

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM705421

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
BEL FUSE INC.		09/02/2021	Corporation: NEW JERSEY
RECEIVING PARTY DATA			
Name:	KEYBANK NATIONAL ASSOCIATION, As Administrative Agent		
Street Address:	127 Public Square		
Internal Address:	Attention: Commercial Banking		
City:	Cleveland		
State/Country:	OHIO		
Postal Code:	44114		
Entity Type:	National Banking Association: OHIO		
PROPERTY NUMBERS Total: 14			
Property Type	Number	Word Mark	
Registration Number:	0701716	BEL	
Registration Number:	1624608	BEL	
Serial Number:	90624203	BEL GROUP	
Serial Number:	90624134	BEL INC.	
Registration Number:	5655970	BEL MAGNETIC SOLUTIONS A BEL GROUP	
Registration Number:	5469954	BEL POWER PROTECT CONNECT	
Registration Number:	5418560	BEL POWER SOLUTIONS & PROTECTION A BEL G	
Registration Number:	0701715	BELFUSE	
Registration Number:	2776334	COMPONENTS FOR A CONNECTED PLANET	
Registration Number:	5082836	SIGNAL TRANSFORMER A BEL GROUP	
Registration Number:	5475822	STEWART CONNECTOR A BEL GROUP	
Registration Number:	4548751	T	
Registration Number:	4696478	T TRP CONNECTOR	
Registration Number:	5486840		
CORRESPONDENCE DATA			
Fax Number:	2165665800		
<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>			

OP \$365.00 0701716

Phone: 2165665741
Email: mae.smith@thompsonhine.com
Correspondent Name: Jennifer Villyard
Address Line 1: 3900 Key Center, 127 Public Square
Address Line 2: Thompson Hine LLP
Address Line 4: Cleveland, OHIO 44114

NAME OF SUBMITTER: Jennifer Villyard

SIGNATURE: /Jennifer Villyard/

DATE SIGNED: 01/28/2022

Total Attachments: 21

source=BEL FUSE - Supplement to Intellectual Property Security Agreement (Borrower) (Executed), v.1#page1.tif
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SUPPLEMENT TO
INTELLECTUAL PROPERTY SECURITY AGREEMENT

This SUPPLEMENT TO INTELLECTUAL PROPERTY SECURITY AGREEMENT (this “Agreement”), is made as of September 2, 2021 by BEL FUSE INC., a New Jersey corporation (“Pledgor”), in favor of KEYBANK NATIONAL ASSOCIATION, as the administrative agent under the Credit Agreement, as defined in the IP Agreement, as hereinafter defined (the “Administrative Agent”), for the benefit of the Lenders, as defined in the Credit Agreement.

WHEREAS, Pledgor executed and delivered to the Administrative Agent that certain Intellectual Property Security Agreement, dated as of June 19, 2014 (as the same may from time to time be amended, restated or otherwise modified, the “IP Agreement”) wherein Pledgor granted to the Administrative Agent a security interest in all of Pledgor’s intellectual property;

WHEREAS, except as specifically defined herein, capitalized terms used herein that are defined in the IP Agreement shall have their respective meanings ascribed to them in the IP Agreement;

WHEREAS, pursuant to the Section 15 of the IP Agreement, Pledgor is required to execute and deliver this Agreement and to grant to the Administrative Agent a continuing security interest in all of the Collateral to secure all of the Secured Obligations;

NOW THEREFORE, in consideration of each financial accommodation granted to Pledgor by the Administrative Agent and the Lenders and for other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Pledgor hereby agrees as follows:

1. Grant of Security Interest. Pledgor hereby grants to the Administrative Agent, for the benefit of the Lenders, a continuing security interest in all of Pledgor’s right, title and interest in the Collateral listed on Schedule 1 hereto.

2. IP Agreement. Pledgor hereby ratifies its obligations under the IP Agreement and confirms the continuing effectiveness of the IP Agreement and the grants of the security interests thereunder. This Agreement has been executed and delivered by Pledgor for the purpose of registering the security interest of the Administrative Agent in the Collateral identified in Section 1 hereof with the United States Patent and Trademark Office. The security interest granted hereby has been granted as a supplement to, and not in limitation of, the security interest granted to the Administrative Agent, for the benefit of the Lenders, under the IP Agreement. The IP Agreement (and all rights and remedies of the Administrative Agent and each Lender thereunder) shall remain in full force and effect in accordance with its terms.

3. Acknowledgment. Pledgor does hereby further acknowledge and affirm that the rights and remedies of the Administrative Agent with respect to the security interest in the Collateral granted hereby are more fully set forth in the IP Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein.

4. Counterparts. This Agreement may be executed in any number of counterparts, by different parties hereto in separate counterparts and by facsimile or other electronic signature, each of which when so executed and delivered shall be deemed to be an original and all of which taken together shall constitute but one and the same agreement.

5. Governing Law. This Agreement shall be construed in accordance with, and governed by, the laws of the State of New York.

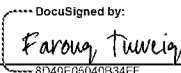
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JURY TRIAL WAIVER. PLEDGOR HEREBY WAIVES ANY RIGHT TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, AMONG PLEDGOR, THE ADMINISTRATIVE AGENT AND THE LENDERS, OR ANY THEREOF, ARISING OUT OF, IN CONNECTION WITH, RELATED TO, OR INCIDENTAL TO THE RELATIONSHIP ESTABLISHED AMONG THEM IN CONNECTION WITH THIS AGREEMENT OR ANY OTHER NOTE OR OTHER INSTRUMENT, DOCUMENT OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HERewith OR THE TRANSACTIONS RELATED THERETO.

IN WITNESS WHEREOF, the undersigned has executed this Supplement to Intellectual Property Security Agreement as of the date first set forth above.

BEL FUSE INC.

By: 
Farouq Tuweiq
Chief Financial Officer and Treasurer

SCHEDULE 1
(Supplement)

Trademarks:

TM Record	TM/AN/RN/Disclaimer	Owner Information	Full Goods/Services
US Federal Q25 uf 1	<u>BEL</u> (Stylized) RN: 0701716 SN: 72088591	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Fuses
US Federal Q25 uf 2	<u>BEL</u> (Stylized) RN: 1624608 SN: 74027910	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) dc - dc converters, pulse transformers, micro-circuits, hybrid circuits
US Federal Q25 uf 3	<u>BEL GROUP</u> SN: 90624203	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Plugs; jacks; cables; cable assemblies; cable couplers; magnetics; connectors; transformers; circuits; converters; fuses; fuse boxes; electronic components; electrical controllers; power conversion and power management solutions
US Federal Q25 uf 4	<u>BEL INC.</u> SN: 90624134	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Plugs; jacks; cables; cable assemblies; cable couplers; magnetics; connectors; transformers; circuits; converters; fuses; fuse boxes; electronic components; electrical controllers; power conversion and power management solutions

TM Record	TM/AN/RN/Disclaimer	Owner Information	Full Goods/Services
US Federal Q25 uf 5	<u>BEL MAGNETIC SOLUTIONS A BEL GROUP and Design</u> RN: 5655970 SN: 86521557 Disclaimer: "MAGNETIC SOLUTIONS" AND "GROUP"	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) LAN, Ethernet and telecom magnetics and connectors, namely, plug connectors for computers, USB connectors, namely, USB cables, and magnetic connectors, namely, modular jack connectors, magnetic contacts and cable connectors
US Federal Q25 uf 6	<u>BEL POWER PROTECT CONNECT and Design</u> RN: 5469954 SN: 86521457 Disclaimer: "POWER" AND "CONNECT"	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Electronic components for the computer networking, telecommunications, transportation, defense and aerospace industries, namely, LAN, Ethernet and telecom magnetics and connectors, namely, plug connectors for computers, USB connectors, namely, USB cables, and magnetic connectors, namely, modular jack connectors, magnetic contacts, cable connectors; power conversion and power management solutions, namely, electric fuse boxes, electrical controllers, circuit protection radial fuses, standard glass and ceramic cartridge fuses; electronic connectors and cable assemblies, namely, cables for electrical and optical signal transmission systems; transformers
US Federal Q25 uf 7	<u>BEL POWER SOLUTIONS & PROTECTION A BEL GROUP and Design</u> RN: 5418560 SN: 86521644 Disclaimer: "POWER SOLUTIONS & PROTECTION" AND "GROUP"	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Power conversion and power management solutions, namely, front-end, board-mount and industrial power products and modules, namely, AC-DC, DC-DC converters, circuit protection converters, converters for e-mobility, load controllers, namely, digital power controllers

TM Record	TM/AN/RN/Disclaimer	Owner Information	Full Goods/Services
US Federal Q25 uf 8	<u>BELFUSE (Stylized)</u> RN: 0701715 SN: 72088589	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Fuses
US Federal Q25 uf 9	<u>COMPONENTS FOR A CONNECTED PLANET and Design</u> RN: 2776334 SN: 76275211	Bel Fuse, Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 073024421 United States of America	Int'l Class: 09 (Int'l Class: 09) electrical fuses, micro fuses, miniature fuses, fuse, clips, delay lines and delay modules, oscillators for subsequent manufactured electrical and electronic products, pulse transformers, dc-dc converters, ac-dc converters; electrical components, namely, connectors for use with electrical and electronic products, connecting jacks, connecting jacks incorporating filter networks and/or transformers, hybrid microcircuits; inductive components for connection to printed circuit boards or for use in telecommunication equipment, namely central office installations of telecommunications services providers and internal and facility networks for telecommunications
US Federal Q25 uf 10	<u>SIGNAL TRANSFORMER A BEL GROUP and Design</u> RN: 5082836 SN: 86527215 Disclaimer: "SIGNAL TRANSFORMER" AND "GROUP"	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Transformers
US Federal Q25 uf 11	<u>STEWART CONNECTOR A BEL GROUP and Design</u> RN: 5475822 SN: 86530222 Disclaimer: "CONNECTOR" AND "GROUP"	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, NJ 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Interconnect products for Ethernet connectivity, namely, electronic connectors and cable assemblies for use with electrical, optical and signal transmission systems, premise wiring, passive jacks, and modular plugs

TM Record	TM/AN/RN/Disclaimer	Owner Information	Full Goods/Services
US Federal Q25 uf 12	<u>T (Stylized)</u> RN: 4548751 SN: 85861354	Bel Fuse, Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, NJ 073024421 United States of America	Int'l Class: 09 (Int'l Class: 09) Electrical connectors and transformers
US Federal Q25 uf 13	<u>T TRP CONNECTOR (Stylized)</u> RN: 4696478 SN: 85861363 Disclaimer: "CONNECTOR"	Bel Fuse, Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, New Jersey 073024421 United States of America	Int'l Class: 09 (Int'l Class: 09) Electrical connectors; none of the aforesaid goods are meant for use in connection with vehicles
US Federal Q25 uf 14	<u>Design Only</u> RN: 5486840 SN: 86530279	Bel Fuse Inc. (New Jersey Corporation) 206 Van Vorst Street, JERSEY CITY, NJ 07302 United States of America	Int'l Class: 09 (Int'l Class: 09) Electronic components for the computer networking, telecommunications, transportation, defense and aerospace industries, namely, LAN, Ethernet and telecom magnetics and connectors, namely, plug connectors for computers, USB connectors, namely, USB cables, and magnetic connectors, namely, modular jack connectors, magnetic contacts, cable connectors; power conversion and power management solutions, namely, electric fuse boxes, electrical controllers, circuit protection radial fuses, standard glass and ceramic cartridge fuses; electronic connectors and cable assemblies, namely, cables for electrical and optical signal transmission systems; transformers

Patents:

See attached.

