PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5621637

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT	07/16/2019

RECEIVING PARTY DATA

Name:	VISHAY DALE ELECTRONICS, INC.
Street Address:	1122 23RD STREET
City:	COLUMBUS
State/Country:	NEBRASKA
Postal Code:	68601-3647
Name:	DALE ELECTRONICS, INC.
Street Address:	1122 23RD STREET
City:	COLUMBUS
State/Country:	NEBRASKA
Postal Code:	68601-3647
Name:	VISHAY INTERTECHNOLOGY, INC.
Street Address:	63 LANCASTER AVENUE
City:	MALVERN
State/Country:	PENNSYLVANIA
Postal Code:	19355
Name:	SILICONIX INCORPORATED
Street Address:	2585 JUNCTION AVENUE
City:	SAN JOSE
State/Country:	CALIFORNIA
Postal Code:	95134
Name:	VISHAY SPRAGUE, INC.
Street Address:	2813 WEST ROAD
City:	BENNINGTON
State/Country:	VERMONT
Postal Code:	05201
Name:	VISHAY TECHNO COMPONENTS, LLC
Street Address:	2813 WEST ROAD
City:	BENNINGTON
	PATENT

PATENT

505574838 REEL: 049826 FRAME: 0312

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State/Country:	VERMONT	
Postal Code:	05201	
Name:	VISHAY EFI, INC.	
Street Address:	2813 WEST ROAD	
City:	BENNINGTON	
State/Country:	VERMONT	
Postal Code:	05201	
Name:	VISHAY VITRAMON, INC.	
Street Address:	2813 WEST ROAD	
City:	BENNINGTON	
State/Country:	VERMONT	
Postal Code:	05201	
Name:	SPRAGUE ELECTRIC COMPANY	
Street Address:	2813 WEST ROAD	
City:	BENNINGTON	
State/Country:	VERMONT	
Postal Code:	05201	

PROPERTY NUMBERS Total: 383

Property Type	Number
Patent Number:	6204744
Patent Number:	6460244
Patent Number:	5604477
Patent Number:	5287083
Patent Number:	5302932
Patent Number:	5986533
Patent Number:	5970604
Patent Number:	5922514
Patent Number:	6215387
Patent Number:	6201215
Patent Number:	6366192
Patent Number:	5999085
Patent Number:	6198375
Patent Number:	6449829
Patent Number:	6946944
Patent Number:	7034645
Patent Number:	7221249
Patent Number:	7263761
Patent Number:	7345562

PATENT

REEL: 049826 FRAME: 0313

Property Type	Number
Patent Number:	6401329
Patent Number:	6441718
Patent Number:	6725529
Patent Number:	6901655
Patent Number:	6510605
Patent Number:	6181234
Patent Number:	6587025
Patent Number:	7214295
Patent Number:	7170389
Patent Number:	7038572
Patent Number:	7102484
Patent Number:	6925704
Patent Number:	7042328
Patent Number:	7190252
Patent Number:	RE39660
Patent Number:	6680668
Patent Number:	6671945
Patent Number:	7247250
Patent Number:	6880234
Patent Number:	6669435
Patent Number:	6873028
Patent Number:	6727798
Patent Number:	7089652
Patent Number:	6892443
Patent Number:	7154370
Patent Number:	7278201
Patent Number:	7394845
Patent Number:	6538300
Patent Number:	6621142
Patent Number:	6621143
Patent Number:	6271060
Patent Number:	6316287
Patent Number:	6562647
Patent Number:	6876061
Patent Number:	7426102
Patent Number:	6970496
Patent Number:	6535545
Patent Number:	6441475

Property Type	Number
Patent Number:	7211877
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Patent Number:	5429964
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Patent Number:	5506496
Patent Number:	5689128

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Patent Number:	6590440
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Patent Number:	4824795
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Patent Number:	5053927
Application Number:	12013725
Application Number:	12535757
Application Number:	11380293
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Application Number:	11601501
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Application Number:	61309824
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Application Number:	09135716
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Application Number:	10254385
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Application Number:	10869382
Application Number:	11724961
Application Number:	12050929
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Application Number:	11644553
Application Number:	12123664
Application Number:	11655493

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Application Number:	11823375
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Application Number:	12548841
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Application Number:	12610148
Application Number:	12824075
Application Number:	12869554
Application Number:	12788158
Application Number:	12730230
Application Number:	11759523
Application Number:	12759769
Application Number:	12107349
Application Number:	12189492
Application Number:	12052251
Application Number:	12189465
Application Number:	12553508

CORRESPONDENCE DATA

Fax Number: (800)494-7512

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.

Phone: 202-370-4756

Email: ipteam@cogencyglobal.com

Correspondent Name: JAY DASILVA

Address Line 1: 1025 VERMONT AVE NW, SUITE 1130

Address Line 2: COGENCY GLOBAL INC.
Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	1107704 PAT REL B
NAME OF SUBMITTER:	ELIZABETH WAGENBACH
SIGNATURE:	/Elizabeth Wagenbach/
DATE SIGNED:	07/17/2019

Total Attachments: 79

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RELEASE OF SECURITY INTEREST IN PATENTS AND TRADEMARKS, dated as of July 16, 2019 (this "Release"), by JPMORGAN CHASE BANK, N.A., as Administrative Agent.

- A. Reference is made to (i) the Credit Agreement dated as of December 1, 2010, as amended and restated as of August 8, 2013, as further amended and restated as of December 10, 2015 (as further amended, restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), among Vishay Intertechnology, Inc., a Delaware corporation (the "Borrower"), the Subsidiary Borrowers from time to time party thereto, the Lenders from time to time party thereto and JPMorgan Chase Bank, N.A., as administrative agent, (ii) the Guarantee and Collateral Agreement dated as of December 1, 2010, as amended by that certain Reaffirmation Agreement dated as of August 8, 2013 among the Borrower, the subsidiaries of the Borrower party thereto and JPMorgan Chase Bank, N.A., as administrative agent (as further amended, restated, supplemented or otherwise modified from time to time, the "Collateral Agreement"), among the Borrower, the Domestic Subsidiary Loan Parties from time to time party thereto and JPMorgan Chase Bank, N.A., as administrative agent (in such capacity, the "Administrative Agent"), and (iii) the Patent and Trademark Security Agreements dated as of December 1, 2010, August 8, 2013 and December 10, 2015, in each case, among the Borrower, the Domestic Subsidiaries of the Borrower from time to time party thereto (together with the Borrower, the "Grantors") and the Administrative Agent (the documents set forth in clauses (ii) and (iii) above, the "Security Agreements" and each a "Security Agreement").
- B. Pursuant to the Security Agreements, the Grantors granted to the Administrative Agent, for the benefit of the Secured Parties, a security interest in all right, title and interest of the Grantors in, among other things, the patents and trademarks set forth on Schedule I hereto (the "Patent and Trademark Collateral"), which security interests were recorded with the United States Patent and Trademark Office on (i) January 14, 2011 at Reel/Frame 004453/0500, (ii) January 21, 2011 at Reel/Frame 025675/0001, (iii) September 5, 2013 at Reel/Frame 031170/0001, (iv) September 5, 2013 at Reel/Frame 5105/0896, (v) December 10, 2015 at Reel/Frame 037261/0616 and (vi) December 10, 2015 at Reel/Frame 5686/0277.
- C. Pursuant to the Payoff Letter dated as of June 5, 2019, between the Borrower and the Administrative Agent, the Administrative Agent agreed to release any and all security interests it may have in the Patent and Trademark Collateral pursuant to the Security Agreements.

Accordingly, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Administrative Agent, on behalf of the Secured Parties, does hereby state as follows:

SECTION 1. <u>Terms</u>. Each capitalized term used but not otherwise defined herein shall have the meaning specified in the Credit Agreement or the applicable Security Agreement.

[[5202801]]

SECTION 2. Release. The Administrative Agent, on behalf of itself, the Secured Parties and their permitted successors and assigns, does hereby terminate, release, relinquish and discharge its and their security interest granted under the Security Agreements in the Patent and Trademark Collateral and any right, title or interest granted under the Security Agreements it has in the Patent and Trademark Collateral shall hereby cease and become void. This Release is made without representation or warranty, express or implied, of any kind, by, or recourse to, the Administrative Agent or any other Secured Party.

