

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5652491

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| SUBMISSION TYPE: | NEW ASSIGNMENT | |
| NATURE OF CONVEYANCE: | ASSIGNMENT | |
| CONVEYING PARTY DATA | | |
| Name | | Execution Date |
| FAIRCHILD (TAIWAN) CORPORATION (FORMERLY SYSTEM GENERAL CORPORATION) | | 12/21/2016 |
| RECEIVING PARTY DATA | | |
| Name: | SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC | |
| Street Address: | 5005 E. MCDOWELL ROAD | |
| Internal Address: | MAILDROP A700 | |
| City: | PHOENIX | |
| State/Country: | ARIZONA | |
| Postal Code: | 85008 | |
| PROPERTY NUMBERS Total: 1 | | |
| Property Type | Number | |
| Application Number: | 16531401 | |
| CORRESPONDENCE DATA | | |
| Fax Number: | (602)244-3169 | |
| <i>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.</i> | | |
| Phone: | 6022443574 | |
| Email: | patents@onsemi.com | |
| Correspondent Name: | SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC | |
| Address Line 1: | 5005 E. MCDOWELL ROAD | |
| Address Line 2: | MAILDROP A700 | |
| Address Line 4: | PHOENIX, ARIZONA 85008 | |
| ATTORNEY DOCKET NUMBER: | FSCC210CC01US | |
| NAME OF SUBMITTER: | MICHELLE A. SMOJVER | |
| SIGNATURE: | /MICHELLE A. SMOJVER/ | |
| DATE SIGNED: | 08/05/2019 | |
| Total Attachments: 32 | | |
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CONFIRMATORY ASSIGNMENT

This Confirmatory Assignment (the “**Assignment**”) is executed, acknowledged and delivered by Semiconductor Components Industries, LLC, a Delaware limited liability company having offices at 5005 E. McDowell Road, Phoenix, Arizona 85008 (“**Assignee**”), in accordance with, and pursuant to the terms and conditions of the Amendment to the Intangible Asset Transfer Agreement having an Effective Date of December 20, 2016 (along with the still valid terms and conditions of the original Intangible Asset Transfer Agreement, herein after referred to as the “**Agreement**”) between Assignee and Fairchild (Taiwan) Corporation (formerly System General Corporation) (“**Assignor**”). Capitalized terms used herein and not expressly defined shall have the meaning ascribed to such terms in the Agreement.

“**Listed Patents**” means the patent applications and issue patents listed on **Schedule A**, or as may be amended.

“**Assigned Patents**” means, all (a) Listed Patents; (b) patents or patent applications (i) to which any of the Listed Patents claims priority, (ii) for which any of the Listed Patents forms a basis for priority and/or (c) reissues, reexaminations, extensions, continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, divisions, and registrations of any item in any of the foregoing categories (a) and (b); (d) national (of any country of origin) and multinational patents, patent applications and counterparts relating to any item in any of the foregoing categories (a) through (c), including, without limitation, certificates of invention and utility models; (e) rights provided by multinational treaties or conventions for any item in any of the foregoing categories (a) through (d); and (e) any item in any of the foregoing categories (b) through (d) whether or not expressly listed as Listed Patents and whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like.

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN:

For good and valuable consideration including the sum of \$10.00 and other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor agrees to and does hereby irrevocably sell, assign, transfer and convey unto said Assignee, and Assignee hereby accepts, all of Assignor’s right, title, and interest (i) in and to the Assigned Patents, the same to be held and enjoyed by said Assignee for its own use, and for the use of its successors, assigns, or other legal representatives to the end of the term or terms for which said Patents may be granted as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment had not been made; (ii) in and to causes of action and enforcement rights for the Assigned Patents including all rights to pursue damages, injunctive relief and other remedies for past and future infringement of the Assigned Patents; and (iii) to apply in any and all countries for the world for patents; certificates of invention or other governmental grants for the Assigned Patents. Assignor also hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents or certificates of invention which may be granted upon any of the Assigned Patents in the name of Assignee, as the assignee to the entire interest therein.

Notwithstanding anything to the contrary herein, Assignor is executing and delivering this Assignment in accordance with and subject to all of the terms and provisions of the Agreement. In the event of any conflict between the terms of this Assignment and those of the Agreement, the terms of the Agreement shall be controlling.

This Assignment shall be binding upon and shall inure to the benefit of the parties and their respective successors and assigns.

This Assignment shall be governed by, and construed in accordance with, the laws of the United States in respect to patent issues and in all other respects by the laws of the State of Arizona, without giving effect to the conflict of laws rules thereof.

This Assignment may be executed in any number of counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.

Signatures are provided on separate pages.

IN WITNESS WHEREOF, Assignor has caused this Assignment to be executed as of this 21st
day of December 2016.

ASSIGNOR:

Fairchild (Taiwan) Corporation

By: 

Name: Moon Kuen Mak

Title: Director

In the presence of:  (Witness)

Name: Stacy Yoon

Title: Korea Sales manager

ACCEPTANCE OF ASSIGNMENT

The Assignee hereby acknowledges and accepts the foregoing assignment of rights by Assignor.

IN TESTIMONY WHEREOF, the Assignee, by its undersigned officer, confirms its acceptance on the date and in the place set forth below.

Date: 21 December 2016

By: _____

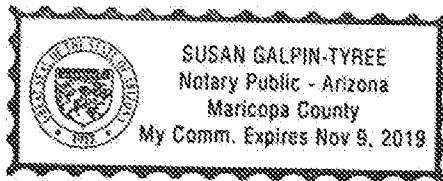
George H. Cave
George H. Cave
Executive Vice President
Semiconductor Components Industries, LLC

STATE OF ARIZONA §

§

COUNTY OF MARICOPA §

On this 21st day of December, 2016, before me a Notary Public in and for said county, personally appeared George H. Cave who executed the foregoing instrument and acknowledged that he signed, sealed and delivered the same instrument as a free and voluntary act for the purposes and considerations therein expressed.



Susan Galpin-Tyree
Notary Public
My Commission Expires 9 Nov 2019

Exhibit A
"Listed Patents"

| Patent No. | Country | Title |
|------------|---------|--|
| 5,903,452 | US | Adaptive Slope Compensator for Current Mode Power Converters |
| 6,135,718 | US | Interface Apparatus for Fan Monitor and Control |
| 6,185,082 | US | Protection Circuit for a Boost Power Converter |
| 6,418,002 | US | Power Supply Supervisor Having a Line Voltage Detector |
| 6,353,405 | US | Low Distortion Video Analog to Digital Converter |
| 6,597,159 | US | Pulse Width Modulation Controller Having Frequency Modulation for Power Converter |
| 6,545,882 | US | PWM Controller Having Off-time Modulation for Power Converter |
| 6,501,666 | US | Method and Apparatus for Magnetic Amplifier to Reduce Minimum Load Requirement |
| 6,611,439 | US | PWM Controller for Output Power Limit of a Power Supply |
| 6,661,679 | US | PWM Controller Having Adaptive Off-time Modulation for Power Saving |
| 6,674,656 | US | PWM Controller Having a Saw-limiter for Output Power Limit without Sensing Input Voltage |
| 6,839,247 | US | PFC-PWM Controller Having a Power Saving Means |
| 6,900,623 | US | Power Supply Having Multi-vector Error Amplifier for Power Factor Correction |
| 6,812,769 | US | Switch Charge Multiplier-Divider |
| RE43,015 | US | Capacitive High-side Switch Driver for a Power Converter |
| RE40,844 | US | High-side Transistor Driver for Power Converters |
| 7,057,440 | US | Multiplier-Divider Circuit for a PFC Controller |
| 6,903,536 | US | PFC-PWM Controller Having an Interleaved Switching |
| 6,967,851 | US | An Apparatus for Reducing the Power Consumption of a PFC-PWM Power Converter |
| 7,054,170 | US | Power-mode Controlled Power Converter |
| 7,091,710 | US | Low Dropout Voltage Regulator Providing Adaptive Compensation |
| 7,088,598 | US | Power-mode Control Circuitry for Power Converters |
| 6,952,354 | US | Single Stage PFC Power Converter |
| 7,061,776 | US | Half-bridge Flyback Power Converter |
| 7,026,851 | US | PWM Controller Having Frequency Jitter for Power Supply |
| 6,995,991 | US | PWM Controller for Synchronous Rectifier of Flyback Power Converter |
| 7,061,225 | US | Apparatus and Method Thereof for Measuring Output Current from Primary Side of Power Converter |
| 6,977,824 | US | Control Circuit for Controlling Output Current at the Primary Side of a Power Converter |
| 7,016,204 | US | Close-loop PWM Controller for Primary-side Controlled Power Converters |
| 7,184,283 | US | Switching Frequency Jitter Having Output Ripple Cancel for Power Supplies |
| 7,362,592 | US | Switching Control Circuit for Primary-side-controlled Power Converters |
| 7,061,780 | US | Switching Control Circuit with Variable Switching Frequency for Primary-side-controlled Power Converters |
| 7259972 | US | Primary-side-control Power Converter Having a Switching Controller Using Frequency Hopping and Voltage and Current Control Loops |
| 7,203,079 | US | Switching Controller Having Frequency Hopping for Power Supplies |
| 7,391,628 | US | Switching Controller Having Frequency Hopping for Power Supplies and Method Thereof |
| 7,486,493 | US | Over-Power Protection Circuit for Power Converter |
| 7,133,300 | US | Over-voltage Protection Circuit for Power Converter |

| Patent No. | Country | Title |
|------------|---------|--|
| 7,235,957 | US | Power Supply with Current-sharing Control and Current-sharing Method Thereof |
| 7,362,593 | US | Switching Control Circuit Having Off-time Modulation to Improve Efficiency of Primary-side Controlled Power Supply |
| 7,151,681 | US | Multiple-sampling Circuit for Measuring Reflected Voltage and Discharge Time of a Transformer |
| 7,116,565 | US | Over-power Protection Apparatus for Self-Excited Power Converter |
| 7,218,080 | US | Soft-Start Apparatus for Power Supplies |
| 7,257,008 | US | Start-up Apparatus for Power Converters |
| 7,274,251 | US | Apparatus and Method of Current Sharing |
| 7,368,895 | US | Apparatus for a Power Supply with Brownout Protection and Protecting Method for the Same |
| 7,498,788 | US | Switching Regulator Having Energy Saving Circuit |
| 7,426,120 | US | Switching Control Circuit Having a Valley Voltage Detector to Achieve Soft Switching for Resonant Power Converters |
| 7,466,569 | US | Power Converter Having Phase Lock Circuit for Quasi-resonant Soft Switching |
| 7,149,098 | US | Over-Power Protection Apparatus with Programmable Over-current Threshold |
| 7,256,675 | US | Energy Transfer Apparatus for Reducing Conductivity Electromagnetic Interference and Manufacturing Method Thereof |
| 7,489,532 | US | Apparatus and Method for a Power Converter with Feed-forward Voltage Compensation to Enable a PFC Circuit |
| 7,482,788 | US | Buck Converter for both Full Load and Light Load Operations |
| 7,236,376 | US | Controller for regulating output current at the primary side of a power supply |
| 7,259,525 | US | High Efficiency Switching LED Driver |
| 7,616,454 | US | Control Circuit Having Programmable Waveform for Output Power Limit of Power Converter |
| 7,460,380 | US | Highly Efficient Switching Power Converter Using a Charge Pump to Power the Drive Circuit |
| 7,414,865 | US | Controller Having Output Current Control for a Power Converter |
| 7,492,613 | US | Control Circuit of Power Converter Having Adaptive Bias for Detecting Reflected Voltage of Transformer |
| 7,173,835 | US | Control Circuit Associated with Saturable Inductor Operated as Synchronous Rectifier for Forward Power Converter |
| 7,489,529 | US | Control Circuit Having Frequency Modulation to Reduce EMI of Power Converters |
| 7,577,002 | US | Control Circuit Including a Frequency Hopping to Reduce EMI of Power Supplies |
| 7,564,903 | US | Method and Apparatus for Measuring Reflected Voltage of Transformer |
| 7,286,376 | US | Soft-switching Power Converter Having Power Saving Circuit for Light Load Operations |
| 7,116,090 | US | Switching Control Circuit for Discontinuous Mode PFC Converters |
| 7,352,595 | US | Primary-side Controlled Switching Regulator |
| 7,561,447 | US | Primary-side Controlled Switching Regulator |
| 7,245,089 | US | Switching LED Driver |
| 7,245,090 | US | Switching LED Driver with Temperature Compensation to Program LED Current |
| 7,286,123 | US | LED Drive Circuit Having Temperature Compensation |
| 7,995,358 | US | Control Circuit Including Adaptive Bias for Transformer Voltage Detection of a Power Converter |
| 7,554,367 | US | Driving Circuit |