Computer Packages Inc

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Granted Applications by Client Bel Fuse, Inc.

Thursday, August 26, 2021

Page 1 of 5

Case Number, Country, Sub Case	Application Number, Date	Client and Reference		
Case Type	Publication Number, Date	Owner		
Status	Patent Number, Date	Attorneys		
Expiration Date		Agent and Reference		
Title				
1101-001.001 US	12868965	26-Aug-2010	Bel Fuse, Inc.	
ORD	US20110057573A1	10-Mar-2011	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	8395329	12-Mar-2013	DEH, JFT	
11-Mar-2031				
LED BALLAST POWER SUPPLY HAVING DIGITAL CONTROLLER				
1101-001.004 EP	101757391	08-Sep-2010	Bel Fuse, Inc.	
ORD	2334145	15-Jun-2011	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	2334145	29-Apr-2015	DEH, JFT	
08-Sep-2030			Page White and Farrer	325638.EP/RO
LED BALLAST POWER SUPPLY USING DIGITAL CONTROL FOR IMPROVED PERFORMANCE				
1101-003.002 US	13044965	10-Mar-2011	Bel Fuse, Inc.	
ORD	US20110234000A1	29-Sep-2011	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	8901774	02-Dec-2014	DEH, JFT, JFT	
02-Oct-2033				
DISTRIBUTED POWER SUPPLY SYSTEM WITH DIGITAL POWER MANAGER PROVIDING DIGITAL CLOSED-LOOP POWER CONTROL				
1101-005.001 US	13453534	23-Apr-2012	Bel Fuse, Inc.	
ORD	US20130188399A1	25-Jul-2013	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	8581565	12-Nov-2013	DEH, JFT, JFT	
25-Apr-2032				
DC-TO-DC CONVERTER HAVING SECONDARY-SIDE DIGITAL SENSING AND CONTROL				
1101-008.002 US	14256158	18-Apr-2014	Bel Fuse, Inc.	
ORD	US20140312857	23-Oct-2014	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	9515558	06-Dec-2016	DEH, JFT, JFT	
23-Sep-2034				
SWITCH-MODE POWER SUPPLY WITH TEMPERATURE AND CURRENT SHARING				
1101-009.001 US	14230364	31-Mar-2014	Bel Fuse, Inc.	
ORD	201402922297	02-Oct-2014	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	9124101	01-Sep-2015	DEH, JFT, JFT	
31-Mar-2034				
POWER SUPPLY HAVING SELECTABLE OPERATION BASED ON COMMUNICATIONS WITH LOAD				
1101-009.002 EP	141632554	02-Apr-2014	Bel Fuse, Inc.	
ORD	EP2787620	06-May-2015	Bel Fuse (Macao Commercial Offshore) Limited	
Granted	2787620	23-Aug-2017	DEH, JFT, JFT	
02-Apr-2034			Page White and Farrer	336323EP/RO
POWER SUPPLY HAVING SELECTABLE OPERATION BASED ON COMMUNICATIONS WITH LOAD				

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Granted Applications by Client Bel Fuse, Inc.

Thursday, August 26, 2021

Page 2 of 5

Case Number, Country, Sub Case	Application Number, Date	Client and Reference	
Case Type	Publication Number, Date	Owner	
Status	Patent Number, Date	Attorneys	
Expiration Date		Agent and Reference	
Title			
1101-010.001 US	14029222	17-Sep-2013	Bel Fuse, Inc.
ORD	20146340941	20-Nov-2014	Bel Fuse (Macao Commercial Offshore) Limited
Granted	9176433	03-Nov-2015	DEH, JFT, JFT
29-Jan-2034			
DROOP CURRENT SHARING POWER CONVERTER WITH CONTROLLED TRANSITIONS BETWEEN REGULATION SET POINTS			
1101-010.002 EP	141685230	15-May-2014	Bel Fuse, Inc.
ORD	EP2804304	19-Nov-2014	Bel Fuse (Macao Commercial Offshore) Limited
Granted	2804304	29-Jul-2020	DEH, JFT, JFT
15-May-2034			Page White and Farrer
336683EP/DJW/ac			
DROOP CURRENT SHARING POWER CONVERTER WITH CONTROLLED TRANSITIONS BETWEEN REGULATION SET POINTS			
1101-010.002 DE	141685230	15-May-2014	Bel Fuse, Inc.
EPC	EP2804304	19-Nov-2014	Bel Fuse (Macao Commercial Offshore) Limited
Granted	2804304	29-Jul-2020	DEH, JFT, JFT
15-May-2034			Page White and Farrer
DROOP CURRENT SHARING POWER CONVERTER WITH CONTROLLED TRANSITIONS BETWEEN REGULATION SET POINTS			
1101-010.002 GB	141685230	15-May-2014	Bel Fuse, Inc.
EPC	EP2804304	19-Nov-2014	Bel Fuse (Macao Commercial Offshore) Limited
Granted	2804304	29-Jul-2020	DEH, JFT, JFT
15-May-2034			Page White and Farrer
DROOP CURRENT SHARING POWER CONVERTER WITH CONTROLLED TRANSITIONS BETWEEN REGULATION SET POINTS			
1101-010.003 CN	2014102053075	15-May-2014	Bel Fuse, Inc.
ORD	CN104167920	26-Nov-2014	Bel Fuse (Macao Commercial Offshore) Limited
Granted	ZL201410205307.5	31-May-2017	DEH, JFT, JFT
15-May-2034			China Science Patent & Trademark Agent Ltd
IA142426A			
DROOP CURRENT SHARING POWER CONVERTER WITH CONTROLLED TRANSITIONS BETWEEN REGULATION SET POINTS			
1101-011.004 CN	201510002949.X	05-Jan-2015	Bel Fuse, Inc.
ORD	CN104767405	08-Jul-2015	Bel Fuse (Macao Commercial Offshore) Limited
Granted	104767405	04-Jul-2019	DEH, JFT, JFT
05-Jan-2035			China Science Patent & Trademark Agent Ltd.
IA146156A			
SYNCHRONOUS RECTIFICATION MODULATION METHOD AT SECONDARY SIDE OF ISOLATED DC/DC CONVERTER			
1101-012.001 US	14193014	28-Feb-2014	Bel Fuse, Inc.
ORD	US20150194875	09-Jul-2015	Bel Fuse (Macao Commercial Offshore) Limited
Granted	9337720	10-May-2016	DEH, JFT, JFT
13-Jul-2034			
SWITCHING POWER SUPPLY STARTUP CIRCUIT HAVING NORMALLY ON EMITTER-SWITCHED CURRENT SOURCE			
1101-012.002 EP	151502127	06-Jan-2015	Bel Fuse, Inc.
ORD	2892137	06-Jul-2015	Bel Fuse (Macao Commercial Offshore) Limited
Granted	2892137	08-May-2019	DEH, JFT, JFT
06-Jan-2035			Page White and Farrer
400332EP/VRD			
SWITCHING POWER SUPPLY STARTUP CIRCUIT HAVING NORMALLY ON EMITTER-SWITCHED CURRENT SOURCE			

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Granted Applications by Client Bel Fuse, Inc.

Thursday, August 26, 2021

Page 3 of 5

Case Number, Country, Sub Case Case Type Status Expiration Date Title	Application Number, Date Publication Number, Date Patent Number, Date	Client and Reference Owner Attorneys Agent and Reference
1101-012.002 DE EPC Granted 06-Jan-2035 SWITCHING POWER SUPPLY STARTUP CIRCUIT HAVING NORMALLY ON EMITTER-SWITCHED CURRENT SOURCE	151502127 2892137 2892137 06-Jan-2015 08-Jul-2015 08-May-2019	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT, JFT Page White and Farrer
1101-012.002 GB EPC Granted 06-Jan-2035 SWITCHING POWER SUPPLY STARTUP CIRCUIT HAVING NORMALLY ON EMITTER-SWITCHED CURRENT SOURCE	151502127 2892137 2892137 06-Jan-2015 08-Jul-2015 08-May-2019	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT, JFT Page White and Farrer
1101-012.003 CN ORD Granted 05-Jan-2035 SWITCHING POWER SUPPLY STARTUP CIRCUIT HAVING NORMALLY ON EMITTER-SWITCHED CURRENT SOURCE	2015100029714 CN104767370 104767370 05-Jan-2015 08-Jul-2015 05-Jun-2018	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT, JFT China Science Patent & Trademark Agent Ltd
1101-013.001 US ORD Granted 28-Sep-2036 CONFIGURABLE LED POWER SUPPLY WITH WIRELESS INTERFACE	14673749 US20160098046 10274980 02-Oct-2015 07-Apr-2016 30-Apr-2019	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT Request for Continued Exam Filed
1101-014.001 US ORD Granted 30-Aug-2037 POWER INDUCTOR	15233446 US20170047157 10541063 10-Aug-2016 16-Feb-2017 21-Jan-2020	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT
1101-014.002 CN ORD Granted 11-Aug-2036 POWER INDUCTOR	2016106565813 CN106443119 106443119 11-Aug-2016 22-Feb-2017 18-Oct-2019	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT China Science Patent & Trademark Agent Ltd. IA162367B
1101-015.001 US ORD Granted 29-Dec-2037 FILTER INDUCTOR FOR HEAVY-CURRENT APPLICATION	15491055 US20170309390 10643784 19-Apr-2017 26-Oct-2017 05-May-2020	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT Request for Continued Exam Filed
1101-015.002 CN ORD Granted 20-Apr-2037 FILTER INDUCTOR FOR HEAVY-CURRENT APPLICATION	2017102646290 107305808 107305808 20-Apr-2017 31-Oct-2017 16-Aug-2019	Bel Fuse, Inc. Bel Fuse (Macao Commercial Offshore) Limited DEH, JFT China Science Patent & Trademark Agent Ltd. IA170904B

Computer Packages Inc

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Granted Applications by Client Bel Fuse, Inc.