THIS RELEASE SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

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[[5202801]]

IN WITNESS WHEREOF, the Administrative Agent has caused this Release to be duly executed as of the day and year first above written.

JPMORGAN CHASE BANK, N.A., as

Administrative Agent,

by

Name: Title: Daglas P Panchal Executive Director

[Signature Page - Release of Security Interest in Patents and Trademarks]

SCHEDULE I

[See attached]

[[5202801]]

Patents and Trademarks of Vishay Dale Electronics, Inc.

U.S. Patent Registrations and Patent Applications

(a)

Type	Serial No.	Patent No.	Title: (Patent Description)	Status	File Date	Issue Date	Domestic Loan Party
UTL	08/963,224	6,204,744	HIGH CURRENT, LOW PROFILE INDUCTOR	ISSUED	11/3/1997	3/20/2001	Vishay Dale Electronics, Inc.
UTL	09/547,155	6,460,244	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	ISSUED	4/11/2000	10/8/2002	Vishay Dale Electronics, Inc.
UTL	08/350,960	5,604,477	SURFACE MOUNT RESISTOR AND METHOD FOR MAKING SAME	ISSUED	12/7/1994	2/18/1997	Dale Electronics, Inc.
UTL	07/860,403	5,287,083	BULK METAL CHIP RESISTOR	ISSUED	3/30/1992	2/15/1994	Dale Electronics, Inc.
UTI	07/881,856	5,302,932	MONOLYTHIC MULTILAYER CHIP INDUCTOR AND METHOD FOR MAKING SAME	ISSUED	5/12/1992	4/12/1994	Dale Electronics, Inc.
UTL	08/665,788	5,986,533	MONOLITHIC THICK FILM INDUCTOR METHOD FOR MAKING SAME	ISSUED	6/18/1996	11/16/1999	Dale Electronics, Inc.
UTL	08/881,480	5,970,604	METHOD OF MAKING A MONOLITHIC THICK FILM INDUCTOR	ISSUED	6/24/1997	10/26/1999	Dale Electronics, Inc.
UTL	08/936,193	5,922,514	THICK FILM LOW VALUE HIGH FREQUENCY INDUCTOR, AND METHOD OF MAKING THE SAME	ISSUED	9/17/1997	7/13/1999	Dale Electronics, Inc.

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Туре
11/609,165	11/409,651	11/038,880	10/244,777	09/546,859	09/271,748	09/247,490	09/834,123	09/448,676	09/080,494	Serial No.
7,263,761	7,221,249	7,034,645	6,946,944	6,449,829	6,198,375	5,999,085	6,366,192	6,201,215	6,215,387	Patent No.
METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	INDUCTOR COIL	INDUCTOR COIL AND METHOD FOR MAKING SAME	INDUCTOR COIL AND METHOD FOR MAKING SAME	METHOD FOR MAKING INDUCTOR COIL STRUCTURE	INDUCTOR COIL STRUCTURE	SURFACE MOUNTED FOUR TERMINAL RESISTOR	STRUCTURE OF MAKING A THICK FILM LOW VALUATE HIGH FREQUENCY INDUCTOR	THE METHOD OF MAKING A THICK FILM LOW VALUE HIGH FREQUENCY INDUCTOR	THICK FILM LOW VALUE HIGH FREQUENCY INDUCTOR AND METHOD OF MAKING THE SAME	Title: (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
12/11/2006	4/24/2006	1/20/2005	9/16/2002	4/10/2000	3/18/1999	2/10/1999	4/12/2001	11/24/1999	5/18/1998	File Date
9/4/2007	5/22/2007	4/25/2006	9/20/2005	9/17/2002	3/6/2001	12/7/1999	4/2/2002	3/13/2001	4/10/2001	Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

				1						
UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
09/774,854	09/474,448	09/471,617	10/797,866	10/078,311	09/715,252	09/471,622	12/535,757	12/013,725	11/782,020	Serial No.
6,587,025	6,181,234	6,510,605	6,901,655	6,725,529	6,441,718	6,401,329			7,345,562	Patent No.
SIDE-BY-SIDE COIL INDUCTOR	MONOLYTHIC METAL STRIP RESISTOR WITH HEAT SINKING WINGS	METHOD FOR MAKING FORMED SURFACE MOUNT RESISTOR	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR.	OVERLAY SURFACE MOUNT RESISTOR	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR.	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	PUBLISHED	PUBLISHED	ISSUED	Status
1/31/2001	12/29/1999	12/21/1999	3/10/2004	2/18/2002	11/17/2000	12/21/1999	8/5/2009	1/14/2008	7/24/2007	File Date
7/1/2003	1/30/2001	1/28/2003	6/7/2005	4/27/2004	8/27/2002	6/11/2002			3/18/2008	Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	Туре
11/123,508	10/744,846	10/441,649	09/811,844	10/079,010	09/829,169	Serial No.
7,042,328	6,925,704	7,102,484	7,038,572	7,170,389	7,214,295	Patent No.
HIGH POWER RESISTOR HAVING AN IMPROVED OPERATING TEMPERATURE RANGE	METHOD FOR MAKING HIGH POWER RESISTOR HAVING IMPROVED OPERATING TEMPERATURE RANGE	HIGH POWER RESISTOR HAVING AN IMPROVED OPERATING TEMPERATURE RANGE AND METHOD OF MAKING SAME	POWER CHIP RESISTOR	APPARATUS FOR TANTALUM PENTOXIDE MOISTURE BARRIER IN FILM RESISTORS	METHOD FOR TANTALUM PENTOXIDE MOISTURE BARRIER IN FILM RESISTORS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/5/2005	12/23/2003	5/20/2003	3/19/2001	2/19/2002	4/9/2001	File Date
5/9/2006	8/9/2005	9/5/2006	5/2/2006	1/30/2007	5/8/2007	<u>Issue Date</u>
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, I.nc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
12/536,792	12/205,197	12/114,057	12/026,939	12/134,240	11/862,572	11/535,758	11/380,293	11/066,865	Serial No.
								7,190,252	Patent No.
METAL STRIP RESISTOR FOR MITIGATING EFFECTS OF THERMAL EMF	RESISTOR AND METHOD FOR MAKING SAME	HIGHLY COUPLED INDUCTOR	RESISTOR AND METHOD FOR MAKING SAME	HIGH POWERED INDUCTORS USING A. MAGNETIC BIAS	POWER RESISTOR.	INDUCTOR WITH THERMALLY STABLE RESISTANCE	FLUX CHANNELED, HIGH CURRENT INDUCTOR	SURFACE MOUNT ELECTRICAL RESISTOR WITH THERMALLY CONDUCTIVE, ELECTRICALLY INSULATIVE FILLER AND METHOD FOR USING SAME	<u>Title:</u> (Patent Description)
PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	ISSUED	Status
8/6/2009	9/5/2008	5/2/2008	2/6/2008	6/6/2008	9/27/2007	9/27/2006	4/26/2006	2/25/2005	File Date
								3/13/2007	Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL 13/109,576	UTL 13/689,928	PRV 61/290,429	PRV 61/359,000	UTL 12/650,079	UTL 12/874,514	Type Serial No. Patent No.
METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	SURFACE MOUNT RESISTOR WITH TERMINALS FOR HIGH POWER DISSIPATION AND METHOD FOR MAKING SAME	SURFACE MOUNT RESISTOR WITH TERMINALS FOR HIGH POWER DISSIPATION AND METHOD FOR MAKING SAME	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION	SURFACE MOUNT RESISTOR WITH TERMINALS FOR HIGH POWER DISSIPATION AND METHOD FOR MAKING SAME	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION	(Patent Description)
PENDING	PENDING	PENDING	PENDING	PENDING	PENDING	Status
5/17/2011	11/30/2012	12/28/2009	6/28/2010	12/30/2009	9/2/2010	File Date
						Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
031170/0001	031170/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

