



Ridgefield Park, New Jersey 07660. Upon information and belief, SEA is a wholly-owned subsidiary of SEC.

4. Upon information and belief, Samsung Semiconductor, Inc. (“SSI”) is a California corporation having its principal place of business at 3655 North First Street, San Jose, California 95134 or 601 McCarthy Blvd., Milpitas, California 95035. Upon information and belief, SSI is a subsidiary of SEA.

5. Upon information and belief, Samsung Austin Semiconductor, LLC. (“SAS”) is a Delaware limited liability corporation having its principal place of business at 12100 Samsung Boulevard, Austin, Texas 78754. Upon information and belief, SAS is a wholly-owned subsidiary of SSI.

6. Upon information and belief, Samsung has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware.

### **JURISDICTION AND VENUE**

7. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*, including but not limited to 35 U.S.C. §§ 271, 281, 283, 284, and 285. This Court has subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over SEC. SEC is amenable to service of summons for this action. Furthermore, personal jurisdiction over SEC in this action comports with due process. SEC has conducted and regularly conducts business within the United States and this District. SEC has purposefully availed itself of the privileges

of conducting business in the United States, and more specifically in the State of Delaware and this District. SEC has sought protection and benefit from the laws of the State of Delaware by forming one of its United States affiliates in this District and/or by placing infringing products into the stream of commerce through an established distribution channel with the awareness and/or intent that they will be purchased by consumers in this District.

9. SEC – directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents – ships, distributes, offers for sale, and/or sells its products in the United States and this District. SEC has purposefully and voluntarily placed one or more of its infringing products into the stream of commerce with the awareness and/or intent that they will be purchased by consumers in this District. SEC knowingly and purposefully ships infringing products into and within this District through an established distribution channel. These infringing products have been and continue to be purchased by consumers in this District. Upon information and belief, through those activities, SEC has committed the tort of patent infringement in this District.

10. This Court has personal jurisdiction over SEA. SEA is amenable to service of summons for this action. Furthermore, personal jurisdiction over SEA in this action comports with due process. SEA has conducted and regularly conducts business within the United States and this District. SEA has purposefully availed itself of the privileges of conducting business in the United States, and more specifically in the State of Delaware and this District. SEA has sought protection and benefit from the laws of the State of Delaware by forming one of its United States affiliates in this District and/or by

placing infringing products into the stream of commerce through an established distribution channel with the awareness and/or intent that they will be purchased by consumers in this District.

11. SEA – directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents – ships, distributes, offers for sale, and/or sells its products in the United States and this District. SEA has purposefully and voluntarily placed one or more of its infringing products into the stream of commerce with the awareness and/or intent that they will be purchased by consumers in this District. SEA knowingly and purposefully ships infringing products into and within this District through an established distribution channel. These infringing products have been and continue to be purchased by consumers in this District. Upon information and belief, through those activities, SEA has committed the tort of patent infringement in this District.

12. This Court has personal jurisdiction over SSI. SSI is amenable to service of summons for this action. Furthermore, personal jurisdiction over SSI in this action comports with due process. SSI has conducted and regularly conducts business within the United States and this District. SSI has purposefully availed itself of the privileges of conducting business in the United States, and more specifically in the State of Delaware and this District. SSI has sought protection and benefit from the laws of the State of Delaware by placing infringing products into the stream of commerce through an established distribution channel with the awareness and/or intent that they will be purchased by consumers in this District.

13. SSI – directly or through intermediaries (including distributors, retailers,

and others), subsidiaries, alter egos, and/or agents – ships, distributes, offers for sale, and/or sells its products in the United States and this District. SSI has purposefully and voluntarily placed one or more of its infringing products into the stream of commerce with the awareness and/or intent that they will be purchased by consumers in this District. SSI knowingly and purposefully ships infringing products into and within this District through an established distribution channel. These infringing products have been and continue to be purchased by consumers in this District. Upon information and belief, through those activities, SSI has committed the tort of patent infringement in this District.