Thursday, August 26, 2021

Page 4 of 5

Case Number, Country, Sub Case	Application Number, Date	Client and Reference	
Case Type	Publication Number, Date	Owner	
Status	Patent Number, Date	Attorneys	
Expiration Date		Agent and Reference	
Title			
1101-016 US	15148302	06-May-2016	Bel Fuse, Inc.
PR!			Bel Fuse (Macao Commercial Offshore) Limited
Granted	9742262	22-Aug-2017	DEH, JFT
06-May-2036			
SWITCHING POWER SUPPLY STARTUP CIRCUIT WITH NORMALLY ON DEVICE PROVIDING STARTUP CHARGING CURRENT			
1101-016.001 CN	201710306286X	03-May-2017	Bel Fuse, Inc.
ORD	CN107346936	14-Nov-2017	Bel Fuse (Macao Commercial Offshore) Limited
Granted	107346936	09-Aug-2019	DEH, JFT
03-May-2037			China Science Patent & Trademark Agent Ltd. :A170903A
SWITCHING POWER SUPPLY STARTUP CIRCUIT WITH NORMALLY ON DEVICE PROVIDING STARTUP CHARGING CURRENT			
1101-017.002 US	15660637	26-Jul-2017	Bel Fuse, Inc.
ORD	US20180034270	01-Feb-2018	Bel Fuse (Macao Commercial Offshore) Limited
Granted	10749340	18-Aug-2020	DEH, JFT
12-Jan-2039			
POWER SWITCH WITH POWER HARVESTING FOR LOCAL CONTROLLER			
1101-018.001 US	16010649	18-Jun-2016	Bel Fuse, Inc.
ORD	US20180375421A1	27-Dec-2018	Bel Fuse (Macao Commercial Offshore) Limited
Granted	10756632	25-Aug-2020	DEH, JFT
18-Jun-2036			Request for Continued Exam Filed
POWER SUPPLY WITH AUXILIARY CONVERTER FOR EXTENDED VIN RANGE			
1101-019.001 US	16568933	12-Sep-2019	Bel Fuse, Inc.
ORD	US20200083805	12-Mar-2020	Bel Fuse (Macao Commercial Offshore) Limited
Granted	10756624	25-Aug-2020	DEH, JFT
12-Sep-2039			
HYBRID DC-DC CONVERTER			

Bel Fuse, Inc. Patent Matters

Title	Matter Code	Country	App Serial No.	Status	Patent No.	Date Filed	Date Issued	Publication
(ICM) Connector Including Isolation Magnetic Devices Capable of Handling High Speed Communications	016550	CA	2,620,901	ISSUED	2,620,901	02/12/2008	04/29/2014	
(ICM) Modular Jack Assembly With Signal Conditioning	018834	CN	02824021.9	ISSUED	ZL02824021.9	10/18/2002	01/07/2009	
(ICM) Magnetic Assembly and Connector Assembly and Connector	016564	CN	201110339447.8	ISSUED	ZL201110339447.8	10/31/2011	12/02/2015	05/08/2013
(ICM) Electrical Connector and Connector Assembly (utility model)	016563	CN	201120490729.3	ISSUED	ZL201120490729.3	11/30/2011	08/29/2012	08/29/2012
(ICM) Connector (utility model)	016548	CN	201220355247.1	ISSUED	ZL201220355247.1	07/20/2012	01/09/2013	01/09/2013
(ICM) Electrical Connector (utility model)	016547	CN	201220386566.9	ISSUED	ZL201220386566.9	08/06/2012	01/16/2013	01/16/2013
(ICM) Electric Connector (utility model)	016562	CN	201220429344.0	ISSUED	ZL201220429344.0	08/27/2012	02/13/2013	02/13/2013
(ICM) Connector (utility model)	016542	CN	201220613503.2	ISSUED	ZL201220613503.2	11/19/2012	04/17/2013	04/17/2013
(ICM) Magnetic Network Connector (utility model)	016567	CN	201220704148.X	ISSUED	ZL201220704148.X	12/18/2012	06/19/2013	06/19/2013
(ICM) Power Over Ethernet for 10Gbase-T Ethernet	017199	CN	201580044538.5	ISSUED	ZL201580044538.5	08/20/2015	10/18/2019	05/31/2017
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245CN	CN	201880036911.6	PUBLISHED		04/03/2018		02/07/2020
(CON) High Speed Data Plug and Method for Assembling (Method for Assembling a Plug)	016554	EP	07108408.1	ISSUED	1,858,117	05/17/2007	08/15/2012	11/21/2007
(CON) High Speed Modular Jack	016560	EP	07108425.5	ISSUED	1,858,119	05/17/2007	05/02/2012	
(ICM) Connector Including Isolation Magnetic Devices Capable of Handling High Speed Communications	016549	EP	08101659.4	ISSUED	1,959,525	02/15/2008	05/11/2016	
(ICM) Power Over Ethernet for 10Gbase-T Ethernet	017200	EP	15834414.3	PUBLISHED		08/20/2015		07/26/2017
(CON) Modular Connector Plug for High Speed Data Transmission Networks	016240EP	EP	16745359.6	PUBLISHED		07/21/2016		05/30/2018
(CON) Modular Jack Connector	019211	EP	16798059.8	PUBLISHED		11/08/2016		08/22/2018
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245EP	EP	18719385.9	ISSUED	3,607,568	04/03/2018	02/24/2021	02/12/2020
(CON) Modular Plug Connector with Multilayer PCB for Very High Speed Applications	018736EP	EP	19705667.4	PUBLISHED		01/31/2019		12/09/2020
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245HK	HK	62020004777.2	PUBLISHED		04/03/2018		08/28/2020
(ICM) Power Over Ethernet for 10Gbase-T Ethernet	017201	JP	2017-505650	ISSUED	6,370,989	08/20/2015	07/20/2018	
(CON) Modular Jack Connector	019212	JP	2018-524271	ISSUED	6,655,183	11/08/2016	02/04/2020	
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245JP	JP	2020-502544	PENDING		04/03/2018		
(ICM) Power Over Ethernet for 10Gbase-T Ethernet	017202	MY	PI2017700406	PENDING		08/20/2015		
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245MY	MY	PI2019005759	PENDING		04/03/2018		
(ICM) Connector Including Isolation Magnetic Devices Capable of Handling High Speed Communications	016552	SG	2008012486	ISSUED	145,651	02/14/2008	05/31/2010	
(ICM) Power Over Ethernet for 10Gbase-T Ethernet	017203	SG	11201700607U	ISSUED	11201700607U	08/20/2015	11/17/2017	
(ICM) Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245SG	SG	11201908627P	PENDING		04/03/2018		
(ICM) Connector Including Isolation Magnetic Devices Capable of Handling High Speed Communications	016553	TW	097104898	ISSUED	4440263	02/13/2008	06/01/2014	
Optical Interconnection System	016409	US	08/955,762	ISSUED	5,896,480			
Modular Electrical Plug, Plug Cable Assemblies Including the Same, and Load Bar and Terminal Blade for	016406	US	09/578,397	ISSUED	6,402,559	05/25/2000	06/11/2002	
Modular Plug Wire Aligner	016408	US	09/875,452	ISSUED	6,524,128	06/04/2001	02/25/2003	
Modular Jack For Ethernet Applications	016415	US	10/196,452	ISSUED	7,153,163	07/16/2002	12/26/2006	
Modular Jack Assembly With Signal Conditioning	016416	US	10/209,377	ISSUED	6,872,098	07/31/2002	03/29/2005	
HIGH PERFORMANCE, HIGH CAPACITANCE GAIN, JACK CONNECTOR FOR DATA TRANSMISSION OR THE LIKE	016411	US	10/292,089	ISSUED	6,964,587	11/10/2002	11/15/2005	
Signal Conditioned Modular Jack Assembly With Improved Shielding	016421	US	10/418,460	ISSUED	6,729,906	04/18/2003	05/04/2004	
High Performance, High Capacitance Gain, Jack Connector for Data Transmission or the Like	016412	US	10/714,803	ISSUED	7,048,590	11/16/2003	05/23/2006	
High Performance, High Capacitance Gain, Jack Connector For Data Transmission Or The Like	016413	US	11/175,764	ISSUED	7,086,909	07/06/2005	08/08/2006	
Connector Including Isolation Magnetic Devices Capable of Handling High Speed Communications	016403	US	11/675,701	ISSUED	7,429,195	02/16/2007	09/30/2008	
High Speed Modular Jack With Flexible Compensation Circuit	016400	US	11/748,674	ISSUED	7,568,950	05/15/2007	08/04/2009	
High Speed Modular Jack With Flexible Compensation Circuit	016402	US	11/748,709	ISSUED	7,686,650	05/15/2007	03/30/2010	
High Speed Data Plug and Method for Assembly	016414	US	11/748,665	ISSUED	7,753,717	05/15/2007	07/13/2010	
Isolation Magnetic Devices Capable Of Handling High Speed Communications	016422	US	12/194,645	ISSUED	7,924,130	08/20/2008	04/12/2011	
Inventory Control System For Digital Signage Network Having a Plurality of Screen Zones Associated W	016425	US	12/267,218	ISSUED	8,170,914	11/07/2008	05/01/2012	
Electrical Device Including A Transformer With A Core Having Two Holes And Connector Incorporating T	016410	US	12/849,941	ISSUED	8,077,004	08/04/2010	12/13/2011	
Modular Connector Plug Having a Wire Guide Filter with an Impedance Containing Portion and a Cable G	016555	US	12/925,752	ISSUED	8,033,863	10/28/2010	10/11/2011	
Network Interface Connector with Proximity Compensation	016533	US	14/729,233	ISSUED	9,502,842	06/03/2015	11/22/2016	
Power Over Ethernet for 10GBase-T Ethernet	016570	US	14/831,102	ISSUED	9,388,564	08/20/2015	03/07/2017	
Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245A	US	15/725,047	ISSUED	10,504,647	10/04/2017	12/10/2019	10/04/2018
Modular Connector Plug for High Speed Data Transmission Networks	016240US	US	15/786,795	ISSUED	10,439,329	10/18/2017	10/08/2019	02/08/2018
Modular Jack Connector	016758US	US	15/963,765	ISSUED	10,424,874	04/26/2018	09/24/2019	08/20/2018
A Modular Jack Contact Assembly Having Controlled Capacitive Coupling Positioned within a Jack Housi	016758CIP	US	16/259,455	ISSUED	10,637,196	01/28/2019	04/28/2020	05/23/2019
Modular Plug Connector with Multilayer PCB for Very High Speed Applications	018736US	US	16/262,696	ISSUED	10,530,106	01/30/2019	01/07/2020	08/01/2019
Magnetic Transformer Having Increased Bandwidth for High Speed Data Communications	017245CON	US	16/539,420	ISSUED	11,049,649	08/13/2019	06/29/2021	11/28/2019