031170/0001	Vishay Dale Electronics, Inc.		1/25/2013	PENDING	INTEGRATED CIRCUIT ELEMENT AND ELECTRONIC CIRCUIT FOR LIGHT EMITTING DIODE APPLICATIONS		13/750,404	UTL
031170/0001	Vishay Dale Electronics, Inc.		12/19/2012	PENDING	METHOD FOR MAKING INDUCTOR COIL STRUCTURE		13/720,618	UTL
031170/0001	Vishay Dale Electronics, Inc.		8/31/2012	PENDING	HIGHLY COUPLED INDUCTOR		13/600,770	UTL
031170/0001	Vishay Dale Electronics, Inc.		8/8/2012	PENDING	RESISTOR AND METHOD FOR MAKING SAME		13/569,721	UTL
031170/0001	Vishay Dale Electronics, Inc.		6/11/2012	PENDING	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION		13/493,402	UTL
031170/0001	Vishay Dale Electronics, Inc.		5/1/2012	PENDING	HEAT SPREADER FOR ELECTRICAL COMPONENTS		13/462,958	UTL
031170/0001	Vishay Dale Electronics, Inc.		8/19/2011	PENDING	HIGH POWERED INDUCTORS USING A MAGNETIC BIAS		13/213,877	UTL
031170/0001	Vishay Dale Electronics, Inc.		5/5/2011	PENDING	FOUR-TERMINAL RESISTOR WITH FOUR RESISTORS AND ADJUSTABLE TEMPERATURE COEFFICIENT OF RESISTANCE		13/127,838	UIL
Reel/Frame	Domestic Loan Party	<u>Issue Date</u>	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	Туре

UTL	UTL	UTL	UTL	UTL	PRV	PRV	PRV	UTL	UTL	Type
13/198,274	13/051,585	12,950,177	13/096,715	12/134,240	61/752,278	61/751,562	61/591,018	13/768,039	13/750,762	Serial No.
8,378,772	8,344,843	8,319,598	8,258,907	8,004,379						Patent No.
INDUCTOR WITH THERMALLY STABLE RESISTANCE	RESISTOR AND METHOD FOR MAKING SAME	POWER RESISTOR	HIGHLY COUPLED INDUCTOR	HIGH POWERED INDUCTORS USING A MAGNETIC BIAS	ELECTRONIC MODULE AND METHOD FOR MAKING SAME	WIRELESS SIDE CHARGING	INTEGRATED CIRCUIT ELEMENT AND ELECTRONIC CIRCUIT FOR LIGHT EMITTING DIODE APPLICATIONS	INDUCTOR WITH THERMALLY STABLE RESISTANCE	LOW PROFILE HIGH CURRENT COMPOSITE TRANSFORMER	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	PENDING	PENDING	PENDING	PENDING	PENDING	Status
8/4/2011	3/18/2011	11/19/2010	4/28/2011	6/6/2008	1/14/2013	1/11/2013	1/26/2012	2/15/2013	1/25/2013	File Date
2/19/2013	1/1/2013	11/27/2012	9/4/2012	8/23/2011						Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	Reel/Frame

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UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
12/535,757	12/013,725	11/782,020	11/609,165	11/409,651	11/038,880	10/244,777	09/546,859	09/271,748	09/247,490	09/448,676	Serial No.
7.986,207	7,921,546	7,345,562	7,263,761	7,221,249	7,034,645	6,946,944	6,449,829	6,198,375	5,999,085	6,201,215	Patent No.
METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	INDUCTOR COIL	INDUCTOR COIL AND METHOD FOR MAKING SAME	INDUCTOR COIL AND METHOD FOR MAKING SAME	METHOD FOR MAKING INDUCTOR COIL STRUCTURE	INDUCTOR COIL STRUCTURE	SURFACE MOUNTED FOUR TERMINAL RESISTOR	THE METHOD OF MAKING A THICK FILM LOW VALUE HIGH FREQUENCY INDUCTOR	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
8/5/2009	1/1/14/200	7/24/2007	12/11/2006	4/24/2006	1/20/2005	9/16/2002	4/10/2000	3/18/1999	2/10/1999	11/24/1999	File Date
7/26/2011	4/12/2011	3/18/2008	9/4/2007	5/22/2007	4/25/2006	9/20/2005	9/17/2002	3/6/2001	12/7/1999	3/13/2001	Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	Reel/Frame

Type	Serial No.	Patent No.	<u>Title:</u> (Patent Description)	<u>Status</u>	File Date	Issue Date	Domestic Loan Party	Reel/Frame
UTL	09/471,622	6,401,329	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR	ISSUED	12/21/1999	6/11/2002	Vishay Dale Electronics, Inc.	037261/0616
UTL	09/715,252	6,441,718	OVERLAY SURFACE MOUNT RESISTOR	ISSUED	11/17/2000	8/27/2002	Vishay Dale Electronics, Inc.	037261/0616
UTL	10/078,311	6,725,529	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR	ISSUED	2/18/2002	4/27/2004	Vishay Dale Electronics, Inc.	037261/0616
TTU	10/797,866	6,901,655	METHOD FOR MAKING OVERLAY SURFACE MOUNT RESISTOR	ISSUED	3/10/2004	6/7/2005	Vishay Dale Electronics, Inc.	037261/0616
UTL	09/471,617	6,510,605	METHOD FOR MAKING FORMED SURFACE MOUNT RESISTOR	ISSUED	12/21/1999	1/28/2003	Vishay Dale Electronics, Inc.	037261/0616
TLU	10/079,010	7,170,389	APPARATUS FOR TANTALUM PENTOXIDE MOISTURE BARRIER IN FILM RESISTORS	ISSUED	2/19/2002	1/30/2007	Vishay Dale Electronics, Inc.	037261/0616
UTL	09/811,844	7,038,572	POWER CHIP RESISTOR	ISSUED	3/19/2001	5/2/2006	Vishay Dale Electronics, Inc.	037261/0616
UTL	10/441,649	7,102,484	HIGH POWER RESISTOR HAVING AN IMPROVED OPERATING TEMPERATURE RANGE AND METHOD OF MAKING SAME	ISSUED	5/20/2003	9/5/2006	Vishay Dale Electronics, Inc.	037261/0616

UTL	UTL	UTL	UTL	UTL	UTL	UIL	<u> Type</u>
12/205,197	12/026,939	11/862,572	11/535,758	11/066,865	11/123,508	10/744,846	Serial No.
8,242,878			8,018,310	7,190,252	7,042,328	6,925,704	Patent No.
RESISTOR AND METHOD FOR MAKING SAME	RESISTOR AND METHOD FOR MAKING SAME	POWER RESISTOR	INDUCTOR WITH THERMALLY STABLE RESISTANCE	SURFACE MOUNT ELECTRICAL RESISTOR WITH THERMALLY CONDUCTIVE, ELECTRICALLY INSULATIVE FILLER AND METHOD FOR USING SAME	HIGH POWER RESISTOR HAVING AN IMPROVED OPERATING TEMPERATURE RANGE	METHOD FOR MAKING HIGH POWER RESISTOR HAVING IMPROVED OPERATING TEMPERATURE RANGE	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	PUBLISHED	ISSUED	ISSUED	ISSUED	Ganssi	Status
9/5/2008	2/6/2008	9/27/2007	9/27/2006	2/25/2005	5/5/2005	12/23/2003	File Date
8/14/2012	3/22/2011		9/13/2011	3/13/2007	5/9/2006	8/9/2005	<u>Issue Date</u>
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
13/213,877	13/198,274	13/109,576	13/127,838	13/051,585	12/650,079	12/874,514	12/536,792	Serial No.
	8,378,772		8,581,687	8,344,843	8,325,007	8,198,977	8,248,202	Patent No.
HIGH POWERED INDUCTORS USING A MAGNETIC BIAS	INDUCTOR WITH THERMALLY STABLE RESISTANCE	METHOD FOR MAKING A HIGH CURRENT LOW PROFILE INDUCTOR	FOUR-TERMINAL RESISTOR WITH FOUR RESISTORS AND ADJUSTABLE TEMPERATURE COEFFICIENT OF RESISTANCE	RESISTOR AND METHOD FOR MAKING SAME	SURFACE MOUNT RESISTOR WITH TERMINALS FOR HIGH POWER DISSIPATION AND METHOD FOR MAKING SAME	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION	METAL STRIP RESISTOR FOR MITIGATING EFFECTS OF THERMAL EMF	Title: (Patent Description)
PENDING	ISSUED	PENDING	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
8/19/2011	8/4/2011	5/17/2011	5/5/2011	3/18/2011	12/30/2009	9/2/2010	8/6/2009	File Date
	2/19/2013		11/12/2013	1/1/2013	12/4/2012	6/12/2012	2102/12/8	Issue Date
Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Domestic Loan Party
037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	Reel/Frame

