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ON SEMICONDUCTOR CORP. and
SEMICONDUCTOR COMPONENTS
INDUSTRIES, LLC

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
(SAN JOSE DIVISION)

POWER INTEGRATIONS, INC.,

Plaintiff,

v.

ON SEMICONDUCTOR CORP. AND
SEMICONDUCTOR COMPONENTS
INDUSTRIES, LLC,

Defendants.

Case No. 16-cv-06371-BLF

**THIRD AMENDED COMPLAINT OF ON
SEMICONDUCTOR CORP. AND
SEMICONDUCTOR COMPONENTS
INDUSTRIES, LLC FOR PATENT
INFRINGEMENT AND DECLARATORY
JUDGMENT**

(DEMAND FOR TRIAL BY JURY)

ON SEMICONDUCTOR CORP. AND
SEMICONDUCTOR COMPONENTS
INDUSTRIES, LLC,

Plaintiff,

v.

POWER INTEGRATIONS, INC.,

Defendants.

Case No. 17-cv-03189-BLF

1 ON Semiconductor Corporation and Semiconductor Components Industries, LLC
2 (collectively, “ON”) brings this civil action against Power Integrations, Inc. (“Power Integrations”)
3 and hereby avers and complains as follows:

4 **THE PARTIES**

5 1. ON Semiconductor Corporation is a Delaware corporation with its principal place of
6 business at 5005 East McDowell Road, Phoenix, Arizona, 85008.

7 2. Semiconductor Components Industries, LLC is a Delaware limited liability company
8 with its principal place of business at 5005 East McDowell Road, Phoenix, Arizona, 85008.

9 Semiconductor Components Industries, LLC is the principal domestic operating subsidiary of ON
10 Semiconductor Corporation and does business under the name of ON Semiconductor. ON
11 Semiconductor designs, manufactures, and markets a comprehensive portfolio of semiconductor
12 products, including AC-DC controllers and regulators.

13 3. Power Integrations, Inc. (“Power Integrations”) is incorporated under the laws of the
14 state of Delaware, and has a regular and established place of business at 5245 Hellyer Avenue, San
15 Jose, California, 95138. Power Integrations may be served through its registered agent at 5245
16 Hellyer Avenue, San Jose, California, 95138.

17 **JURISDICTION AND VENUE**

18 4. This action arises under the United States patent laws, 35 U.S.C. §§ 101, et seq.,
19 and includes a request for declaratory relief under 28 U.S.C. §§ 2201 and 2202.

20 5. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331, 1338, and 2201,
21 and 35 U.S.C. § 1, et seq.

22 6. Power Integrations is subject to general personal jurisdiction in this judicial district.
23 This Court has personal jurisdiction over Power Integrations because Power Integrations has
24 purposely availed themselves of the privilege of conducting activities within this State and judicial
25 District. For example, Power Integrations maintains continuous and systematic contacts with this
26 District, including maintaining its principal place of business in San Jose, California.

1 7. Power Integrations is subject to specific personal jurisdiction in this judicial district
2 for its infringement of U.S. Patent No. 6,333,624, U.S. Patent No. 6,429,709, U.S. Patent No.
3 RE39,933, U.S. Patent No. RE41,908, U.S. Patent No. RE45,862, U.S. Patent No. 6,597,221, U.S.
4 Patent No. 7,944,272, and U.S. Patent No. 7,447,601 at least because Power Integrations has placed
5 and continues to place the accused products into the stream of commerce that are sold in this
6 district, and has therefore purposefully availed itself of the privilege of conducting business in this
7 judicial district.

8 8. Power Integrations is also subject to specific personal jurisdiction in this judicial
9 district for ON's declaratory judgment claims concerning U.S. Patent No. 6,249,876, at least
10 because of Power Integrations's patent enforcement contacts with the jurisdiction, demonstrating
11 that Power Integrations has purposefully availed itself of the privilege of conducting business in this
12 judicial district.

13 9. Venue is proper in this district under each of 28 U.S.C. §§ 1391(b), 1391(c), and
14 1400(b). Power Integrations has its principal place of business in this district and has committed
15 acts of infringement in this district.

16 **INFRINGEMENT OF ON's PATENTS**

17 10. ON re-alleges and incorporates by reference each of Paragraphs 1-9 above.

18 11. After a full and fair examination, the United States Patent and Trademark Office
19 duly and legally issued U.S. Patent No. 6,333,624, entitled "Circuit and Method for a Switching
20 Power Supply with Primary Side Transformer Sensing" (hereinafter, "the '624 patent") on
21 December 25, 2001. A true and correct copy of the '624 patent is attached as Exhibit A.

22 12. After a full and fair examination, the United States Patent and Trademark Office
23 duly and legally issued U.S. Patent No. 6,429,709, entitled "Power Converter and Method for
24 Controlling" (hereinafter, "the '709 patent") on August 6, 2002. A true and correct copy of the 709
25 patent is attached as Exhibit B.

26 13. After a full and fair examination, the United States Patent and Trademark Office
27 duly and legally issued U.S. Patent No. RE39,933, entitled "Power Conversion Integrated Circuit
28

1 and Method for Programming” (hereinafter, “the ’933 patent”) on December 4, 2007. A true and
2 correct copy of the ’933 patent is attached as Exhibit C. The ’933 patent is a reissue of U.S. Patent
3 No. 5,859,768 (“the ’768 patent”) and claims 1-20 of the ’768 patent also appear in claims 1-20 of
4 the ’933 patent.

5 14. After a full and fair examination, the United States Patent and Trademark Office
6 duly and legally issued U.S. Patent No. RE41,908, entitled “Power Conversion Integrated Circuit
7 and Method for Programming” (hereinafter, “the ’908 patent”) on November 2, 2010. A true and
8 correct copy of the ’908 patent is attached as Exhibit D.

9 15. After a full and fair examination, the United States Patent and Trademark Office
10 duly and legally issued U.S. Patent No. RE45,862, entitled “Power Conversion Integrated Circuit
11 and Method for Programming” (hereinafter, “the ’862 patent”) on January 19, 2016. A true and
12 correct copy of the ’862 patent is attached as Exhibit E.

13 16. After a full and fair examination, the United States Patent and Trademark Office
14 duly and legally issued U.S. Patent No. 6,597,221, entitled “Power Converter Circuit and Method
15 for Controlling” (hereinafter, “the ’221 patent”) on July 22, 2003. A true and correct copy of the
16 ’221 patent is attached as Exhibit F.

17 17. After a full and fair examination, the United States Patent and Trademark Office
18 duly and legally issued U.S. Patent No. 7,944,272, entitled “Constant Current Circuit” (hereinafter,
19 “the ’272 patent”) on May 17, 2011. A true and correct copy of the 272 patent is attached as
20 Exhibit G.

21 18. After a full and fair examination, the United States Patent and Trademark Office
22 duly and legally issued U.S. Patent No. 7,447,601, entitled “Power Supply Controller Method and
23 Structure” (hereinafter, “the ’601 patent”) on November 4, 2008. A true and correct copy of the
24 ’601 patent is attached as Exhibit H.

25 19. Semiconductor Components Industries, LLC owns title and all rights to the ’624,
26 ’709, ’933, ’768, ’908, ’862, ’221, ’272, and ’601 patents, including the right to prevent others from
27 making, having made, using, offering for sale, importing, or selling products and services covered
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1 by those patents; the right to enforce those patents against Power Integrations; and the right to
2 collect damages for all relevant times.

3 20. Power Integrations has offered and continues to offer infringing semiconductors,
4 including but not limited to the LinkZero-LP series of integrated circuits, including those having
5 product name LNK574/576, TOPSwitch-HX series of integrated circuits, LYTSwitch-4 integrated
6 circuit, InnoSwitch-CE integrated circuit, and LYTSwitch-3 integrated circuit for sale, through
7 intermediaries (including distributors, retailers, and others), in this district and elsewhere.

8 **EXISTENCE OF AN ACTUAL CONTROVERSY**

9 21. ON re-alleges and incorporates by reference each of Paragraphs 1-20 above.

10 22. An actual controversy exists within the jurisdiction of this Court under 28
11 U.S.C. §§ 2201 and 2202.

12 23. On information and belief, Power Integrations is the owner of U.S. Patent
13 No. 6,249,876, entitled “Frequency Jittering Control for Varying the Switching Frequency of a
14 Power Supply” (“the ‘876 patent”), by assignment from named inventors Balu Balakrishnan, Alex
15 Djenguerian, and Leif Lund. The ‘876 patent bears an issuance date of June 19, 2001. A copy of
16 the ‘876 patent is attached to this Complaint as Exhibit I.

17 24. Power Integrations has accused ON of infringing the ‘876 patent. Specifically, Balu
18 Balakrishnan, President and CEO of Power Integrations and named inventor on the ‘876 patent, sent
19 an e-mail to Keith Jackson, President and Chief Executive Officer of ON, alleging that ON infringes
20 the ‘876 patent in connection with its manufacture, sale, and/or offers to sell ON’s AC-DC
21 controller with the model number NCP1246. A copy of the text of the e-mail (with e-mail
22 addresses redacted) is attached to this Complaint as Exhibit J.

23 25. Power Integrations has a history of asserting the ‘876 patent. *See, e.g., Power*
24 *Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, Case No. 1:04-CV-1371 (D. Del. filed Oct.
25 20, 2004) (asserting the ‘876 patent); *Power Integrations, Inc. v. Fairchild Semiconductor, Int’l*
26 *Inc.*, Case No. 1:08-CV-0309 (D. Del. filed May 23, 2008) (asserting the ‘876 patent); and *Power*

1 *Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc. et al.*, Case No. 3:15-CV-04854 (N.D. Cal.
2 filed October 21, 2015) (asserting the '079 and '876 patents).

3 26. In light of the specific allegation of infringement in Mr. Balakrishnan's e-mail, and
4 Power Integrations's history of filing suit for patent infringement on the '876 patent against other
5 semiconductor companies, the circumstances show a substantial controversy between parties with
6 adverse legal interests of sufficient immediacy and reality to warrant the issuance of a declaratory
7 judgment. Therefore, an actual controversy within this Court's jurisdiction exists under
8 28 U.S.C. § 2201.

9 **COUNT ONE**

10 **INFRINGEMENT OF U.S. PATENT NO. 6,333,624**

11 27. ON re-alleges and incorporates by reference each and every allegation of paragraphs
12 1-26 as though fully set forth herein.

13 28. The '624 patent is valid and enforceable.

14 29. Power Integrations has at no time, expressly or impliedly, been licensed under the
15 '624 patent.

16 30. Upon information and belief, Power Integrations has been and is now directly
17 infringing, literally or under the doctrine of equivalents, one or more claims of the '624 patent
18 through at least the acts of making, using, selling, offering for sale, and/or importing in the United
19 States infringing power supply controllers that include the features of one or more claims of the
20 '624 patent. More particularly, and without limitation, Power Integrations's LinkZero-LP series of
21 integrated circuits, including those having product name LNK574/576, infringe at least claim 6 of
22 the '624 patent. Upon information and belief, Power Integrations's LinkZero-LP series of
23 integrated circuits, including those having product name LNK574/576, include a switching
24 regulator coupled for receiving a first feedback signal and a variable reference signal to provide the
25 switching transistor drive signal. Upon information and belief, Power Integrations's LinkZero-LP
26 series of integrated circuits, including those having product name LNK574/576, include a
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1 compensation circuit coupled for receiving a current reference signal representative of the inductor
2 current for generating the variable reference signal.

3 31. Upon information and belief, Power Integrations has been and is now actively
4 inducing infringement of one or more claims of the '624 patent, either literally or under the doctrine
5 of equivalents.

6 32. Power Integrations has known of the '624 patent since at least September 25, 2014.

7 33. On information and belief, Power Integrations has intended, and continues to intend,
8 to induce patent infringement by third parties and has knowledge that the inducing acts would cause
9 infringement or has been willfully blind to the possibility that its inducing acts would cause
10 infringing acts. For example, Power Integrations is aware that the features claimed in the '624
11 patent are features of the power supply controller products and are necessarily used by purchasers of
12 the power supply controller products and, therefore, that Power Integrations's customers will
13 infringe the '624 patent by using the power supply controller products or incorporating the power
14 supply controller products in other products, and that subsequent sales of such products would also
15 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
16 the features claimed in the '624 patent are present in the LinkZero-LP series of integrated circuits,
17 including those having product name LNK574/576, and that such features are necessarily used by
18 purchasers of the LinkZero-LP series of integrated circuits and, therefore, that Power Integrations's
19 customers will infringe the '624 patent by using the LinkZero-LP series of integrated circuits or
20 incorporating the LinkZero-LP series of integrated circuits in other products, and that subsequent
21 sales of such products would also be a direct infringement.