OS/Model Ref	Country	Title	Status	App. No.	Filing Date	Publ. No.	Issue Date	Exp. Date
0144-0229	US	ELECTRICAL DISCHARGE OF A PLUG	ISSUED	09/619,060	18-Jul-2000	6,468,997	22-Oct-2002	18-Jul-2020
0144-0237	FR	A JACK PROVIDING ELECTRICAL DISCHARGE OF A PLUG THROUGH A RESISTIVE ELEMENT	ISSUED	0010989	28-Aug-2000	0010989	03-Oct-2003	28-Aug-2020
0144-0253	TW	CAPLESS FUSE	ISSUED	90103441	15-Feb-2001	157400	04-Oct-2002	15-Feb-2021
0144-0353	BE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0355	DE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0250	EP	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0354	FR	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0356	GB	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0357	IE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0358	NL	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0359	SE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0251	CN	CAPLESS FUSE	ISSUED	01116282.1	09-Apr-2001	ZL 01116282.1	15-Feb-2006	09-Apr-2021
0144-0298	HK	CAPLESS FUSE	ISSUED	02101804.2	08-Mar-2002	1040457	29-Sep-2006	09-Apr-2021
0144-0252	JP	CAPLESS FUSE	ISSUED	2001110243	09-Apr-2001	4703884	18-Mar-2011	09-Apr-2021
0144-0272	HK	LINE INTERFACE TRANSFORMER	ISSUED	1103493.5	22-Mar-2001	1032844	22-Apr-2005	22-May-2021
0144-0280	US	HIGHLY EFFICIENT SELF-OSCILLATION BOOST DC/DC CONVERTER	ISSUED	09/931,608	16-Aug-2001	6,597,155	22-Jul-2003	16-Aug-2021
0144-0279	US	SELF-DRIVEN SYNCHRONOUS RECTIFICATION SCHEME FOR WIDE OUTPUT RANGE	ISSUED	09/932,398	17-Aug-2001	6,583,993	24-Jun-2003	17-Aug-2021
0144-0307	US	EMI SUPPRESSION TECHNIQUE FOR RJ CONNECTORS WITH INTEGRATED MAGNETICS	ISSUED	10/328,836	23-Dec-2002	6,840,817	11-Jan-2005	22-Aug-2021
0144-0287	US	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	09/954,583	17-Sep-2001	6,565,391	20-May-2003	17-Sep-2021
0144-0311	CN	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	01815737.8	18-Sep-2001	CN 1265512C	19-Jul-2006	18-Sep-2021
0144-0314	JP	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	200257617	18-Sep-2001	4606695	15-Oct-2010	18-Sep-2021
0144-0290	TW	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	90122056	11-Feb-2002	192629	08-Apr-2004	18-Sep-2021
0144-0281	US	MULTIPLE OUTPUT POWER ADAPTER	ISSUED	09/932,385	17-Aug-2001	6,879,497	12-Apr-2005	23-Oct-2021
0144-0283	US	SELF-DRIVEN SYNCHRONOUS RECTIFICATION SCHEME	ISSUED	10/119,424	09-Apr-2002	6,563,719	13-May-2003	09-Apr-2022
0144-0329	CA	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	2459942	11-Sep-2002	2459942	01-Apr-2008	11-Sep-2022
0144-0330	GB	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	0405043.1	11-Sep-2002	2400757	08-Jun-2005	11-Sep-2022
0144-0332	JP	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	2003528073	11-Sep-2002	4188831	19-Sep-2008	11-Sep-2022
0144-0304	TW	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	91120909	12-Sep-2002	183678	09-Dec-2003	12-Sep-2022
0144-0309	CA	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	2420268	27-Feb-2003	2420268	12-Oct-2010	27-Feb-2023
0144-0318	US	OVERMOLDED DEVICE WITH CONTOURED SURFACE	ISSUED	10/438,721	15-Mar-2003	6,930,305	27-Sep-2005	15-Dec-2023
0144-0321	US	MULTI-PORT RJ CONNECTOR	ISSUED	10/657,343	08-Sep-2003	7,717,749	18-May-2010	24-Mar-2024
0144-0326	US	CONVERTER WITH INTEGRATED ACTIVE CLAMP CIRCUIT AND BIAS CIRCUIT	ISSUED	10/776,967	10-Feb-2004	7,012,817	14-Mar-2006	16-Apr-2024
0144-0335	US	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	10/857,324	28-May-2004	6,980,411	27-Dec-2005	28-May-2024
0144-0337	TW	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	93115520	31-May-2004	1351150	21-Oct-2011	30-May-2024
0144-0342	CN	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	200480015605.2	04-Jun-2004	ZL 200480015605.2	03-Feb-2010	03-Jun-2024
0144-0343	DE	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	112004000913.8	04-Jun-2004	112004000913.8	15-Oct-2009	04-Jun-2024
0144-0340	GB	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	0529296.3	04-Jun-2004	2417841	21-Feb-2007	04-Jun-2024
0144-0345	HK	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	06113351.0	04-Jun-2004	1092953	23-Jul-2010	04-Jun-2024
0144-0344	JP	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	2006515262	04-Jun-2004	4708338	25-Mar-2011	04-Jun-2024
0144-0334	US	LAN MAGNETIC INTERFACE CIRCUIT	ISSUED	10/851,618	21-May-2004	7,123,117	17-Oct-2006	25-Nov-2024
0144-0362	US	LAN MAGNETIC INTERFACE CIRCUIT	ISSUED	10/851,618	21-May-2004	7,123,117	17-Oct-2006	25-Nov-2024
0144-0339	US	PREVENTING DAMAGE TO RJ JACKS FROM IMPROPER PLUG INSERTION	ISSUED	11/014,286	16-Dec-2004	7,125,288	24-Oct-2006	16-Dec-2024

014440338	US	PREVENTING DAMAGE TO RJ JACKS FROM IMPROPER PLUG INSERTION	ISSUED	11/014,277	16-Dec-2004	7,311,562	25-Dec-2007	16-Dec-2024
014440325	US	DIFFERENTIAL ELECTRICAL SURGE PROTECTION WITHIN A LAN MAGNETICS INTERFACE CIRCUIT	ISSUED	10/833,750	28-Apr-2004	7,808,751	05-Oct-2010	26-May-2026
014440347	US	DC-DC FLYBACK CONVERTER HAVING A SYNCHRONOUS RECTIFICATION SELF-DRIVEN CIRCUIT	ISSUED	11/561,937	21-Nov-2006	7,791,903	07-Sep-2010	13-Nov-2027