Type UTL	Serial No. 13/750,404 13/750,762	Patent No.	Itile: (Patent Description) INTEGRATED INTEGRATED CIRCUIT ELEMENT AND ELECTRONIC CIRCUIT FOR LIGHT EMITTING DIODE APPLICATIONS LOW PROFILE HIGH CURRENT COMPOSITE TRANSFORMER ELECTRONIC MODULE AND	Status PENDING PENDING	File Date 1/25/2013 1/25/2013	Issue Date	Domestic Loan Party Vishay Dale Electronics, Inc. Vishay Dale Electronics, Inc. Vishay Dale Vishay Dale
PRV	61/752,278		ELECTRONIC MODULE AND METHOD FOR MAKING SAME	PENDING	1/14/2013		Vishay Dale Electronics, Inc.
UTL	14/015,488	8,878,643	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION	ISSUED	8/30/2013	11/4/2014	Vishay Dale Electronics, Inc.
UTL	14/228,780		RESISTOR AND METHOD FOR MAKING SAME	PENDING	3/28/2014		Dale Electronics, Inc.
UTL	14/203,234		RESISTOR AND METHOD OF MANUFACTURE	PENDING	3/10/2014		Vishay-Dale
UTL	13/730,155	8,730,003	RESISTOR AND METHOD FOR MAKING SAME	ISSUED	12/28/2012	5/20/2014	Dale Electronics, Inc.
UTL	14/242,982		MAGNETIC COMPONENTS AND METHODS FOR MAKING SAME	PENDING	4/2/2014		Dale Electronics, Inc.
UTL	14/280,230		RESISTOR AND METHOD FOR MAKING SAME	PENDING	5/16/2014		Dale Electronics, Inc.

Prov	UTL	UTL	UTL	UTL	Design	UTL	<u> Type</u>
62/202,580	14/563,560	14/531,505	14/473,118	13/725,018	29/491,946	14/287,883	Serial No.
				8,823,483			Patent No.
MOLDED PASSIVE COMPONENT FOR HIGH VOLTAGE APPLICATIONS	THERMALLY SPRAYED THIN FILM RESISTOR AND METHOD OF MAKING	RESISTOR WITH TEMPERATURE COEFFICIENT OF RESISTANCE (TCR) COMPENSATION	POWER RESISTOR WITH INTEGRATED HEAT SPREADER	POWER RESISTOR WITH INTEGRATED HEAT SPREADER	EDGE-WOUND RESISTOR	EDGE-WOUND RESISTOR, RESISTOR ASSEMBLY, AND METHOD OF MAKING SAME	<u>Title:</u> (Patent Description)
PENDING	PENDING	PENDING	PENDING	ISSUED	PENDING	PENDING	Status
8/7/2015	12/8/2014	11/3/2014	8/29/2014	12/21/2012	5/27/2014	5/27/2014	<u>File Date</u>
				9/2/2014			<u>Issue Date</u>
Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Vishay Dale Electronics, Inc.	Dale Electronics, Inc.	Dale Electronics, Inc.	Dale Electronics, Inc.	Dale Electronics, Inc.	Domestic Loan Party
037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	037261/0616	Reel/Frame

(b) <u>U.S. Trademarks and Trademark Applications</u>

* Some of the trademarks listed below have been filed with the USPTO under Dale Electronics, Inc. or Vishay Dale Electronics, Inc. March 26, 2015. Dale Electronics, Inc. changed its name to Vishay Dale Electronics, Inc. on June 4, 1997 and to Vishay Dale Electronics, LLC on

WSR	WSL	POWER METAL STRIP	IHLP	DALE	WSR	WSL	POWER METAL STRIP	IHLP	DALE	Trademark
Vishay Dale Electronics, Inc.	Legal Owner									
United States	Country									
3264991	3431324	2074628	3394307	1383220	3264991	3431324	2074628	3394307	1383220	Reg.#
7/17/2007	5/20/2008	6/24/1997	3/11/2008	2/18/1986	7/17/2007	5/20/2008	6/24/1997	3/11/2008	2/18/1986	Reg. Date
5686/0277	5686/0277	5686/0277	5686/0277	5686/0277	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	Reel/Frame

Patents and Trademarks of Vishay Intertechnology, Inc.

U.S. Patent Registrations and Patent Applications

(a)

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UTL	UTL	UTI	UTI	UTL	UTL	UTE	UTL	Type
10/233,184	10/002,868	09/820,064	09/810,206	10/964,357	10/079,085	09/765,901	09/568,937	<u>Serial No.</u>
6,727,798	6,873,028	6,669,435	6,880,234	7,247,250	6,671,945	6,680,668	RE39,660	Patent No.
FLIP CHIP RESISTOR AND ITS MANUFACTURING METHOD	SURGE CURRENT CHIP RESISTOR	PRECISION RESISTOR TUBE FEEDER	METHOD FOR THIN FILM NTC THERMISTOR	METHOD FOR MANUFACTURING A FAST HEAT RISE RESISTOR	METHOD FOR MAKING A RESISTOR USING RESISTIVE FOIL	METHOD AND APPARATUS FOR FAST HEAT RISE RESISTOR USING RESISTIVE FOIL WITH FOIL WITH PHOTOLITHOGRAP HIC PRODUCTION	SURFACE MOUNTED FOUR TERMINAL RESISTOR	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
9/3/2002	11/15/200	3/28/2001	3/16/2001	10/13/2004	2/20/2002	1/19/2001	5/11/2000	File Date
4/27/2004	3/29/2005	12/30/2003	4/19/2005	7/24/2007	1/6/2004	1/20/2004	5/29/2007	Issue Date
Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	Type
11/415,039	10/157,584	09/844,934	09/395,094	09/395,095	Serial No.
7,426,102	6,876,061	6,562,647	6,316,287	6,271,060	Patent No.
HIGH PRECISION CAPACITOR WITH STANDOFF	CHIP SCALE SURFACE MOUNT PACKAGE FOR SEMICONDUCTOR DEVICE AND PROCESS OF FABRICATING THE SAME	CHIP SCALE SURFACE MOUNT PACKAGE FOR SEMICONDUCTOR DEVICE AND PROCESS OF FABRICATING THE SAME	CHIP SCALE SURFACE MOUNT PACKAGES FOR SEMICONDUCTOR DEVICE AND PROCESS OF FABRICATING THE SAME	PROCESS OF FABRICATING A CHIP SCALE SURFACE MOUNT PACKAGE FOR. SEMICONDUCTOR DEVICE	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/1/2006	5/28/2002	4/26/2001	9/13/1999	9/13/1999	File Date
9/16/2008	4/5/2005	5/13/2003	11/13/2001	8/7/2001	<u>Issue Date</u>
Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	ITU	Type
09/733,823	12/035,472	12/030,281	09/419,824	09/688,300	Serial No.
6,441,475			6,535,545	6,970,496	Patent No.
CHIP SCALE SURFACE MOUNT PACKAGE FOR SEMICONDUCTOR DEVICE AND PROCESS OF FABRICATING THE SAME	SURFACE MOUNTED CHIP RESISTOR WITH FLEXIBLE LEADS	SULFURATION RESISTANT CHIP RESISTOR AND METHOD FOR MAKING SAME	RF MODEM UTILIZING SAW RESONATOR AND CORRELATOR AND COMMUNICATIONS TRANSCEIVER CONSTRUCTED THEREFROM	RF MODEM AND COMMUNICATIONS TRANSCEIVER UTILIZING SAW DEVICE, AND PULSE SHAPING	<u>Title:</u> (Patent Description)
ISSUED	PUBLISHED	PUBLISHED	ISSUED	ISSUED	Status
12/8/2000	2/22/2008	2/13/2008	10/15/1999	10/13/2000	File Date
8/27/2002			3/18/2003	11/29/2005	Issue Date
Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