22 34. On information and belief, Power Integrations's intentional actions induce others to
23 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
24 direct infringement and with full knowledge that Power Integrations's products infringe one or more
25 claims of the '624 patent both literally and under the doctrine of equivalents. By way of example only,
26 Power Integrations sells and delivers the infringing LinkZero-LP series of integrated circuits,
27 including those having product name LNK574/576 devices to U.S. distributors including Mouser
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1 Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale
2 the infringing products to customers in the United States, thereby directly infringing the '624 patent.
3 Power Integrations maintains a website in which it promotes the sale of and identifies that LinkZero-LP
4 series of integrated circuits, including those having product name LNK574/576, are available for sale
5 in the United States by Mouser Electronics (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby
6 inducing acts of direct infringement. Power Integrations further induces third parties to design the
7 accused products into power supplies and other products to be used in the United States, by, for
8 example, providing datasheets, application notes, design notes, and other collateral on their Internet
9 website available to customers and instructing those customers how to incorporate the LinkZero-LP
10 series of integrated circuits, including those having product name LNK574/576, into a power supply.
11 *See, e.g.*, https://ac-dc.power.com/sites/default/files/product-docs/linkzero-lp_family_datasheet.pdf. In
12 addition, Power Integrations employs sales representatives and field applications engineers that interact
13 with and work directly with customers to assist them in designing complete power supplies or other
14 products that, upon information and belief, Power Integrations knows or has reason to believe are
15 intended to be sold worldwide, including in the United States.

16 35. On information and belief, Power Integrations has been and is now contributing to
17 the infringement of the '624 patent, either literally or under the doctrine of equivalents.

18 36. On information and belief, Power Integrations has been aware, since first learning of
19 the '624 patent, that its power supply controllers that include the claimed features of the '624 patent
20 are a material part of the patented invention, are not a staple article or commodity of commerce
21 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
22 infringing the '624 patent, at least because the claimed features of the '624 patent are necessarily
23 used by purchasers of its power supply controllers. More particularly, and without limitation,
24 Power Integrations is aware that the LinkZero-LP series of integrated circuits, including those
25 having product name LNK574/576, are a material part of the patented invention, are not a staple
26 article or commodity of commerce suitable for substantial non-infringing use, and are especially
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1 made and/or adapted for use in infringing the '624 patent, at least because the claimed features of
2 the '624 patent are necessarily used by purchasers of its power supply controllers.

3 37. On information and belief, Power Integrations's customers have in fact directly
4 infringed the '624 patent by making, using, offering to sell, selling, and importing in the United
5 States infringing devices that incorporate a Power Integrations power supply controller chip that
6 includes the claimed features of the '624 patent. These devices meet each and every limitation of at
7 least one claim of the '624 patent either literally or equivalently. Power Integrations has knowledge
8 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
9 customers have directly infringed the '624 patent by making, using, offering to sell, selling, and
10 importing in the United States the LinkZero-LP series of integrated circuits, including those having
11 product name LNK574/576.

12 38. ON has been irreparably harmed by Power Integrations's infringement of the '624
13 patent and will continue to be harmed unless and until Power Integrations's infringement is
14 enjoined by this Court.

15 39. Power Integrations's infringement of the '624 has been willful as Power Integrations
16 has had knowledge of the '624 since at least September 2014. Upon information and belief, Power
17 Integrations's decision to continue to knowingly infringe the '624 patent is willful, deliberate, and
18 consciously wrongful, and Power Integrations has no good reason to believe its infringing conduct
19 is defensible. Upon information and belief, Power Integrations's acts of infringement have been,
20 and continue to be, willful so as to warrant the enhancement of damages awarded as a result of their
21 infringement. In particular, despite knowing of ON Semiconductor's patent rights, Power
22 Integrations continue to infringe the '624 patent by making, using, selling, offering for sale and/or
23 importing at least LinkZero-LP series of integrated circuits, including those having product name
24 LNK574/576, and contributing to and inducing others to do the same, knowing the products contain
25 infringing circuitry.

26 40. As a result of Power Integrations's infringement, ON has suffered and will continue
27 to suffer damages in an amount to be proved at trial.

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COUNT TWO

INFRINGEMENT OF U.S. PATENT NO. 6,429,709

41. ON re-alleges and incorporates by reference each and every allegation of paragraphs 1-40 as though fully set forth herein.

42. The '709 patent is valid and enforceable.

43. Power Integrations has at no time, expressly or impliedly, been licensed under the '709 patent.

44. Upon information and belief, Power Integrations has been and is now directly infringing, literally or under the doctrine of equivalents, one or more claims of the '709 patent through at least the acts of making, using, selling, offering for sale, and/or importing in the United States infringing power supply controllers that include the features of one or more claims of the '709 patent. More particularly, and without limitation, the use of Power Integrations's LinkZero-LP series of integrated circuits, including those having product name LNK574/576, infringe at least claim 12 of the '709 patent. Upon information and belief, the use of Power Integrations's LinkZero-LP series of integrated circuits, including those having product name LNK574/576, includes performing the steps of comparing an input voltage to a first reference signal to provide a first compare signal. Upon information and belief, the use of Power Integrations's LinkZero-LP series of integrated circuits, including those having product name LNK574/576, includes performing the steps of comparing the input voltage to a second reference signal after receiving the first compare signal to provide a second compare signal, and passing the control signal from the first node to the second node after receiving the second compare signal.

45. Upon information and belief, Power Integrations has been and is now actively inducing infringement of one or more claims of the '709 patent, either literally or under the doctrine of equivalents.

46. Power Integrations has known of the '709 patent since at least September 25, 2014.

47. On information and belief, Power Integrations has intended, and continues to intend, to induce patent infringement by third parties and has knowledge that the inducing acts would cause

1 infringement or has been willfully blind to the possibility that its inducing acts would cause
2 infringing acts. For example, Power Integrations is aware that the features claimed in the '709
3 patent are features of the power supply controller products and are necessarily used by purchasers of
4 the power supply controller products and, therefore, that Power Integrations's customers will
5 infringe the '709 patent by using the power supply controller products or incorporating the power
6 supply controller products in other products, and that subsequent sales of such products would also
7 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
8 the features claimed in the '709 patent are present in the LinkZero-LP series of integrated circuits,
9 including those having product name LNK574/576, and that such features are necessarily used by
10 purchasers of the LinkZero-LP series of integrated circuits and, therefore, that Power Integrations's
11 customers will infringe the '709 patent by using the LinkZero-LP series of integrated circuits or
12 incorporating the LinkZero-LP series of integrated circuits in other products, and that subsequent
13 sales of such products would also be a direct infringement.

14 48. On information and belief, Power Integrations's intentional actions induce others to
15 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
16 direct infringement and with full knowledge that Power Integrations's products infringe one or more
17 claims of the '709 patent both literally and under the doctrine of equivalents. By way of example only,
18 Power Integrations sells and delivers the infringing LinkZero-LP series of integrated circuits,
19 including those having product name LNK574/576 devices to U.S. distributors including Mouser
20 Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer for sale
21 the infringing products to customers in the United States, thereby directly infringing the '709 patent.
22 Power Integrations maintains a website in which it promotes the sale of and identifies that LinkZero-LP
23 series of integrated circuits, including those having product name LNK574/576, are available for sale
24 in the United States by Mouser Electronics (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby
25 inducing acts of direct infringement. Power Integrations further induces third parties to design the
26 accused products into power supplies and other products to be used in the United States, by, for
27 example, providing datasheets, application notes, design notes, and other collateral on their Internet
28

1 website available to customers and instructing those customers how to incorporate the LinkZero-LP
2 series of integrated circuits, including those having product name LNK574/576, into a power supply.
3 *See, e.g.*, https://ac-dc.power.com/sites/default/files/product-docs/linkzero-lp_family_datasheet.pdf. In
4 addition, Power Integrations employs sales representatives and field applications engineers that interact
5 with and work directly with customers to assist them in designing complete power supplies or other
6 products that, upon information and belief, Power Integrations knows or has reason to believe are
7 intended to be sold worldwide, including in the United States.

8 49. On information and belief, Power Integrations has been and is now contributing to
9 the infringement of the '709 patent, either literally or under the doctrine of equivalents.

10 50. On information and belief, Power Integrations has been aware, since first learning of
11 the '709 patent, that its power supply controllers that include the claimed features of the '709 patent
12 are a material part of the patented invention, are not a staple article or commodity of commerce
13 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
14 infringing the '709 patent, at least because the claimed features of the '709 patent are necessarily
15 used by purchasers of its power supply controllers. More particularly, and without limitation,
16 Power Integrations is aware that the LinkZero-LP series of integrated circuits, including those
17 having product name LNK574/576, are a material part of the patented invention, are not a staple
18 article or commodity of commerce suitable for substantial non-infringing use, and are especially
19 made and/or adapted for use in infringing the '709 patent, at least because the claimed features of
20 the '709 patent are necessarily used by purchasers of its power supply controllers.

21 51. On information and belief, Power Integrations's customers have in fact directly
22 infringed the '709 patent by making, using, offering to sell, selling, and importing in the United
23 States infringing devices that incorporate a Power Integrations power supply controller chip that
24 includes the claimed features of the '709 patent. These devices meet each and every limitation of at
25 least one claim of the '709 patent either literally or equivalently. Power Integrations has knowledge
26 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
27 customers have directly infringed the '709 patent by making, using, offering to sell, selling, and
28

1 importing in the United States the LinkZero-LP series of integrated circuits, including those having
2 product name LNK574/576.

3 52. ON has been irreparably harmed by Power Integrations's infringement of the '709
4 patent and will continue to be harmed unless and until Power Integrations's infringement is
5 enjoined by this Court.

6 53. Power Integrations's infringement of the '709 has been willful as Power Integrations
7 has had knowledge of the '709 since at least September 2014. Upon information and belief, Power
8 Integrations's decision to continue to knowingly infringe the '709 patent is willful, deliberate, and
9 consciously wrongful, and Power Integrations has no good reason to believe its infringing conduct
10 is defensible. Upon information and belief, Power Integrations's acts of infringement have been,
11 and continue to be, willful so as to warrant the enhancement of damages awarded as a result of their
12 infringement. In particular, despite knowing of ON Semiconductor's patent rights, Power
13 Integrations continues to infringe the '709 patent by making, using, selling, offering for sale and/or
14 importing at least LinkZero-LP series of integrated circuits, including those having product name
15 LNK574/576, and contributing to and inducing others to do the same, knowing the products contain
16 infringing circuitry.

17 54. As a result of Power Integrations's infringement, ON has suffered and will continue
18 to suffer damages in an amount to be proved at trial.

19 **COUNT THREE**

20 **INFRINGEMENT OF U.S. PATENT NO. RE39,933**

21 55. ON re-alleges and incorporates by reference each and every allegation of paragraphs
22 1-54 as though fully set forth herein.

23 56. The '933 patent is valid and enforceable.

24 57. Power Integrations has at no time, expressly or impliedly, been licensed under the
25 '933 patent.

26 58. Upon information and belief, Power Integrations has been and is now directly
27 infringing, literally or under the doctrine of equivalents, one or more claims of the '933 patent
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1 through at least the acts of making, using, selling, offering for sale, and/or importing in the United
2 States infringing power supply controllers that include the features of one or more claims of the
3 '933 patent. More particularly, and without limitation, Power Integrations's TOPSwitch-HX series
4 of integrated circuits infringe at least claim 14 of the '933 patent. Upon information and belief, the
5 use of Power Integrations's TOPSwitch-HX series of integrated circuits, includes performing the
6 steps of controlling a pulse-width modulated output signal of the power converter in response to a
7 feedback signal. Upon information and belief, the use of Power Integrations's TOPSwitch-HX
8 series of integrated circuits, includes performing the steps of setting a memory state according to a
9 comparison between a control signal and a first reference signal where the memory state controls
10 the mode of operation of the power converter.

11 59. Upon information and belief, Power Integrations has been and is now actively
12 inducing infringement of one or more claims of the '933 patent, either literally or under the doctrine
13 of equivalents.

14 60. Power Integrations has known of the '768 patent, including claims 1-20 of the '768
15 patent, since at least August 2007. The '768 patent has been cited as a reference in at least eight
16 issued patents of Power Integrations, the first of which issued on August 7, 2007. Because the '933
17 patent includes claims 1-20 of the '768 patent, Power Integrations has known of claims 1-20 of the
18 '933 patent since at least August 7, 2007 and has known of the remainder of the claims '933 patent
19 since at least the filing date of this lawsuit on August 11, 2016.

20 61. On information and belief, Power Integrations has intended, and continues to intend,
21 to induce patent infringement by third parties and has knowledge that the inducing acts would cause
22 infringement or has been willfully blind to the possibility that its inducing acts would cause
23 infringing acts. For example, Power Integrations is aware that the features claimed in the '933
24 patent are features of the power supply controller products and are necessarily used by purchasers of
25 the power supply controller products and, therefore, that Power Integrations's customers will
26 infringe the '933 patent by using the power supply controller products or incorporating the power
27 supply controller products in other products, and that subsequent sales of such products would also
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1 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
2 the features claimed in the '933 patent are present in the TOPSwitch-HX series of integrated circuits
3 and that such features are necessarily used by purchasers of the TOPSwitch-HX series of integrated
4 circuits and, therefore, that Power Integrations's customers will infringe the '933 patent by using
5 the TOPSwitch-HX series of integrated circuits or incorporating the TOPSwitch-HX series of
6 integrated circuits in other products, and that subsequent sales of such products would also be a
7 direct infringement.