Bel Power Patent Matters

Title	Matter	Country	App Serial No.	Status	Patent No.	Date Filed	Date Issued	Publication
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	008897	AU	2008279400	ISSUED	2008279400	07/16/2008	02/16/2012	
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	012256	CA	2,694,295	ISSUED	2,694,295	07/16/2008	10/01/2013	
System and Method for Controlling a Point-of-Load Regulator	006855	CN	2003-80100032.9	ISSUED	ZL200380100032.9	10/30/2003	07/06/2011	
System and Method for Providing Digital Pulse Width Modulation	005675	CN	2003-80100031.4	ISSUED	ZL200380100031.4	10/30/2003	09/08/2010	
System and Method for Communicating with a Voltage Regulator	005673	CN	2003-80100034.8	ISSUED	ZL200380100034.8	10/31/2003	02/04/2009	
System and Method for Interleaving Point-of-Load Regulators	005632	CN	200380100020.6	ISSUED	ZL200380100020.6	11/06/2003	02/04/2009	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005593	CN	2003-80100033.3	ISSUED	ZL200380100033.3	11/06/2003	01/14/2009	
Digital Signal Processor Architecture Optimized Controlling Switched Mode Power Supply	005599	CN	2004-80000006.3	ISSUED	ZL200480000006.3	02/04/2004	09/17/2008	
Voltage Set Point Control Scheme	005601	CN	2004-80000007.8	ISSUED	ZL200480000007.8	02/06/2004	02/27/2008	
Switched Mode Power Supply and Method of Controlling the Switched Mode Power Supply	005630	CN	2004-80000008.2	ISSUED	ZL200480000008.2	02/09/2004	06/24/2009	
System and Method for Controlling Output-Timing Parameters of Power Converters	005606	CN	200480000009.7	ISSUED	ZL200480000009.7	03/05/2004	03/04/2009	
Method and System for Current Sharing Among a Plurality of Power Modules	005604	CN	200480000005.9	ISSUED	ZL200480000005.9	03/17/2004	07/08/2009	
Adaptive delay control circuit for switched mode power supply	005878	CN	200480028192.1	ISSUED	ZL200480028192.1	11/12/2004	03/04/2009	
Unregulated DC-DC converter having synchronous rectification with efficient gate drives	005879	CN	200480035785.0	ISSUED	ZL200480035785.0	11/15/2004	07/02/2009	
Method and system for communicating filter compensation coefficients for a digital power control sys	005882	CN	200580008019.X	ISSUED	200580008019.X	01/27/2005	07/08/2009	
ADC transfer function providing improved dynamic regulation in a switched mode power supply	005883	CN	200580008060.7	ISSUED	200580008060.7	01/28/2005	12/08/2010	
System and method for managing fault in a power system	005884	CN	200580008041.4	ISSUED	200580008041.4	01/28/2005	12/02/2009	
Digital Power Manager for Controlling and Monitoring an Array of Point-of-Load Regulators	012266	CN	2005-80024059.3	ISSUED	200580024059.3	06/30/2005	11/13/2013	
Digital double-loop output voltage regulation	005881	CN	200610003673.8	ISSUED	ZL200610003673.8	01/11/2006	03/04/2009	
Digital pulse width modulation controller with preset filter	005885	CN	200680010907.X	ISSUED	200680010907.X	02/17/2006	12/02/2009	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	008900	CN	200680029829.8	ISSUED	ZL200680029829.8	04/07/2006	09/14/2011	
Control of Point-of-Load Regulations and Auxiliary Devices	008899	CN	200780005315.3	ISSUED	ZL200780005315.3	01/24/2007	06/20/2012	
Digital Double-Loop Output Voltage Regulation	012262	CN	200880009223.7	ISSUED	200880009223.7	01/24/2008	05/29/2013	
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	009667	CN	200880107236.8	ISSUED	ZL200880107236.8	07/16/2008	02/13/2013	
Self Tracking ADC for Digital Power Supply Control Systems	012254	CN	2008-080119830.9	ISSUED	ZL200880119830.9	09/30/2008	08/28/2013	
System for Controlling and Monitoring an Array of Point-of-Load Regulators and Auxiliary Devices	012253	CN	2008-80120160.2	ISSUED	ZL200880120160.2	10/07/2008	04/09/2014	
An Isolated Current to Voltage, Voltage to Voltage Converter	005822	CN	200880120151.3	ISSUED	ZL200880120151.3	10/07/2008	09/10/2014	12/21/2011
Method and Apparatus for Providing an Initial Bias and Enable Signal for a Power Converter	004692	CN	200980119482.X	ISSUED	ZL200980119482.X	02/27/2009	08/01/2017	05/04/2011
Digital Phase Adjustment for Multi-Phase Power Converters	010236	CN	201280017655.9	ISSUED	ZL201280017655.9	02/10/2012	04/06/2016	12/18/2013
Input Current Shaping for Transition and Discontinuous Mode Power Converter	010239	CN	201280017669.0	ISSUED	ZL201280017669.0	02/10/2012	06/22/2016	03/12/2014
Integrated Magnetics with Isolated Drive Circuit	010420	CN	201280024672.5	ISSUED	ZL201280024672.5	03/23/2012	10/12/2016	03/12/2014
Isolated Drive Circuitry Used in Switch-Mode Power Converters	003687	EP	02709247.7	ISSUED	1,405,394	02/01/2002	12/12/2007	
Isolated Drive Circuitry Used in Switch-Mode Power Converters	003688	EP	02714806.3	ISSUED	1,356,575	02/01/2002	05/02/2007	
Method and Apparatus for Providing an Initial Bias and Enable Signal for Power Converter	003686	EP	02721222.4	ISSUED	1,364,444	03/01/2002	10/24/2007	
Simple and Efficient Switching Regulator for Fast Transient Loads	003690	EP	02742380.5	ISSUED	1,415,386	07/02/2002	09/05/2012	
I-Channel Surface-Mount Connector with Extended Flanges and Method for Interconnecting Circuit Board	003694	EP	02789798.2	ISSUED	1,446,993	11/15/2002	10/22/2008	
System and Method for Providing Digital Pulse Width Modulation	005674	EP	03781679.0	ISSUED	1,563,591	10/30/2003	07/12/2006	
System and Method for Controlling a Point-of-Load Regulator	005633	EP	03781673.3	ISSUED	1,561,268	10/30/2003	03/17/2010	
System and Method for Communicating with a Voltage Regulator	012286	EP	03781613.9	ISSUED	1,561,156	10/31/2003	08/24/2016	08/10/2005
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	012285	EP	03783224.3	ISSUED	1,576,710	11/06/2003	04/03/2018	
System and Method for Interleaving Power-of-Load Regulators	008872	EP	03768750.6	ISSUED	1,576,711	11/06/2003	08/08/2012	
Digital Signal Processor Architecture Optimized for Controlling Switched Mode Power Supply	006861	EP	04708196.3	ISSUED	1,593,014	02/04/2004	05/25/2011	
Voltage Set Point Control Scheme	012284	EP	04709038.6	ISSUED	1,604,264	02/06/2004	05/30/2018	12/14/2005
Digital Control System and Method for Switched Mode Power Supply	008869	EP	04709521.1	ISSUED	1,593,195	02/09/2004	09/12/2012	
System and Method for Controlling Output-Timing Parameters of Power Converters	012283	EP	04749343.2	ISSUED	1,604,254	03/05/2004	11/16/2016	
Method and system for current sharing among a plurality of power modules	007923	EP	04759645.7	ISSUED	1,618,442	03/17/2004	12/28/2011	
Adaptive Delay Control Circuit for Switched Mode Power Supply	012282	EP	04810819.5	ISSUED	1,687,683	11/12/2004	08/24/2016	
Unregulated DC-DC converter having synchronous rectification with efficient gate drives	012281	EP	04811209.8	ISSUED	1,690,327	11/15/2004	12/21/2016	
Method and System for Communicating Filter Compensation Coefficients for a Digital Power Control Sys	012280	EP	05712797.9	ISSUED	1,745,536	01/27/2005	08/07/2019	
ADC Transfer Function Providing Improved Dynamic Regulation in a Switched Mode Power Supply	005823	EP	05712231.9	ISSUED	1,714,200	01/28/2005	11/21/2018	
System and Method for Managing Fault in a Power System	005824	EP	05712238.4	ISSUED	1,714,369	01/28/2005	05/17/2017	
Compensated Droop Method for Paralleling of Power Supplies (C-Droop Method)	003389EP	EP	05846331.6	ISSUED	1,844,533	11/16/2005	08/22/2018	10/17/2007
Digital Double-Loop Output Voltage Regulation	012279	EP	05026905.9	ISSUED	1,703,624	12/08/2005	07/15/2015	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	012264	EP	06740619.9	ISSUED	1,899,789	04/07/2006	11/07/2018	
METHOD AND SYSTEM FOR CONTROLLING AN ARRAY OF POINT-OF-LOAD REGULATORS AND AUXILIARY DEVICES	012263	EP	07749193.4	ISSUED	1,984,801	01/24/2007	11/15/2017	10/29/2008
Digital Double-Loop Output Voltage Regulation	012261	EP	08728173.9	ISSUED	2,122,831	01/24/2008	01/16/2019	11/25/2009

Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	012257	EP	08781877.9	ISSUED	2,183,656	07/16/2008	04/01/2015	05/12/2010
Self Tracking ADC for Digital Power Supply Control Systems	008871	EP	08842105.2	ISSUED	2,218,185	09/30/2008	09/05/2012	
An Isolated Current to Voltage, Voltage to Voltage Converter	005826	EP	08845418.6	ISSUED	2,220,567	10/07/2008	08/20/2014	
System for Controlling and Monitoring an Array of Point-of-Load Regulators and Auxiliary Devices	012250	EP	08845059.8	ISSUED	2,210,159	10/07/2008	09/27/2017	07/28/2010
Method and Apparatus for Providing an Initial Bias and Enable Signal for a Power Converter	004655	EP	09725485.8	ISSUED	2,263,300	02/27/2009	04/03/2019	12/22/2010
Input Current Shaping for Transition and Discontinuous Mode Power Converter	010240	EP	12708424.2	ISSUED	2,673,868	02/10/2012	05/20/2015	12/18/2013
Digital Phase Adjustment for Multi-Phase Power Converters	010237	EP	12708423.4	ISSUED	2,673,871	02/10/2012	11/04/2015	12/18/2013
Integrated Magnetics with Isolated Drive Circuit	010419	EP	12761425.3	ISSUED	2,689,522	03/23/2012	11/13/2019	01/29/2014
An Isolated Current to Voltage, Voltage to Voltage Converter	007707	HK	12103139.2	ISSUED	HK1162713	10/07/2008	08/14/2015	08/31/2012
Method and Apparatus for Providing an Initial Bias and Enable Signal for a Power Converter	003728	JP	2002-570388	ISSUED	4,163,959	03/01/2002	08/01/2008	
Inductor Current Sensing in Isolated Switching Regulators and Related Methods	003697	JP	2003-511395	ISSUED	4,149,915	06/28/2002	07/04/2008	
Simple and Efficient Isolated Switching Regulator for Fast Transient Loads	003729	JP	2003-511390	ISSUED	4,173,442	07/02/2002	08/22/2008	
I-Channel Surface-Mount Connector	003730	JP	2004-529043	ISSUED	4,700,343	11/15/2002	03/11/2011	09/29/2005
Compensated Droop Method for Paralleling of Power Supplies (C-Droop Method)	003362	JP	2007-550365	ISSUED	4,688,227	11/16/2005	02/25/2011	07/24/2008
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	008895	JP	2010-518291	ISSUED	5,081,303	07/16/2008	09/07/2012	11/28/2012
System for Controlling and Monitoring an Array of Point-of-Load Regulators and Auxiliary Devices	012252	JP	2010-532110	ISSUED	5,302,324	10/07/2008	06/28/2013	
An Isolated Current to Voltage, Voltage to Voltage Converter	005825	JP	2010-532111	ISSUED	6,045,125	10/07/2008	11/25/2016	
Apparatus and Method of Optimizing Power System Efficiency Using a Power Loss Model	012248	JP	2011-511699	ISSUED	5,462,868	05/13/2009	01/24/2014	
System and Method for Providing Digital Pulse Width Modulation	005676	KR	2004-7009277	ISSUED	0610992	10/30/2003	08/02/2006	
Power Control System and Point-of-Load Regulator	005613	KR	2004-7008946	ISSUED	0780982	10/30/2003	11/23/2007	
System and Method for Communicating With a Voltage Regulator	005594	KR	2004-7009977	ISSUED	0796074	10/31/2003	01/11/2008	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005595	KR	10-2004-7009853	ISSUED	0792876	11/06/2003	01/02/2008	
METHOD OF INTERLEAVING A PLURALITY OF VOLTAGE REGULATORS AND POWER SUPPLY SYSTEM USING THE SAME	005631	KR	2004-7007979	ISSUED	785941	11/06/2003	12/07/2007	
Digital Signal Processor Architecture Optimized Controlling Switched Mode Power Supply	005600	KR	2004-7010234	ISSUED	593521	02/04/2004	06/19/2006	
Voltage Set Point Control Scheme	005607	KR	2004-7008092	ISSUED	593522	02/06/2004	06/19/2006	
Digital Control System and Method for Switched Mode Power Supply	005608	KR	2004-7008342	ISSUED	593523	02/09/2004	06/19/2006	
System and Method for Controlling Output-Timing Parameters of Power Converters	005612	KR	2004-7007174	ISSUED	593520	03/05/2004	06/19/2006	
Method and System for Current Sharing Among a Plurality of Power	005611	KR	2004-7007812	ISSUED	0768926	03/17/2004	10/15/2007	
Micro Lead Frame Package and Method to Manufacture the Micro Lead Frame Package	005610	KR	2005-7024642	ISSUED	0846939	06/09/2004	07/10/2008	
DC-DC Converter Implemented in a Land Grid Array Package	005598	KR	2004-7015631	ISSUED	0770482	08/26/2004	10/19/2007	
Adaptive Delay Control Circuit for Switched Mode Power Supply	005639	KR	2006-7005597	ISSUED	0825536	11/12/2004	04/21/2008	
Unregulated DC-DC converter having synchronous rectification with efficient gate drives	005876	KR	2006-7010741	ISSUED	0846943	11/15/2004	07/10/2008	
Method and System for Communicating Filter Compensation Coefficients for a Digital Power Control Sys	006859	KR	2006-7017987	ISSUED	10-0989480	01/27/2005	10/15/2010	
System and method for managing fault in a power system	005877	KR	2006-7018455	ISSUED	0859048	01/28/2005	09/10/2008	
ADC transfer function providing improved dynamic regulation in a switched mode power supply	005887	KR	2006-7018678	ISSUED	0967750	01/28/2005	06/25/2010	
Digital double-loop outlook voltage regulation	005880	KR	2006-0003954	ISSUED	0779785	01/13/2006	11/20/2007	
Digital Pulse Width Modulation Controller with Present Filter Coefficients	007751	KR	10-2007-7022556	ISSUED	10-0919334	02/17/2006	09/21/2009	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	006858	KR	10-2008-7001954	ISSUED	10-0986411	04/07/2006	10/01/2010	
Method and System for Controlling an Array of Point-of-Load Regulators and Auxiliary Devices	006857	KR	10-2008-7019894	ISSUED	10-1017774	01/24/2007	02/18/2011	
Digital Double-Loop Output Voltage Regulation	008898	KR	10-2009-7018522	ISSUED	10-1117416	01/24/2008	02/09/2012	
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	008894	KR	10-2010-7003932	ISSUED	10-1143133	07/16/2008	04/27/2012	
Self Tracking ADC for Digital Power Supply Control Systems	008873	KR	10-2010-7011124	ISSUED	1,153,541	09/30/2008	05/30/2012	
Apparatus and Method of Optimizing Power System Efficiency Using a Power Loss Model	012244	KR	10-2010-7029140	ISSUED	10-1300449	05/13/2009	08/20/2013	
Digital Phase Adjustment for Multi-Phase Power Converters	010238	KR	10-2013-7023976	ISSUED	10-1663357	02/10/2012	09/29/2016	
Integrated Magnetics with Isolated Drive Circuit	010421	KR	10-2013-7027995	ISSUED	10-1597885	03/23/2012	02/19/2016	
POWER CONVERTER WITH NON-SYMMETRICAL TOTEM POLE RECTIFIER AND CURRENT-SHAPING BRANCH CIRCUITS	017995	US	13/886,386	ISSUED	9,166,498			
Connector for Surface Mounting Subassemblies Vertically on a Mother Board and Assemblies Comprising	003782	US	10/715,908	ISSUED	6,984,156		01/10/2006	
Low Flow Impedance Voltage Guard for Electronic Assemblies	006266	US	10/000,314	ISSUED	6,452,796		09/17/2002	
Power Supply Housing	005500	US	29/101,164	ISSUED	D429,213	02/25/1999	08/08/2000	
Single Ended Forwarded DC-to-DC Converter Providing Enhanced Resetting for Synchronous Rectification	003395	US	09/266,199	ISSUED	5,986,899	03/10/1999	11/16/1999	
FORWARD CONVERTER CIRCUIT HAVING REDUCED SWITCHING LOSSES	005384	US	09/706,407	ISSUED	6,370,051	11/03/2000	04/09/2002	
Circuit Module with Universal Connectivity	003667	US	09/737,410	ISSUED	6,692,269	12/15/2000	02/17/2004	
I-Channel Surface-Mount Connector	003669	US	09/737,303	ISSUED	6,750,396	12/15/2000	06/15/2004	
DUAL INPUT RANGE POWER SUPPLY USING TWO SERIES OR PARALLEL CONNECTED CONVERTER SECTIONS WITH AUTOMATICALLY-DRIVEN SYNCHRONOUS RECTIFIER CIRCUIT FOR NON-OPTIMAL RESET SECONDARY VOLTAGE	005387	US	09/740,110	ISSUED	6,370,047	12/18/2000	04/09/2002	
Power Converter Having Regulated Dual Outputs	005450	US	09/948,456	ISSUED	6,501,193	09/07/2001	12/31/2002	
Fully Automatic Process for Magnetic Circuit Assembly	003668	US	10/041,792	ISSUED	6,792,667	10/23/2001	09/21/2004	