| Patent No. | Country | Title |
|-------------------|----------------|---|
| 7,218,060 | US | Flyback Ballast for Fluorescent Lamp |
| 7,365,997 | US | Synchronous Switching Control Circuit for Power Converters |
| 7,310,244 | US | Primary Side Controlled Switching Regulator |
| 7,310,251 | US | Control Circuit having Two-level under Voltage Lockout to Improve the Protection of Power Supply |
| 7,511,466 | US | Method and Apparatus for Predicting Discharge Time of Magnetic Device for Power Converter |
| 7,570,038 | US | Control Circuit to Reduce Reverse Current of Synchronous Rectifier |
| 7,615,976 | US | Switching Circuit of Power Converter Having Voltage-Clipping Device to Improve Efficiency |
| 7,859,234 | US | Switch Circuit to Control On/Off of High Voltage Source |
| 8,044,685 | US | Floating Driving Circuit |
| 7,724,034 | US | Floating Driving Circuit |
| 7,592,790 | US | Start-up Circuit with Feedforward Compensation for Power Converters |
| 7,368,878 | US | Current Mode Resonant Ballast |
| 7,671,486 | US | Switching Controller Having Synchronous Input for the Synchronization of Power Converters |
| 7,764,098 | US | Start-up Circuit of Power Converter |
| 7,671,578 | US | Detection Circuit for Sensing the Input Voltage of Transformer |
| 8,415,928 | US | Power Circuit |
| 7,573,251 | US | AC-to-DC Voltage Regulator |
| 7,701,734 | US | Detection Circuit to Detect Input Voltage of Transformer and Detecting Method for the Same |
| 7,602,160 | US | Method and Apparatus Providing Protection for Power Converter |
| 7,847,533 | US | Apparatus Providing Protection for Power Converter |
| 7,755,296 | US | A Resonant Inverter |
| 7,471,523 | US | Method and Apparatus for Detecting Demagnetizing Time of Magnetic Device |
| 7,592,793 | US | Voltage Regulator Providing Power from AC Power Source |
| 7,486,528 | US | Linear-predict Sampling for Measuring Demagnetized Voltage of Transformer |
| 7,440,298 | US | Synchronous Rectification Circuit for Power Converters |
| 7,564,705 | US | Synchronous Rectification Circuit for Power Converters |
| 7,349,229 | US | Causal Sampling Circuit for Measuring Reflected Voltage and Demagnetizing Time of Transformer |
| 7,778,051 | US | Output Current Control Circuit for Power Converter with a Changeable Switching Frequency |
| 8,179,700 | US | Switching Control Circuit with Adaptive Minimum On Time for Power Converters |
| 8,154,153 | US | Method and Apparatus for Providing Communication Channel through Output Cable of Power Supply |
| 7,531,996 | US | Low Dropout Regulator with Wide Input Voltage Range |
| 7,471,121 | US | Transistor Driver Circuit of Power Converter Operating in a Wide Voltage Range |
| 7,313,004 | US | Switching Controller for Resonant Power Converter |
| 7,622,827 | US | Switching Controller for Parallel Power Supply |
| 7,633,183 | US | Method and Apparatus for Sharing Power of Parallel Power Supplies |
| 7,604,78 | US | Method and Apparatus Providing Short Circuit Protection for Current Sense Terminal of Power Converter |
| 7,800,927 | US | Method and Apparatus for Providing Compensations of Current Mode Power Converters |
| 8,089,791 | US | Compensation Circuit and Compensation Method for Current Mode Power Converters |

| Patent No. | Country | Title |
|-------------------|----------------|--|
| 7,656,685 | US | Method and Apparatus for Detecting Input Voltage of Power Converter |
| 7,616,461 | US | Control Method and Circuit with Indirect Input Voltage Detection by Switching Current Slope Detection |
| RE42,674 | US | Control Method and Circuit with Indirect Input Voltage Detection By Switching Current Slope Detection |
| 8,279,638 | US | Output Regulation Circuit of a Power Converter without Current Sensing Loss and Method Thereof |
| 7,710,095 | US | Power Converter Having PWM Controller for Maximum Output Power Compensation |
| 7643313 | US | Power Converter for Compensating a Maximum Output Power and PWM Controller for the Same |
| 8,031,492 | US | PWM Controller for Compensating a Maximum Output Power of a Power Converter |
| 7,652,463 | US | PWM Controller Having a Frequency Modulation for Maximum Output Power Compensation |
| 7,835,162 | US | Power Converter for Compensating a Maximum Output Power |
| 7,940,035 | US | Control Circuit Having an Impedance Modulation Controlling Power Converter for Power Saving |
| 7,855,899 | US | Controller with Loop Impedance Modulation and Soft-start for Power Converter |
| 7,936,087 | US | Switching Controller for Parallel Power Converters |
| 7,570,087 | US | Switching Drive Circuit for Soft Switching |
| 8729828 | US | Integrated circuit controller for ballast |
| 7,518,416 | US | Method and Apparatus for Detecting Switching Current of Magnetic Device Operated at Continuous Current Mode |
| 7701733 | US | Method and Apparatus to Provide Synchronous Rectifying Circuit for Offline Power Converters |
| 7787264 | US | Apparatus to Provide Synchronous Rectifying Circuit for Flyback Power Converters |
| 7,974,108 | US | Synchronous Rectifying Circuit for Offline Power Converter |
| 7701736 | US | Synchronous Rectifying Circuit for Resonant Power Converters |
| 7,663,352 | US | Control Circuit for Measuring and Regulating Output Current of GCM Power Converter |
| 7,885,084 | US | Control Circuit for Synchronous Rectifying and Soft Switching of Power Converters |
| 7660136 | US | Method and Apparatus for Synchronous Rectifying of Soft Switching Power Converters |
| 7,626,372 | US | Control Circuit for Multi-phases, Multi-channels PFC converter with Variable Switching Frequency |
| 8,072,787 | US | Synchronous Rectifying for Soft Switching Power Converters |
| 7,616,457 | US | Synchronous Regulation Circuit |
| 7,903,440 | US | Synchronous Regulation Circuit and Method for Providing Synchronous Regulation for Power Converters |
| 7,796,407 | US | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 7,764,516 | US | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 7,800,923 | US | Offline Synchronous Switching Regulator |
| 7,550,933 | US | Offline Control Circuit of LED Driver to Control the Maximum Voltage and the Maximum Current of LEDs |
| 7,812,552 | US | Controller of LED Lighting to Control the Maximum Voltage of LEDs and the Maximum Voltage across Current Sources |
| 8,004,862 | US | Offline Synchronous Rectifying Circuit with Current Transformer for Soft Switching Power Converters |
| 8,045,351 | US | Method and Apparatus of Providing a Biased Current Limit for Limiting Maximum Output Power of Power Converters |
| 8576595 | US | Method and Apparatus of Providing a Biased Current Limit for Limiting Maximum Output Power of Power Converters |

| Patent No. | Country | Title |
|-------------------|----------------|---|
| 8503144 | US | Using HV JFET to Achieve Brown-out Protection & Current Limit hi/lo Line Compensation |
| 7,911,813 | US | Offline Synchronous Rectifying Circuit with Sense Transistor for Resonant Switching Power Converters |
| 8,054,656 | US | Switching Control Circuit for a Switching Power Converter |
| 9,093,993 | US | Power Saving Circuit for PWM Circuit |
| 8,030,992 | US | Low-Pass Filter |
| 8,094,468 | US | Control Circuit Having Off-time Modulation to Operate Power Converter at Quasi Resonance and in Continuous Current Mode |
| 8,023,289 | US | Offline Synchronous Rectifier with Causal Circuit for Resonant Switching Power Converter |
| 7,965,528 | US | Method and Apparatus for Measuring the Switching Current of Power Converter Operated at Continuous Current Mode |
| 7,999,527 | US | Switching Controller Having Programmable Feedback Circuit for Power Converters |
| 8085021 | US | PFC Converter Having Two-level Output Voltage without Voltage Undershooting |
| 7,903,435 | US | Switching Controller Having Switching Frequency Hopping for Power Converter |
| 8,482,391 | US | Wall Control Interface with Phase Modulation and Detection for Power Management |
| 8,154,888 | US | Offline Synchronous Rectifier with Turn-On Arbiter and Phase-Lock for Switching Power Converters |
| 9,148,060 | US | Switching Controller with Burst Mode Management Circuit to Reduce Power Loss and Acoustic Noise of Power Converter |
| 7,881,076 | US | Buck-Boost PFC Converter |
| 7,944,721 | US | Switching Control Circuit for Multi-channels and Multi-phases Power Converter Operated at Continuous Current Mode |
| 7,983,061 | US | Switching Controleeer Capable of Reducing Acoustic Noise for Power Converters |
| 8,199,541 | US | High Efficiency Bridgeless PFC Power Converter |
| 8710813 | US | Low Drop-out Regulator Providing Constant Current and Maximum Voltage Limit |
| 7,928,758 | US | Transistor Gate Driving Circuit with Power Saving for Power Converters |
| 8,049,448 | US | Control Circuit with Dual Programmable Feedback Loops for BLDC Motors |
| 8,102,133 | US | Control Circuit for BLDC Motors |
| 8,179,250 | US | Power Management Interface |
| 8605462 | US | Switching Circuit for Primary-side Regulated Resonant Power Converters |
| 7,990,739 | US | Asymmetrical Resonant Power Converter |
| 8331114 | US | Flyback Power Converters |
| 8649191 | US | Synchronous Rectifier having Phase Lock Circuit Coupled to Feedback Loop for Resonant Power Converters |
| 8559196 | US | Output Voltage Control Circuit of Power Converter for Light-Load Power Saving |
| 8451632 | US | Dual-Switches Flyback Power Converter with Self-Excited Supply to power the High-Side Driver |
| 8461915 | US | Start-up Circuit to Discharge EMI Filter for Power Saving of Power Supplies |
| 8373399 | US | Control Circuit of Interleaved PFC Power Converter |
| 835518 | US | Switching Regulator Having Terminal for Feedback Signal Inputting and Peak Switching Current Programming |
| 8351227 | US | Switching Controller for Power Converters |