8 62. On information and belief, Power Integrations's intentional actions induce others to
9 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
10 direct infringement and with full knowledge that Power Integrations's products infringe one or more
11 claims of the '933 patent both literally and under the doctrine of equivalents. By way of example only,
12 Power Integrations sells and delivers the TOPSwitch-HX series of integrated circuits to U.S.
13 distributors including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser
14 Electronics to sell and offer for sale the infringing products to customers in the United States, thereby
15 directly infringing the '933 patent. Power Integrations maintains a website in which it promotes the sale
16 of and identifies that the TOPSwitch-HX series of integrated circuits are available for sale in the
17 United States by Mouser Electronics (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby
18 inducing acts of direct infringement. Power Integrations further induces third parties to design the
19 accused products into power supplies and other products to be used in the United States, by, for
20 example, providing datasheets, application notes, design notes, and other collateral on their Internet
21 website available to customers and instructing those customers how to incorporate the TOPSwitch-HX
22 series of integrated circuits into a power supply. *See, e.g.,* [https://ac-](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf)
23 [dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf) and
24 <https://www.power.com/sites/default/files/product-docs/an43.pdf> . In addition, Power Integrations
25 employs sales representatives and field applications engineers that interact with and work directly with
26 customers to assist them in designing complete power supplies or other products that, upon information
27
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1 and belief, Power Integrations knows or has reason to believe are intended to be sold worldwide,
2 including in the United States.

3 63. On information and belief, Power Integrations has been and is now contributing to
4 the infringement of the '933 patent, either literally or under the doctrine of equivalents.

5 64. On information and belief, Power Integrations has been aware, since first learning of
6 the '933 patent, that its power supply controllers that include the claimed features of the '933 patent
7 are a material part of the patented invention, are not a staple article or commodity of commerce
8 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
9 infringing the '933 patent, at least because the claimed features of the '933 patent are necessarily
10 used by purchasers of its power supply controllers. More particularly, and without limitation,
11 Power Integrations is aware that the TOPSwitch-HX series of integrated circuits are a material part
12 of the patented invention, are not a staple article or commodity of commerce suitable for substantial
13 non-infringing use, and are especially made and/or adapted for use in infringing the '933 patent, at
14 least because the claimed features of the '933 patent are necessarily used by purchasers of its power
15 supply controllers.

16 65. On information and belief, Power Integrations's customers have in fact directly
17 infringed the '933 patent by making, using, offering to sell, selling, and importing in the United
18 States infringing devices that incorporate a Power Integrations power supply controller chip that
19 includes the claimed features of the '933 patent. These devices meet each and every limitation of at
20 least one claim of the '933 patent either literally or equivalently. Power Integrations has knowledge
21 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
22 customers have directly infringed the '933 patent by making, using, offering to sell, selling, and
23 importing in the United States the TOPSwitch-HX series of integrated circuits.

24 66. ON has been irreparably harmed by Power Integrations's infringement of the '933
25 patent and will continue to be harmed unless and until Power Integrations's infringement is
26 enjoined by this Court.

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1 67. As a result of Power Integrations's infringement, ON has suffered and will continue
2 to suffer damages in an amount to be proved at trial.

3 **COUNT FOUR**

4 **INFRINGEMENT OF U.S. PATENT NO. RE41,908**

5 68. ON re-alleges and incorporates by reference each and every allegation of paragraphs
6 1-67 as though fully set forth herein.

7 69. The '908 patent is valid and enforceable.

8 70. Power Integrations has at no time, expressly or impliedly, been licensed under the
9 '908 patent.

10 71. Upon information and belief, Power Integrations has been and is now directly
11 infringing, literally or under the doctrine of equivalents, one or more claims of the '908 patent
12 through at least the acts of making, using, selling, offering for sale, and/or importing in the United
13 States infringing power supply controllers that include the features of one or more claims of the
14 '908 patent. More particularly, and without limitation, Power Integrations's LYTSwitch-4
15 integrated circuit infringes at least claim 26 of the '908 patent. Upon information and belief, Power
16 Integrations's LYTSwitch-4 integrated circuit includes a terminal coupled for receiving a mode
17 control signal which controls on-state and off-state of the power supply regulator circuit. Upon
18 information and belief, Power Integrations's LYTSwitch-4 integrated circuit includes a regulator
19 circuit having a first input coupled for receiving a feedback signal, and an output for providing a
20 pulse-width modulated switching signal in response to the feedback signal, the regulator circuit
21 including (a) a first comparator having an input coupled for receiving the mode control signal, and
22 an output having first or second states depending on a comparison between the mode control signal
23 and a first reference value, (b) a second comparator having an input coupled for receiving the mode
24 control signal, and an output having first or second states depending on a comparison between the
25 mode control signal and a second reference value different from the first reference value, and (c) a
26 logic circuit having a first input coupled to the output of the first comparator, a second input
27 coupled to the output of the second comparator, the logic circuit decoding the outputs of the first
28

1 and second comparators and setting the regulator circuit to a non-operational off-state, wherein the
2 regulator circuit is provided in a monolithic integrated circuit package and the terminal is coupled to
3 a pin of the monolithic integrated circuit package.

4 72. Upon information and belief, Power Integrations has been and is now actively
5 inducing infringement of one or more claims of the '908 patent, either literally or under the doctrine
6 of equivalents.

7 73. Power Integrations has known of the '908 patent since at least the filing date of this
8 lawsuit on August 11, 2016.

9 74. On information and belief, Power Integrations has intended, and continues to intend,
10 to induce patent infringement by third parties and has knowledge that the inducing acts would cause
11 infringement or has been willfully blind to the possibility that its inducing acts would cause
12 infringing acts. For example, Power Integrations is aware that the features claimed in the '908
13 patent are features of the power supply controller products and are necessarily used by purchasers of
14 the power supply controller products and, therefore, that Power Integrations's customers will
15 infringe the '908 patent by using the power supply controller products or incorporating the power
16 supply controller products in other products, and that subsequent sales of such products would also
17 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
18 the features claimed in the '908 patent are present in the LYTSwitch-4 integrated circuit and that
19 such features are necessarily used by purchasers of the LYTSwitch-4 integrated circuit and,
20 therefore, that Power Integrations's customers will infringe the '908 patent by using the
21 LYTSwitch-4 integrated circuit or incorporating the LYTSwitch-4 integrated circuit in other
22 products, and that subsequent sales of such products would also be a direct infringement.

23 75. On information and belief, Power Integrations's intentional actions induce others to
24 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
25 direct infringement and with full knowledge that Power Integrations's products infringe one or more
26 claims of the '908 patent both literally and under the doctrine of equivalents. By way of example only,
27 Power Integrations sells and delivers the LYTSwitch-4 integrated circuit to U.S. distributors including
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1 Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell and offer
2 for sale the infringing products to customers in the United States, thereby directly infringing the '908
3 patent. Power Integrations maintains a website in which it promotes the sale of and identifies that the
4 LYTSwitch-4 integrated circuit are available for sale in the United States by Mouser Electronics
5 (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby inducing acts of direct infringement.
6 Power Integrations further induces third parties to design the accused products into power supplies and
7 other products to be used in the United States, by, for example, providing datasheets, application notes,
8 design notes, and other collateral on their Internet website available to customers and instructing those
9 customers how to incorporate the LYTSwitch-4 integrated circuit into a power supply. *See, e.g.*,
10 https://led-driver.power.com/sites/default/files/product-docs/lytswitch-4_family_datasheet.pdf and
11 https://led-driver.power.com/system/files_force/product-docs/an59.pdf. In addition, Power Integrations
12 employs sales representatives and field applications engineers that interact with and work directly with
13 customers to assist them in designing complete power supplies or other products that, upon information
14 and belief, Power Integrations knows or has reason to believe are intended to be sold worldwide,
15 including in the United States.

16 76. On information and belief, Power Integrations has been and is now contributing to
17 the infringement of the '908 patent, either literally or under the doctrine of equivalents.

18 77. On information and belief, Power Integrations has been aware, since first learning of
19 the '908 patent, that its power supply controllers that include the claimed features of the '908 patent
20 are a material part of the patented invention, are not a staple article or commodity of commerce
21 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
22 infringing the '908 patent, at least because the claimed features of the '908 patent are necessarily
23 used by purchasers of its power supply controllers. More particularly, and without limitation,
24 Power Integrations is aware that the LYTSwitch-4 integrated circuit are a material part of the
25 patented invention, are not a staple article or commodity of commerce suitable for substantial non-
26 infringing use, and are especially made and/or adapted for use in infringing the '908 patent, at least
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1 because the claimed features of the '908 patent are necessarily used by purchasers of its power
2 supply controllers.

3 78. On information and belief, Power Integrations's customers have in fact directly
4 infringed the '908 patent by making, using, offering to sell, selling, and importing in the United
5 States infringing devices that incorporate a Power Integrations power supply controller chip that
6 includes the claimed features of the '908 patent. These devices meet each and every limitation of at
7 least one claim of the '908 patent either literally or equivalently. Power Integrations has knowledge
8 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
9 customers have directly infringed the '908 patent by making, using, offering to sell, selling, and
10 importing in the United States the LYTSwitch-4 integrated circuit.

11 79. ON has been irreparably harmed by Power Integrations's infringement of the '908
12 patent and will continue to be harmed unless and until Power Integrations's infringement is
13 enjoined by this Court.

14 80. As a result of Power Integrations's infringement, ON has suffered and will continue
15 to suffer damages in an amount to be proved at trial.

16 **COUNT FIVE**

17 **INFRINGEMENT OF U.S. PATENT NO. RE45,862**

18 81. ON re-alleges and incorporates by reference each and every allegation of paragraphs
19 1-80 as though fully set forth herein.

20 82. The '862 patent is valid and enforceable.

21 83. Power Integrations has at no time, expressly or impliedly, been licensed under the
22 '862 patent.

23 84. Upon information and belief, Power Integrations has been and is now directly
24 infringing, literally or under the doctrine of equivalents, one or more claims of the '862 patent
25 through at least the acts of making, using, selling, offering for sale, and/or importing in the United
26 States infringing power supply controllers that include the features of one or more claims of the
27 '862 patent. More particularly, and without limitation, Power Integrations's InnoSwitch-CE
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1 integrated circuit infringes at least claim 34 of the '862 patent. Upon information and belief, the use
2 of Power Integrations's InnoSwitch-CE integrated circuit includes performing the steps of receiving
3 a state control signal at a pin of the semiconductor package for controlling an operational state of a
4 power conversion control circuit. Upon information and belief, the use of Power Integrations's
5 InnoSwitch-CE integrated circuit includes performing the steps of comparing the state control
6 signal to a first reference and to a second reference less than the first reference. Upon information
7 and belief, the use of Power Integrations's InnoSwitch-CE integrated circuit includes performing
8 the steps of generating a first value of a mode signal during a second value of the state control
9 signal, the first value of the mode signal being dependent upon the comparing of the state control
10 signal to the first reference and the second reference. Upon information and belief, the use of
11 Power Integrations's InnoSwitch-CE integrated circuit includes performing the steps of setting the
12 operational state of the power conversion control circuit to one of a plurality of operational states in
13 response to the mode signal depending on whether the state control signal is greater than the first
14 reference value, or the state control signal is between the first and second reference values, or the
15 state control signal is less than the second reference value.

16 85. Upon information and belief, Power Integrations has been and is now actively
17 inducing infringement of one or more claims of the '862 patent, either literally or under the doctrine
18 of equivalents.

19 86. Power Integrations has known of the '862 patent since at least the filing date of this
20 lawsuit on August 11, 2016.

21 87. On information and belief, Power Integrations has intended, and continues to intend,
22 to induce patent infringement by third parties and has knowledge that the inducing acts would cause
23 infringement or has been willfully blind to the possibility that its inducing acts would cause
24 infringing acts. For example, Power Integrations is aware that the features claimed in the '862
25 patent are features of the power supply controller products and are necessarily used by purchasers of
26 the power supply controller products and, therefore, that Power Integrations's customers will
27 infringe the '862 patent by using the power supply controller products or incorporating the power
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1 supply controller products in other products, and that subsequent sales of such products would also
2 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
3 the features claimed in the '862 patent are present in the InnoSwitch-CE integrated circuit and that
4 such features are necessarily used by purchasers of the InnoSwitch-CE integrated circuit and,
5 therefore, that Power Integrations's customers will infringe the '862 patent by using the
6 InnoSwitch-CE integrated circuit or incorporating the InnoSwitch-CE integrated circuit in other
7 products, and that subsequent sales of such products would also be a direct infringement.