14. This Court has personal jurisdiction over SAS because SAS is an LLC organized under the laws of Delaware. SAS is amenable to service of summons for this action. Furthermore, personal jurisdiction over SAS in this action comports with due process. SAS has conducted and regularly conducts business within the United States and this District. SAS has purposefully availed itself of the privileges of conducting business in the United States, and more specifically in the State of Delaware and this District. SAS has sought protection and benefit from the laws of the State of Delaware by forming in this District.

15. SAS – directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents – ships, distributes, offers for sale, and/or sells its products in the United States and this District. SAS has purposefully and voluntarily placed one or more of its infringing products into the stream of commerce with the awareness and/or intent that they will be purchased by consumers in this District. SAS knowingly and purposefully ships infringing products into and within this District through an established distribution channel. These infringing products have been

and continue to be purchased by consumers in this District. Upon information and belief, through those activities, SAS has committed the tort of patent infringement in this District.

16. Venue is proper in this Court according to the venue provisions set forth by 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Samsung is subject to personal jurisdiction in this District, and therefore is deemed to reside in this District for purposes of venue. Upon information and belief, Samsung has committed acts within this District giving rise to this action and does business in this District, including but not limited to making sales in this District, providing service and support to its respective customers in this District and/or operating an interactive website, available to persons in this District, that advertises, markets, and/or offers for sale infringing products.

### **BACKGROUND**

17. U.S. Patent No. 6,088,270 titled “Sense Amplifier with Local Write Drivers” (the “’270 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on July 11, 2000. Kim Hardee is the inventor listed on the ’270 patent. The ’270 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the ’270 patent. A true and correct copy of the ’270 patent is attached as Exhibit A and made a part hereof.

18. U.S. Patent No. 6,195,302 titled “Dual Slope Sense Clock Generator” (the “’302 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on February 27, 2001. Kim Hardee is the inventor listed on the ’302 patent. The ’302 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the ’302 patent. A true and correct copy of the ’302 patent is attached as Exhibit B and made a part

hereof.

19. U.S. Patent No. 5,761,112 titled “Charge Storage for Sensing Operations in a DRAM” (the “’112 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on June 2, 1998. Michael Murray, Lawrence Liu, and Li-Chun Li are the inventors listed on the ’112 patent. The ’112 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the ’112 patent. A true and correct copy of the ’112 patent is attached as Exhibit C and made a part hereof.

20. U.S. Patent No. 6,020,259 titled “Method of Forming a Tungsten-Plug Contact for a Semiconductor Device” (the “’259 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on February 1, 2000. Hsi-Chieh Chen, Guan-Jiun Yi, Wen-Cheng Tu, and Kuo-Lun Tseng are the inventors listed on the ’259 patent. The ’259 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the ’259 patent. A true and correct copy of the ’259 patent is attached as Exhibit D and made a part hereof.

21. U.S. Patent No. 6,699,789 titled “Metallization Process to Reduce Stress Between Al-Cu Layer and Titanium Nitride Layer” (the “’789 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on March 2, 2004. Zhih-Sheng Yang, Chung-Yan Cheng, Ying-Yan Huang, and Jason C. S. Chu are the inventors listed on the ’789 patent. The ’789 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the ’789 patent. A true and correct copy of the ’789 patent is attached as Exhibit E and made a part hereof.

22. U.S. Patent No. 6,849,897 titled “Transistor Including SION Buffer Layer” (the “’897 patent”) was duly and legally issued by the U.S. Patent and Trademark Office

on February 1, 2005. Zhong Dong and Chuck Jang are the inventors listed on the '897 patent. The '897 patent has been assigned to Plaintiff, and Plaintiff holds all rights, title, and interest in the '897 patent. A true and correct copy of the '897 patent is attached as Exhibit F and made a part hereof.

## COUNT I

### **Patent Infringement of U.S. Patent No. 6,088,270**

23. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-22 as though fully set forth herein.

24. Upon information and belief, Samsung has been and is directly infringing the '270 patent under 35 U.S.C. § 271(a) by, without authority, making, using, offering to sell, and/or selling within the United States and/or importing into the United States Samsung dynamic random-access memories ("DRAM") that include all of the limitations of one or more claims of the '270 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung DRAM including but not limited to: smartphones, tablets, desktop PCs, notebook PCs, smart TVs, and monitors.