| Patent No. | Country | Title |
|------------|---------|--|
| 8,242,754 | US | Resonant Power Converter with Half Bridge and Full Bridge Operations and Method for Control Thereof |
| 8,134,302 | US | An Offline LED Drive Circuit with Dimming Control |
| 8,269,432 | US | Offline LED Lighting Circuit with Dimming Control |
| 8331070 | US | A Power Supply with Open-loop Protection |
| 8513895 | US | High Efficiency LED Driver with Current Source Regulations |
| 8767419 | US | Feedback Circuit with Feedback Impedance Modulation for Improving Power Saving |
| 8,854,840 | US | Method and Apparatus to Improve Dynamic Response of the Synchronous Rectifying for Resonant Power Converters |
| 8,742,677 | US | LED Drive Circuit with a Programmable Input for LED Lighting |
| 8,164,928 | US | Method and Apparatus of Operating a Primary-side-regulation Power Converter at Both Continuous Current Mode and Discontinuous Current Mode |
| 8,854,841 | US | High Speed Reflected Signal Detection for Primary-side Controlled Power Converters |
| 8482937 | US | Switching Control Circuit with Valley Lock for Power Converters |
| 8542507 | US | Adaptive Synchronous Rectification Control Method and Apparatus |
| 8665621 | US | Power Supply with Open-Loop Protection and Short-Circuit Protection |
| 8767417 | US | Dual Switches Flyback Power Converter with Wide Input Voltage Range |
| 8698474 | US | A Start-Up Circuit with Low Standby Power Loss for Power Converters |
| 8625313 | US | High-side Synchronous Rectifier Circuits and control circuits for Power Converters |
| 8649129 | US | Method and Apparatus of Providing Over-temperature Protection for Power Converters |
| 8593833 | US | Method and Apparatus for a Flyback Power Converter Providing Output Voltage and Current Regulation without Input Capacitor |
| 8482268 | US | A Correction Circuit of a Switching-Current Sample for Power Converters in Both CCM and DCM Operation |
| 8587964 | US | Control Circuit with Burst Mode and Extended Valley Switching for Quasi-Resonant Power Converter |
| 8488338 | US | Controller with Valley Switching and Limited Maximum Frequency for Quasi-resonant Power Converters |
| 8432109 | US | Method and Apparatus for an Offline LED Driver with High Power Factor |
| 8471626 | US | Start-up Circuit to Discharge EMI Filter of Power Supplies |
| 8780515 | US | Control Circuit with Protection Circuit for Power Supply |
| 8669728 | US | Angle Detection Apparatus and Method for Rotor of Motor |
| 8,670,248 | US | A Primary-side Controlled Power Converter with an RC Network and Method Thereof |
| 8711583 | US | Single-Stage PFC Converter with Constant Voltage and Constant Current |
| 9,306,459 | US | Control Circuit for Burst Switching of Power Converter and Method Thereof |
| 9,142,952 | US | Multi-Function Terminal of Power Supply Controller for Feedback Signal Input and Over-Temperature Protection |
| 8,866,512 | US | A Feedback Terminal of Power Converter Having Programming Function for Parameter Setting |
| 8,664,998 | US | An Adaptive Filter for Sampling the Reflected Voltage of Transformer of a Power Converter |
| 8730687 | US | Switching Controller with Valley-Lock Switching and Limited Maximum Frequency for Quasi-Resonant Power Converters |
| 8,643,297 | US | Control Circuit and Control Method for Dimming LED Lighting Circuit |

| Patent No. | Country | Title |
|-------------------|----------------|---|
| 8531210 | US | Monolithic High-Side Switch Control Circuit |
| 8749999 | US | Controller and Power Converter Using the Same for Clamping Maximum Switching Current of Power Converter |
| 7,850,217 | US | Equidistance Pick-and-Place Device for ICs |
| 7,888,835 | US | Rotating Shaft and Motor Rotor Having the Same |
| 7,723,887 | US | Motor Rotor |
| D595,740 | US | Rotor End Cover |
| D590,339 | US | Controller with DC Brushless Motor |
| 8587172 | US | Method of Fastening Detector and Fastening Bracket Used Therewith |
| 8508091 | US | End Cover and Motor Rotor Having the END Cover |
| 8,050,057 | US | Mounting Structure for an Electronic Element |
| 7,169,661 | US | Process of Fabricating High Resistance CMOS Resistor |
| 6,995,428 | US | High Voltage LDMOS Transistor Having an Isolated Structure |
| 7,205,201 | US | CMOS Compatible Process with Different-voltage Devices |
| 7,858,466 | US | Different-Voltage Device Manufactured by a CMOS Compatible Process and High-Voltage Device Used in the Different-Voltage Device |
| 7,102,194 | US | High Voltage and Low On-resistance LDMOS Transistor Having Radiation Structure and Isolated Effect |
| 7,285,837 | US | Electrostatic Discharge Device Integrated with Pad |
| 7,042,028 | US | Electrostatic Discharge Device |
| 7,417,287 | US | Electrostatic Discharge Device Having Controllable Trigger Voltage |
| 7,355,250 | US | Electrostatic Discharge Device with Controllable Holding Current |
| 7,615,826 | US | Electrostatic Discharge Protection Semiconductor Structure |
| 7,847,365 | US | MOSFET with Isolation Structure for Monolithic Integration and Fabrication Method Thereof |
| 7,923,787 | US | MOSFET with Isolation Structure and Fabrication Method Thereof |
| 7,829,928 | US | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 7,759,769 | US | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 7,589,393 | US | Semiconductor Structure of a High Side Driver for Two High Voltage Nodes with Partially Linked Deep Wells and Method for Manufacturing the Same |
| 8,124,466 | US | Process for Manufacturing Voltage-controlled Transistor |
| 7,911,031 | US | Voltage-controlled Semiconductor Structure, Resistor, and Manufacturing Processes Thereof |
| 8,125,008 | US | Schottky Device and Process of Making the Same |
| 7,655,990 | US | Voltage-Clipping Device with High Breakdown Voltage |
| 7732890 | US | Integrated Circuit with High Voltage Junction Structure |
| 8568349 | US | Integrated Circuit for a High-side Transistor Driver |
| 7,834,400 | US | Semiconductor structure for protecting an internal integrated circuit and method for manufacturing the same |
| 8492801 | US | Semiconductor Structure with High Breakdown Voltage and Resistance and Method for Manufacturing the Same |
| 7,888,704 | US | Semiconductor Device for Electrostatic Discharge Protection |

| Patent No. | Country | Title |
|------------|---------|--|
| 9,184,097 | US | Semiconductor Devices and Formation Methods Thereof |
| 8492849 | US | Semiconductor Structure for High-side Drivers |
| 8373253 | US | ESD Semiconductor Structure |
| 8354698 | US | Semiconductor Device |
| 8816753 | US | Trim Circuit for Power Supply Controller |
| 8649194 | US | Electro-Magnetic Interference Reduction Circuit for Power Converters and Method Thereof |
| 8,654,546 | US | Method and Apparatus for Controlling Resonant Power Converter |
| 9,007,786 | US | Switching Controller for Flyback Power Converters without Input Capacitor |
| 9,337,737 | US | Control Circuit with Fast Dynamic Response for Power Converters |
| 9,306,464 | US | Synchronous Rectifier Control Circuits of Power Converters |
| 9,219,432 | US | Control Systems and Methods for Angle Estimation of Permanent Magnet Motors |
| 8,934,266 | US | ADAPTIVE SLOPE COMPENSATION PROGRAMMABLE BY INPUT VOLTAGE OF POWER CONVERTER |
| 9,270,184 | US | Control Circuit and Terminal for Cable Compensation and Wake-up of Primary-side Regulated Power Converter |
| 8,902,999 | US | Isolation Interface Circuit for Power Management |
| 9,077,258 | US | Regulation Circuit Associated with Synchronous Rectifier Providing Cable Compensation for the Power Converter and Method Thereof |
| 9,344,002 | US | Adaptive Sampling Circuit for Detecting the Demagnetized Voltage of the Transformer |
| 9,337,713 | US | Sampling Circuit for Measuring the Reflected Voltage of Transformer for Power Converter |
| 9,159,450 | US | Sampling Circuit for Measuring Reflected Voltage of Transformer for Power Converter Operated in DCM and CCM |
| 9,252,674 | US | Transistor Gate Driver with Charge Pump Circuit for Offline Power Converters |
| 8,884,684 | US | Charge Pump Circuit having Frequency Synchronization with Switching Frequency of Power Converters |
| 9,184,665 | US | Control Circuit of Power Converter with Temperature Control and Method for Controlling Power Converter |
| 9,343,982 | US | A Primary-Side Controlled Programmable Power Converter |
| 9,280,192 | US | Programmable Power Supply |
| 9,218,737 | US | Receiving Control Circuit for a Wall Control Interface with Phase Modulation and Detection for Power Management |
| 9379622 | US | Control Circuit and Method for Controlling Power Converter |
| 8525554 | US | High-Side Signal Sensing Circuit |
| 9,407,141 | US | Control Circuit of Power Converter and Method Therefore |
| 9,236,806 | US | Method and Apparatus for Controlling Programmable Power Converter with Low Standby Power Loss |
| 9,252,676 | US | Adaptive Active Clamp of Flyback Power Converter with High Efficiency for Heavy Load and Light Load |
| 9,276,483 | US | Control Circuit for Active-Clamp Flyback Power Converter with Programmable Switching Period |
| 9337736 | US | CONTROLLER WITH POWER SAVING FOR POWER CONVERTERS AND METHOD FOR THE SAME |
| 9,093,918 | US | Control Circuit for Offline Power Converter without Input Capacitor |

| Patent No. | Country | Title |
|------------|---------|--|
| 8,760,099 | US | Sensorless Motor Apparatus, Back EMF Detector and Detection Method Thereof |
| 9,300,199 | US | Under-Voltage Protection Circuit for Programmable Power Supplies |
| 8659916 | US | Control Circuit with ZVS-lock and Asymmetrical PWM for Resonant Power Converter |
| 8729930 | US | Successive Approximation Multiplier-Divider for Signal Process and Method for Signal Process |
| 9,049,764 | US | LED Drive Circuit with a Programmable Input for LED Lighting |
| 9,379,616 | US | Control circuit with deep burst mode for power converter |
| 8908396 | US | Control Circuit for Controlling the Maximum Output Current of Power Converter |
| 9,141,118 | US | Switching Current Synthesis Circuit for Power Converter |
| 1112077 | Taiwan | Adaptive Slope Compensator for Current Mode Power Converters |
| 1149712 | Taiwan | Low Distortion Video Analog to Digital Converter |
| 1200258 | Taiwan | Pulse Width Modulation Controller Having Frequency Modulation for Power Converter |
| 1200257 | Taiwan | PWM Controller Having Off-time Modulation for Power Converter |
| 1277854 | Taiwan | PWM Controller for Output Power Limit of a Power Supply |
| 1288313 | Taiwan | PWM Controller Having a Saw-limiter for Output Power Limit without Sensing Input Voltage |
| 1277852 | Taiwan | Control Circuit for Controlling Output Current at the Primary Side of a Power Converter |
| 1251976 | Taiwan | Switching Control Circuit for Primary-side-controlled Power Converters |
| 1251979 | Taiwan | Switching Control Circuit with Variable Switching Frequency for Primary-side-controlled Power Converters |
| 1283956 | Taiwan | Switching Controller Having Frequency Hopping for Power Supplies and Method Thereof |
| 1269508 | Taiwan | Over-Power Protection Circuit for Power Converter |
| 1283804 | Taiwan | Over-voltage Protection Circuit for Power Converter |
| 1277860 | Taiwan | Power Supply with Current-sharing Control and Current-sharing Method Thereof |
| 1251978 | Taiwan | Switching Control Circuit Having Off-time Modulation to Improve Efficiency of Primary-side Controlled Power Supply |
| 1255093 | Taiwan | Multiple-sampling Circuit for Measuring Reflected Voltage and Discharge Time of a Transformer |
| 1282049 | Taiwan | Over-power Protection Apparatus for Self-Excited Power Converter |
| 1301691 | Taiwan | Soft-Start Apparatus for Power Supplies |
| 1347086 | Taiwan | Soft-Start Apparatus for Power Supplies |
| 1311396 | Taiwan | Start-up Apparatus for Power Converters |
| 1282048 | Taiwan | Voltage-regulator and Power Supply Having Current Sharing Control |
| 1281104 | Taiwan | Apparatus and Method of Current Sharing |
| 1283808 | Taiwan | Apparatus for a Power Supply with Brownout Protection and Protecting Method for the Same |
| 1323396 | Taiwan | Switching Regulator Having Energy Saving Circuit |
| 1277741 | Taiwan | Switching Control Circuit Having a Valley Voltage Decider to Achieve Soft Switching for Resonant Power Converters |
| 1281316 | Taiwan | Power Converter Having Phase Lock Circuit for Quasi-resonant Soft Switching |
| 1274977 | Taiwan | Control Circuit for Proportional Driving Switching Power Supply |
| 1328149 | Taiwan | Apparatus and Method for a Power Converter with Feed-forward Voltage Compensation to Enable a PFC Circuit |