I-Channel Surface-Mount Connector with Extended Flanges	003670	US	09/991,420	ISSUED	6,503,088	11/16/2001	01/07/2003
Apparatus and Method for Testing High Current Circuit Assemblies	003659	US	10/053,135	ISSUED	6,838,898	01/17/2002	01/04/2005
Isolated Drive Circuitry Used in Switch-Mode Power Converters	003664	US	10/061,189	ISSUED	6,804,125	02/01/2002	10/12/2004
Isolated Drive Circuitry Used in Switch-Mode Power Converters	003675	US	10/061,662	ISSUED	7,102,898	02/01/2002	09/05/2006
Method and Apparatus for Providing an Initial Bias and Enable Signal for a Power Converter	003678	US	10/085,363	ISSUED	6,724,642	02/28/2002	04/20/2004
Composite Low Flow Impedance Voltage Guard for Electronic Assemblies	003662	US	10/134,214	ISSUED	6,560,105	04/26/2002	05/06/2003
I-Channel Surface-Mount Connector	003671	US	10/138,139	ISSUED	6,860,003	05/02/2002	03/01/2005
I-Channel Surface-Mount Connector	003672	US	10/138,173	ISSUED	6,722,930	05/02/2002	04/20/2004
Simple and Efficient Isolated Switching Regulator For Fast Transient Loads	003679	US	10/187,645	ISSUED	6,567,279	07/02/2002	05/20/2003
Inductor Current Sensing in Isolated Switching Regulators and Related Methods	003674	US	10/187,782	ISSUED	6,828,762	07/02/2002	12/07/2004
Method and Apparatus for Controlling Synchronous Rectifiers of a Power Converter	003677	US	10/187,562	ISSUED	6,711,039	07/02/2002	03/23/2004
Power Supply Housing	005501	US	29/168,494	ISSUED	D494,538	10/01/2002	08/17/2004
I-Channel Surface-Mount Connector	003673	US	10/270,904	ISSUED	6,649,831	10/15/2002	11/18/2003
System and Method for Controlling a Point-of-Load Regulator	005388	US	10/293,531	ISSUED	6,949,916	11/12/2002	09/27/2005
System and Method for Communicating with a Voltage Regulator	005389	US	10/293,001	ISSUED	7,049,798	11/13/2002	05/23/2006
System and Method Providing Digital Pulse Width Modulation	005396	US	10/299,439	ISSUED	6,833,691	11/19/2002	12/21/2004
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005397	US	10/326,222	ISSUED	7,000,125	12/21/2002	02/14/2006
System and Method for Interleaving Power-of-Load Regulators	005392	US	10/328,154	ISSUED	7,373,527	12/23/2002	05/13/2008
Transistor Driver Circuit	005488	US	10/357,313	ISSUED	6,741,099	01/31/2003	05/25/2004
Digital Control System and Method for Switched Mode Power Supply	005399	US	10/361,667	ISSUED	6,933,709	02/10/2003	08/23/2005
Power Supply Packaging System	005395	US	10/377,202	ISSUED	7,129,577	02/27/2003	10/31/2006
Voltage Set Point Control Scheme	005390	US	10/388,829	ISSUED	7,080,265	03/14/2003	07/18/2006
System and Method for Controlling Output-Timing Parameters of Power Converters	005391	US	10/388,831	ISSUED	6,936,999	03/14/2003	08/30/2005
Method and System for Current Sharing Among a Plurality of Power Modules	005402	US	10/401,463	ISSUED	6,788,036	03/28/2003	09/07/2004
Phase-Shifted Resonant Converter Having Reduced Output Ripple	005394	US	10/407,047	ISSUED	6,970,366	04/03/2003	11/29/2005
DC-DC Converter Implemented in a Land Grid Array Package	005403	US	10/423,603	ISSUED	7,026,664	04/24/2003	04/11/2006
Micro Lead Frame Package	005404	US	10/602,100	ISSUED	7,253,506	06/23/2003	08/07/2007
Isolated Drive Circuitry Used in Switch-Mode Power Converters	003676	US	10/648,659	ISSUED	6,791,851	08/26/2003	09/14/2004
Dynamic Control of Power Converter Output Voltage Slew Rate	005393	US	10/670,050	ISSUED	6,914,348	09/24/2003	07/05/2005
Arrangement for Co-Planar Vertical Surface Mounting of Subassemblies on a Mother Board	003660	US	10/716,134	ISSUED	6,815,614	11/18/2003	11/09/2004
Arrangement for Surface Mounting of Subassemblies on a Mother Board	003661	US	10/715,907	ISSUED	7,027,305	11/18/2003	04/11/2006
Adaptive Delay Control Circuit For Switched Mode Power Supply	005398	US	10/724,509	ISSUED	6,958,592	11/26/2003	10/25/2005
Unregulated DC-DC Converter Having Synchronous Rectification with Efficient Gate Drives	005410	US	10/726,893	ISSUED	6,917,529	12/02/2003	07/12/2005
ADC Transfer Function Providing Improved Dynamic Regulation in a Switched Mode Power Supply	005414	US	10/779,475	ISSUED	7,023,190	02/12/2004	04/07/2006
Vertical Power JFET with Low On-Resistance for High Voltage Applications	003386	US	10/828,773	ISSUED	7,235,827	04/20/2004	06/26/2007
Primary Side Turn-Off of Self-Driven Synchronous Rectifiers	005493	US	10/843,406	ISSUED	7,203,041	05/10/2004	04/10/2007
Method and System for Communicating Filter Compensation Coefficients for a Digital Power Control Sys	005416	US	10/889,806	ISSUED	7,249,267	07/12/2004	07/24/2007
System and Method for Managing Fault in a Power System	005415	US	10/890,573	ISSUED	7,372,682	07/13/2004	05/13/2008
Power Supply Packaging System	005417	US	10/925,792	ISSUED	7,154,174	08/24/2004	12/26/2006
Enhanced Connection Arrangement for Co-Planar Vertical Surface Mounting of Subassemblies on a Mother	003680	US	10/972,488	ISSUED	7,145,085	10/21/2004	12/05/2006
System and Method for Providing Digital Pulse Width Modulation	005419	US	10/986,607	ISSUED	6,989,661	11/11/2004	01/24/2006
Integral Molded Heat Sinks on DC-DC Converters and Power Supplies	003390	US	11/044,870	ISSUED	7,236,368	01/26/2005	06/26/2007
DIGITAL POWER MANAGER FOR CONTROLLING AND MONITORING AN ARAY OF POINT-OF-LOAD REGULATORS	005418	US	11/048,014	ISSUED	7,394,445	01/31/2005	07/01/2008
Compensated Droop Method for Paralleling of Power Supplies (C-Droop Method)	003389US	US	11/049,909	ISSUED	7,304,462	02/02/2005	12/04/2007
Digital Output Voltage Regulation Circuit Having First Control Loop for High Speed and Second Control Loop for High Accuracy	005420	US	11/084,766	ISSUED	7,141,956	03/18/2005	11/28/2006
Digital Pulse Width Modulation Controller with Present Filter Coefficients	005421	US	11/099,391	ISSUED	7,239,115	04/04/2005	07/03/2007
System and Method for Controlling Output-Timing Parameters of Power Converters	005423	US	11/103,835	ISSUED	7,068,021	04/11/2005	06/27/2006
System and Method for Controlling a Point-of-Load Regulator	005425	US	11/117,188	ISSUED	7,459,892	04/27/2005	12/02/2008
Bi-Directional MOS Current Sense Circuit	005422	US	11/126,429	ISSUED	7,327,149	05/10/2005	02/05/2008
System for Controlling an Monitoring an Array of Point-of-Load Regulators by a Host	005426	US	11/165,798	ISSUED	7,456,617	06/24/2005	11/25/2008
Dynamic Control of Power Converter Output Voltage Slew Rate	005427	US	11/174,811	ISSUED	6,989,612	07/01/2005	01/24/2006
System and Method for Providing Digital Pulse Width Modulation	005428	US	11/187,182	ISSUED	7,057,379	07/21/2005	06/06/2006
AC Coupled Bias Circuit for Power Converters	003399	US	11/198,601	ISSUED	7,274,575	08/05/2005	09/25/2007
System and Method for Controlling Output-Timing Parameters of Power Converters	005429	US	11/264,057	ISSUED	7,315,156	10/31/2005	01/01/2008
Voltage Set Point Control Scheme	005430	US	11/281,973	ISSUED	7,526,660	11/16/2005	04/28/2009
System and Method for Providing Digital Pulse Width Modulation	005431	US	11/326,813	ISSUED	7,202,651	01/06/2006	04/10/2007
ADC Transfer Function Providing Improved Dynamic Regulation in a Switched Mode Power Supply	005432	US	11/349,853	ISSUED	7,315,157	02/07/2006	01/01/2008
Method and System for Controlling an Array of Point-of-Load Regulators and Auxiliary Devices	005433	US	11/354,550	ISSUED	7,266,709	02/14/2006	09/04/2007
Method and System for Controlling a Mixed Array of Point-of-Load Regulators Through a Bus Translator	005434	US	11/558,848	ISSUED	7,673,157	11/10/2006	03/02/2010
Digital Double-Loop Output Voltage Regulation	005435	US	11/605,045	ISSUED	7,394,236	11/27/2006	07/01/2008
Self Driven Synchronous Rectifier Shutdown Circuit and Method	005494	US	11/614,908	ISSUED	7,333,350	12/21/2006	02/19/2008
Digital Double-Loop Output Voltage Regulation	005436	US	11/671,889	ISSUED	7,554,310	02/06/2007	06/30/2009

Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005437	US	11/696,422	ISSUED	7,737,961	04/04/2007	06/15/2010	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005438	US	11/696,449	ISSUED	7,882,372	04/04/2007	02/01/2011	
Method and System for Controlling an Array of Point-of-Load Regulators and Auxiliary Devices (former	005454	US	11/760,660	ISSUED	8,086,874	06/08/2007	12/27/2011	
Method and System for Communicaitng Filter Compensation Coefficients for a Digital Power Control Sys	005440	US	11/778,647	ISSUED	7,565,559	07/17/2007	07/21/2009	
Method and System for Optimizing Filter Compensation Coefficients for a Digital Power Control System	005439	US	11/781,878	ISSUED	7,743,266	07/23/2007	06/22/2010	
Self Tracking ADC for Digital Power Supply Control Systems	005441	US	11/876,756	ISSUED	7,710,092	10/22/2007	05/04/2010	
System and Method for Interleaving Point-of-Load Regulators	005442	US	11/927,682	ISSUED	7,493,504	10/30/2007	02/17/2009	
System for Controlling an Array of Point-of-Load regulators and Auxiliary Devices	005443	US	11/930,049	ISSUED	7,836,322	10/30/2007	11/16/2010	
System and Method for Managing Fault in a Power System	005445	US	11/930,065	ISSUED	7,554,778	10/30/2007	06/30/2009	
Digital Power Manager for Controlling and Monitoring an Array of Point-of-Load Regulators	005446	US	11/932,796	ISSUED	7,646,382	10/31/2007	01/12/2010	
System and Method for Managing Fault in a Power System	005444	US	11/930,107	ISSUED	7,583,487	10/31/2007	09/01/2009	
Method and System for Controlling and Monitoring an Array of Point-of-Load Regulators	005448	US	11/946,809	ISSUED	7,782,029	11/28/2007	08/24/2010	
Method and Apparatus for Providing an Initial Bias and Enable Signal for a Power Converter	003663	US	12/056,796	ISSUED	8,031,494	03/27/2008	10/04/2011	
Isolated Current Voltage, Voltage to Voltage Converter	005449	US	12/115,452	ISSUED	7,834,613	05/05/2008	11/16/2010	
Apparatus and Method of Optimizing Power System Efficiency Using a Power Loss Model (formerly OMM Fi	005455	US	12/127,726	ISSUED	8,179,705	05/27/2008	05/15/2012	
Circuit for Controlling Synchronous Rectifiers During the Start-Up into Prebiased Output Voltage	001400	US	12/500,741	ISSUED	8,373,403	07/10/2009	02/12/2013	
AC/DC Power Converter with Active Rectification and Input Current Shaping								
AC/DC Power Converter	003069UTL	US	12/707,775	ISSUED	8,503,199	02/18/2010	08/06/2013	
MAGNETIC COMPONENT WITH BOBBINLESS WINDING	003606	US	12/780,498	ISSUED	9,000,878	05/14/2010	04/07/2015	
Power Supply Architecture for Controlling and Monitoring Isolated Output Modules	003096	US	12/905,693	ISSUED	8,502,420	10/15/2010	08/06/2013	
System and Method for Zero-Volt Switching of Half Bridge Converters During Start-Up and Short Circui	003097	US	12/905,699	ISSUED	8,503,195	10/15/2010	08/06/2013	
Modular Power Supply Interconnection System With Pluggable Interface Isolation System for a Bi-directional Communication Bus Line	004787	US	12/957,162	ISSUED	8,766,221	11/30/2010	07/01/2014	
Digital Signal Processor Architecture Optimized for Controlling Switched Mode Power Supply	005401	US	10/361,452	ISSUED	6,850,046	03/30/2011	02/01/2005	
Multi-Phase Resonant Converter with Trimmable Inductor and Phase Current Balancing Method	006672	US	13/227,302	ISSUED	8,749,332	09/07/2011	06/10/2014	
Anti-Vibration Fan Control System and Method for Modular Power Supplies	005325	US	13/237,459	ISSUED	8,845,299	09/20/2011	09/30/2014	
Input Current Shaping Method for Transition and Discontinuous Mode Power Converter	007220	US	13/370,417	ISSUED	8,598,933	02/10/2012	12/03/2013	08/23/2012
Digital Phase Adjustment Method for Multi-Phase Power Converters	007403	US	13/370,564	ISSUED	8,901,901	02/10/2012	12/02/2014	08/30/2012
Integrated Magnetics with Isolated Drive Circuit	006190	US	13/427,384	ISSUED	8,929,103	03/22/2012	01/06/2015	10/11/2012
Circuit and Method for Providing Hold-Up Time in a DC-DC Converter	008216	US	13/705,672	ISSUED	9,024,609	12/05/2012	05/05/2015	01/16/2014
RESONANT CONVERTER WITH AUXILIARY RESONANT COMPONENTS AND HOLDUP TIME CONTROL CIRCUITRY	008229	US	13/739,862	ISSUED	9,065,343	01/11/2013	06/23/2015	08/01/2013
POWER CONVERTER WITH NON-SYMMETRICAL TOTEM POLE RECTIFIER AND CURRENT-SHAPING BRANCH CIRCUITS	009598	US	13/886,386	ISSUED	9,166,498B2	05/03/2013	10/20/2015	08/14/2014
Slotted Bobbin Magnetic Component Devices and Methods	008994	US	14/078,428	ISSUED	9,202,621	11/12/2013	12/01/2015	07/03/2014
Power Converter with Self-Driven Synchronous Rectifier Control Circuitry	009919	US	14/182,109	ISSUED	9,577,546	02/17/2014	02/21/2017	09/18/2014
MULTIPHASE CONVERTER WITH ACTIVE AND PASSIVE INTERNAL CURRENT SHARING	009723	US	14/208,011	ISSUED	9,300,214	03/13/2014	03/29/2016	09/18/2014
Commutation Current Steering Method in a Zero Volt Switching Power Converter Using a Synchronous Rec	010866	US	14/231,797	ISSUED	9,837,920	04/01/2014	12/05/2017	04/02/2015
Circuit and Method for Managing Common Mode Noise in Isolated Resonant DC-DC Power Converters	011073NP	US	14/611,374	ISSUED	9,502,987	02/02/2015	11/22/2016	
Power Converter Output Stage Using Heat Dissipating Bus Bars	012477	US	14/625,120	ISSUED	9,641,095	02/18/2015	05/02/2017	
Method to Operate a Resonant Converter at Characteristic Frequency of Power Stage	011886NP	US	14/705,069	ISSUED	9,893,609	05/06/2015	02/13/2018	
High Current Busbar System for Low-Profile Power Shelves	013327NP	US	14/973,873	ISSUED	9,762,037	12/18/2015	09/12/2017	
Power Switching Device with Integrated Current Sensing Transformer	013479NP	US	15/010,625	ISSUED	10,429,416	01/29/2016	10/01/2019	
Power Factor Correction Current Sense with Shunt Switching Circuit	013742NP	US	15/046,640	ISSUED	9,941,784	02/18/2016	04/10/2018	
Distributed Planar Inductor with Multi-2D Geometry for Energy Storage	015188NP	US	15/180,598	ISSUED	10,163,561	06/13/2016	12/25/2018	
DC/DC Converter for High Voltage Applications	015234NP	US	15/354,293	ISSUED	10,158,291	11/17/2016	12/18/2018	
Recuperative Gate Drive Circuit and Method	017681	US	15/638,467	ISSUED	10,250,249	06/30/2017	04/02/2019	
High Current Busbar System for Low-Profile Power Shelves	013327CON	US	15/700,300	ISSUED	10,128,639	09/11/2017	11/13/2018	
Dual Leg Slotted Bobbin Magnetic Component with Two-Legged Core	020732NP	US	16/864,815	PENDING		05/01/2020		

