Filed on behalf of GlobalFoundries U.S., Inc.
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GlobalFoundries U.S. Inc.
Petitioner

v.

Godo Kaisha IP Bridge 1
Patent Owner

Case No. IPR2017-00903

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. RE41,980

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1. [18.1] and [35.1] Cheung discloses "semiconductor device comprising: a semiconductor substrate bearing semiconductor elements.....31

2. [18.2] and [35.2] Cheung discloses "an interlayer insulating film formed on said semiconductor substrate" 33

3. [18.3] and [35.3] Cheung discloses "a metal wire layer including plural metal wires formed on said interlayer insulating film" 40

4. [18.4a] and [35.4a] Cheung discloses "a surface protecting film including a first dielectric film with a small dielectric constant for filling at least a part of areas among said metal wires in said metal wire layer" .41

5. [18.4b] and [35.4b] Cheung discloses "a second dielectric film with a higher moisture absorption preventing function than said first dielectric film for covering said metal wire layer and said first dielectric film, said second dielectric film having a function of suppressing moisture absorption of said first dielectric film" 44

6. [18.5] and [35.5] Cheung discloses "an opening for a bonding pad formed in said surface protecting film" 47

7. [18.6] and [35.6] Cheung discloses "a bonding pad formed in said opening for obtaining external electrical connection" 49

8. [18.7] Cheung discloses "wherein said bonding pad in said opening and said second dielectric film of said surface protecting film completely cover said first

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dielectric film so as not to expose said first dielectric film" of claim 18 49

9. **[35.7] Cheung discloses "wherein said bonding pad covers said opening and said second dielectric film of said surface protecting film completely covers said first dielectric film so as not to expose said first dielectric film" of claim 35** 51

10. **Cheung discloses Patent Owner's proposed construction of [18.7] and [35.7]** 52

11. **[19] and [36] Cheung discloses "wherein said first dielectric film is buried, among said areas among said metal wires, at least in an area having a minimum pitch between said metal wires"** 53

12. **[30] and [47] Cheung discloses "wherein said first dielectric film is made from at least one oxide film selected from the group consisting of a silicon oxide film, a silicon oxide film doped with fluorine and a porous silicon oxide film, or a composite film including an organic insulating film and at least one oxide film selected from the group consisting of a silicon oxide film, a silicon oxide film doped with fluorine and a porous silicon oxide film"** 54

13. **[31] and [48] Cheung discloses "wherein said first dielectric film has a dielectric constant of 3.9 or less"** 54

14. **[32] and [49] Cheung discloses "wherein said second dielectric film is made from a silicon nitride film"** 56

15. **[33] and [50] Cheung discloses "wherein said bonding pad directly contacts one of said plural metal wires formed on said interlayer insulating film"** 57

16. **[34] and [51] Cheung discloses "wherein said bonding pad directly contacts said surface protecting film"** 58

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D. The Challenged Claims are obvious in view of Chiang alone or in combination with Cheung and/or El-Kareh 59

1. [18.1] and [35.1] Chiang discloses "semiconductor device comprising: a semiconductor substrate bearing semiconductor elements.....59

2. [18.2] and [35.2] Chiang discloses "an interlayer insulating film formed on said semiconductor substrate" 60

3. [18.3] and [35.3] Chiang discloses "a metal wire layer including plural metal wires formed on said interlayer insulating film" 65

4. [18.4a] and [35.4a] Chiang discloses "a surface protecting film including a first dielectric film with a small dielectric constant for filling at least a part of areas among said metal wires in said metal wire layer" .67

5. [18.4b] and [35.4b] Chiang discloses "a second dielectric film with a higher moisture absorption preventing function than said first dielectric film for covering said metal wire layer and said first dielectric film, said second dielectric film having a function of suppressing moisture absorption of said first dielectric film" 71

6. [18.5] and [35.5] Chiang discloses "an opening for a bonding pad formed in said surface protecting film" 74

7. [18.6] and [35.6] Chiang discloses "a bonding pad formed in said opening for obtaining external electrical connection" 76

8. [18.7] Chiang discloses "wherein said bonding pad in said opening and said second dielectric film of said surface protecting film completely cover said first dielectric film so as not to expose said first dielectric film" of claim 18 78

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