12/28/2007
11/16/2006
6/5/2003 12/19/2006
4/10/2007
File Date Issue

UTL	UTL	UTL	Type
13/075,752	11/759,523	13/592,091	Serial No.
8,324,711	7,907,090		Patent No.
PRECISION HIGH FREQUENCY CAPACITOR FORMED ON SEMICONDUCTOR SUBSTRATE	CERAMIC DIELECTRIC FORMULATION FOR BROAD BAND UHF ANTENNA	PRECISION HIGH- FREQUENCY CAPACITOR FORMED ON SEMICONDUCTOR SUBSTRATE	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	PENDING	Status
3/30/2011	6/7/2007	12/3/2012	<u>File Date</u>
12/4/2012	3/15/2011		<u>Issue Date</u>
Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	<u>Domestic Loan Party</u>
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Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.	Legal Owner	13/075,752 8,324,711 FORMED ON SEMICONDUCTOR SUBSTRATE U.S. Trademarks and Trademark Applications	PRECISION HIGH FREQUENCY CAPACITOR	CERAMIC DIELECTRIC FORMULATION FOR BROAD BAND UHF ANTENNA	PRECISION HIGH- FREQUENCY CAPACITOR FORMED ON SEMICONDUCTOR SUBSTRATE
United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	Country	ISSUED	TO COLUMN	ISSUED	PENDING
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1689517	1687032	3530559	1692580	3530560	837476	1015163	1790212	1979712	2602606	Reg.#	12/4/2012		3/15/2011	
5/26/1992	5/12/1992	11/11/2008	6/9/1992	11/11/2008	10/24/1967	7/8/1975	8/31/1993	6/11/1996	7/30/2002	Reg. Date	Intertechnology, Inc.	Vishay	Vishay Intertechnology, Inc.	Vishay Intertechnology, Inc.
004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	Reel/Frame	031170/0001	001170	031170/0001	031170/0001

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004455/0500	3/8/2010	111733,373	Offica States	visnay ilici technology; ilic.	GROUP b&w logo
00//52/0500	2/8/2010	77/052 205	Haitad States	Victor Intertocknology Inc	VISHAY PRECISION
004453/0500	6/26/2007	3256028	United States	Vishay Intertechnology, Inc.	TMBS
Reel/Frame	Reg. Date	Reg.#	Country	Legal Owner	Trademark

Patents and Trademarks of Siliconix incorporated

U.S. Patent Registrations and Patent Applications

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UTL	UTL	UTL	UTL	UTL	UTL	Type
08/067,373	08/289,358	08/031,798	08/236,299	07/949,288	08/047,723	Serial No.
5,517,379	5,474,943	5,341,011	5,439,842	5,328,866	5,410,170	Patent No.
REVERSE BATTERY PROTECTION DEVICE ISSUED CONTAINING POWER MOSFET	METHOD FOR FABRICATING A SHORT CHANNEL TRENCHED DMOS TRANSISTOR	SHORT CHANNEL TRENCHED DMOS TRANSISTOR	LOW TEMPERATURE OXIDE LAYER OVER ISSUED FIELD IMPLANT MASK	LOW TEMPERATURE OXIDE LAYER OVER FIELD IMPLANT FIELD IMPLANT MASK	DMOS POWER TRANSISTORS WITH REDUCED NUMBER OF CONTACTS USING INTEGRATED BODY-SOURCE CONNECTIONS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/26/1993	8/11/1994	3/15/1993	5/2/1994	9/21/1992	4/14/1993	File Date
5/14/1996	12/12/1995	8/23/1994	8/8/1995	7/12/1994	4/25/1995	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

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UTL	UTL	UTL	UTL	UTL	UTL	<u>Type</u>
08/367,486	08/062,969	08/062,503	08/062,968	08/062,504	08/067,372	Serial No.
5,665,996	5,459,654	5,508,874	5,455,496	5,377,094	5,414,292	Patent No.
VERTICAL POWER MOSFET HAVING THICK METAL LAYER TO REDUCE DISTRIBUTED RESISTANCE	APPARATUS FOR GENERATING POSITIVE AND NEGATIVE SUPPLY RAILS FROM OPERATING MOTOR CONTROL CIRCUIT	DISCONNECT SWITCH CIRCUIT TO POWER HEAD RETRACT IN HARD DISK DRIVE MEMORIES	HEAD-RETRACT CIRCUIT FOR MOVING MEDIA STORAGE APPARATUS	PUSH-PULL OUTPUT STAGE FOR DRIVING MOTORS WHICH GENERATES AUXILIARY VOLTAGE SUPPLY	A JUNCTION- ISOLATED FLOATING DIODE	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
12/30/1994	5/14/1993	5/14/1993	5/14/1993	5/14/1993	5/26/1993	File Date
9/9/1997	10/17/1995	4/16/1996	10/3/1995	12/27/1994	5/9/1995	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

025675/0001	Siliconix incorporated	1/31/1995	5/6/1991	ISSUED	DRAIN MOSFET WITH IMPROVED BREAKDOWN CHARACTERISTICS	5,386,136	07/697,356	UTL
025675/0001	Siliconix incorporated	12/12/2000	3/8/1999	ISSUED	METHOD OF FABRICATING LATERAL POWER MOSFET HAVING METAL STRAP LAYER TO REDUCE DISTRIBUTED RESISTANCE	6,159,841	09/264,602	UTL
025675/0001	Siliconix incorporated	8/31/1999	8/6/1997	ISSUED	INTEGRATED CIRCUIT DIE HAVING THICK BUS TO USE DISTRIBUTED RESISTANCE	5,945,709	08/907,276	UTL
025675/0001	Siliconix incorporated	6/16/1998	12/30/1994	ISSUED	LATERAL POWER MOSFET HAVING METAL STRAP LAYER TO REDUCE DISTRIBUTED RESISTANCE	5,767,546	08/367,388	UTL
025675/0001	Siliconix incorporated	3/28/2000	11/10/1997	ISSUED	METHOD OF FABRICATING VERTICAL POWER MOSFET HAVING LOW DISTRIBUTED RESISTANCE	6,043,125	08/966,553	UTL
025675/0001	Siliconix incorporated	5/23/2000	1/6/1997	ISSUED	VERTICAL POWER MOSFET HAVING THICK METAL LAYER ISSUED TO REDUCE DISTRIBUTED RESISTANCE	6,066,877	08/779,176	UTL
Reel/Frame	<u>Domestic Loan Party</u>	Issue Date	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	<u>Type</u>