| Patent No. | Country | Title |
|------------|---------|--|
| 1291801 | Taiwan | Buck Converter for both Full Load and Light Load Operations |
| 1308816 | Taiwan | Controller for regulating output current at the primary side of a power supply |
| 1308034 | Taiwan | High Efficiency Switching LED Driver |
| 1306325 | Taiwan | Control Circuit Having Programmable Waveform for Output Power Limit of Power Converter |
| 1320258 | Taiwan | Highly Efficient Switching Power Converter Using a Charge Pump to Power the Drive Circuit |
| 1304288 | Taiwan | High-side Transistor Driver Having Positive Feedback for Improving Speed and Power Saving |
| 1377774 | Taiwan | Controller Having Output Current Control for a Power Converter |
| 1313097 | Taiwan | Control Circuit of Power Converter Having Adaptive Bias for Detecting Reflected Voltage of Transformer |
| 1306328 | Taiwan | Control Circuit Associated with Saturable Inductor Operated as Synchronous Rectifier for Forward Power Converter |
| 1352487 | Taiwan | Control Circuit Having Frequency Modulation to Reduce EMI of Power Converters |
| 1312923 | Taiwan | Control Circuit Including a Frequency Hopping to Reduce EMI of Power Supplies |
| 1299404 | Taiwan | Method and Apparatus for Measuring Reflected Voltage of Transformer |
| 1313098 | Taiwan | Soft-switching Power Converter Having Power Saving Circuit for Light Load Operations |
| 1283805 | Taiwan | Switching Control Circuit for Discontinuous Mode PFC Converters |
| 1320260 | Taiwan | Primary-side Controlled Switching Regulator |
| 1318761 | Taiwan | Switching LED Driver with Temperature Compensation to Program LED Current |
| 1274315 | Taiwan | LED Drive Circuit Having Temperature Compensation |
| 1347069 | Taiwan | Control Circuit Including Adaptive Bias for Transformer Voltage Detection of a Power Converter |
| 1335710 | Taiwan | Driving Circuit |
| 1332608 | Taiwan | Switching Power Converter with Transformer Arrangement |
| 1378631 | Taiwan | Flyback Power Converter with Split Primary Winding Transformer |
| 1318850 | Taiwan | Flyback Ballast for Fluorescent Lamp |
| 1315599 | Taiwan | Synchronous Switching Control Circuit for Power Converters |
| 1313096 | Taiwan | Primary Side Controlled Switching Regulator |
| 1317199 | Taiwan | Control Circuit having Two-level under Voltage Lockout to Improve the Protection of Power Supply |
| 1315812 | Taiwan | Method and Apparatus for Predicting Discharge Time of Magnetic Device for Power Converter |
| 1329408 | Taiwan | Control Circuit to Reduce Reverse Current of Synchronous Rectifier |
| 1313095 | Taiwan | Switching Circuit of Power Converter Having Voltage-Clipping Device to Improve Efficiency |
| 1326961 | Taiwan | Switch Circuit to Control On/Off of High Voltage Source |
| 1316322 | Taiwan | High Voltage Start-up Circuit for Power Converters |
| 1418146 | Taiwan | Floating Driving Circuit |
| 1324430 | Taiwan | Start-up Circuit with Feedforward Compensation for Power Converters |
| 1344319 | Taiwan | Current Mode Resonant Ballast |
| 1347802 | Taiwan | Resonant Ballast Circuit |
| 1347800 | Taiwan | High Efficiency Resonant Ballast |
| 1339931 | Taiwan | Switching Controller Having Synchronous Input for the Synchronization of Power Converters |
| 1351808 | Taiwan | Start-up Circuit of Power Converter |
| 1344748 | Taiwan | Detection Circuit for Sensing the Input Voltage of Transformer |

| Patent No. | Country | Title |
|------------|---------|---|
| 1337794 | Taiwan | Multi-channel Power Converter with Switching Frequency Modulation Circuit for Power Saving |
| 1331446 | Taiwan | Control Circuit of Multi-Channels Power Converter |
| 1322559 | Taiwan | AC-to-DC Power Circuit |
| 1325218 | Taiwan | AC-to-DC Voltage Regulator |
| 1333732 | Taiwan | Detection Circuit to Detect Input Voltage of Transformer and Detecting Method for the Same |
| 1346434 | Taiwan | Apparatus Providing Protection for Power Converter |
| 1306169 | Taiwan | Method and Apparatus for Detecting Demagnetizing Time of Magnetic Device |
| 1349412 | Taiwan | Voltage Regulator Providing Power from AC Power Source |
| 1323551 | Taiwan | Synchronous Rectification Circuit for Power Converters |
| 1338993 | Taiwan | Causal Sampling Circuit for Measuring Reflected Voltage and Demagnetizing Time of Transformer |
| 1357708 | Taiwan | Output Current Control Circuit for Power Converter with a Changeable Switching Frequency |
| 1383564 | Taiwan | Switching Control Circuit with Adaptive Minimum On Time for Power Converters |
| 1377775 | Taiwan | Method and Apparatus for Providing Communication Channel through Output Cable of Power Supply |
| 1330308 | Taiwan | Low Dropout Regulator with Wide Input Voltage Range |
| 1343167 | Taiwan | Transistor Driver Circuit of Power Converter Operating in a Wide Voltage Range |
| 1344747 | Taiwan | Switching Controller for Resonant Power Converter |
| 1344744 | Taiwan | Switching Controller for Parallel Power Supply |
| 1344742 | Taiwan | Method and Apparatus for Sharing Power of Parallel Power Supplies |
| 1335118 | Taiwan | Method and Apparatus Providing Short Circuit Protection for Current Sense Terminal of Power Converter |
| 1347729 | Taiwan | Method and Apparatus for Providing Compensations of Current Mode Power Converters |
| 1347728 | Taiwan | Compensation Circuit and Compensation Method for Current Mode Power Converters |
| 1343693 | Taiwan | Method and Apparatus for Detecting Input Voltage of Power Converter |
| 1343692 | Taiwan | Method and Control Circuit with Input Voltage Detection for the Control and Protection of Power Converter |
| 1349417 | Taiwan | Output Regulation Circuit of a Power Converter without Current Sensing Loss and Method Thereof |
| 1348827 | Taiwan | Power Converter Having PWM Controller for Maximum Output Power Compensation |
| 1341650 | Taiwan | Power Converter for Compensating a Maximum Output Power and PWM Controller for the Same |
| 1349441 | Taiwan | PWM Controller for Compensating a Maximum Output Power of a Power Converter |
| 1369845 | Taiwan | PWM Controller Having a Frequency Modulation for Maximum Output Power Compensation |
| 1370612 | Taiwan | Power Converter for Compensating a Maximum Output Power |
| 1344256 | Taiwan | Control Circuit Having an Impedance Modulation Controlling Power Converter for Power Saving |
| 1362812 | Taiwan | Controller with Loop Impedance Modulation and Soft-start for Power Converter |
| 1342656 | Taiwan | Switching Controller for Parallel Power Converters |
| 1389442 | Taiwan | Switching Drive Circuit for Soft Switching |
| 1449468 | Taiwan | An integrated circuit controller for ballast for just use one external capacitor and adjustable operate frequency/OVP by voltage feedback |
| 1352486 | Taiwan | Method and Apparatus for Detecting Switching Current of Magnetic Device Operated at Continuous Current Mode |

| Patent No. | Country | Title |
|------------|---------|--|
| 1343169 | Taiwan | Method and Apparatus to Provide Synchronous Rectifying Circuit for Offline Power Converters |
| 1372511 | Taiwan | Apparatus to Provide Synchronous Rectifying Circuit for Flyback Power Converters |
| 1366335 | Taiwan | Synchronous Rectifying Circuit for Offline Power Converter |
| 1362819 | Taiwan | Synchronous Rectifying Circuit for Resonant Power Converters |
| 1353499 | Taiwan | Control Circuit for Measuring and Regulating Output Current of CCM Power Converter |
| 1364911 | Taiwan | Control Circuit for Synchronous Rectifying and Soft Switching of Power Converters |
| 1383571 | Taiwan | Method and Apparatus for Synchronous Rectifying of Soft Switching Power Converters |
| 1373701 | Taiwan | Control Circuit for Multi-phases, Multi-channels PFC converter with Variable Switching Frequency |
| 1371907 | Taiwan | Synchronous Rectifying for Soft Switching Power Converters |
| 1347063 | Taiwan | Synchronous Regulation Circuit |
| 1353712 | Taiwan | Synchronous Regulation Circuit and Method for Providing Synchronous Regulation for Power Converters |
| 1389435 | Taiwan | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 1368122 | Taiwan | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 1356570 | Taiwan | Offline Synchronous Switching Regulator |
| 1454182 | Taiwan | Offline Control Circuit of LED Driver to Control the Maximum Voltage and the Maximum Current of LEDs |
| 1486098 | Taiwan | Controller of LED Lighting to Control the Maximum Voltage of LEDs and the Maximum Voltage across Current Sources |
| 1379501 | Taiwan | Method and Apparatus of Providing a Biased Current Limit for Limiting Maximum Output Power of Power Converters |
| 1456371 | Taiwan | Control Circuit of Power Factor Corrector |
| 1425748 | Taiwan | Control Circuit of a Power Converter |
| 1414118 | Taiwan | Using HV JFET to Achieve Brown-out Protection & Current Limit hi/lo Line Compensation |
| 1355794 | Taiwan | Offline Synchronous Rectifying Circuit with Sense Transistor for Resonant Switching Power Converters |
| 1411203 | Taiwan | Switching Control Circuit for a Switching Power Converter |
| 1469520 | Taiwan | A Power Saving Circuit for PWM Circuit |
| 1385499 | Taiwan | Interleaved Slave Switching Circuit for Discontinuous Mode PFC Converter |
| 1505635 | Taiwan | Low-Pass Filter |
| 1372971 | Taiwan | Control Circuit with Frequency Modulation for Power Supplies |
| 1365587 | Taiwan | Control Circuit Having Off-time Modulation to Operate Power Converter at Quasi Resonant and in Continuous Current Mode |
| 1366972 | Taiwan | Offline Synchronous Rectifier with Causal Circuit for Resonant Switching Power Converters |
| 1390212 | Taiwan | Method and Apparatus for Measuring the Switching Current of Power Converter Operated at Continuous Current Mode |
| 1412217 | Taiwan | Switching Controller Having Programmable Feedback Circuit for Power Converters |
| 1395395 | Taiwan | PFC Converter Having Two-level Output Voltage without Voltage Undershooting |
| 1385893 | Taiwan | A Wall Control Interface with Phase Modulation and Detection for Power Management |
| 1389443 | Taiwan | Offline Synchronous Rectifier with Turn-On Arbiter and Phase-Lock for Switching Power Converters |