8 88. On information and belief, Power Integrations's intentional actions induce others to
9 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
10 direct infringement and with full knowledge that Power Integrations's products infringe one or more
11 claims of the '862 patent both literally and under the doctrine of equivalents. By way of example only,
12 Power Integrations sells and delivers the InnoSwitch-CE integrated circuit to U.S. distributors
13 including Mouser Electronics located in Mansfield, TX and thereafter induce Mouser Electronics to sell
14 and offer for sale the infringing products to customers in the United States, thereby directly infringing
15 the '862 patent. Power Integrations maintains a website in which it promotes the sale of and identifies
16 that the InnoSwitch-CE integrated circuit are available for sale in the United States by Mouser
17 Electronics (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby inducing acts of direct
18 infringement. Power Integrations further induces third parties to design the accused products into
19 power supplies and other products to be used in the United States, by, for example, providing
20 datasheets, application notes, design notes, and other collateral on their Internet website available to
21 customers and instructing those customers how to incorporate the InnoSwitch-CE integrated circuit
22 into a power supply. *See, e.g.,* [https://ac-dc.power.com/sites/default/files/product-docs/innoswitch-](https://ac-dc.power.com/sites/default/files/product-docs/innoswitch-ce_family_datasheet.pdf)
23 [ce_family_datasheet.pdf](https://ac-dc.power.com/sites/default/files/product-docs/innoswitch-ce_family_datasheet.pdf). In addition, Power Integrations employs sales representatives and field
24 applications engineers that interact with and work directly with customers to assist them in designing
25 complete power supplies or other products that, upon information and belief, Power Integrations knows
26 or has reason to believe are intended to be sold worldwide, including in the United States.

1 89. On information and belief, Power Integrations has been and is now contributing to
2 the infringement of the '862 patent, either literally or under the doctrine of equivalents.

3 90. On information and belief, Power Integrations has been aware, since first learning of
4 the '862 patent, that its power supply controllers that include the claimed features of the '862 patent
5 are a material part of the patented invention, are not a staple article or commodity of commerce
6 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
7 infringing the '862 patent, at least because the claimed features of the '862 patent are necessarily
8 used by purchasers of its power supply controllers. More particularly, and without limitation,
9 Power Integrations is aware that the InnoSwitch-CE integrated circuit is a material part of the
10 patented invention, are not a staple article or commodity of commerce suitable for substantial non-
11 infringing use, and are especially made and/or adapted for use in infringing the '862 patent, at least
12 because the claimed features of the '862 patent are necessarily used by purchasers of its power
13 supply controllers.

14 91. On information and belief, Power Integrations's customers have in fact directly
15 infringed the '862 patent by making, using, offering to sell, selling, and importing in the United
16 States infringing devices that incorporate a Power Integrations power supply controller chip that
17 includes the claimed features of the '862 patent. These devices meet each and every limitation of at
18 least one claim of the '862 patent either literally or equivalently. Power Integrations has knowledge
19 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
20 customers have directly infringed the '862 patent by making, using, offering to sell, selling, and
21 importing in the United States the InnoSwitch-CE integrated circuit.

22 92. ON has been irreparably harmed by Power Integrations's infringement of the '862
23 patent and will continue to be harmed unless and until Power Integrations's infringement is
24 enjoined by this Court.

25 93. As a result of Power Integrations's infringement, ON has suffered and will continue
26 to suffer damages in an amount to be proved at trial.

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COUNT SIX

INFRINGEMENT OF U.S. PATENT NO. 6,597,221

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2
3 94. ON re-alleges and incorporates by reference each and every allegation of paragraphs
4 1-93 as though fully set forth herein.

5 95. The '221 patent is valid and enforceable.

6 96. Power Integrations has at no time, expressly or impliedly, been licensed under the
7 '221 patent.

8 97. Upon information and belief, Power Integrations has been and is now directly
9 infringing, literally or under the doctrine of equivalents, one or more claims of the '221 patent
10 through at least the acts of making, using, selling, offering for sale, and/or importing in the United
11 States infringing power supply controllers that include the features of one or more claims of the
12 '221 patent. More particularly, and without limitation, Power Integrations's DPA-Switch,
13 TOPSwitch-HX (TOP252-262), and TOPSwitch-JX (TOP264-271) infringe at least claim 9 of the
14 '221 patent. Upon information and belief, the Power Integrations's DPA-Switch, TOPSwitch-HX
15 (TOP252-262), and TOPSwitch-JX (TOP264-271) are each an integrated circuit that includes a
16 pulse generator for regulating an output voltage with pulses having duty cycles determined by an
17 error signal. Upon information and belief, the Power Integrations's DPA-Switch, TOPSwitch-HX
18 (TOP252-262), and TOPSwitch-JX (TOP264-271) include a first comparator for comparing the
19 error signal with a reference signal representing a threshold duty cycle of the pulses, and having an
20 output for disabling the pulse generator.

21 98. Upon information and belief, Power Integrations has been and is now actively
22 inducing infringement of one or more claims of the '221 patent, either literally or under the doctrine
23 of equivalents.

24 99. Power Integrations has known of the '221 patent since at least the filing date of the
25 First Amended Complaint in this lawsuit on November 18, 2016.

26 100. On information and belief, Power Integrations has intended, and continues to intend,
27 to induce patent infringement by third parties and has knowledge that the inducing acts would cause
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1 infringement or has been willfully blind to the possibility that its inducing acts would cause
2 infringing acts. For example, Power Integrations is aware that the features claimed in the '221
3 patent are features of the power supply controller products and are necessarily used by purchasers of
4 the power supply controller products and, therefore, that Power Integrations's customers will
5 infringe the '221 patent by using the power supply controller products or incorporating the power
6 supply controller products in other products, and that subsequent sales of such products would also
7 be a direct infringement. More particularly, and without limitation, Power Integrations is aware that
8 the features claimed in the '221 patent are present in the DPA-Switch, TOPSwitch-HX (TOP252-
9 262), and TOPSwitch-JX (TOP264-271) and that such features are necessarily used by purchasers
10 of the DPA-Switch, TOPSwitch-HX (TOP252-262), and TOPSwitch-JX (TOP264-271) and,
11 therefore, that Power Integrations's customers will infringe the '221 patent by using the DPA-
12 Switch, TOPSwitch-HX (TOP252-262), and TOPSwitch-JX (TOP264-271) or incorporating the
13 DPA-Switch, TOPSwitch-HX (TOP252-262), and TOPSwitch-JX (TOP264-271) in other products,
14 and that subsequent sales of such products would also be a direct infringement.

15 101. On information and belief, Power Integrations's intentional actions induce others to
16 directly infringe, and those actions are undertaken with the specific intent that they will, in fact, induce
17 direct infringement and with full knowledge that Power Integrations's products infringe one or more
18 claims of the '221 patent both literally and under the doctrine of equivalents. By way of example only,
19 Power Integrations sells and delivers the DPA-Switch, TOPSwitch-HX (TOP252-262), and
20 TOPSwitch-JX (TOP264-271) to U.S. distributors including Mouser Electronics located in Mansfield,
21 TX and thereafter induce Mouser Electronics to sell and offer for sale the infringing products to
22 customers in the United States, thereby directly infringing the '221 patent. Power Integrations maintains
23 a website in which it promotes the sale of and identifies that the DPA-Switch, TOPSwitch-HX
24 (TOP252-262), and TOPSwitch-JX (TOP264-271) are available for sale in the United States by
25 Mouser Electronics (<https://ac-dc.power.com/sales/distributors/mouser/>), thereby inducing acts of direct
26 infringement. Power Integrations further induces third parties to design the accused products into
27 power supplies and other products to be used in the United States, by, for example, providing
28

1 datasheets, application notes, design notes, and other collateral on their Internet website available to
2 customers and instructing those customers how to incorporate the DPA-Switch, TOPSwitch-HX
3 (TOP252-262), and TOPSwitch-JX (TOP264-271) into a power supply. *See, e.g.*, [https://ac-](https://ac-dc.power.com/sites/default/files/product-docs/dpa_family_datasheet.pdf)
4 [dc.power.com/sites/default/files/product-docs/dpa_family_datasheet.pdf](https://ac-dc.power.com/sites/default/files/product-docs/dpa_family_datasheet.pdf) ; [https://ac-](https://ac-dc.power.com/system/files_force/product-docs/an31.pdf)
5 [dc.power.com/system/files_force/product-docs/an31.pdf](https://ac-dc.power.com/system/files_force/product-docs/an31.pdf) ; [https://ac-](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf)
6 [dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-hx_family_datasheet.pdf) ;
7 <https://www.power.com/sites/default/files/product-docs/an43.pdf>; [https://ac-](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-jx_family_datasheet.pdf)
8 [dc.power.com/sites/default/files/product-docs/topswitch-jx_family_datasheet.pdf](https://ac-dc.power.com/sites/default/files/product-docs/topswitch-jx_family_datasheet.pdf) ; and [https://ac-](https://ac-dc.power.com/sites/default/files/product-docs/an47.pdf)
9 [dc.power.com/sites/default/files/product-docs/an47.pdf](https://ac-dc.power.com/sites/default/files/product-docs/an47.pdf). In addition, Power Integrations employs sales
10 representatives and field applications engineers that interact with and work directly with customers to
11 assist them in designing complete power supplies or other products that, upon information and belief,
12 Power Integrations knows or has reason to believe are intended to be sold worldwide, including in the
13 United States.

14 102. On information and belief, Power Integrations has been and is now contributing to
15 the infringement of the '221 patent, either literally or under the doctrine of equivalents.

16 103. On information and belief, Power Integrations has been aware, since first learning of
17 the '221 patent, that its power supply controllers that include the claimed features of the '221 patent
18 are a material part of the patented invention, are not a staple article or commodity of commerce
19 suitable for substantial non-infringing use, and are especially made and/or adapted for use in
20 infringing the '221 patent, at least because the claimed features of the '221 patent are necessarily
21 used by purchasers of its power supply controllers. More particularly, and without limitation,
22 Power Integrations is aware that the DPA-Switch, TOPSwitch-HX (TOP252-262), and TOPSwitch-
23 JX (TOP264-271) are a material part of the patented invention, are not a staple article or commodity
24 of commerce suitable for substantial non-infringing use, and are especially made and/or adapted for
25 use in infringing the '221 patent, at least because the claimed features of the '221 patent are
26 necessarily used by purchasers of its power supply controllers.

1 104. On information and belief, Power Integrations's customers have in fact directly
2 infringed the '221 patent by making, using, offering to sell, selling, and importing in the United
3 States infringing devices that incorporate a Power Integrations power supply controller chip that
4 includes the claimed features of the '221 patent. These devices meet each and every limitation of at
5 least one claim of the '221 patent either literally or equivalently. Power Integrations has knowledge
6 of these infringing uses by its customers. Specifically, and without limitation, Power Integrations's
7 customers have directly infringed the '221 patent by making, using, offering to sell, selling, and
8 importing in the United States the DPA-Switch, TOPSwitch-HX (TOP252-262), and TOPSwitch-
9 JX (TOP264-271) circuits.

10 105. ON has been irreparably harmed by Power Integrations's infringement of the '221
11 patent and will continue to be harmed unless and until Power Integrations's infringement is
12 enjoined by this Court.

13 106. As a result of Power Integrations's infringement, ON has suffered and will continue
14 to suffer damages in an amount to be proved at trial.

15 **COUNT SEVEN**

16 **INFRINGEMENT OF U.S. PATENT NO. 7,944,272**

17 107. ON re-alleges and incorporates by reference each and every allegation of paragraphs
18 1-106 as though fully set forth herein.

19 108. The '272 patent is valid and enforceable.

20 109. Power Integrations has at no time, expressly or impliedly, been licensed under the
21 '272 patent.

22 110. Power Integrations has been and is now directly infringing, literally or under the
23 doctrine of equivalents, one or more claims of the '272 patent through at least the acts of making,
24 using, selling, offering for sale, and/or importing in the United States infringing power supply
25 controllers that include the features of one or more claims of the '272 patent.

26 111. More particularly, and without limitation, Power Integrations's LYTSwitch-4
27 integrated circuit infringes at least claim 1 of the '272 patent. In the following passages, the claim
28

1 language of the claim 1 is underlined. Power Integrations’s LYTSwitch-4 integrated circuit
 2 includes a constant current circuit. Page 4 of the datasheet for the LYTSwitch-4 integrated circuit
 3 states that the LYTSwitch-4 integrated circuit “provides both high power factor and constant current
 4 output in a single-stage.”

5 112. The LYTSwitch-4 integrated circuit also includes a temperature compensator circuit
 6 configured to output a first current which is temperature compensated. As shown in Figure 1
 7 below, the LYTSwitch-4 integrated circuit includes a bias generator block. The temperature
 8 compensator circuit of the LYTSwitch-4 integrated circuit is included within the bias generator
 9 block. The first current is output within the bias generator block, and several outputs of the bias
 10 generator block, including VBP1, VBP2, IBP1, and IBP2, are based on the temperature-
 11 compensated first current generated within the bias generator block. In the diagram of Figure 2
 12 below, which is a diagram of a circuit included within the bias generator block, the first current is
 13 shown at C.