UTL	UTL	UTL	UTL	UTL	UTL	UTL	<u>Туре</u>
08/062,370	07/854,162	08/362,674	08/180,265	07/881,589	08/040,684	08/318,027	Serial No.
5,465,000	5,248,627	5,521,409	5,429,964	5,304,831	5,374,843	5,514,608	Patent No.
THRESHOLD ADJUSTMENT IN VERTICAL DMOS DEVICES	THRESHOLD ADJUSTMENT IN FABRICATING VERTICAL DMOS DEVICES	STRUCTURE AND FABRICATION OF POWER MOSFETS INCLUDING TERMINATION STRUCTURES	LOW ON- RESISTANCE POWER MOS TECHNOLOGY	LOW ON- RESISTANCE POWER MOS TECHNOLOGY	LIGHTLY-DOPED DRAIN MOSFET WITH IMPROVED BREAKDOWN CHARACTERISTICS	LIGHTLY-DOPED DRAIN MOSFET WITH IMPROVED BREAKDOWN CHARACTERISTICS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/14/1993	3/20/1992	12/22/1994	1/12/1994	5/12/1992	3/31/1993	10/4/1994	File Date
11/7/1995	9/28/1993	5/28/1996	7/4/1995	4/19/1994	12/20/1994	5/7/1996	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
08/463,647	08/464,978	08/464,435	08/323,950	08/226,419	08/101,886	07/855,377	08/482,341	Serial No.
47	78	35	50	19	86	77	41	0.
5,541,123	5,547,880	5,583,061	5,559,044	5,426,328	5,426,325	5,296,765	5,726,477	Patent No.
<u>ω</u>			4	8		55	7	[o.
METHOD FOR FORMING A BIPOLAR TRANSISTOR HAVING SELECTED BREAKDOWN VOLTAGE	METHOD FOR FORMING A ZENER DIODE REGION AND AN ISOLATION REGION	PMOS TRANSISTORS WITH DIFFERENT BREAKDOWN VOLTAGES FORMED IN THE SAME SUBSTRATE	BICDMOS PROCESS, TECHNOLOGY	BICDMOS STRUCTURES	METAL CROSSOVER IN HIGH VOLTAGE IC WITH GRADUATED DOPING CONTROL	DRIVER CIRCUIT FOR SINKING CURRENT TO TWO SUPPLY VOLTAGES	THRESHOLD ADJUSTMENT IN FIELD EFFECT SEMICONDUCTOR DEVICES	<u>Title:</u> (Patent Description)
ISSUED) ISSUED	H ISSUED	issued	ISSUED	RISSUED	ISSUED	ISSUED	Status
6/5/1995	6/5/1995	6/5/1995	10/17/1994	4/11/1994	8/4/1993	3/20/1992	6/6/1995	File Date
7/30/1996	8/20/1996	12/10/1996	9/24/1996	6/20/1995	6/20/1995	3/22/1994	3/10/1998	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	UTL	UTL	UTL	Туре
08/026,930	08/705,910	08/026,932	08/667,219	. 08/647,073	08/463,165	Serial No.
5,422,508	5,751,054	5,374,569	5,643,820	5,648,281	5,541,125	Patent No.
BICDMOS STRUCTURE	ZENER DIODES ON SAME WAFER WITH BICDMOS STRUCTURES	METHOD FOR FORMING A BICDMOS	METHOD FOR FABRICATING AND MOS CAPACITOR USING ZENER DIODE REGION	METHOD FOR FORMING AN FORMING AN ISOLATION STRUCTURE AND A ISSUED BIPOLAR TRANSISTOR ON A SEMICONDUCTOR SUBSTRATE	METHOD FOR FORMING A LATERAL MOS TRANSISTOR HAVING LIGHTLY DOPED DRAIN FORMED ALONG WITH OTHER TRANSISTORS IN THE SAME SUBSTRATE	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
3/5/1993	8/29/1996	3/5/1993	6/19/1996	5/8/1996	6/5/1995	File Date
6/6/1995	5/12/1998	12/20/1994	7/1/1997	7/15/1997	9661/02/L	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	TTU	UTL	Type
08/447,484	08/386,895	07/918,954	08/131,114	08/463,417	Serial No.
5,532,179	5,558,313	5,910,669	5,479,037	5,618,743	Patent No.
METHOD OF MAKING A FIELD EFFECT TRENCH TRANSISTOR HAVING LIGHTLY DOPED EPITAXIAL REGION ON THE SURFACE PORTION THEREOF	TRENCH FIELD EFFECT TRANSISTOR WITH REDUCED PUNCH- THROUGH SUSCEPTIBILITY AND LOW RDSON	FIELD EFFECT TRENCH TRANSISTOR HAVING LIGHTLY DOPED EPITAXIAL REGION ON THE SURFACE PORTION THEREOF	LOW THRESHOLD VOLTAGE EPITAXIAL DMOS TECHNOLOGY	MOS TRANSISTOR HAVING ADJUSTED THRESHOLD VOLTAGE FORMED ALONG WITH OTHER TRANSISTORS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/23/1995	2/10/1995	7/24/1992	10/1/1993	6/5/1995	File Date
7/2/1996	9/24/1996	6/8/1999	12/26/1995	4/8/1997	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
08/160,560	08/062,507	08/444,336	07/918,996	08/242,519	07/873,423	08/658,115	Serial No.
5,510,747	5,412,239	5,605,852	5,430,324	5,445,978	5,430,314	5,981,344	Patent No.
GATE DRIVE TECHNIQUE FOR A BIDIRECTIONAL BLOCKING LATERAL MOSFET	CONTACT GEOMETRY FOR IMPROVED LATERAL	METHOD FOR FABRICATING HIGH VOLTAGE TRANSISTOR HAVING TRENCHED TERMINATION	HIGH VOLTAGE TRANSISTOR HAVING EDGE TERMINATION UTILIZING TRENCH TECHNOLOGY	METHOD OF MAKING POWER DEVICE WITH BUFFERED GATE SHIELD REGION	POWER DEVICE WITH BUFFERED GATE SHIELD	TRENCH FIELD EFFECT TRANSISTOR WITH REDUCED PUNCH- THROUGH SUSCEPTIBILITY AND LOW RDSON	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
11/30/1993	5/14/1993	5/18/1995	7/23/1992	5/13/1994	4/23/1992	6/4/1996	File Date
4/23/1996	5/2/1995	2/25/1997	7/4/1995	8/29/1995	7/4/1995	11/9/1999	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	Type
08/326,172	08/318,323	08/160,539	08/907,216	08/636,258	08/569,334	Serial No.
5,545,909	5,451,533	5,420,451	5,909,139	5,731,732	5,612,566	Patent No.
ELECTROSTATIC DISCHARGE PROTECTION DEVICE FOR INTEGRATED CIRCUIT	A BIDIRECTIONAL BLOCKING LATERAL MOSFET WITH IMPROVED ON-RESISTANCE	A BIDIRECTIONAL BLOCKING LATERAL MOSFET WITH IMPROVED ON-RESISTANCE	METHOD AND APPARATUS FOR PROVIDING GATE DRIVE VOLTAGE TO SWITCHING DEVICE	GATE DRIVE TECHNIQUE FOR A BIDIRECTIONAL BLOCKING LATERAL MOSFET	BIDERECTIONAL BLOCKING LATERAL MOSFET WITH IMPROVED ON-RESISTANCE	Title: (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
10/19/1994	10/5/1994	11/30/1993	8/5/1997	4/22/1996	12/8/1995	File Date
8/13/1996	9/19/1995	5/30/1995	6/1/1999	3/24/1998	3/18/1997	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL 08/	UTL 08/	UTL 08/	UTL 08/	UTL 08/	UTL 08/	Type Se
08/253,527	08/268,755	08/295,271	08/873,781	08/486,280	08/472,943	Serial No.
5,468,982	5,486,772	5,528,483	5,877,534	5,654,574	5,677,205	Patent No.
TRENCHED DMOS TRANSISTOR WITH CHANNEL BLOCK AT CELL TRENCH CORNERS	RELIABILITY TEST METHOD FOR SEMICONDUCTOR TRENCH DEVICES	VOLTAGE CONVERTER WITH SHIFT PROTECTION AGAINST OVERLOAD CURRENT	METHOD OF FORMING ELECTROSTATIC DISCHARGE PROTECTION DEVICE FOR INTEGRATED CIRCUIT	ELECTROSTATIC DISCHARGE PROTECTION DEVICE FOR INTEGRATED CIRCUIT	METHOD FOR FORMING ELECTROSTATIC DISCHARGE PROTECTION DEVICE FOR INTEGRATED CIRCUIT	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
6/3/1994	6/30/1994	8/23/1994	6/12/1997	6/6/1995	6/6/1995	<u>File Date</u>
11/21/1995	1/23/1996	6/18/1996	3/2/1999	8/5/1997	10/14/1997	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

