise vias, and the cross-sectional area of each of the first and second electrically-conductive lines is defined by a width of the corresponding via.

24. (New) The method of claim 13, wherein the passivative layer comprises silicon nitride.

25. (New) The method of claim 4, wherein the cut-link pad has a length of 2-3 microns, and the first and second electrically-conductive lines each have a diameter of about 0.5 microns.

26. (New) The method of claim 11, wherein the electrically-conductive cut-link pad has an inner surface facing the substrate and an opposing outer surface facing away from the substrate, the first and second electrically-conductive lines extending from the inner surface into the substrate.

27. (New) The method of claim 26, further comprising a passivative silicon nitride layer that covers the cut-link pad.

28. (New) The method of claim 11, wherein the cut-link pad comprises aluminum.

DOCKET ALARM
Find authenticated court documents without watermarks at docketalarm.com.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.