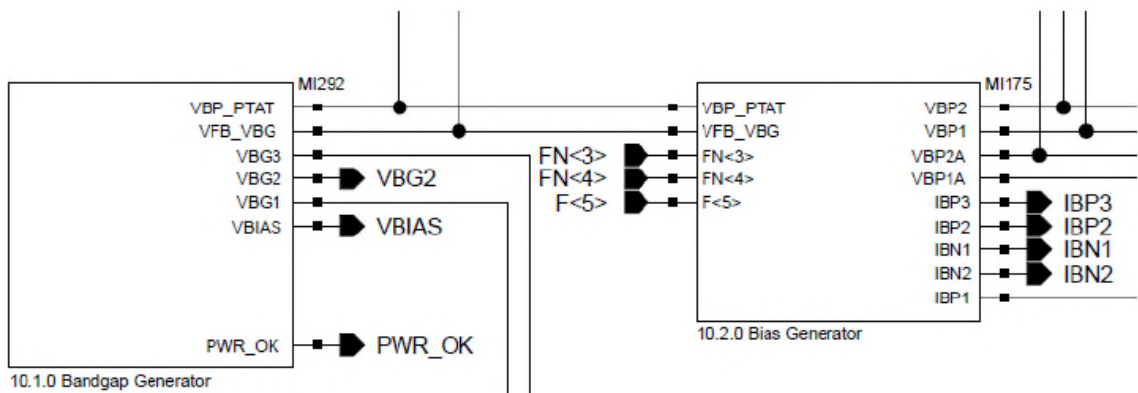
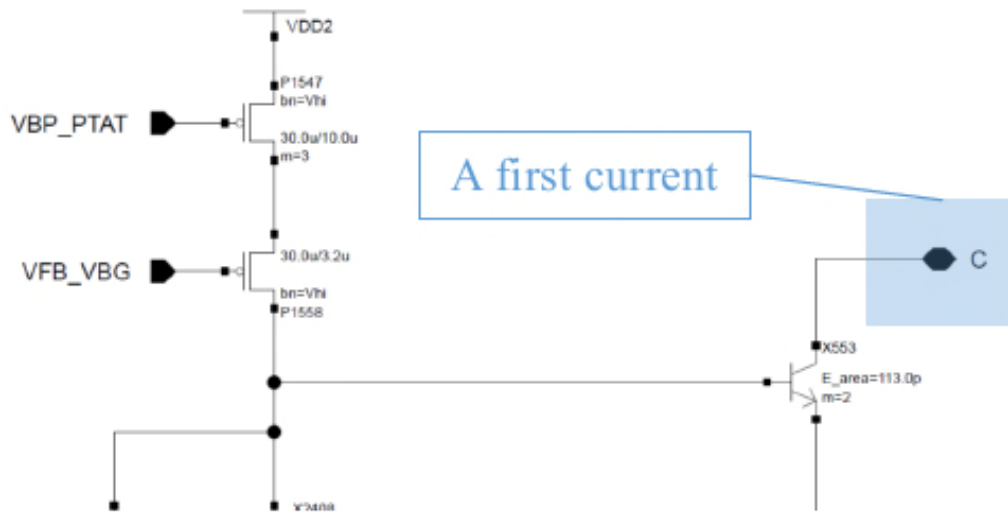


Figure 1



[Figure 2]

113. The LYTSwitch-4 integrated circuit includes a current supply circuit that supplies a second current to the temperature compensation circuit. The current supply circuit is included in the bandgap generator and bias generator blocks of the LYTSwitch-4 integrated circuit, as shown in Figure 1 above. The current supply circuit is configured to supply the temperature compensation circuit, which is included in the bias generator block, with a second current. The second current is based on the signal at line VBP_PTAT.

114. The temperature compensation circuit of the LYTSwitch-4 integrated circuit includes a voltage multiplication circuit including a first transistor configured to generate a base-collector voltage that is obtained by multiplying a base-emitter voltage by a predetermined ratio. The temperature compensation circuit of the LYTSwitch-4 integrated circuit also includes a second transistor that is identical in conductivity type and substantially equal in base-emitter voltage to the first transistor. The temperature compensation circuit of the LYTSwitch-4 integrated circuit also includes a first resistor having one end connected to a collector of the first transistor and the other end connected to a base of the second transistor. The temperature compensation circuit of the LYTSwitch-4 integrated circuit also includes a second resistor having one end connected to an emitter of the first transistor and the other end connected to an emitter of the second transistor. The first current of the temperature compensation circuit of the LYTSwitch-4 integrated circuit is output

1 according to a collector current of the second transistor. The second current of the temperature
2 compensation circuit of the LYTSwitch-4 integrated circuit is supplied to a connection point
3 between the base of the second transistor and the first resistor to generate between both ends of the
4 first resistor a voltage varying substantially in proportion to temperature. As shown in Figure 3
5 below, a voltage multiplication circuit of the LYTSwitch-4 integrated circuit is formed by the two
6 resistors and the transistor labeled T1 in the red dashed box labeled “voltage multiplication circuit.”
7 Transistor T1 of the LYTSwitch-4 integrated circuit is configured to multiply its base-emitter
8 voltage by a predetermined ratio to generate a base-collector voltage. The predetermined ratio can
9 be determined, for example, from the resistors of the voltage multiplication circuit. The
10 temperature compensation circuit of the LYTSwitch-4 integrated circuit also includes a second
11 transistor (labeled at T2 in Figure 3), a first resistor (R1), and a second resistor (R2). Transistors T1
12 and T2 are both NPN bipolar junction transistors and thus are the same conductivity type. The
13 base-emitter voltages of transistors T1 and T2 are substantially equal. Resistor R1 of the
14 LYTSwitch-4 integrated circuit is connected to the collector of transistor T1 and the base of
15 transistor T2, and resistor R2 is connected to the emitter of transistor T2 and ground (GND2), which
16 is connected to the emitter of T1. The first current of the LYTSwitch-4 integrated circuit is output
17 (shown in blue in Figure 3) according to the collector current of transistor T2. The second current
18 of LYTSwitch-4 integrated circuit (based on signal VBP_PTAT) is supplied to a connection point
19 (shown in purple). The connection point is between R1 and the base of T2. The second current is
20 proportionate to a fifth resistor (R5) and temperature. Resistors R1 and R5 of the LYTSwitch-4
21 integrated circuit have substantially equal temperature coefficients, and therefore the voltage across
22 resistor R1 varies substantially in proportion to temperature.

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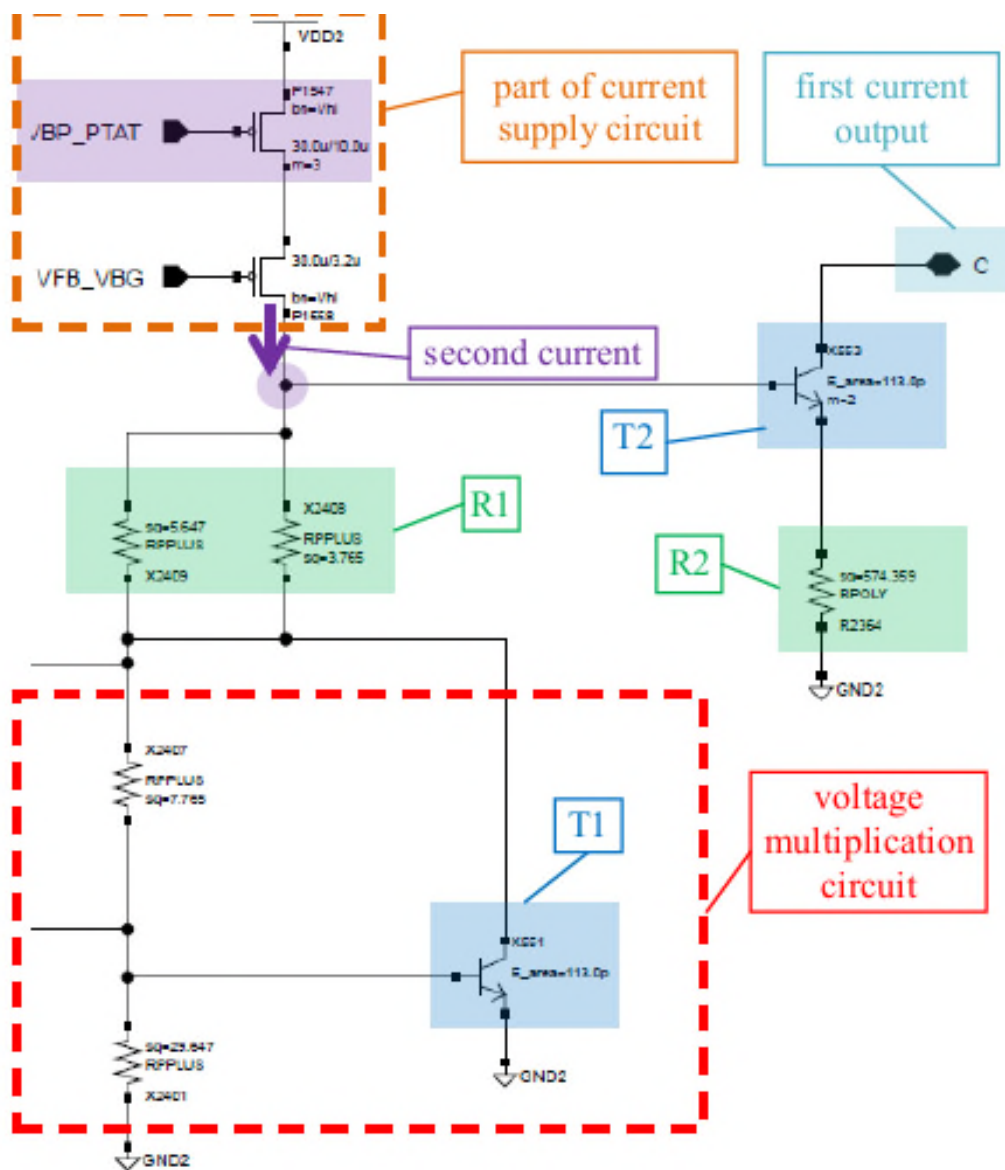


Figure 3

115. The current supply circuit of the LYTSwitch-4 integrated circuit includes a third transistor and a fourth transistor whose emitter areas that are different from each other. The current supply circuit of the LYTSwitch-4 integrated circuit also includes a fifth resistor whose temperature coefficient is substantially equal to a temperature coefficient of the first resistor. The fifth resistor has both ends applied with a differential voltage between a base-emitter voltage of the third transistor and a base-emitter voltage of the fourth transistor. The second current of the LYTSwitch-4 integrated circuit is supplied according to the current flowing through the fifth resistor of the

1 current supply circuit. As shown in Figure 4 below, the current supply circuit of the LYTSwitch-4
2 integrated circuit includes a third transistor (labeled at T3), a fourth transistor (T4), and a fifth
3 transistor (T5). The emitter areas of transistors T3 and T4 are different. T3 includes eight unit
4 devices, while T4 includes one. Resistors R1 and R5 of the LYTSwitch-4 integrated circuit have
5 substantially equal temperature coefficient because the two resistors are made of the same material
6 (*i.e.*, a highly-doped N+ diffusion layer, denoted by “RPPLUS” in Figure 4). Resistor R5 of the
7 LYTSwitch-4 integrated circuit is connected to the emitter of transistor T3 (base-emitter voltage of
8 transistor T3) and ground (GND2), which is connected to the emitter of transistor T4 (base-emitter
9 voltage of transistor T4). The signal at VBP_PTAT is the bias for the second current of the
10 LYTSwitch-4 integrated circuit. The signal at VBP_PTAT of the LYTSwitch-4 integrated circuit is
11 the gate and drain voltage of the PMOS transistor whose current corresponds to the current flowing
12 through R5. Thus, the second current is supplied according to the current flowing through R5.