	Siliconix incorporated	9/24/1996	10/20/1994	ISSUED	VOLTAGE REGULATOR HAVING IMPROVED STABILITY	5,559,424	08/326,408	UTL
	Siliconix incorporated	12/17/1996	10/19/1994	ISSUED	PROTECTIVE CIRCUIT FOR PROTECTING LOAD AGAINST EXCESSIVE INPUT VOLTAGE	5,585,991	08/325,860	UTL
<u> </u>	Siliconix incorporated	11/18/1997	12/30/1994	ISSUED	LOW-SIDE BIDIRECTIONAL BATTERY DISCONNECT SWITCH	5,689,209	08/367,515	UTL
	Siliconix incorporated	3/25/1997	4/15/1996	ISSUED	EDGE TERMINATION STRUCTURE FOR POWER MOSFET	5,614,751	08/632,052	UTL
	Siliconix incorporated	1/28/1997	4/17/1995	ISSUED	METHOD FOR MAKING TERMINATION STRUCTURE FOR POWER MOSFET	5,597,765	08/423,588	TLU
	Siliconix incorporated	4/20/1999	8/21/1996	ISSUED	TRENCH MOSFET WITH MULTI- RESISTIVITY DRAIN TO PROVIDE LOW ON-RESISTANCE	5,895,952	08/701,035	UTL
	Siliconix incorporated	10/7/1997	4/26/1995	ISSUED	METHOD OF MAKING A TRENCH MOSFET WITH MULTI-RESISTIVITY DRAIN TO PROVIDE LOW ON- RESISTANCE BY VARYING DOPANT	5,674,766	08/429,414	UTL
	Domestic Loan Party	Issue Date	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	<u>Туре</u>

Туре	Serial No.	Patent No.	<u>Title:</u> (Patent Description)	<u>Status</u>	File Date	Issue Date	Domestic Loan Party	Reel/Frame
UTL	08/388,535	5,596,265	BAND GAP VOLTAGE COMPENSATION CIRCUIT	ISSUED	2/14/1995	1/21/1997	Siliconix incorporated	025675/0001
UTL	08/389,705	5,506,496	OUTPUT CONTROL CIRCUIT FOR A VOLTAGE REGULATOR	ISSUED	2/14/1995	4/9/1996	Siliconix incorporated	025675/0001
UTL	08/533,814	5,689,128	HIGH DENSITY TRENCHED DMOS TRANSISTOR	ISSUED	8/21/1995	11/18/1997	Siliconix incorporated	025675/0001
UTL	08/415,009	5,592,005	PUNCH-THROUGH FIELD EFFECT TRANSISTOR	ISSUED	3/31/1995	1/7/1997	Siliconix incorporated	025675/0001
UTL	08/962,885	6,069,043	METHOD OF MAKING PUNCH- THROUGH HELD EFFECT TRANSISTOR	ISSUED	11/21/1997	5/30/2000	Siliconix incorporated	025675/0001
UTL	08/459,054	5,856,692	VOLTAGE- CLAMPED POWER ACCUMULATION- MODE MOSFET	ISSUED	6/2/1995	1/5/1999	Siliconix incorporated	025675/0001
UTL	08/884,826	5,877,538	BIDIRECTIONAL TRENCH GATED TRENCH GATED POWER MOSFET WITH SUBMERGED BODY BUS EXTENDING UNDERNEATH GATE TRENCH	ISSUED	6/30/1997	3/2/1999	Siliconix incorporated	025675/0001

UTL	UTL	UTL	UTL	UTL	UIL	Type
08/962,867	08/919,523	08/846,688	08/537,157	08/610,563	09/186,216	Serial No.
6,140,678	5,998,837	5,998,836	5,629,543	5,821,583	6,096,608	Patent No.
TRENCH-GATED POWER MOSFET WITH PROTECTIVE DIODE	TRENCH-GATED POWER MOSFET WITH PROTECTIVE DIODE HAVING ADJUSTABLE BREAKDOWN VOLTAGE	TRENCH-GATED POWER MOSFET WITH PROTECTIVE DIODE	TRENCHED DMOS TRANSISTOR WITH BURIED LAYER FOR REDUCED ON- RESISTANCE AND RUGGEDNESS	TRENCHED DMOS TRANSISTOR WITH LIGHTLY DOPED TUB	BIDIRECTIONAL TRENCH GATED POWER MOSFET WITH SUBMERGED BODY BUS EXTENDING UNDERNEATH GATE TRENCH	Title: (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
11/3/1997	8/28/1997	4/30/1997	8/21/1995	3/6/1996	11/3/1998	File Date
10/31/2000	12/7/1999	12/7/1999	5/13/1997	10/13/1998	8/1/2000	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	UTL	UTL	UTL	UTL	Туре
08/979,837	08/594,676	08/595,812	08/964,419	08/648,334	08/459,559	08/920,330	Serial No.
5,955,903	5,736,879	5,767,643	5,929,481	5,818,084	5,661,322	6,049,108	Patent No.
FOLDED RAMP CAPACITANCE CIRCUIT WITH CURRENT SOURCE AND COMPARATOR CIRCUIT	CLOSED-LOOP FREQUENCY-TO- CURRENT CONVERTER WITH INTEGRABLE CAPACITANCES	COMMUTATION DELAY GENERATOR FOR A MULTIPHASE BRUSHLESS DC MOTOR	HIGH DENSITY TRENCH DMOS TRANSISTOR WITH TRENCH BOTTOM IMPLANT	PSEUDO-SCHOTTKY DIODE	BIDIRECTIONAL BLOCKING ACCUMULATION- MODE TRENCH POWER MOSFET	TRENCH-GATED POWER MOSFET WITH BIDIRECTIONAL VOLTAGE CLAMPING	Title: (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
11/26/1997	2/2/1996	2/2/1996	11/4/1997	5/15/1996	6/2/1995	8/28/1997	File Date
9/21/1999	4/7/1998	6/16/1998	7/27/1999	10/6/1998	8/26/1997	4/11/2000	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL 08/616,393	UTL 08/570,876	UTL 08/828,474	UTL 08/542,611	UTL 09/041,368	UTL 08/538,105	UTL 08/946,613	Type Serial No.
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5,814,858	5,939,752	5,973,367	5,616,945	6,087,862	5,726,594	6,046,470	Patent No.
VERTICAL POWER MOSFET HAVING REDUCED SENSITIVITY TO VARIATIONS IN THICKNESS OF	LOW VOLTAGE MOSFET WITH LOW ON-RESISTANCE AND HIGH BREAKDOWN VOLTAGE	MULTIPLE GATED MOSFET FOR USE IN DC-DC CONVERTER	MULTIPLE GATED MOSFET FOR USE IN DC-DC CONVERTER	POWER MOSFET INTERNAL POWER SUPPLY CIRCUITRY	SWITCHING DEVICE INCLUDING POWER MOSFET WITH INTERNAL POWER SUPPLY CIRCUIT	TRENCH-GATED MOSFET WITH INTEGRAL TEMPERATURE DETECTION DIODE	Title: (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
3/15/1996	12/12/1995	3/31/1997	10/13/1995	3/11/1998	10/2/1995	10/7/1997	File Date
9/29/1998	8/17/1999	10/26/1999	4/1/1997	7/11/2000	3/10/1998	4/4/2000	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

TTU	UTL	UTL	UTL	UTL	UTL	Туре
08/649,747	08/937,941	08/648,266	08/651,232	08/767,708	08/956,257	<u>Serial No.</u>
5,689,144	5,929,690	5,744,994	5,998,834	6,090,716	6,031,702	Patent No.
FOUR-TERMINAL POWER MOSFET SWITCH HAVING REDUCED THRESHOLD VOLTAGE AND ON- RESISTANCE	THREE-TERMINAL POWER MOSFET SWITCH FOR USE AS SYNCHRONOUS RECTIFIER OR VOLTAGE CLAMP	THREE-TERMINAL POWER MOSFET SWITCH FOR USE AS SYNCHRONOUS RECTIFIER OR VOLTAGE CLAMP	LONG-CHANNEL TRENCH-GATED POWER MOSFET: HAVING FULLY DEPLETED BODY REGION	METHOD OF FABRICATING A FIELD EFFECT TRANSISTOR	SHORT CIRCUIT PROTECTED DC-DC CONVERTER USING DISCONNECT SWITCHING AND METHOD OF PROTECTING LOAD AGAINST SHORT CIRCUITS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
5/15/1996	9/25/1997		5/22/1996	12/17/1996	10/22/1997	File Date
11/18/1997	7/27/1999		12/7/1999	7/18/2000	2/29/2000	Issue Date
Siliconix incorporated	Siliconix incorporated			Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