| Patent No. | Country | Title |
|------------|---------|--|
| 1369840 | Taiwan | Switching Controller with Burst Mode Management Circuit to Reduce Power Loss and Acoustic Noise of Power Converter |
| 1398079 | Taiwan | Buck-Boost PFC Converter |
| 1410775 | Taiwan | Switching Control Circuit for Multi-channels and Multi-phases Power Converter Operated at Continuous Current Mode |
| 1369056 | Taiwan | Switching Controlear Capable of Reducing Acoustic Noise for Power Converters |
| 1395084 | Taiwan | High Efficiency Bridgeless PFC Power Converter |
| 1397793 | Taiwan | Low Drop-out Regulator Providing Constant Current and Maximum Voltage Limit |
| 1373195 | Taiwan | Transistor Gate Driving Circuit with Power Saving for Power Converters |
| 1376090 | Taiwan | Control Circuit with Dual Programmable Feedback Loops for BLDC Motors |
| 1378635 | Taiwan | Over-current and Over-torque Protection Circuits for BLDC Motor |
| 1390470 | Taiwan | Power Management Interface |
| 1398087 | Taiwan | Switching Circuit for Primary-side Regulated Resonant Power Converters |
| 1441436 | Taiwan | Asymmetrical Resonant Power Converter |
| 1426694 | Taiwan | Soft Switching Power Converter with a Variable Switching Frequency for Improving Operation and Efficiency |
| 1390830 | Taiwan | Flyback Power Converters |
| 1491156 | Taiwan | Synchronous Rectifier having Phase Lock Circuit Coupled to Feedback Loop for Resonant Power Converters |
| 1410772 | Taiwan | Output Voltage Control Circuit of Power Converter for Light-Load Power Saving |
| 399023 | Taiwan | Dual-Switches Flyback Power Converter with Self-Excited Supply to power the High-Side Driver |
| 1395396 | Taiwan | Start-up Circuit to Discharge EMI Filter for Power Saving of Power Supplies |
| 1407666 | Taiwan | Control Circuit of Interleaved PFC Power Converter |
| 1396365 | Taiwan | Switching Regulator Having Terminal for Feedback Signal Inputting and Peak Switching Current Programming |
| 1429172 | Taiwan | Switching Controller for Power Converters |
| 1396369 | Taiwan | A Resonant Power Converter with Half Bridge and Full Bridge Operations |
| 1415372 | Taiwan | Synchronous Rectifying Circuit with Primary-side Switching Current Detection for Offline Power Converters |
| 1420966 | Taiwan | An Offline LED Drive Circuit with Dimming Control |
| 1406591 | Taiwan | Offline LED Lighting Circuit with Dimming Control |
| 1425751 | Taiwan | A Power Supply with Oper-loop Protection |
| 1414143 | Taiwan | Power Saving Improvement by FB Pin Input Impedance Soft Switching |
| 1483517 | Taiwan | Method and Apparatus to Improve Dynamic Response of the Synchronous Rectifying for Resonant Power Converters |
| 1457035 | Taiwan | A LED Drive Circuit with a Programming Input for LED Lighting |
| 1404308 | Taiwan | Control Apparatus and Methods for Primary-side-regulation Power Converters |
| 1422153 | Taiwan | High Speed Reflected Signal Detection for Primary-side Controlled Power Converters |
| 1482976 | Taiwan | Method and Apparatus for Detecting CCM operation of a Magnetic Device |

| Patent No. | Country | Title |
|------------|---------|---|
| 1416852 | Taiwan | Switching Control Circuit with Valley Lock for Power Converters |
| 1499194 | Taiwan | Adaptive Synchronous Rectification Control Method and Apparatus |
| 1454007 | Taiwan | Method and Apparatus of Short-Circuit Protection for Power Converters |
| 1472131 | Taiwan | Active-Clamp Circuit for Quasi Resonant Flyback Power Converter |
| 1469488 | Taiwan | Dual Switches Flyback Power Converter with Wide Input Voltage Range |
| 1472134 | Taiwan | A Start-Up Circuit with Low Standby Power Loss for Power Converters |
| 1436571 | Taiwan | High-side Synchronous Rectification Circuit for Power Converters |
| 1422132 | Taiwan | Power Converters and Method for Providing Over-temperature Protection |
| 1450070 | Taiwan | Method and Apparatus for a Flyback Power Converter Providing Output Voltage and Current Regulation without Input Capacitor |
| 1436190 | Taiwan | A Correction Circuit of a Switching-Current Sample for Power Converters in Both CCM and DCM Operation |
| 1484736 | Taiwan | Control Circuit with Burst Mode and Extended Valley Switching for Quasi Resonant Power Converter |
| 1448063 | Taiwan | Controller with Valley Switching and Limited Maximum Frequency for Quasi-resonant Power Converters |
| 1452926 | Taiwan | Method and Apparatus for an Offline LED Driver with High Power Factor |
| 1456877 | Taiwan | Start-up Circuit to Discharge EMI Filter of Power Supplies |
| 1452807 | Taiwan | Adaptive Filter Circuit for Sampling a Reflected Voltage of Transformer in a Power Converter and Method for Detecting the Reflected Voltage Thereof |
| 1473404 | Taiwan | A Control Circuit for Burst Switching of Power Converter and Method Thereof |
| 1525972 | Taiwan | A Switching Control Circuit with Valley-lock Switching and Limited Maximum Frequency for QR Power Converter |
| 1536718 | Taiwan | A Feedback Terminal of Power Converter Having Programming Function for Parameter Setting |
| 1525978 | Taiwan | An Adaptive Filter for Sampling the Reflected Voltage of Transformer of a Power Converter |
| 1458229 | Taiwan | A Switching Control Circuit with Valley-Lock Switching and Limited Maximum Frequency for Quasi-Resonant Power Converters and Method thereof |
| 1445443 | Taiwan | Control Circuit and Control Method for Dimming LED Lighting Circuit |
| 1359474 | Taiwan | Equidistance Pick-and-Place Device for ICs |
| 1472466 | Taiwan | A Pick-and Place Device for Ics |
| 1343688 | Taiwan | Rotating Shaft and Motor Rotor Having the Same |
| 1356562 | Taiwan | Motor Rotor |
| 1126799 | Taiwan | Motor Rotor |
| 1128647 | Taiwan | Controller with DC Brushless Motor |
| 1133552 | Taiwan | Brushless Direct Current Motor of Industrial Fan |
| 1424803 | Taiwan | End Cover and Motor Rotor Having the END Cover |
| 1434489 | Taiwan | Motor Rotor and a Motor Having the Same |
| 1406493 | Taiwan | Constant-Speed Control Circuit for BLDC Motors |
| 1249851 | Taiwan | High Voltage and Low On-resistance LDMOS Having Equalized Capacitance |
| 1235492 | Taiwan | High Voltage LDMOS Transistor Having an Isolated Structure |
| 1288470 | Taiwan | Isolated High Voltage LDMOS Transistor with Split Well Structure |

| Patent No. | Country | Title |
|------------|---------|---|
| 1292608 | Taiwan | Different-Voltage Device Manufactured by a CMOS Compatible Process and High-Voltage Device Used in the Different-Voltage Device |
| 1270984 | Taiwan | High Voltage and Low On-resistance LDMOS Transistor Having Radiation Structure and Isolated Effect |
| 1308792 | Taiwan | Electrostatic Discharge Device Integrated with Pad |
| 1288467 | Taiwan | Electrostatic Discharge Device |
| 1253166 | Taiwan | Electrostatic Discharge Device Having Controllable Trigger Voltage |
| 1275172 | Taiwan | Electrostatic Discharge Device with Controllable Holding Current |
| 1244209 | Taiwan | Isolated High-Voltage Mosfet Devices in Integrated Circuits |
| 1241715 | Taiwan | MOSFET with Isolation Structure for Monolithic Integration and Fabrication Method Thereof |
| 1248685 | Taiwan | MOSFET with Isolation Structure and Fabrication Method Thereof |
| 1323509 | Taiwan | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 1323515 | Taiwan | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 1317167 | Taiwan | Semiconductor Structure of a High Side Driver for Two High Voltage Nodes with Partially Linked Deep Wells and Method for Manufacturing the Same |
| 1318796 | Taiwan | Process for Manufacturing Voltage-controlled Transistor |
| 1369758 | Taiwan | Voltage-controlled Semiconductor Structure, Resistor, and Manufacturing Processes Thereof |
| 1332267 | Taiwan | Semiconductor Resistor and Semiconductor Process of Making The Same |
| 1332268 | Taiwan | Schottky Device and Process of Making the Same |
| 1303104 | Taiwan | Voltage-Cipping Device with High Breakdown Voltage |
| 1305417 | Taiwan | Integrated Circuit with High Voltage Junction Structure |
| 1323514 | Taiwan | Integrated Circuit for a High-side Transistor Driver |
| 1395316 | Taiwan | Multi-chip Module Package |
| 1358812 | Taiwan | Semiconductor structure for protecting an internal integrated circuit and method for manufacturing the same |
| 1384617 | Taiwan | Semiconductor Structure with High Breakdown Voltage and Resistance and Method for Manufacturing the Same |
| 1371846 | Taiwan | ESD Protection Circuit for an Integrated Circuit with a Negative Voltage Input Terminal |
| 1440161 | Taiwan | Semiconductor Device for Electrostatic Discharge Protection |
| 1404193 | Taiwan | Semiconductor Devices and Formation Methods Thereof |
| 1409937 | Taiwan | Semiconductor Device |
| 1437666 | Taiwan | Trim Circuit for Power Supply Controller |
| 1233254 | Taiwan | A Current Sensing Pulse Width Modulation Technology for Motor Drives |
| 1442679 | Taiwan | Control Circuit with ZVS-lock and Asymmetrical PWM for Resonant Power Converter |
| 1433447 | Taiwan | Angel Detection Apparatus and Method for Rotor of Motor |
| 1468071 | Taiwan | High-Side Signal Sensing Circuit |
| 1449310 | Taiwan | Switching Control Circuit for a Flyback Power Converter without Input Capacitor |
| 1493873 | Taiwan | Monolithic High-Side Switch Control Circuit |
| 1499176 | Taiwan | A Control Circuit with Fast Dynamic Response for Power Converters |
| 1504114 | Taiwan | Synchronous Rectifier Control Circuits of Power Converters |