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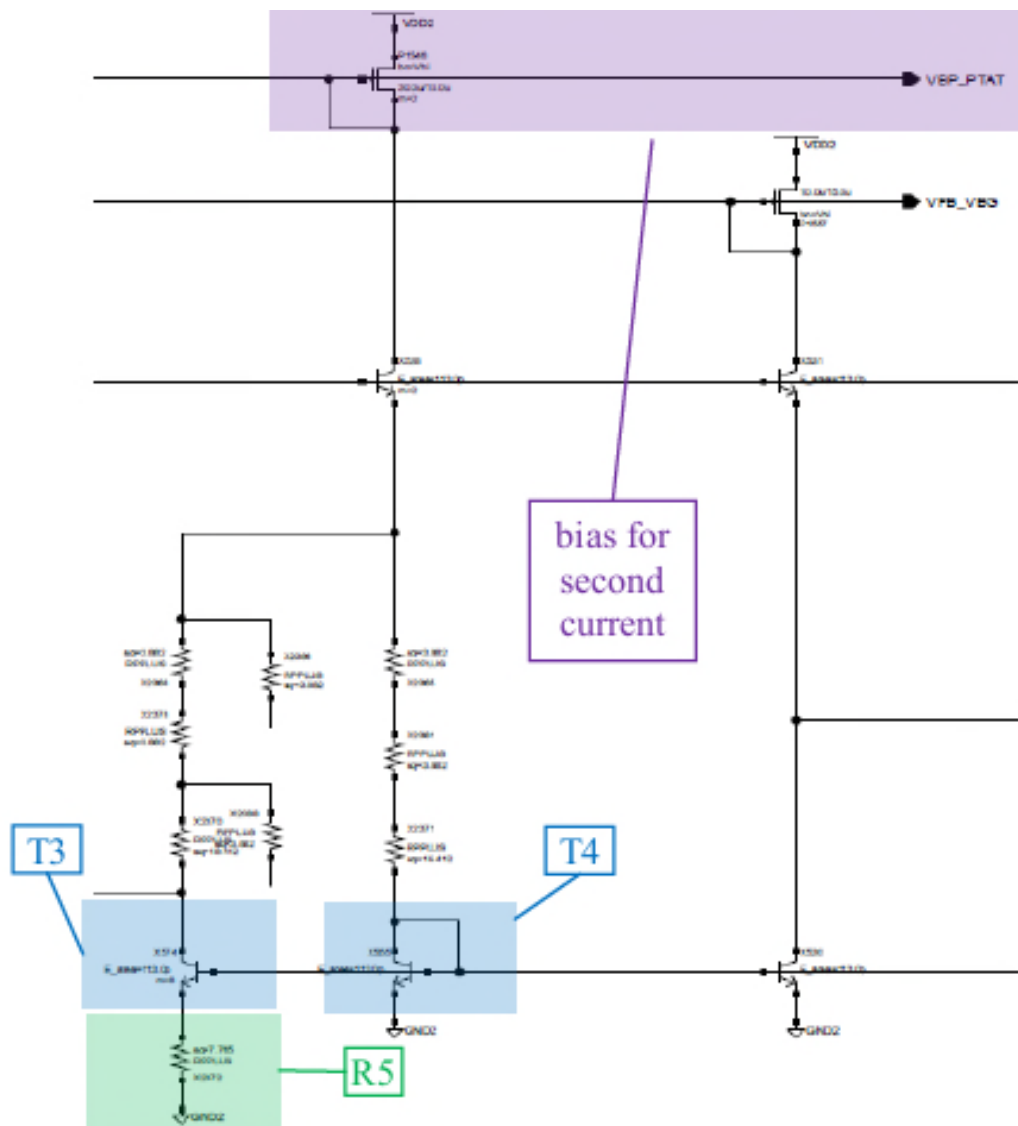


Figure 4

116. Power Integrations is a direct infringer of the '272 patent under 35 U.S.C 271(a) because Power Integrations makes, uses, sells, and offers to sell in the United States the LYTSwitch-4 integrated circuit.

117. Power Integrations has been and is now actively inducing infringement under 35 U.S.C. § 271(b) of one or more claims of the '272 patent, either literally or under the doctrine of equivalents.

118. Power Integrations has had knowledge of, or was willfully blind to, the '272 patent and has had knowledge of, or was willfully blind to the fact that its actions induce infringement

1 since no later than August 14, 2017, when ON filed its Second Amended Complaint for patent
2 infringement in this action.

3 119. As an example of Power Integrations's induced infringement of the '272 patent,
4 since learning of the '272 patent, Power Integrations has sold and delivered (and still sells and
5 delivers) the LYTSwitch-4 integrated circuit products to U.S. distributors, including Mouser
6 Electronics, and thereafter induces its U.S. distributors, including Mouser Electronics, to sell and
7 offer for sale the infringing products to customers in the United States, thereby directly infringing
8 the '272 patent. *See Ex. K.* Moreover, Power Integrations advertises on its website that it maintains
9 "close relationships" with its distributors (including Mouser Electronics), maintains an inventory of
10 infringing products available from Mouser Electronics, and directs customers to buy infringing
11 products from Mouser Electronics. *Id.* Thus, since learning of the '272 patent, Power Integrations
12 directs and has directed and encouraged Mouser Electronics to sell and offer for sale infringing
13 LYTSwitch-4 integrated circuit products to customers. Mouser Electronics maintains a website
14 (mouser.com) available to U.S.-based customers that, as a result of Power Integrations' inducement,
15 stocks, sells, and offers for sale the infringing LYTSwitch-4 integrated circuit products. *See Ex. L.*
16 The LYTSwitch-4 integrated circuit products are in stock in the U.S. and are offered for sale and
17 delivery to U.S. customers from Mouser Electronics, making Mouser Electronics a direct infringer
18 of the '272 patent whose direct infringement is being induced, encouraged, and caused to occur by
19 Power Integrations. And as of August 14, 2017 and today, these infringing products were and are in
20 stock in the U.S., offered for sale by Mouser Electronics, and available for purchase and delivery to
21 U.S. customers from Mouser Electronics.

22 120. Since learning of the '272 patent, Power Integrations has known that its conduct
23 encourages third parties, including Mouser Electronics, to infringe the '272 patent in the United
24 States. Power Integrations possesses the technical expertise required to understand the scope of the
25 claims of the '272 patent and reach a conclusion that the LYTSwitch-4 integrated circuit infringes
26 the '272 patent. Since learning of the '272 patent, Power Integrations has possessed a specific
27 intent to induce infringement by, at a minimum, encouraging and directing its distributors, including
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1 Mouser Electronics, to sell and offer for sale LYTSwitch-4 integrated circuit products in the United
2 States. Since learning of the '272 patent, Power Integrations has sold to its distributors, including
3 Mouser Electronics, infringing products, such as LYTSwitch-4 integrated circuit products, with the
4 specific intent for the distributor to offer for sale or sell the infringing products to customers in the
5 United States, thereby infringing the '272 patent. Since learning of the '272 patent, Power
6 Integrations has encouraged and intended for its distributors, including Mouser Electronics, to sell
7 or offer for sale LYTSwitch-4 integrated circuit products in the United States. Since Power
8 Integrations learned of the '272 patent, Mouser Electronics has offered for sale and sold
9 LYTSwitch-4 integrated circuit products to customers in the United States, thereby infringing the
10 '272 patent. Since learning of the '272 patent, Power Integrations has been aware that the foregoing
11 acts were an act of direct infringement and has intended that these acts of direct infringement occur.

12 121. In addition, Power Integrations has been aware since no later than August 14, 2017
13 that the features claimed in the '272 patent are features of the LYTSwitch-4 integrated circuit
14 products and are necessarily used by purchasers of the LYTSwitch-4 integrated circuit products
15 and, therefore, that Power Integrations's customers will infringe the '272 patent by using
16 LYTSwitch-4 integrated circuit products or incorporating the power supply controller products in
17 other products, and that subsequent sales of such products would also be a direct infringement.

18 122. Power Integrations further induces its customers to design the LYTSwitch-4 integrated
19 circuit products into products, such as LED lighting products, to be sold and used in the United States.
20 Since learning of the '272 patent, Power Integrations has promoted infringement by providing a
21 comprehensive data sheet, application note, and other collateral on its Internet website that is available
22 to direct and indirect customers and that instructs those direct and indirect customers on how to
23 incorporate the LYTSwitch-4 integrated circuit. *See, e.g.*, [https://led-](https://led-driver.power.com/sites/default/files/product-docs/lytswitch-4_family_datasheet.pdf)
24 [driver.power.com/sites/default/files/product-docs/lytswitch-4_family_datasheet.pdf](https://led-driver.power.com/sites/default/files/product-docs/lytswitch-4_family_datasheet.pdf) and [https://led-](https://led-driver.power.com/system/files_force/product-docs/an59.pdf)
25 [driver.power.com/system/files_force/product-docs/an59.pdf](https://led-driver.power.com/system/files_force/product-docs/an59.pdf). In the application note, which includes
26 numerous design examples, Power Integrations states that “[t]his application note is intended for
27 engineers designing an isolated AC-DC LED driver using the LYTSwitch-4 family of devices.” On
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1 Power Integrations's website, Power Integrations provides twenty-five "Design Example Reports,"
2 each of which provides detailed example designs for products that include the LYTSwitch-4
3 integrated circuit. In addition, Power Integrations employs sales representatives and field applications
4 engineers that interact with and work directly with customers to assist them in designing complete
5 power supplies or other products that, upon information and belief, Power Integrations knows or has
6 reason to believe are intended to be sold worldwide, including in the United States. Thus, since learning
7 of the '272 patent, Power Integrations has assisted its customers in designing products that use the
8 LYTSwitch-4 integrated circuit. Power Integrations also promotes the sale of products that include the
9 LYTSwitch-4 integrated circuit in the United States by providing marketing materials concerning the
10 LYTSwitch-4 integrated circuit on its website. Direct and indirect customers of Power Integrations are
11 direct infringers because Power Integrations's direct and indirect customers import, make, use, sell, and
12 offer products that include the LYTSwitch-4 integrated circuit in the United States. Power
13 Integrations's intentional actions induce Power Integrations's direct and indirect customers to design
14 manufacture, import, and sell infringing products that include the LYTSwitch-4 integrated circuit in
15 the United States, and Power Integration's actions are undertaken with the specific intent that such
16 actions will, in fact, induce direct infringement and with full knowledge that Power Integrations's
17 LYTSwitch-4 integrated circuit products infringe one or more claims of the '272 patent both literally
18 and under the doctrine of equivalents.

19 123. Power Integrations has been and is now contributing to the infringement of the '272
20 patent under 35 U.S.C. § 271(c), either literally or under the doctrine of equivalents, by selling and
21 offering to sell in the United States the infringing LYTSwitch-4 integrated circuit to third parties.
22 Power Integrations contributes to the direct infringement of customers who incorporate the
23 infringing LYTSwitch-4 integrated circuit into finished products, including LED lighting products.
24 Customers who import into the United States, sell, offer for sale, or use the power supplies that
25 incorporate the infringing LYTSwitch-4 integrated circuit are direct infringers of the '272 patent.
26 The only commercially reasonable use of the infringing LYTSwitch-4 integrated circuit results in an
27 act of direct infringement.

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1 124. The infringing LYTSwitch-4 integrated circuit is material to practicing the invention
2 of at least claim 1 of the '272 patent. The infringing LYTSwitch-4 integrated circuit has no
3 substantial non-infringing use, is not a staple article or commodity of commerce suitable for
4 substantial non-infringing use, and is known by Power Integrations to be especially made or
5 especially adapted for use in an infringement of the '272 patent. For example, the infringing
6 LYTSwitch-4 integrated circuit is especially adapted to be used in products that infringes at least
7 claim 1 of the '272 patent. The only way that the infringing LYTSwitch-4 integrated circuit can be
8 used is in an infringing manner.

9 125. Power Integrations sells, offers to sell, and imports the infringing LYTSwitch-4
10 integrated circuit within the United States. Power Integrations sells infringing LYTSwitch-4
11 integrated circuit to customers within the United States to be incorporated into infringing products,
12 including LED lighting products. Power Integrations's direct and indirect customers sell and offer
13 for sale the products that include the infringing LYTSwitch-4 integrated circuit in the United States,
14 which constitutes an act of direct infringement.

15 126. Power Integrations provides data sheets, application notes, design example reports,
16 and other design instruction materials that explain in substantial detail how to incorporate the
17 infringing LYTSwitch-4 integrated circuit into finished products in a way that would infringe the
18 '272 patent. Power Integrations intends for its direct and indirect customers to use its design
19 instruction materials to create infringing finished products that, when used in their only
20 commercially reasonable use, results in a direct infringement of the '272 patent. Direct and indirect
21 customers of Power Integrations have relied on those materials and continue to rely on those
22 materials to sell and offer for sale infringing products.

23 127. Power Integrations has known that finished products that incorporate the infringing
24 LYTSwitch-4 integrated circuit are infringing combinations since no later than August 14, 2017
25 when ON asserted the '272 patent in a Second Amended Complaint in this lawsuit.

26 128. Since learning of the '272 patent, Power Integrations has known that its conduct
27 contributes to the infringement of the '272 patent. Power Integrations possesses the technical
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1 expertise required to understand the scope of the claims of the '272 patent and reach a conclusion
2 that the infringing LYTSwitch-4 integrated circuit sold or offered for sale by Power Integrations in
3 the United States infringe the '272 patent when assembled in a finished product, such as an LED
4 lighting product. Since learning of the '272 patent, Power Integrations has known that the
5 infringing LYTSwitch-4 integrated circuit sold by Power Integrations in the United States is
6 especially made, designed, and adapted to infringe the '272 when the infringing LYTSwitch-4
7 integrated circuit is incorporated into a finished product, such as an LED lighting product. Since
8 learning of the '272 patent, Power Integrations has known that the infringing LYTSwitch-4
9 integrated circuit sold in the United States is not a staple article of commerce suitable for a
10 substantial non-infringing use, and that the only commercially reasonable use of the infringing
11 LYTSwitch-4 integrated circuit results in a product that infringes the '272 patent.