OS/Model Ref	Country	Title	Status	App. No.	Filing Date	Publ. No.	Issue Date	Exp. Date
0144-0229	US	ELECTRICAL DISCHARGE OF A PLUG	ISSUED	09/619,060	18-Jul-2000	6,468,997	22-Oct-2002	18-Jul-2020
0144-0237	FR	A JACK PROVIDING ELECTRICAL DISCHARGE OF A PLUG THROUGH A RESISTIVE ELEMENT	ISSUED	0010989	28-Aug-2000	0010989	03-Oct-2003	28-Aug-2020
0144-0253	TW	CAPLESS FUSE	ISSUED	90103441	15-Feb-2001	157400	04-Oct-2002	15-Feb-2021
0144-0353	BE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0355	DE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0250	EP	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0354	FR	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0356	GB	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0357	IE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0358	NL	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0359	SE	CAPLESS FUSE	ISSUED	01107329.3	24-Mar-2001	1146535	28-Nov-2007	24-Mar-2021
0144-0251	CN	CAPLESS FUSE	ISSUED	01116282.1	09-Apr-2001	ZL 01116282.1	15-Feb-2006	09-Apr-2021
0144-0298	HK	CAPLESS FUSE	ISSUED	02101804.2	08-Mar-2002	1040457	29-Sep-2006	09-Apr-2021
0144-0252	JP	CAPLESS FUSE	ISSUED	2001110243	09-Apr-2001	4703884	18-Mar-2011	09-Apr-2021
0144-0272	HK	LINE INTERFACE TRANSFORMER	ISSUED	1103493.5	22-Mar-2001	1032844	22-Apr-2005	22-May-2021
0144-0280	US	HIGHLY EFFICIENT SELF-OSCILLATION BOOST DC/DC CONVERTER	ISSUED	09/931,608	16-Aug-2001	6,597,155	22-Jul-2003	16-Aug-2021
0144-0279	US	SELF-DRIVEN SYNCHRONOUS RECTIFICATION SCHEME FOR WIDE OUTPUT RANGE	ISSUED	09/932,398	17-Aug-2001	6,583,993	24-Jun-2003	17-Aug-2021
0144-0307	US	EMI SUPPRESSION TECHNIQUE FOR RJ CONNECTORS WITH INTEGRATED MAGNETICS	ISSUED	10/328,836	23-Dec-2002	6,840,817	11-Jan-2005	22-Aug-2021
0144-0287	US	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	09/954,583	17-Sep-2001	6,565,391	20-May-2003	17-Sep-2021
0144-0311	CN	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	01815737.8	18-Sep-2001	CN 1265512C	19-Jul-2006	18-Sep-2021
0144-0314	JP	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	200257617	18-Sep-2001	4606695	15-Oct-2010	18-Sep-2021
0144-0290	TW	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	90123056	11-Feb-2002	192629	08-Apr-2004	18-Sep-2021
0144-0281	US	MULTIPLE OUTPUT POWER ADAPTER	ISSUED	09/932,385	17-Aug-2001	6,879,497	12-Apr-2005	23-Oct-2021
0144-0283	US	SELF-DRIVEN SYNCHRONOUS RECTIFICATION SCHEME	ISSUED	10/119,424	09-Apr-2002	6,563,719	13-May-2003	09-Apr-2022
0144-0329	CA	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	2459942	11-Sep-2002	2459942	01-Apr-2008	11-Sep-2022
0144-0330	GB	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	0405043.1	11-Sep-2002	2400757	08-Jun-2005	11-Sep-2022
0144-0332	JP	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	2003528073	11-Sep-2002	4188831	19-Sep-2008	11-Sep-2022
0144-0304	TW	CLIP FOR REPLACEABLE SURFACE MOUNTED DEVICES	ISSUED	91120909	12-Sep-2002	183678	09-Dec-2003	12-Sep-2022
0144-0309	CA	HIGH DENSITY RJ CONNECTOR ASSEMBLY	ISSUED	2420268	27-Feb-2003	2420268	12-Oct-2010	27-Feb-2023
0144-0318	US	OVERMOLDED DEVICE WITH CONTOURED SURFACE	ISSUED	10/438,721	15-Mar-2003	6,930,305	27-Sep-2005	15-Dec-2023
0144-0321	US	MULTI-PORT RJ CONNECTOR	ISSUED	10/657,343	08-Sep-2003	7,717,749	18-May-2010	24-Mar-2024
0144-0326	US	CONVERTER WITH INTEGRATED ACTIVE CLAMP CIRCUIT AND BIAS CIRCUIT	ISSUED	10/776,967	10-Feb-2004	7,012,817	14-Mar-2006	16-Apr-2024
0144-0335	US	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	10/857,324	28-May-2004	6,980,411	27-Dec-2005	28-May-2024
0144-0337	TW	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	93115520	31-May-2004	1351150	21-Oct-2011	30-May-2024
0144-0342	CN	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	200480015605.2	04-Jun-2004	Z1.20048001.5605.2	03-Feb-2010	03-Jun-2024
0144-0343	DE	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	112004000913.8	04-Jun-2004	112004000913.8	15-Oct-2009	04-Jun-2024
0144-0340	GB	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	0529296.3	04-Jun-2004	2417841	21-Feb-2007	04-Jun-2024
0144-0345	HK	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	06113351.0	04-Jun-2004	10992953	23-Jul-2010	04-Jun-2024
0144-0344	JP	TELECOM CIRCUIT PROTECTION APPARATUS	ISSUED	2006515262	04-Jun-2004	4708338	25-Mar-2011	04-Jun-2024
0144-0334	US	LAN MAGNETIC INTERFACE CIRCUIT	ISSUED	10/851,618	21-May-2004	7,123,117	17-Oct-2006	25-Nov-2024
0144-0362	US	LAN MAGNETIC INTERFACE CIRCUIT	ISSUED	10/851,618	21-May-2004	7,123,117	17-Oct-2006	25-Nov-2024
0144-0339	US	PREVENTING DAMAGE TO RJ JACKS FROM IMPROPER PLUG INSERTION	ISSUED	11/014,286	16-Dec-2004	7,125,288	24-Oct-2006	16-Dec-2024

014440338	US	PREVENTING DAMAGE TO RJ JACKS FROM IMPROPER PLUG INSERTION	ISSUED	11/014,277	16-Dec-2004	7,311,562	25-Dec-2007	16-Dec-2024
014440325	US	DIFFERENTIAL ELECTRICAL SURGE PROTECTION WITHIN A LAN MAGNETICS INTERFACE CIRCUIT	ISSUED	10/833,750	28-Apr-2004	7,808,751	05-Oct-2010	26-May-2026
014440347	US	DC-DC FLYBACK CONVERTER HAVING A SYNCHRONOUS RECTIFICATION SELF-DRIVEN CIRCUIT	ISSUED	11/561,937	21-Nov-2006	7,791,903	07-Sep-2010	13-Nov-2027

TRADEMARK

REEL: 007593 FRAME: 0402

RECORDED: 01/28/2022