25. Upon information and belief, Samsung had knowledge of the '270 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

26. Upon information and belief, Samsung's acts of infringement of the '270 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015 and, since then, Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '270 patent by refusing to take a license and continuing its infringing activity.



## COUNT II

### **Patent Infringement of U.S. Patent No. 6,195,302**

27. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-26 as though fully set forth herein.

28. Upon information and belief, Samsung has been and is directly infringing the '302 patent under 35 U.S.C. § 271(a) by, without authority, making, using, offering to sell, and/or selling within the United States and/or importing into the United States Samsung DRAM that include all of the limitations of one or more claims of the '302 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung DRAM including but not limited to: smartphones, tablets, desktop PCs, notebook PCs, Smart TVs, and monitors.

29. Upon information and belief, Samsung has been and is indirectly infringing the '302 patent by contributing to infringement under 35 U.S.C. § 271(c) by, without authority, offering to sell and/or selling within the United States and/or importing into the United States Samsung DRAM that practice all of the limitations of one or more claims of the '302 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung DRAM including but not limited to: smartphones, tablets, desktop PCs, notebook PCs, Smart TVs, and monitors.

30. Upon information and belief, Samsung had knowledge of the '302 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

31. Upon information and belief, since at least July 31, 2015, when Plaintiff placed Samsung on notice of its infringement, Samsung has contributed to infringement, under 35 U.S.C. § 271(c), by selling, offering to sell, and importing DRAM that are apparatuses for use in

practicing the '302 patent, have no substantial non-infringing uses, and are known by Samsung to be especially made or especially adapted for use in what constitutes infringement of the '302 patent. The infringing DRAM are specifically suited for infringement of the '302 patent and cannot be used in a manner that does not infringe the '302 patent. The circuitry in the DRAM is especially made to infringe the '302 patent, and simply by using the DRAM at least one claim of the '302 patent is practiced. Upon information and belief, users of Samsung DRAM and products containing Samsung DRAM directly infringe the '302 patent by using the DRAM to practice the patented process in the United States.

32. Upon information and belief, Samsung's acts of infringement of the '302 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015 and, since then, Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '302 patent by refusing to take a license and continuing its infringing activity.

### **COUNT III**

#### **Patent Infringement of U.S. Patent No. 5,761,112**

33. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-32 as though fully set forth herein.

34. Upon information and belief, Samsung has been and is directly infringing the '112 patent under 35 U.S.C. § 271(a) by, without authority, making, using, offering to sell, and/or selling within the United States and/or importing into the United States Samsung DRAM that include all of the limitations of one or more claims of the '112 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung DRAM including but not limited to: smartphones, tablets, desktop PCs, notebook PCs, Smart TVs, and monitors.

35. Upon information and belief, Samsung has been and is indirectly infringing the '112 patent by contributing to infringement under 35 U.S.C. § 271(c) by, without authority, offering to sell and/or selling within the United States and/or importing into the United States Samsung DRAM that practice all of the limitations of one or more claims of the '112 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung DRAM including but not limited to: smartphones, tablets, desktop PCs, notebook PCs, Smart TVs, and monitors.

36. Upon information and belief, Samsung had knowledge of the '112 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

37. Upon information and belief, since at least July 31, 2015, when Plaintiff placed Samsung on notice of its infringement, Samsung has contributed to infringement, under 35 U.S.C. § 271(c), by selling, offering to sell, and importing DRAM that are apparatuses for use in practicing the '112 patent, have no substantial non-infringing uses, and are known by Samsung to be especially made or especially adapted for use in what constitutes infringement of the '112 patent. The infringing DRAM are specifically suited for infringement of the '112 patent and cannot be used in a manner that does not infringe the '112 patent. The circuitry in the DRAM is especially made to infringe the '112 patent, and simply by using the DRAM at least one claim of the '112 patent is practiced. Upon information and belief, users of Samsung DRAM and products containing Samsung DRAM directly infringe the '112 patent by using the DRAM to practice the patented process in the United States.

38. Upon information and belief, Samsung's acts of infringement of the '112 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015

and, since then, Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '112 patent by refusing to take a license and continuing its infringing activity.

#### **COUNT IV**

##### **Patent Infringement of U.S. Patent No. 6,020,259**

39. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-38 as though fully set forth herein.