12 129. ON has been irreparably harmed by Power Integrations's infringement of the '272
13 patent and will continue to be harmed unless and until Power Integrations's infringement is
14 enjoined by this Court.

15 130. As a result of Power Integrations's infringement, ON has suffered and will continue
16 to suffer damages in an amount to be proved at trial.

17 **COUNT EIGHT**

18 **INFRINGEMENT OF U.S. PATENT NO. 7,447,601**

19 131. ON re-alleges and incorporates by reference each and every allegation of paragraphs
20 1-130 as though fully set forth herein.

21 132. The '601 patent is valid and enforceable.

22 133. Power Integrations has at no time, expressly or impliedly, been licensed under the
23 '601 patent.

24 134. Power Integrations has been and is now directly infringing, literally or under the
25 doctrine of equivalents, one or more claims of the '601 patent through at least the act of using an
26 infringing method of one or more claims of the '601 patent.

1 135. More particularly, and without limitation, the process of making a power supply
2 using Power Integrations's LYTSwitch-3 integrated circuit infringes at least claim 10 of the '601
3 patent, and Power Integrations has manufactured power supplies according to the steps of claim 10
4 of the '601 patent. In particular, Power Integrations has performed the steps of claim 10 of the '601
5 patent to manufacture design example boards that include the LYTSwitch-3 integrated circuit,
6 including boards that have the designation DER-486, DER-498, DER-500, DER-502, DER-510,
7 DER-511, DER-512, and DER-524.

8 136. In the following passages, the claim language of the claim 10 is underlined. Power
9 Integrations has used the LYTSwitch-3 integrated circuit in forming a power supply controller. The
10 LYTSwitch-3 integrated circuit is a power supply controller. In the manufacture of design example
11 boards with the LYTSwitch-3 integrated circuit, Power Integrations has coupl[ed] the power supply
12 controller to receive a first signal representative of an input voltage and a second signal
13 representative of an input current and responsively form a power signal representative of an input
14 power. A LINE-SENSE (L) signal is a first signal that is representative of the rectified AC input
15 voltage. Power Integrations couples the first signal to be received by the LYTSwitch-3 integrated
16 circuit at the LINE-SENSE (L) input. A DRIVER CURRENT SENSING (DS) signal is the second
17 signal that is representative of an input current and the driver current for the primary inductor.
18 Power Integrations couples the second signal to be received by the LYTSwitch-3 integrated circuit
19 at the DRIVER CURRENT SENSING (DS) input. The coupling by Power Integrations
20 responsively forms a power signal that is representative of an input power. Because power is
21 equivalent to voltage multiplied by current, the power signal of the LYTSwitch-3 integrated circuit
22 that is representative of the input power is formed by multiplying the second signal representative of
23 the input current (DS) by the first signal representative of the input voltage (L). In the
24 LYTSwitch-3 integrated circuit, a power signal is formed in the "MULTIPLIER" block, the
25 "FREQUENCY AND DUTY CYCLE" block.

26 137. Power Integrations has also coupl[ed] the power supply controller to receive a
27 feedback signal representative of an output voltage. In the manufacture of the design example
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1 boards, the LYTSwitch-3 integrated circuit is coupled to the components of the power supply such
2 that the LYTSwitch-3 integrated circuit receives a current fed into the OUTPUT
3 COMPENSATION (OC) input. The current is a feedback signal representation of an output
4 voltage. The output voltage is proportional to a bias winding voltage based on the turns-ratio
5 between the bias supply and output-main winding. The bias winding voltage is passed through a
6 resistor to convert the voltage into a current that is fed to the OUTPUT COMPENSATION (OC)
7 input of the LYTSwitch-3 integrated circuit.

8 138. Power Integrations has also coupl[ed] the power supply controller to form drive
9 pulses to regulate the output voltage responsively to the power signal and the feedback signal
10 including coupling the power supply controller to divide the power signal by the feedback signal.

11 In the manufacture of the design example boards, the LYTSwitch-3 integrated circuit is coupled to
12 the components of the power supply such that the power signal, which is representative of input
13 power, is determined by multiplying the first signal representative of the input voltage (LINE-
14 SENSE (L)) by the second signal representative of the input current (DRIVER CURRENT SENSE
15 (DS)). The feedback signal, which is representative of the output voltage, is the OUTPUT
16 COMPENSATION (OC) information. Drive pulses of the LYTSwitch-3 integrated circuit are
17 formed at the gate of the MOSFET connected between the Drain (D) pin and the Source (S) pin of
18 the devices. The drive pulses of the LYTSwitch-3 integrated circuit that are formed regulate the
19 output voltage or the equivalent output current. The drive pulses of the LYTSwitch-3 integrated
20 circuit are generated by an internal frequency/on-time engine that combines the input voltage (L),
21 input current (DS), and feedback signal (OUTPUT COMPENSATION (OC)) information to
22 regulate the output. The power signal of the LYTSwitch-3 integrated circuit is determined by
23 multiplying the first signal representative of the input voltage (LINE-SENSE (L)) by the second
24 signal representative of the input current (DRIVER CURRENT SENSE (DS)). On information and
25 belief, the power signal is divided by the feedback signal. The LYTSwitch-3 integrated circuit uses
26 DRIVER CURRENT SENSE (DS) signal to deduce the output current by multiplying it by the
27 input voltage (i.e., LINE-SENSE(L) signal) and the result is then divided by the output voltage (i.e.,
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1 OUTPUT COMPENSATION (OC) signal). Any manufacture of a power supply with a
2 LYTSwitch-3 integrated circuit will necessarily be performed according to the steps of claim 10 of
3 the '601 patent, either literally or under the doctrine of equivalents.

4 139. Power Integrations is a direct infringer of the '601 patent under 35 U.S.C § 271(a)
5 because Power Integrations has used the method of claim 10 of the '601 patent in the manufacture
6 of power supply controllers, as described in the preceding paragraphs.

7 140. Power Integrations is also an infringer under 35 U.S.C. § 271(g) because Power
8 Integrations has, without authority, sold, offered to sell, and used products within the United States
9 products that have been made by the process steps of claim 10 during the term of the '601 patent.
10 These products include design example boards that include the LYTSwitch-3 integrated circuit,
11 including boards that have the designation DER-486, DER-498, DER-500, DER-502, DER-510,
12 DER-511, DER-512, and DER-524, which were manufactured according to the steps set out above
13 in Paragraphs 136-138. The products produced by the performance of the steps of claim 10 of the
14 '601 patent have not been materially changed by subsequent processes and have not become a
15 trivial and nonessential component of another product.

16 141. Power Integrations has also induced others under 35 U.S.C. § 271(b) to commit acts
17 of infringement under 35 U.S.C. § 271(g). During the term of the '601 patent, third parties have,
18 without authority, imported into the United States and offered to sell, sold, and used within the
19 United States products, including power supplies for LED bulbs and downlighters, that have been
20 made by the process steps of claim 10 during the term of the '601 patent, which steps are described
21 above in Paragraphs 136-138. The products produced by the performance of the steps of claim 10
22 of the '601 patent have not been materially changed by subsequent processes and have not become
23 a trivial and nonessential component of another product. Power Integrations has actively induced
24 the third parties to import into the United States and offer to sell, sell, sand use within the United
25 States products that have been made by the process steps of claim 10 of the '601 patent, either
26 literally or under the doctrine of equivalents. Power Integrations has encouraged and promoted
27 third parties to manufacture power supplies with the LYTSwitch-3 integrated circuit, and, on
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1 information and belief, such manufacture has occurred at Power Integrations's direction and
2 control.

3 142. Power Integrations has had knowledge of, or was willfully blind to, the '601 patent
4 and has had knowledge of, or was willfully blind to the fact that its actions induce infringement
5 since no later than August 14, 2017, when ON filed its Second Amended Complaint for patent
6 infringement in this action.

7 143. Since learning of the '601 patent, Power Integrations has known that its conduct
8 encourages Power Integrations's direct and indirect customers to infringe the '601 patent by
9 importing into the United States or offering to sell, selling, or using within the United States
10 products, including power supplies for LED bulbs and downlighters, that were made by the process
11 steps of claim 10 of the '601 patent. Power Integrations possesses the technical expertise required
12 to understand the scope of the claims of the '601 patent and reach a conclusion that the manufacture
13 of power supplies with the LYTSwitch-3 integrated circuit and the subsequent importation, sale, or
14 use of those products in the United States infringes claim 10 of the '601 patent.

15 144. Power Integrations has implemented and continues to operate since learning of the '601
16 patent an extensive support and promotion system that encourages its direct and indirect customers to
17 manufacture, import, sell, offer to sell and use products with the LYTSwitch-3 integrated circuit.
18 Since learning of the '601 patent, Power Integrations has promoted these acts of infringement by
19 providing a comprehensive data sheet, application note, and other collateral on its Internet website that
20 is available to direct and indirect customers and that instructs those direct and indirect customers on how
21 to incorporate the LYTSwitch-3 integrated circuit into power supplies. *See, e.g.*, [https://led-](https://led-driver.power.com/sites/default/files/product-docs/lytswitch-3_family_datasheet.pdf)
22 [driver.power.com/sites/default/files/product-docs/lytswitch-3_family_datasheet.pdf](https://led-driver.power.com/sites/default/files/product-docs/lytswitch-3_family_datasheet.pdf) and [https://led-](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/)
23 [driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/)
24 [guide/](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/). In the application note, which includes numerous design examples, Power Integrations states
25 that “[t]his application note is intended for users designing an AC-DC LED driver using
26 LYTSwitch-3 family devices.” On Power Integrations's website, Power Integrations provides nine
27 “Design Example Reports,” each of which provides detailed example designs for products that
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1 include the LYTSwitch-3 integrated circuit. Power Integrations has encouraged and promoted third
2 parties to manufacture power supplies with the LYTSwitch-3 integrated circuit, and, on information
3 and belief, such manufacture has occurred at Power Integrations's direction and control. In addition,
4 Power Integrations employs sales representatives and field applications engineers that interact with and
5 work directly with customers to assist them in designing complete power supplies or other products that,
6 upon information and belief, Power Integrations knows or has reason to believe are intended to be sold
7 worldwide, including in the United States. Thus, since learning of the '601 patent, Power Integrations
8 has assisted its customers in designing products that use the LYTSwitch-3 integrated circuit. Since
9 learning of the '601 patent, Power Integrations has also promoted the sale of products that include the
10 LYTSwitch-3 integrated circuit in the United States by providing marketing materials concerning the
11 LYTSwitch-3 integrated circuit on its website.

12 145. Because a power supply with a LYTSwitch-3 integrated circuit is made by the process
13 steps of claim 10 of the '601 patent, each importer of a product that includes a power supply with a
14 LYTSwitch-3 integrated circuit is an infringer under Section 271(g) and Power Integrations has
15 induced such infringement under Section 271(b). Because a power supply with a LYTSwitch-3
16 integrated circuit is made by the process steps of claim 10 of the '601 patent, each of Power
17 Integrations's direct and indirect customers that has used or sold in the United States a product that
18 includes a power supply with a LYTSwitch-3 integrated circuit is an infringer under Section 271(g)
19 and Power Integrations has induced such infringement under Section 271(b). Since learning of the '601
20 patent, Power Integrations's intentional, continuous, and systematic offering of design and marketing
21 assistance to promote the incorporation of the LYTSwitch-3 integrated circuit into power supplies has
22 induced importers to import products that include a LYTSwitch-3 integrated circuit into the United
23 States. Power Integrations has induced such importers to infringe under Section 271(g). In addition,
24 since learning of the '6015 patent, Power Integrations's intentional, continuous, and systematic offering
25 of design and marketing assistance to promote the incorporation of the LYTSwitch-3 integrated circuit
26 into power supplies has induced Power Integrations's direct and indirect customers to use and sell
27 products that include a LYTSwitch-3 integrated circuit in the United States. Since learning of the '601
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1 patent, Power Integrations has induced such direct and indirect customers to infringe under Section
2 271(g).

3 146. Power Integrations has also induced others under 35 U.S.C. § 271(b) to commit acts
4 of infringement under 35 U.S.C. § 271(a). On information and belief, during the term of the '601
5 patent, third parties have, without authority, manufactured within the United States products,
6 including power supplies for LED bulbs and downlighters, by the process steps of claim 10 during
7 the term of the '601 patent, which steps are described above in Paragraphs 136-138. Power
8 Integrations has actively induced the third parties to manufacture within the United States the
9 products by the process steps of claim 10 of the '601 patent, either literally or under the doctrine of
10 equivalents.

11 147. Power Integrations has had knowledge of, or was willfully blind to, the '601 patent
12 and has had knowledge of, or was willfully blind to the fact that its actions induce infringement
13 since no later than August 14, 2017, when ON filed its Second Amended Complaint for patent
14 infringement in this action.