| Patent No. | Country | Title |
|------------|---------|--|
| 1525981 | Taiwan | System, Method and Apparatus of Sensor-Less Field Oriented Control for Permanent Magnet Motor |
| 1520474 | Taiwan | A Primary Side Regulation Control Circuit of a Power Converter |
| 1509956 | Taiwan | Control Circuit for an Inverter with Small Input Capacitor |
| 1525969 | Taiwan | Method and Apparatus for Controlling Resonant Power Converter |
| 1525984 | Taiwan | Circuit and Method for Detecting Positions for Motor |
| 1506952 | Taiwan | Isolation Interface Circuit for Power Management |
| 1469478 | Taiwan | Adaptive Slope Compensation Programmed by Input Voltage of Power Converter |
| 1493847 | Taiwan | Regulation Circuit Associated with Synchronous Rectifier Providing Cable Compensation for the Power Converter |
| 1499192 | Taiwan | Adaptive Sampling Circuit for Detecting the Demagnetized Voltage of the Transformer |
| 1499178 | Taiwan | Two-Switch Flyback Power Converters |
| 1502867 | Taiwan | A Sampling Circuit for Measuring the Reflected Voltage of Transformer for Power Converter |
| 1531147 | Taiwan | A Sampling Circuit for Measuring Reflected Voltage of Transformer for Power Converter Operated in DCM and CCM |
| 1520470 | Taiwan | Transistor Gate Driver with Charge Pump Circuit for Offline Power Converters |
| 1495236 | Taiwan | Method and Apparatus for Controlling Programmable Power Converter |
| 1506927 | Taiwan | Control Circuits and Generation Methods |
| 1525973 | Taiwan | Circuit of Power Converter with Temperature Control and Method Thereof |
| 1509970 | Taiwan | Control Circuit for Active Clamp Flyback Power Converter with Predicted Timing Control |
| 1528691 | Taiwan | The Control Means |
| 1539712 | Taiwan | Method and Apparatus for Controlling Wireless Induction Power Supply |
| 1514125 | Taiwan | Method and Apparatus for Programming a Programmable Power Supply |
| 1516009 | Taiwan | Control Circuit of Synchronous Rectifier with Period Lock Function for Flyback Power Converter operated in DCM and CCM |
| 1479771 | Taiwan | Interface Circuits for Cascade and Series Battery Management and Methods Thereof |
| 1550997 | Taiwan | Control Circuit for Charging Battery through Programmable Power Supply |
| 1499191 | Taiwan | Active-clamp circuit |
| 1533578 | Taiwan | Control Circuit of Power Converter and Method Therefore |
| 1513159 | Taiwan | Method and Apparatus for Controlling Programmable Power Converter with Low Standby Power Loss |
| 1513162 | Taiwan | Control Circuit for Programmable Power Supply |
| 1525975 | Taiwan | Adaptive active clamp of flyback power converter with high efficiency for heavy load and light load |
| 1496406 | Taiwan | Power Converter and Method for Controlling Power Converter |
| 1523386 | Taiwan | Method and Apparatus of Frequency Modulation for Power Saving of Adaptive Power Converter |
| 1523394 | Taiwan | Control Circuit for Active-Clamp Flyback Power Converter with Programmable Switching Period |
| 1502864 | Taiwan | Method and Apparatus of Power Saving for Power Converters |
| 1462450 | Taiwan | Control Circuit for Offline Power Converter without Input Capacitor |
| 1469504 | Taiwan | Sensorless Motor Apparatus, Back EMF Detector and Detection Method Thereof |
| 1542966 | Taiwan | Under-Voltage Protection Circuit for Programmable Power Supplies |
| 1517546 | Taiwan | A Primary Side Regulated Programmable Power Converter with Communication with Mobile Device |

| Patent No. | Country | Title |
|------------------|-----------------------|--|
| 1495269 | Taiwan | A Successive Approximation Multiplier Divider for Signal Process |
| 1469491 | Taiwan | A Control Circuit for Clamping the Maximum Switching Current of Power Converter |
| 1499180 | Taiwan | Control circuit with deep burst mode for power converter |
| 1483525 | Taiwan | Control Circuit for Controlling the Maximum Output Current of Power Converter |
| 1523383 | Taiwan | Discharge EMI filter Cap. Circuit Design For Lower EMI ,Higher Power Saving |
| 1522003 | Taiwan | High Efficiency LED Driver with Current Source Regulation |
| 1473399 | Taiwan | A Switching Current Synthesis Circuit for Power Converter |
| 1475789 | Taiwan | Adaptive Frequency Compensation for PFC Converter Operated in CCM and DCM |
| 1538377 | Taiwan | Programmable Current Limit Circuit for a Programmable Power Supply |
| 10-0982169-00-00 | Korea, | Switching Control Circuit for Primary-side-controlled Power Converters |
| 10-1040159-00-00 | Korea, | Switching Control Circuit with Variable Switching Frequency for Primary-side-controlled Power Converters |
| 10-1005269-00-00 | Korea, Republic of | Switching Control Circuit Having Off-time Modulation to Improve Efficiency of Primary-side Controlled Power Supply |
| 4871135 | Japan | An Apparatus for Reducing the Power Consumption of a PFC-PWM Power Converter |
| 4724229 | Japan | Switching Control Circuit for Primary-side-controlled Power Converters |
| 4733186 | Japan | Switching Control Circuit with Variable Switching Frequency for Primary-side-controlled Power Converters |
| 4763055 | Japan | Switching Control Circuit Having Off-time Modulation to Improve Efficiency of Primary-side Controlled Power Supply |
| 4268176 | Japan | Floating Driving Circuit |
| 4795441 | Japan | Method and Apparatus for Detecting Demagnetizing Time of Magnetic Device |
| 5102318 | Japan | Primary-side Controlled Switching Regulator |
| 4263216 | Japan | Switch Charge Multiplier-Divider |
| 422371 | China | Pulse Width Modulation Controller Having Frequency Modulation for Power Converter |
| 343303 | China | PWM Controller Having Off-time Modulation for Power Converter |
| 426647 | China | PWM Controller for Output Power Limit of a Power Supply |
| 612005 | China | PWM Controller Having a Saw-limiter for Output Power Limit without Sensing Input Voltage |
| 418044 | China | A PWM Controller Regulating Output Voltage and Output Current in Primary Side |
| 612866 | China | Primary-side Regulated Pulse Width Modulation Controller with Improved Load Regulation |
| 411736 | China | PFC-PWM Controller Having a Power Saving Means |
| 429694 | China | Flyback Power Converter Having a Constant Voltage and a Constant Current Output under Primary-side PWM Control |
| 445832 | China | Power Supply Having Multi-vector Error Amplifier for Power Factor Correction |
| 429711 | China | Switch Charge Multiplier-Divider |
| 411751 | China | Capacitive High-side Switch Driver for a Power Converter |
| 445887 | China | High-side Transistor Driver for Power Converters |
| 483883 | China | Multiplier-Divider Circuit for a PFC Controller |
| 546628 | China | PFC-PWM Controller Having an Interleaved Switching |

| Patent No. | Country | Title |
|-------------------|----------------|--|
| 612163 | China | An Apparatus for Reducing the Power Consumption of a PFC-PWM Power Converter |
| 720867 | China | Apparatus and Method Thereof for Measuring Output Current from Primary Side of Power Converter |
| 441610 | China | Control Circuit for Controlling Output Current at the Primary Side of a Power Converter |
| 726852 | China | Close-loop PWM Controller for Primary-side Controlled Power Converters |
| 405754 | China | Switching Control Circuit for Primary-side-controlled Power Converters |
| 405739 | China | Switching Control Circuit with Variable Switching Frequency for Primary-side-controlled Power Converters |
| 531915 | China | Switching Controller Having Frequency Hopping for Power Supplies and Method Thereof |
| 522563 | China | Over-Power Protection Circuit for Power Converter |
| 462937 | China | Over-voltage Protection Circuit for Power Converter |
| 406114 | China | Power Supply with Current-sharing Control and Current-sharing Method Thereof |
| 436372 | China | Switching Control Circuit Having Off-time Modulation to Improve Efficiency of Primary-side Controlled Power Supply |
| 396524 | China | Multiple-sampling Circuit for Measuring Reflected Voltage and Discharge Time of a Transformer |
| 441660 | China | Over-power Protection Apparatus for Self-Excited Power Converter |
| 429903 | China | Soft-Start Apparatus for Power Supplies |
| 426734 | China | Start-up Apparatus for Power Converters |
| 425374 | China | Voltage-regulator and Power Supply Having Current Sharing Control |
| 429867 | China | Apparatus and Method of Current Sharing |
| 535597 | China | Power Conversion Apparatus |
| 693025 | China | Switching Regulator Having Energy Saving Circuit |
| 454367 | China | Switching Control Circuit Having a Valley Voltage Detector to Achieve Soft Switching for Resonant Power Converters |
| 421514 | China | Power Converter Having Phase Lock Circuit for Quasi-resonant Soft Switching |
| 522722 | China | Control Circuit for Proportional Driving Switching Power Supply |
| 435162 | China | Over-Power Protection Apparatus with Programmable Over-current Threshold |
| 546801 | China | Energy Transfer Apparatus for Reducing Conductivity Electromagnetic Interference and Manufacturing Method Thereof |
| 494310 | China | Buck Converter for both Full Load and Light Load Operations |
| 554730 | China | Controller for regulating output current at the primary side of a power supply |
| 746661 | China | High Efficiency Switching LED Driver |
| 522778 | China | Control Circuit Having Programmable Waveform for Output Power Limit of Power Converter |
| 499139 | China | Highly Efficient Switching Power Converter Using a Charge Pump to Power the Drive Circuit |
| 628661 | China | High-side Transistor Driver Having Positive Feedback for Improving Speed and Power Saving |
| 469912 | China | Controller Having Output Current Control for a Power Converter |
| 463346 | China | Control Circuit of Power Converter Having Adaptive Bias for Detecting Reflected Voltage of Transformer |
| 481557 | China | Control Circuit Having Frequency Modulation to Reduce EMI of Power Converters |
| 532670 | China | Control Circuit Including a Frequency Hopping to Reduce EMI of Power Supplies |
| 450891 | China | Method and Apparatus for Measuring Reflected Voltage of Transformer |

| Patent No. | Country | Title |
|------------------|---------|--|
| 520377 | China | Soft-switching Power Converter Having Power Saving Circuit for Light Load Operations |
| 430046 | China | Switching Control Circuit for Discontinuous Mode PFC Converters |
| 568269 | China | Primary-side Controlled Switching Regulator |
| 573555 | China | Switching LED Driver |
| 538202 | China | Switching LED Driver with Temperature Compensation to Program LED Current |
| 486014 | China | LED Drive Circuit Having Temperature Compensation |
| 566460 | China | Control Circuit Including Adaptive Bias for Transformer Voltage Detection of a Power Converter |
| 587504 | China | Synchronous Switching Control Circuit for Power Converters |
| 925189 | China | Primary Side Controlled Switching Regulator |
| 533584 | China | Control Circuit having Two-level under Voltage Lockout to Improve the Protection of Power Supply |
| 619361 | China | Method and Apparatus for Predicting Discharge Time of Magnetic Device for Power Converter |
| 504441 | China | Control Circuit to Reduce Reverse Current of Synchronous Rectifier |
| 614847 | China | Switching Circuit of Power Converter Having Voltage-Clipping Device to Improve Efficiency |
| 554815 | China | Switch Circuit to Control On/Off of High Voltage Source |
| 572128 | China | High Voltage Start-up Circuit for Power Converters |
| 882899 | China | Floating Driving Circuit |
| 533804 | China | Start-up Circuit with Feedforward Compensation for Power Converters |
| 674968 | China | Current Mode Resonant Ballast |
| 605112 | China | Switching Controller Having Synchronous Input for the Synchronization of Power Converters |
| 697748 | China | Start-up Circuit of Power Converter |
| 617882 | China | Detection Circuit for Sensing the Input Voltage of Transformer |
| 534533 | China | Multi-channel Power Converter with Switching Frequency Modulation Circuit for Power Saving |
| 514971 | China | Control Circuit of Multi-Channels Power Converter |
| ZL200610109717.5 | China | AC-to-DC Power Circuit |
| 486386 | China | AC-to-DC Voltage Regulator |
| 556680 | China | Detection Circuit to Detect Input Voltage of Transformer and Detecting Method for the Same |
| 669005 | China | Apparatus Providing Protection for Power Converter |
| 556627 | China | Method and Apparatus for Detecting Demagnetizing Time of Magnetic Device |
| 685846 | China | Voltage Regulator Providing Power from AC Power Source |
| 620470 | China | Linear-predict Sampling for Measuring Demagnetized Voltage of Transformer |
| 860603 | China | Synchronous Rectification Circuit for Power Converters |
| 517613 | China | Causal Sampling Circuit for Measuring Reflected Voltage and Demagnetizing Time of Transformer |
| 534532 | China | Output Current Control Circuit for Power Converter with a Changeable Switching Frequency |
| 1054979 | China | Switching Control Circuit with Adaptive Minimum On Time for Power Converters |
| 572501 | China | Method and Apparatus for Providing Communication Channel through Output Cable of Power Supply |
| 604797 | China | Low Dropout Regulator with Wide Input Voltage Range |
| 626214 | China | Transistor Driver Circuit of Power Converter Operating in a Wide Voltage Range |
| 590308 | China | Switching Controller for Resonant Power Converter |
| 659308 | China | Switching Controller for Parallel Power Supply |