40. Upon information and belief, Samsung has been and is directly infringing the '259 patent under 35 U.S.C. § 271(a) by making Samsung flash memories using within the United States, without authority, a process practicing all of the limitations of one or more claims of the '259 patent, either literally or under the doctrine of equivalents.

41. Upon information and belief, Samsung has been and is directly infringing the '259 patent under 35 U.S.C. § 271(g) by, without authority, importing into the United States and/or offering to sell, selling, and/or using within the United States Samsung flash memories and/or products containing Samsung flash memories including but not limited to stand-alone flash devices, smartphones, tablets, and PCs, where those Samsung flash memories are made by a process practicing all of the limitations of one or more claims of the '259 patent, either literally or under the doctrine of equivalents.

42. Upon information and belief, Samsung had knowledge of the '259 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

43. Upon information and belief, Samsung's acts of infringement of the '259 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015

and, since then Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '259 patent by refusing to take a license and continuing its infringing activity.

## COUNT V

### **Patent Infringement of U.S. Patent No. 6,699,789**

44. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-43 as though fully set forth herein.

45. Upon information and belief, Samsung has been and is directly infringing the '789 patent under 35 U.S.C. § 271(a) by making Samsung DRAM using within the United States, without authority, a process practicing all of the limitations of one or more claims of the '789 patent, either literally or under the doctrine of equivalents.

46. Upon information and belief, Samsung has been and is directly infringing the '789 patent under 35 U.S.C. § 271(g) by, without authority, importing into the United States and/or offering to sell, selling, and/or using within the United States Samsung DRAM and/or products containing Samsung DRAM, including but not limited to smartphones, tablets, desktop PCs, notebook PCs, Smart TVs, and monitors, where those Samsung DRAM are made by a process practicing all of the limitations of one or more claims of the '789 patent, either literally or under the doctrine of equivalents.

47. Upon information and belief, Samsung had knowledge of the '789 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

48. Upon information and belief, Samsung's acts of infringement of the '789 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015

and, since then Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '789 patent by refusing to take a license and continuing its infringing activity.

## **COUNT VI**

### **Patent Infringement of U.S. Patent No. 6,849,897**

49. Plaintiff repeats and re-alleges each and every allegation of paragraphs 1-48 as though fully set forth herein.

50. Upon information and belief, Samsung has been and is directly infringing the '897 patent under 35 U.S.C. § 271(a) by, without authority, making, using, offering to sell, and/or selling within the United States and/or importing into the United States Samsung flash memories that include all of the limitations of one or more claims of the '897 patent, either literally or under the doctrine of equivalents, and/or products containing those Samsung flash memories including but not limited to: stand-alone flash devices, smartphones, tablets, and PCs.

51. Upon information and belief, Samsung had knowledge of the '897 patent and its infringing conduct at least since July 31, 2015 when Samsung was placed on notice of its infringement in a letter sent to representatives of Samsung.

52. Upon information and belief, Samsung's acts of infringement of the '897 patent have been willful. Samsung was notified of its infringement at least as early as July 31, 2015 and, since then, Samsung has acted with an objectively high likelihood that its actions constitute infringement of the '897 patent by refusing to take a license and continuing its infringing activity.

## **JURY DEMAND**

53. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules

of Civil Procedure.

### **PRAYER FOR RELIEF**

54. Plaintiff is entitled to recover from Samsung the damages sustained by Plaintiff as a result of Samsung's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

55. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute create an exceptional case within the meaning of 35 U.S.C. § 285, and Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

56. Plaintiff respectfully requests that the Court find in its favor and against Samsung, and that the Court grant Plaintiff the following relief:

- A. A judgment that Samsung has infringed the patents-in-suit as alleged herein, directly and/or indirectly by contributing to infringement of such patents;
- B. A judgment for an accounting of all damages sustained by Plaintiff as a result of the acts of infringement by Samsung;
- C. A judgment and order requiring Samsung to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages for willful infringement as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
- D. A judgment and order requiring Samsung to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
- E. A judgment and order finding this to be an exceptional case and requiring Samsung to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and

F. Such other and further relief as the Court deems just and equitable.

Respectfully submitted,

ROSS ARONSTAM & MORITZ LLP

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