15 148. Since learning of the '601 patent, Power Integrations has known that its conduct
16 encourages Power Integrations's direct and indirect customers to manufacture within the United
17 States products, including power supplies for LED bulbs and downlighters, by the process steps of
18 claim 10 of the '601 patent. Power Integrations possesses the technical expertise required to
19 understand the scope of the claims of the '601 patent and reach a conclusion that the manufacture of
20 power supplies with the LYTSwitch-3 integrated circuit infringes claim 10 of the '601 patent.

21 149. Power Integrations has implemented and continues to operate since learning of the '601
22 patent an extensive support and promotion system that encourages its direct and indirect customers to
23 manufacture products with the LYTSwitch-3 integrated circuit. Since learning of the '601 patent,
24 Power Integrations has promoted these acts of infringement by providing a comprehensive data sheet,
25 application note, and other collateral on its Internet website that is available to direct and indirect
26 customers and that instructs those direct and indirect customers on how to incorporate the LYTSwitch-3
27 integrated circuit into power supplies. *See, e.g.,* <https://led->

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1 driver.power.com/sites/default/files/product-docs/lytswitch-3_family_datasheet.pdf and [https://led-](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/)
2 [driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/)
3 [guide/](https://led-driver.power.com/design-support/product-documents/application-notes/an-66-lytswitch-3-design-guide/). In the application note, which includes numerous design examples, Power Integrations states
4 that “[t]his application note is intended for users designing an AC-DC LED driver using
5 LYTSwitch-3 family devices.” On Power Integrations’s website, Power Integrations provides nine
6 “Design Example Reports,” each of which provides detailed example designs for products that
7 include the LYTSwitch-3 integrated circuit. In addition, Power Integrations employs sales
8 representatives and field applications engineers that interact with and work directly with customers to
9 assist them in designing complete power supplies or other products that, upon information and belief,
10 Power Integrations knows or has reason to believe are intended to be sold worldwide, including in the
11 United States. Thus, since learning of the ‘601 patent, Power Integrations has assisted its customers in
12 designing products that use the LYTSwitch-3 integrated circuit.

13 150. Each manufacturer of a product within the United States that includes a power supply
14 with a LYTSwitch-3 integrated circuit is an infringer under Section 271(a) and Power Integrations has
15 induced such infringement under Section 271(b). Each of Power Integrations’s direct and indirect
16 customers that has made a power supply in the United States with a LYTSwitch-3 integrated circuit is
17 an infringer under Section 271(a) and Power Integrations has induced such infringement under Section
18 271(b). Since learning of the ‘601 patent, Power Integrations’s intentional, continuous, and systematic
19 offering of design assistance to promote the incorporation of the LYTSwitch-3 integrated circuit into
20 power supplies has induced manufacturers to make products that include a LYTSwitch-3 integrated
21 circuit into the United States. Power Integrations has induced such manufacturers to infringe under
22 Section 271(a).

23 151. Power Integrations is also a contributory infringer under 35 U.S.C. § 271(c).
24 Power Integrations has been and is now liable as a contributory infringer of the ‘601 patent by
25 importing, selling, and offering to sell in the United States the LYTSwitch-3 integrated circuit for
26 use in practicing a patented process. The patented process is the manufacture of products that include a
27 LYTSwitch-3 integrated circuit, and the direct infringers are the manufacturers that make within the
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1 United States power supplies for products, such as LED bulbs and downlighters, by the process
2 steps of claim 10 of the '601 patent using a LYTSwitch-3 integrated circuit. Manufacturing a power
3 supply in the United States with a LYTSwitch-3 integrated circuit necessarily results in an act of
4 direct infringement, and the manufacturer is the direct infringer.

5 152. The LYTSwitch-3 integrated circuit is material to practicing the invention of at least
6 claim 10 of the '601 patent. The LYTSwitch-3 integrated circuit has no substantial non-infringing
7 uses, is not a staple article or commodity of commerce suitable for substantial non-infringing use,
8 and is known by Power Integrations to be especially made or especially adapted for use in an
9 infringement of the '601 patent. For example, the LYTSwitch-3 integrated circuit, when
10 incorporated into a power supply, necessarily results in the infringement and practicing of at least
11 claim 10 of the '601 patent.

12 153. Power Integrations provides data sheets, application notes, design example reports,
13 and other design instruction materials that explain in substantial detail how to make a power supply
14 with the LYTSwitch-3 integrated circuit. Power Integrations intends for its direct and indirect
15 customers to use its design instruction materials to make a power supply with the LYTSwitch-3
16 integrated circuit, which action necessarily results in the infringement and practicing of claim 10 of
17 the '601 patent.

18 154. Power Integrations has known that the manufacturing a power supply with the
19 LYTSwitch-3 integrated circuit practices a patented process no later than August 14, 2017, when
20 ON filed its Second Amended Complaint for patent infringement in this action.

21 155. Since learning of the '601 patent, Power Integrations has known that its conduct
22 contributes to the infringement of the '601 patent. Power Integrations possesses the technical
23 expertise required to understand the scope of the claims of the '601 patent and reach a conclusion
24 that the manufacture of a power supply with the LYTSwitch-3 integrated circuit practices claim 10
25 of the '601 patent and is an act of direct infringement. Since learning of the '601 patent, Power
26 Integrations has known that the LYTSwitch-3 integrated circuit sold by Power Integrations in the
27 United States is especially made, designed, and adapted for use in practicing a patented process as
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1 part of the manufacture of a power supply that includes a LYTSwitch-3 integrated circuit. Since
2 learning of the '601 patent, Power Integrations has known that the LYTSwitch-3 integrated circuit
3 sold in the United States is not a staple article of commerce suitable for a substantial non-infringing
4 use, and that the manufacture of a power supply that includes a LYTSwitch-3 integrated circuit
5 necessarily results in the practice and infringement of claim 10 of the '601 patent.

6 156. ON has been irreparably harmed by Power Integrations's infringement of the '601
7 patent and will continue to be harmed unless and until Power Integrations's infringement is
8 enjoined by this Court.

9 157. As a result of Power Integrations's infringement, ON has suffered and will continue
10 to suffer damages in an amount to be proved at trial.

11 158. With respect to Counts One-Eight above, ON has either complied with the marking
12 requirements or provided actual notice to Power Integrations as required by 35 U.S.C. § 287.

13 **COUNT NINE**

14 **DECLARATORY JUDGMENT OF NONINFRINGEMENT OF**
15 **THE '876 PATENT**

16 159. ON re-alleges and reincorporates herein by reference Paragraphs 1-158 above.

17 160. This count is directed to products of ON and does not include the Fairchild
18 Semiconductor products at issue in other proceedings. This case was filed before the merger
19 between ON and Fairchild Semiconductor.

20 161. ON, including its NCP1246 and NCP1237 controller chips and other products that
21 have frequency jitter features, have not directly infringed, contributorily infringed, or induced
22 infringement of any claim of the '876 patent, including claim 1, and do not directly infringe,
23 contributorily infringe, or induce infringement of any claim, including claim 1, of the '876 patent,
24 either literally or under the doctrine of equivalents.

25 162. ON is being damaged by Power Integrations's false accusations of infringement of
26 the '876 patent. Consequently, an actual and justiciable controversy exists between ON and Power
27 Integrations concerning ON's noninfringement of the '876 patent.

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1 163. ON is entitled to a declaration pursuant to 28 U.S.C. § 2201 stating that ON has not
2 infringed and do not infringe, directly or indirectly, any claim of the '876 patent, either literally or
3 under the doctrine of equivalents.

4 **COUNT TEN**
5 **DECLARATORY JUDGMENT OF INVALIDITY OF**
6 **THE '876 PATENT**

7 164. ON re-alleges and reincorporates herein by reference Paragraphs 1-163 above.

8 165. One or more claims of the '876 patent are invalid and/or unenforceable for failure to
9 comply with one or more provisions of the patent laws of the United States of America, Title 35
10 United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

11 166. As an example, and without limitation, the U.S. Patent and Trademark Office has
12 held in Reexamination Control No. 90/008,326 that claim 1 of the '876 patent is invalid for being
13 anticipated under 35 U.S.C § 102 by each of U.S. Patent No. 4,638,417 to Martin ("Martin");
14 *Programmed Pulsewidth Modulated Waveforms for Electromagnetic Interference Mitigation in DC-*
15 *DC Converters*, 8 IEEE Transactions on Power Elecs. 596 (1993) to Andrew C. Wang et al.
16 ("Wang"); and Acoustic Noise Reduction in Sinusoidal PWM Drives Using a Randomly Modulated
17 Carrier, 6 IEEE Transactions on Power Elecs. 356 (1991) to Thomas G. Habetler et al. ("Habetler")
18 and that claims 17-19 are invalid for being anticipated under 35 U.S.C § 102 by Habetler.

19 167. In addition, and without limitation, the Patent Trial and Appeal Board of the U.S.
20 Patent and Trademark Office held in IPR2016-01589 that ON has shown a reasonable likelihood
21 that claim 14 and 16 of the '876 patent are invalid for being obvious over the combination of U.S.
22 Patent No. 5,929,620 to Dobkin ("Dobkin") and *Easing EMC Problems in Switched Mode*
23 *Converters by Random Modulation of the PWM Carrier Frequency*, IEEE (1996) to Stone et al.
24 ("Stone"); that claim 15 of the '876 patent is invalid for being obvious over the combination of
25 Dobkin, Stone, and U.S. Patent No. 5,699,024 to Manlove; that claim 17 is invalid for being
26 anticipated by Habetler; that claims 17 and 19 are invalid for being obvious over the combination of
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1 Habetler and European Patent Application EP0321794A2 to Marchio (“Marchio”); and that claim
2 19 is invalid as obvious over the combination of Habetler, Marchio, and Stone.

3 168. Other claims of the ‘876 patent are also invalid as being anticipate or obvious in
4 view of prior art, including claims 2-10, 21-27, and 31, which are invalid as being anticipated or
5 obvious in view of Martin, Marchio, Manlove, Dobkin, and Bipolar and MOS Analog Integrated
6 Circuit Design, John Wiley & Sons, 1984 to Grebene.

7 169. ON requests a judicial determination and declaration that the claims of the ‘876
8 patent are invalid for failure to comply with one or more provisions of the patent laws of the United
9 States of America, Title 35 United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102,
10 103, and/or 112.

11 **DEMAND FOR JURY**

12 170. ON requests a jury trial for this matter under Rule 38, Federal Rules of Civil
13 Procedure.

14 **PRAYER FOR RELIEF**

15 WHEREFORE, ON prays for judgment as follows:

16 1. That Semiconductor Components Industries, LLC is the owner of all right, title, and
17 interest in and to the ‘624, ‘709, ‘933, ‘908, ‘862,’221, ‘272, and ‘601 patents, together with all the
18 rights of recovery under such patents for past and future infringements thereof.

19 2. That Power Integrations has infringed the ‘624, ‘709, ‘933, ‘908, ‘862,’221, ‘272,
20 and ‘601 patents.

21 3. That the ‘624, ‘709, ‘933, ‘908, ‘862,’221, ‘272, and ‘601 patents are valid and
22 enforceable.

23 4. Awarding to ON the damages caused by Power Integrations’s infringement,
24 including an assessment of pre-judgment and post-judgment interest and costs.

25 5. Entering a permanent injunction against Power Integrations, its officers, agents,
26 servants, employees, attorneys, all parent and subsidiary corporations and affiliates, their assigns
27 and successors in interest, and those persons in active concert or participation with any of them who
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1 receive notice of the injunction, enjoining them from continuing acts of infringement of the '624,
2 '709, '933, '908, '862, '221, '272, and '601 patents, including, without limitation, from continuing
3 to make, use, sell, offer for sale, or import infringing semiconductors or products including such
4 semiconductors.

5 6. That this is an exceptional case and awarding to ON its costs, expenses, and
6 reasonable attorneys' fees pursuant to 35 U.S.C. § 285.

7 7. In the event a permanent injunction preventing future acts of infringement is not
8 entered, that ON be awarded a compulsory ongoing licensing fee, including any necessary post-
9 verdict accounting.

10 8. That ON has not directly infringed, contributorily infringed, or induced infringement
11 of any claim of the '876 patent, and does not directly infringe, contributorily infringe, or induce
12 infringement of any claim of the '876 patent.

13 9. That the claims of the '876 patent are invalid for failure to comply with one or more
14 provisions of the patent laws of the United States of America, Title 35 United States Code,
15 including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and/or 112.

16 10. Awarding to ON such other and further relief as this Court may deem just and
17 proper.

18
19 Dated: February 5, 2018

20
21 /s/ Roger Fulghum

22 Roger Fulghum
23 BAKER BOTTS L.L.P.

24 Attorneys for ON SEMICONDUCTOR CORP.
25 and SEMICONDUCTOR COMPONENTS
26 INDUSTRIES, LLC
27
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