| Patent No. | Country | Title |
|-------------------|----------------|---|
| 905118 | China | Method and Apparatus for Sharing Power of Parallel Power Supplies |
| 636722 | China | Method and Apparatus Providing Short Circuit Protection for Current Sense Terminal of Power Converter |
| 891772 | China | Method and Apparatus for Providing Compensations of Current Mode Power Converters |
| ZL200710103717.9 | China | Compensation Circuit and Compensation Method for Current Mode Power Converters |
| 846498 | China | Method and Apparatus for Detecting Input Voltage of Power Converter |
| 883560 | China | Method and Control Circuit with Input Voltage Detection for the Control and Protection of Power Converter |
| 678793 | China | Output Regulation Circuit of a Power Converter without Current Sensing Loss and Method Thereof |
| 820987 | China | Power Converter Having PWM Controller for Maximum Output Power Compensation |
| 843256 | China | Power Converter for Compensating a Maximum Output Power and PWM Controller for the Same |
| 673870 | China | PWM Controller for Compensating a Maximum Output Power of a Power Converter |
| 679343 | China | PWM Controller Having a Frequency Modulation for Maximum Output Power Compensation |
| 692472 | China | Power Converter for Compensating a Maximum Output Power |
| 557057 | China | Control Circuit Having an Impedance Modulation Controlling Power Converter for Power Saving |
| 637456 | China | Controller with Loop Impedance Modulation and Soft-start for Power Converter |
| 679295 | China | Switching Controller for Parallel Power Converters |
| ZL200710146168.3 | China | Switching Drive Circuit for Soft Switching |
| ZL200710163689.X | China | An integrated circuit controller for ballast for just use one external capacitor and adjustable operate frequency/OVP by voltage feedback |
| 754172 | China | Method and Apparatus for Detecting Switching Current of Magnetic Device Operated at Continuous Current Mode |
| 686588 | China | Method and Apparatus to Provide Synchronous Rectifying Circuit for Offline Power Converters |
| 701651 | China | Apparatus to Provide Synchronous Rectifying Circuit for Flyback Power Converters |
| 679500 | China | Synchronous Rectifying Circuit for Offline Power Converter |
| 637934 | China | Synchronous Rectifying Circuit for Resonant Power Converters |
| 590484 | China | Control Circuit for Measuring and Regulating Output Current of CCM Power Converter |
| 639764 | China | Control Circuit for Synchronous Rectifying and Soft Switching of Power Converters |
| 646043 | China | Method and Apparatus for Synchronous Rectifying of Soft Switching Power Converters |
| 737371 | China | Control Circuit for Multi-phases, Multi-channels PFC converter with Variable Switching Frequency |
| 639649 | China | Synchronous Regulation Circuit |
| 908243 | China | Synchronous Regulation Circuit and Method for Providing Synchronous Regulation for Power Converters |
| 853994 | China | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 724743 | China | Method and Apparatus of Providing Synchronous Regulation Circuit for Offline Power Converter |
| 687701 | China | Offline Synchronous Switching Regulator |
| 1009517 | China | Offline Control Circuit of LED Driver to Control the Maximum Voltage and the Maximum Current of LEDs |
| 1035161 | China | Controller of LED Lighting to Control the Maximum Voltage of LEDs and the Maximum Voltage across Current Sources |

| Patent No. | Country | Title |
|-------------------|----------------|--|
| 863813 | China | Offline Synchronous Rectifying Circuit with Current Transformer for Soft Switching Power Converters |
| 970309 | China | Method and Apparatus of Providing a Biased Current Limit for Limiting Maximum Output Power of Power Converters |
| 696645 | China | Control Circuit of Power Factor Corrector |
| 1033735 | China | Control Circuit of a Power Converter |
| 775081 | China | Offline Synchronous Rectifying Circuit with Sense Transistor for Resonant Switching Power Converters |
| 869306 | China | Switching Control Circuit for a Switching Power Converter |
| 906652 | China | A Power Saving Circuit for PWM Circuit |
| 688614 | China | Interleaved Slave Switching Circuit for Discontinuous Mode PFC Converter |
| 839477 | China | Low-Pass Filter |
| 744276 | China | Control Circuit with Frequency Modulation for Power Supplies |
| 861956 | China | Control Circuit Having Off-time Modulation to Operate Power Converter at Quasi Resonant and in Continuous Current Mode |
| 842882 | China | Offline Synchronous Rectifier with Causal Circuit for Resonant Switching Power Converters |
| 1025697 | China | Method and Apparatus for Measuring the Switching Current of Power Converter Operated at Continuous Current Mode |
| 861636 | China | Switching Controller Having Programmable Feedback Circuit for Power Converters |
| 981015 | China | PFC Converter Having Two-level Output Voltage without Voltage Undershooting |
| 899894 | China | Switching Controller Having Switching Frequency Hopping for Power Converter |
| ZL200910163404.1 | China | A Wall Control Interface with Phase Modulation and Detection for Power Management |
| 963319 | China | Offline Synchronous Rectifier with Turn-On Arbiter and Phase-Lock for Switching Power Converters |
| 963490 | China | Switching Controller with Burst Mode Management Circuit to Reduce Power Loss and Acoustic Noise of Power Converter |
| 983502 | China | Buck-Boost PFC Converter |
| 975118 | China | Switching Control Circuit for Multi-channels and Multi-phases Power Converter Operated at Continuous Current Mode |
| 949273 | China | Switching Controller Capable of Reducing Acoustic Noise for Power Converters |
| ZL200910134418.0 | China | High Efficiency Bridgeless PFC Power Converter |
| 907126 | China | Low Drop-out Regulator Providing Constant Current and Maximum Voltage Limit |
| 961428 | China | Transistor Gate Driving Circuit with Power Saving for Power Converters |
| 948653 | China | Control Circuit with Dual Programmable Feedback Loops for BLDC Motors |
| 946479 | China | Over-current and Over-torque Protection Circuits for BLDC Motor |
| 965375 | China | Power Management Interface |
| 1088225 | China | Switching Circuit for Primary-side Regulated Resonant Power Converters |
| 1083526 | China | Asymmetrical Resonant Power Converter |
| ZL201010117084.9 | China | Soft Switching Power Converter with a Variable Switching Frequency for Improving Operation and Efficiency |
| ZL20101000099.7 | China | Synchronous Rectifier having Phase Lock Circuit Coupled to Feedback Loop for Resonant Power Converters |

| Patent No. | Country | Title |
|------------------|---------|--|
| ZL201010134350.9 | China | An Output Voltage Control Circuit of Power Converter for No Load Power Saving |
| ZL201010129390.4 | China | Dual-Switches Flyback Power Converter with Self-Excited Supply to power the High-Side Driver |
| ZL201010133863.8 | China | A Control Circuit of Resonant Power Converter with Asymmetrical Phase Shift to Improve the Operation |
| 942437 | China | Start-up Circuit to Discharge EMI Filter for Power Saving of Power Supplies |
| ZL201010220566.7 | China | Control Circuit of Interleaved PFC Power Converter |
| 1048228 | China | Switching Regulator Having Terminal for Feedback Signal Inputting and Peak Switching Current Programming |
| ZL201010145613.6 | China | Switching Controller for Power Converters |
| 1050077 | China | A Resonant Power Converter with Half Bridge and Full Bridge Operations |
| 943844 | China | Synchronous Rectifying Circuit with Primary-side Switching Current Detection for Offline Power Converters |
| ZL201010170670.X | China | An Offline LED Drive Circuit with Dimming Control |
| ZL201010172406.X | China | Offline LED Lighting Circuit with Dimming Control |
| 1033710 | China | A Power Supply with Oper-loop Protection |
| ZL201010202839.5 | China | High Efficiency LED Driver with Current Source Regulations |
| ZL201010159781.0 | China | Power Saving Improvement by FB Pin Input Impedance Soft Switching |
| ZL201010503935.3 | China | Method and Apparatus to Improve Dynamic Response of the Synchronous Rectifying for Resonant Power Converters |
| ZL201110006880.X | China | A LED Drive Circuit with a Programming Input for LED Lighting |
| ZL201010277600.4 | China | Control Apparatus and Methods for Primary-side-regulation Power Converters |
| ZL201010291874.9 | China | High Speed Reflected Signal Detection for Primary-side Controlled Power Converters |
| ZL201110097457.5 | China | Method and Apparatus for Detecting CCM operation of a Magnetic Device |
| ZL201110147595.X | China | Switching Control Circuit with Valley Lock for Power Converters |
| ZL201110114934.4 | China | Adaptive Synchronous Rectification Control Method and Apparatus |
| ZL201010535323.2 | China | Method and Apparatus of Short-Circuit Protection for Power Converters |
| ZL201110130372.2 | China | Active-Clamp Circuit for Quasi Resonant Flyback Power Converter |
| ZL201110148845.1 | China | Dual Switches Flyback Power Converter with Wide Input Voltage Range |
| ZL201110200544.9 | China | High-side Synchronous Rectification Circuit for Power Converters |
| ZL201010543816.0 | China | Method and Apparatus of Providing Over-temperature Protection for Power Converters |
| ZL201110219561.7 | China | Method and Apparatus for a Flyback Power Converter Providing Output Voltage and Current Regulation without Input Capacitor |
| ZL201110124511.0 | China | A Correction Circuit of a Switching-Current Sample for Power Converters in Both CCM and DCM Operation |
| ZL201110253901.8 | China | Control Circuit with Burst Mode and Extended Valley Switching for Quasi Resonant Power Converter |
| ZL201110039378.9 | China | Controller with Valley Switching and Limited Maximum Frequency for Quasi-resonant Power Converters |
| ZL201110213005.9 | China | Method and Apparatus for an Offline LED Driver with High Power Factor |
| ZL201110056908.0 | China | Start-up Circuit to Discharge EMI Filter of Power Supplies |
| ZL201110398041.7 | China | A Primary-side Controlled Power Converter with an RC Network and Method Thereof |
| ZL201110415486.1 | China | A Feedback Terminal of Power Converter Having Programming Function for Parameter Setting |

