PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------|----------------|
| SHINPEI WATANABE | 04/20/2015 |
| SHINICHI UCHIDA | 04/20/2015 |
| TADASHI MAEDA | 04/27/2015 |
| KAZUO HENMI | 04/20/2015 |

RECEIVING PARTY DATA

| Name: | RENESAS ELECTRONICS CORPORATION |
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| State/Country: | JAPAN |
| Postal Code: | 135-0061 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14863264 |

CORRESPONDENCE DATA

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Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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| ATTORNEY DOCKET NUMBER: | REN.239 | |
|-------------------------|--|--|
| NAME OF SUBMITTER: | SEAN M. MCGINN | |
| SIGNATURE: | /Sean M. McGinn/ | |
| DATE SIGNED: | 09/25/2015 | |
| | This document serves as an Oath/Declaration (37 CFR 1.63). | |

Total Attachments: 4

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PATENT REEL: 036670 FRAME: 0488

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PATENT REEL: 036670 FRAME: 0489

Docket No.: PEN. 239 Only After Sept 16, 2012

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, Renesas Electronics Corporation of Kanagawa, Japan, (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 USC 119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States application when called upon to do so by the assignee.

| | | oplication to the assignee, its successors and assigns; and I/we will execute without further the assignee in connection with the United States application when called upon to do so by |
|---|-----------------------------|---|
| (Legalization not required for recording | but is | prima facie evidence of execution under 35 USC 261) |
| As the below named inventor, I hereby | declar | e that: |
| This assignment with declaration is directed to: | X | The attached application, or |
| | | United States Application or PCT International Application Number |
| | | filed on: |
| The application is entitled: | | |
| | | A SEMICONDUCTOR DEVICE |
| The above identified application was m | ade or | was authorized to be made by me. |
| I believe that I am the original inventor | or an o | original joint inventor of a claimed invention in the application. |
| I have reviewed and understand the co | ntents | of the application for which this assignment with declaration is being submitted. |
| I am aware of the duty to disclose to t | ne Offi | ce all information known to me to be material to patentability as defined in 37 CFR 1.56. |
| I hereby acknowledge that any willful fa or imprisonment of not more than five | | atement made in this assignment with declaration is punishable under 18 USC 1001 by fine rs, or both. |
| Authorization To Permit Access To A | pplicat | ion by Participating Office |
| (JPO), the Korean Intellectual Property property offices in which a foreign appl patent application. See 37 CFR 1.14(c) | Office ication and (h | s the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual claiming priority to the above-identified application is filed access to the above-identified). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or reign application claiming priority to the above-identified application is filed to have |
| identified patent application-as-filed, 2 119(a)-(d) if a copy of the foreign appli |) any fo cation | will be provided to a copy of the application—as—filed with respect to: 1) the above—oreign application to which the above—identified application claims priority under 35 USC that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above—pplication—as—filed from which benefit is sought in the above—identified patent application. |
| In accordance with 37 CFR 1.14(c) acc | ecc m | ay be provided to information concerning the data of filing the Authorization to Pormit |

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| Legal Name of Inventor | Stilliper WATAIN | NDL | | |
|-----------------------------|------------------|-----------------|--|---|
| Inventor's Signature | Shinpei | Watanabe | Date April 20, 2015 | <u>, </u> |
| Legal Name of Additional Ir | oventor, If Any | Shinichi UCHIDA | | |
| Inventor's Signature | Shinich | : Clehida | Date April 20, 200 | 15 |
| Legal Name of Additional I | nventor, If Any | Tadashi MAEDA | | |
| Inventor's Signature | | | Date | |
| Legal Name of Additional I | nventor, If Any | Kazuo HENMI | 1. 1. 11. 11. 10. 10. 10. 10. 10. 10. 10 | |
| Inventor's Signature | Haryo | Henmi | Date April 20, 2015 | |

Docket No.: REN. 236 Only After Sept 16, 2012

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, Renesas Electronics Corporation of Kanagawa, Japan, (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 USC 119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States application when called upon to do so by the assignee.

| | the application to the assignee, its successors and assigns; and I/we will execute without further sary by the assignee in connection with the United States application when called upon to do so by | |
|--|---|--|
| (Legalization not required for recording | but is prima facie evidence of execution under 35 USC 261) | |
| As the below named inventor, I hereby | declare that: | |
| This assignment with declaration is directed to: | X The attached application, or | |
| | United States Application or PCT International Application Number | |
| | filed on | |
| The application is entitled: | | |
| | A SEMICONDUCTOR DEVICE | |
| The above identified application was ma | ade or was authorized to be made by me. | |
| I believe that I am the original inventor | or an original joint inventor of a claimed invention in the application. | |
| I have reviewed and understand the cor | ntents of the application for which this assignment with declaration is being submitted. | |
| I am aware of the duty to disclose to th | ne Office all information known to me to be material to patentability as defined in 37 CFR 1.56. | |
| I hereby acknowledge that any willful fa or imprisonment of not more than five (| lse statement made in this assignment with declaration is punishable under 18 USC 1001 by fine 5) years, or both. | |
| Authorization To Permit Access To Ap | oplication by Participating Office | |
| (JPO), the Korean Intellectual Property property offices in which a foreign appli- patent application. See 37 CFR 1.14(c) | grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual cation claiming priority to the above-identified application is filed access to the above-identified and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or ch a foreign application claiming priority to the above-identified application is filed to have | |
| identified patent application-as-filed, 2) 119(a)-(d) if a copy of the foreign application | access will be provided to a copy of the application—as—filed with respect to: 1) the above— I any foreign application to which the above—identified application claims priority under 35 USC cation that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above—U.S. application—as—filed from which benefit is sought in the above—identified patent application. | |
| n accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit | | |

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| Legal Name of Inventor Shinper WATANADE | 7.10.200.000.000.000 |
|--|----------------------|
| inventor's Signature | Date |
| Legal Name of Additional Inventor, If Any Shinichi UCHIDA | |
| inventor's Signature | Date |
| Legal Name of Additional Inventor, If Any <u>Tadashi MAEDA</u> | |
| Inventor's Signature Tadashi Maeda | Date April, 27, 2015 |
| Legal Name of Additional Inventor, If Any <u>Kazuo HENMI</u> | |
| Inventor's Signature | Date |