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PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| TATSUO NAKAYAMA | 07/30/2014 |
| HIRONOBU MIYAMOTO | 07/30/2014 |
| YASUHIRO OKAMOTO | 07/30/2014 |
| YOSHINAO MIURA | 08/07/2014 |
| TAKASHI INOUE | 08/27/2014 |

RECEIVING PARTY DATA

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| State/Country: | JAPAN |
| Postal Code: | 211-8668 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14604796 |

CORRESPONDENCE DATA

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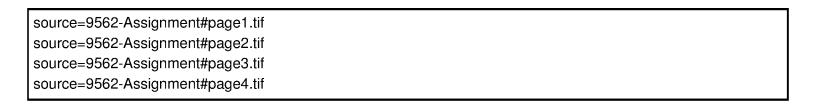
SUITE 370 Address Line 2:

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| ATTORNEY DOCKET NUMBER: | REN-9562 |
|-------------------------|---------------------|
| NAME OF SUBMITTER: | JOHN R. MATTINGLY |
| SIGNATURE: | /John R. Mattingly/ |
| DATE SIGNED: | 03/10/2015 |
| | · |

Total Attachments: 4

PATENT REEL: 035162 FRAME: 0045



PATENT REEL: 035162 FRAME: 0046

Docket No.: 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

| continuations thereof, and all Letters I to claim priority under 35 USC 119, an granted upon the invention set forth in | n and the invention disclosed therein for the United States of America, including all divisions, and atent of the United States that may be granted thereon, and all reissues thereof, including the rig I I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent 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 be | • |
|---|--|-----|
| (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: | | |
| | 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 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 Office all information known to me to be material to patentability as defined in 37 CFR 1.56. | |
| I hereby acknowledge that any willful f 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 A | pplication by Participating Office | |
| (JPO), the Korean Intellectual Propert property offices in which a foreign app patent application. See 37 CFR 1.14(c) | grants 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 ication 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 | fic |
| identified patent application—as—filed, 2 119(a)—(d) if a copy of the foreign appl | access will be provided to a copy of the application—as—filed with respect to: 1) the above—) 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. | |
| In accordance with 37 CFR 1,14(c), ac Access to Application by Participating | sess may be provided to information concerning the date of filing the Authorization to Permit Office. | |

Page 1 of 2

| Legal Name of Inventor | Tatsuo NAKAYA | MA | |
|-----------------------------|----------------|-------------------|---|
| Inventor's Signature | Jatrus | Nakayaro | Date July 30,2014 |
| Legal Name of Additional Ir | ventor, If Any | Hironobu MIYAMOTO | and an entered and a second and |
| Inventor's Signature | Héronobe | Miyamolo | Date July 30, 2014 |
| Legal Name of Additional In | ventor, If Any | Yasuhiro OKAMOTO | |
| Inventor's Signature | Mondato | - Thomato | Date July 30, 2014 |
| Legal Name of Additional In | ventor, If Any | Yoshinao MIURA | |
| Inventor's Signature | Yadiri | mas Moun | Date Aug 7, 2014 |
| Legal Name of Additional In | ventor, If Any | Takashi INOUE | |
| Inventor's Signature | | | Date |

Docket No.: 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

| continuations thereof, and all Letters to claim priority under 35 USC 119, argranted upon the invention set forth in | Patent of Id I/we n the ap | the invention disclosed therein for the United States of America, including all divisions, and of the United States that may be granted thereon, and all reissues thereof, including the right request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent uplication 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 | g but is | prima facie evidence of execution under 35 USO 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: | | |
| | | SEMICONDUCTOR DEVICE |
| The above identified application was n | nade or | was authorized to be made by me, |
| I believe that I am the original invento | roran | original joint inventor of a claimed invention in the application. |
| I have reviewed and understand the c | ontents | of the application for which this assignment with declaration is being submitted. |
| I am aware of the duty to disclose to | the 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 to rimprisonment of not more than five | | stement made in this assignment with declaration is punishable under 18 USC 1001 by fine rs, or both. |
| Authorization To Permit Access To | Applicat | ion by Participating Office |
| (JPO), the Korean Intellectual Property offices in which a foreign apparent application. See 37 CFR 1.14(c | y Office dication 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, 119(a)-(d) if a copy of the foreign app | 2) any fo lication | 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— application—as—filed from which benefit is sought in the above—identified patent application. |
| In accordance with 37 CFR 1.14(c), ac | | ay be provided to information concerning the date of filing the Authorization to Permit |

| Legal Name of Inventor Tatsuo NAKAY | AMA | | |
|---|--|---------------------------------------|---|
| Inventor's Signature | | Date | · · · · · · · · · · · · · · · · · · · |
| Legal Name of Additional Inventor, If Any | Hironobu MIYAMOTO | · · · · · · · · · · · · · · · · · · · | |
| Inventor's Signature | | Date | ······································ |
| Legal Name of Additional Inventor, If Any | Yasuhiro OKAMOTO | | · |
| Inventor's Signature | anno de la la companya de la company | Date | |
| Legal Name of Additional Inventor, If Any | Yoshinao MIURA | · | • · · · · · · · · · · · · · · · · · · · |
| Inventor's Signature | | Date | |
| Legal Name of Additional Inventor, If Any | Takashi INOUE | | |
| Inventor's Signature Jakash | i Frank | Date August 27 | 1th, 2014 |