| Patent No. | Country | Title |
|---------------------|---------|---|
| ZL 2011 1 0276624.2 | China | Control Circuit and Control Method for Dimming LED Lighting Circuit |
| 704938 | China | Equidistance Pick-and-Place Device for ICs |
| 1113659 | China | A Pick-and Place Device for Ics |
| 803806 | China | Motor Rotor |
| 920202 | China | Motor Rotor |
| 1013739 | China | Controller with DC Brushless Motor |
| 1121575 | China | Semiconductor Device Mount Structure and Method Thereof |
| ZL201010277618.4 | China | Constant-Speed Control Circuit for BLDC Motors |
| 395963 | China | High Voltage LDMOS Transistor Having an Isolated Structure |
| 342865 | China | Isolated High Voltage LDMOS Transistor with Split Well Structure |
| 467152 | China | Isolated High Voltage LDMOS Transistor with Split Well Structure |
| 446875 | China | High Voltage and Low On-resistance LDMOS Transistor Having Radiation Structure and Isolated Effect |
| 451206 | China | Electrostatic Discharge Device |
| 411994 | China | Electrostatic Discharge Device Having Controllable Trigger Voltage |
| 425534 | China | Electrostatic Discharge Device with Latch-Up Immunity |
| 462990 | China | Electrostatic Discharge Protection Semiconductor Structure |
| 611750 | China | Isolated High-Voltage Mosfet Devices in Integrated Circuits |
| 458324 | China | MOSFET with Isolation Structure and Fabrication Method Thereof |
| 522599 | China | Transistor Structure Having Breakdown Protection |
| 486554 | China | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 486571 | China | Semiconductor Structure of a High Side Driver and Method for Manufacturing the Same |
| 437655 | China | Semiconductor Structure of a High Side Driver for Two High Voltage Nodes with Partially Linked Deep Wells and Method for Manufacturing the Same |
| 463772 | China | Process for Manufacturing Voltage-controlled Transistor |
| 548064 | China | Voltage-controlled Semiconductor Structure, Resistor, and Manufacturing Processes Thereof |
| 870639 | China | Semiconductor Resistor and Semiconductor Process of Making The Same |
| 699667 | China | Schottky Device and Process of Making the Same |
| 579584 | China | Voltage-Clipping Device with High Breakdown Voltage |
| 561644 | China | Integrated Circuit with High Voltage Junction Structure |
| 474529 | China | Integrated Circuit for a High-side Transistor Driver |
| 977037 | China | Multi-chip Module Package |
| 884390 | China | Semiconductor structure for protecting an internal integrated circuit and method for manufacturing the same |
| 690983 | China | Semiconductor Structure with High Breakdown Voltage and Resistance and Method for Manufacturing the Same |
| 648334 | China | Semiconductor Device for Electrostatic Discharge Protection |
| ZL201010000787.3 | China | Semiconductor Devices and Formation Methods Thereof |
| 863316 | China | Semiconductor Structure for High-side Drivers |
| 905608 | China | ESD Semiconductor Structure |

| Patent No. | Country | Title |
|------------------|---------|--|
| 995701 | China | Semiconductor Device |
| 841086 | China | Driving Circuit |
| ZL201210135951.0 | China | Angel Detection Apparatus and Method for Rotor of Motor |
| ZL201210074436.6 | China | Switching Control Circuit for a Flyback Power Converter without Input Capacitor |
| ZL201210107032.2 | China | Monolithic High-Side Switch Control Circuit |
| ZL201310316420.6 | China | Method and Apparatus for the Angle Estimation of Sensorless PM Motor |
| ZL201210482451.4 | China | An Isolation Interface Circuit for Power Management |
| ZL201210304166.3 | China | Adaptive Slope Compensation Programmed by Input Voltage of Power Converter |
| ZL201210339002.4 | China | Protection Circuit for Power Converter without Input Capacitor |
| ZL201210259706.0 | China | Regulation Circuit Associated with Synchronous Rectifier Providing Cable Compensation for the Power Converter |
| ZL201310118487.9 | China | A Sampling Circuit for Measuring the Reflected Voltage of Transformer for Power Converter |
| ZL201310110834.3 | China | A Sampling Circuit for Measuring Reflected Voltage of Transformer for Power Converter Operated in DCM and CCM |
| ZL201210040863.2 | China | High-Side Signal Sensing Circuit |
| ZL201310054699.5 | China | An Addressable Interface for Cascade Battery Management Circuit |
| ZL201410008958.5 | China | Control Circuit for Programmable Power Supply |
| ZL201410017857.4 | China | Method and Apparatus for Controlling Programmable Power Converter with Low Standby Power Loss |
| ZL201210033018.2 | China | An Adaptive Filter for Sampling the Reflected Voltage of Transformer of a Power Converter |
| ZL201310087008.1 | China | Method and Apparatus of Power Saving for Power Converters |
| ZL201210050721.4 | China | Switching Control Circuit with Valley-Lock Switching and Limited Maximum Frequency for Quasi-Resonant Power Converters |
| ZL201310042692.1 | China | Sensorless Motor Apparatus, Back EMF Detector and Detection Method Thereof |
| ZL201210167024.7 | China | Control circuit for resonant power converter and control method thereof |
| ZL201210440948.X | China | A Successive Approximation Multiplier Divider for Signal Process |
| ZL201210266842.2 | China | Controller for Power Converter |
| ZL200910250063.1 | China | Dual-Switches Flyback Power Converter with a High-Side Driver and Floating Supply |
| ZL201210447061.3 | China | Control circuit with deep burst mode for power converter |
| ZL201210026678.8 | China | Adaptive Hysteresis Threshold for the Burst Switching of Power Converter |
| ZL201210032860.4 | China | A Multi-function Terminal of Power Supply Controller for Feedback Signal Input and Over-temperature Protection |
| ZL201210350223.1 | China | Control Circuit for Controlling the Maximum Output Current of Power Converter |
| ZL201210523728.3 | China | A Switching Current Synthesis Circuit for Power Converter |
| ZL201210385708.4 | China | Adaptive Frequency Compensation for PFC Converter Operated in CCM and DCM |
| ZL201310163536.0 | China | High Efficiency Bridgeless PFC Power Converter |

| Application No. | Application Date | Country | Title |
|-----------------|-------------------|---------|--|
| 14/309858 | June 19, 2014 | US | System, Method and Apparatus of Sensor-less Field Oriented Control for Permanent Magnet Motor |
| 14/474313 | September 2, 2014 | US | Control Circuit for Driving Motor and Method for Controlling Speed of Motor |
| 15/229084 | August 4, 2016 | US | Power Converter and Control Method Therefor |
| 15/347987 | November 10, 2016 | US | Control Circuit For Led And Active Bleeder Thereof |
| 15/350385 | November 14, 2016 | US | Led Driver |
| 62/206927 | August 19, 2015 | US | A Control Circuit with Smooth Mode Change Scheme for Power Converter |
| 62/208895 | August 24, 2015 | US | Stray Inductance Compensation for Synchronous Rectifiers in Adaptive Output Powers |
| 62/254251 | November 12, 2015 | US | Active Bleeder for LED Driver |
| 62/254267 | November 12, 2015 | US | AC-Direct LED Driver |
| 62/260857 | November 30, 2015 | US | Secondary Side Controlled Synchronous Rectifier Power Converter |
| 62/272083 | December 29, 2015 | US | Using Synchronous Rectifier to Assist in Regulation of a Flyback Converter in Light-load Conditions |
| 62/354257 | June 24, 2016 | US | Communication Circuit for Flyback Power Converter with Synchronous Rectifier |
| 62/375982 | August 17, 2016 | US | Control Circuit for Power Converter with Isolated/ Non-Isolated Feedback |
| 62/376922 | August 19, 2016 | US | Control Method for Power Converter and Control Circuit Therefor |
| 15/216701 | July 22, 2016 | US | Power Converter and Control Method Therefor |
| 62/196294 | July 23, 2015 | US | Power Converter |
| 14/725459 | May 29, 2015 | US | LED Drive Circuit with a Programmable Input for LED Lighting |
| 13/865377 | April 18, 2013 | US | Control Circuit For An Inverter With Small Input Capacitor |
| 13/867248 | April 22, 2013 | US | Switching Control Circuit With Signal Process To Accommodate The Synchronous Rectifier Of Power Converters |
| 14/046059 | October 4, 2013 | US | Method And Apparatus For Controlling Programmable Power Converter |
| 14/251899 | April 14, 2014 | US | Control Circuit For Active Clamp Flyback Power Converter With Predicted Timing Control |

SCHEDULE A (Patent Applications)

| Application No. | Application Date | Country | Title |
|------------------------|-------------------------|----------------|---|
| 14/088633 | November 25, 2013 | US | Dual Gate Drive Circuit For Reducing Emi Of Power Converters And Control Method Thereof |
| 14/250566 | April 11, 2014 | US | Method And Apparatus For Controlling Wireless Induction Power Supply |
| 14/217488 | March 18, 2014 | US | Method Of Controlling Synchronous Rectifier For Power Converter, Control Circuit, And Power Converter Thereof |
| 13/748611 | January 24, 2013 | US | Interface Circuits For Cascade And Series Battery Management And Methods Thereof |
| 14/191952 | February 27, 2014 | US | Control Circuit For Charging Battery Through Programmable Power Supplier |
| 14/076404 | November 11, 2013 | US | Active Clamp Circuits For Flyback Power Converters |
| 14/295329 | June 3, 2014 | US | Method For Programmable Primary-Side-Regulated Power Converter |
| 14/148955 | January 7, 2014 | US | Control Circuit For Programmable Power Supply |
| 14/305077 | June 16, 2014 | US | Method And Apparatus For Selecting The Output Of Programmable Power Adapter |
| 14/460373 | August 15, 2014 | US | Method For Controlling Synchronous Rectifier Of Power Converter And Control Circuit Using The Same |
| 14/340809 | July 25, 2014 | US | Method And Apparatus Of Frequency Modulation For Power Saving Of Adaptive Power Converter |
| 14/554174 | November 26, 2014 | US | Discharge Circuits Of Discharge Paths For Electromagnetic Interference Filters |
| 13/560519 | July 27, 2012 | US | Adaptive Frequency Compensation For Pfc Power Converter Operating In Ccm And Dcm |
| 14/510445 | October 9, 2014 | US | Programmable Current Limit Circuit For A Programmable Power Supply |
| 14/525319 | October 28, 2014 | US | Programmable Frequency Decrease Circuit For A Programmable Power Supply |
| 14/692998 | April 22, 2015 | US | Method And Circuit Of Detecting Attachment And Detachment Between A Portable Device And A Power Converter |

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| Application No. | Application Date | Country | Title |
|------------------------|-------------------------|----------------|--|
| 15/072751 | March 17, 2016 | US | Dead Time Compensation For Synchronous Rectifiers In Adaptive Output Powers |
| 14/791649 | July 6, 2015 | US | Regulation Circuit Associated With Synchronous Rectifier Providing Cable Compensation For The Power Converter And Method Thereof |
| 13/870177 | April 25, 2013 | US | Start-Up Circuit To Discharge Emi Filter For Power Saving Of Power Supplies |
| 14/844913 | September 3, 2015 | US | Control Circuits And Methods For Active-Clamp Flyback Power Converters |
| 15/000487 | January 19, 2016 | US | Pollution Detection Circuit For Data Lines And Method Thereof |
| 15/044288 | February 16, 2016 | US | Alternating Valley Switching For Power Converter |
| 15/175382 | June 7, 2016 | US | Protection Circuit and Method for Flyback Power Converter |

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RECORDED: 08/05/2019