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UTL	UTL	UTL	UTL	UTL	UTL	Туре
08/646,593	08/742,326	08/556,369	08/895,497	08/482,357	08/701,114	Serial No.
5,904,525	5,917,216	6,066,890	6,008,520	5,688,725	5,808,453	Patent No.
FABRICATION OF HIGH-DENSITY TRENCH DMOS USING SIDEWALL SPACERS	TRENCHED FIELD EFFECT TRANSISTOR EFFECT TRANSISTOR WITHIN DEPLETION BARRIER	SEPARATE CIRCUIT DEVICES IN AN INTRA-PACKAGE CONFIGURATION AND ASSEMBLY TECHNIQUES	TRENCH MOSFET WITH HEAVILY DOPED DELTA LAYER TO PROVIDE LOW ON- RESISTANCE	METHOD OF MAKING A TRENCH MOSFET WITH DOPE HEAVILY D DELTA LAYER TO PROVIDE LOW ON- RESISTANCE	SYNCHRONOUS CURRENT SHARING PULSE WIDTH MODULATOR	Title: (Patent Description)
ISSUED		ISSUED	ISSUED	ISSUED	ISSUED	Status
5/8/1996	10/31/1996	11/13/1995	7/16/1997	6/6/1995	8/21/1996	File Date
5/18/1999	6/29/1999	5/23/2000	12/28/1999	11/18/1997	9/15/1998	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	Type
08/067,365	09/306,003	07/978,201	07/910,864	07/762,103	09/200,197	Serial No.
5,539,610	6,172,383	5,576,245	5,298,781	5,298,442	6,084,264	Patent No.
FLOATING DRIVE TECHNIQUE FOR REVERSE BATTERY PROTECTION	POWER MOSFET HAVING VOLTAGE- CLAMPED GATE	METHOD OF MAKING A VERTICAL CURRENT FLOW FIELD EFFECT TRANSISTOR	VERTICAL CURRENT FLOW FIELD EFFECT TRANSISTOR WITH THICK INSULATOR OVER NON- CHANNEL AREAS	TRENCH DMOS POWER TRANSISTOR WITH FIELD-SHAPING BODY PROFILE AND THREE- DIMENSIONAL GEOMETRY	TRENCH MOSFET HAVING IMPROVED BREAKDOWN AND ON-RESISTANCE CHARACTERISTICS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
5/26/1993	5/5/1999	11/18/1992	7/8/1992	9/18/1991	11/25/1998	File Date
7/23/1996	1/9/2001	11/19/1996	3/29/1994	3/29/1994	7/4/2000	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	Туре
09/006,774	08/636,367	08/541,345	08/634,957	08/603,512	Serial No.
6,087,740	5,747,891	5,682,050	5,767,578	5,757,081	Patent No.
PORTABLE COMPUTER CONTAINING BIDIRECTIONAL CURRENT BLOCKING MOSFET FOR BATTERY DISCONNECT SWITCHING	METHOD OF BLOCKING BIDIRECTIONAL FLOW OF CURRENT	BIDIRECTIONAL CURRENT BLOCKING MOSFET FOR BATTERY DISCONNECT SWITCHING INCLUDING PROTECTION AGAINST REVERSE CONNECTED BATTERY CHARGER	SURFACE MOUNT AND FLIP CHIP TECHNOLOGY WITH DIAMOND FILM PASSIVATION FOR TOTAL INTEGRATED CIRCUIT ISOLATION	SURFACE MOUNT AND FLIP CHIP TECHNOLOGY FOR TOTAL INTEGRATED CIRCUIT ISOLATION	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
1/14/1998	4/23/1996	10/10/1995	4/19/1996	2/20/1996	File Date
7/11/2000	5/5/1998	10/28/1997	6/16/1998	5/26/1998	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

	Patent No.	(Patent Description)	Status	File Date	Issue Date	Domestic Loan Party	Reel/Frame
\dashv		TRENCHED DMOS					
07/928,909	5,316,959	FABRICATION	ISSUED	8/12/1992	5/31/1994	Siliconix incorporated	025675/0001
		USING SIX MASKS					
		TRANSISTOR					
08/603,047	5,639,676	FABRICATION HAVING THICK	ISSUED	2/16/1996	6/17/1997	Siliconix incorporated	025675/0001
		TERMINATION					
		REGION OXIDE					
		TRENCHED DMOS					
		TRANSISTOR					
08/625,639	5,578,851	HAVING THICK FIELD OXIDE IN	ISSUED	3/29/1996	11/26/1996	Siliconix incorporated	025675/0001
		TERMINATION					
		REGION					
08/480,469	5,621,604	PWM MULTIPLEXED SOLENOID DRIVER	ISSUED	6/7/1995	4/15/1997	Siliconix incorporated	025675/0001
		METHOD OF					
		FORMING A LATERAL FIELD					
	5 750 416	EFFECT	CHISSI	6/7/1995	5/12/1998	Siliconix incornorated	025675/0001
	,	TRANSISTOR				٠	
		DRAIN-TO-SOURCE					
		ON-RESISTANCE					
		SUPER TRENCH					
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MOSFET					
	/,55/,409	INCLUDING BURIED	ISSUED	1/26/2007	// //2009	Siliconix incorporated	1000/5/9620
		ELECTRODE					
		Serial No. 07/928,909 08/603,047 08/625,639 08/480,469 11/698,519	Serial No. Patent No. 07/928,909 5,316,959 08/603,047 5,639,676 08/625,639 5,578,851 08/480,469 5,621,604 08/479,308 5,750,416 11/698,519 7,557,409	Serial No. Patent No. (Patent Description)	Serial No. Patent No. (Patent Description) Status	Serial No. Patent No. (Patent Description) Status File Date	Serial No. Patent No. (Patent Description) Status File Date Issue Date

UTL 10/454,031	UTL 11/158,382	UTL 10/996,148	UTL 11/335,747	UTL 10/872,931	Type Serial No.
031 7,291,884	382 7,326,995	148 7,394,150	7,416,947	931 7,435,650	No. Patent No.
TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION AND THICK BOTTOM OXIDE	TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION AND THICK BOTTOM OXIDE	SEMICONDUCTOR PACKAGE INCLUDING DIE INTERPOSED BETWEEN CUP- SHAPED LEAD FRAME AND LEAD FRAME HAVING MESAS AND VALLEYS	METHOD OF FABRICATING TRENCH MIS DEVICE WITH THICK OXIDE LAYER IN BOTTOM OF TRENCH	PROCESS FOR MANUFACTURING TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION AND THICK BOTTOM OXIDE	Title: (Patent Description)
ISSUED	ISSUED	ISSUED ISSUED	ISSUED	ISSUED	Status
6/4/2003	6/22/2005	11/23/2004	1/19/2006	6/21/2004	File Date
1 1/6/2007	2/5/2008	7/1/2008	8/26/2008	10/14/2008	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

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UTL	UTL	UTL	UTL	TITU	UTL	Туре
10/810,031	11/141,942	10/836,833	11/150,016	10/996,149	11/232,613	Serial No.
7,045,857	7,118,953	7,183,610	7,233,043	7,238,551	7,268,032	Patent No.
TERMINATION FOR TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION	PROCESS OF FABRICATING TERMINATION REGION FOR TRENCH MIS DEVICE	SUPER TRENCH MOSFET INCLUDING BURIED SOURCE ELECTRODE AND METHOD OF FABRICATING THE SAME	TRIPLE-DIFFUSED TRENCH MOSFET	METHOD OF FABRICATING SEMICONDUCTOR PACKAGE INCLUDING DIE INTERPOSED BETWEEN CUP- SHAPED LEAD FRAME HAVING MESAS AND VALLEYS	TERMINATION FOR TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
3/26/2 004	6/1/2005	4/30/2004	6/10/2005	11/23/2004	9/21/2005	File Date
5/16/2006	10/10/2006	2/27/2007	6/19/2007	7/3/2007	9/11/2007	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	Type
10/657,830	10/264,816	10/811,443	10/722,984	10/180,154	10/326,311	Serial No.
6,913,977	6,921,697	6,927,451	7,009,247	7,012,005	7,033,876	Patent No.
TRIPLE-DIFFUSED TRENCH MOSFET AND METHOD OF FABRICATING THE SAME	METHOD FOR MAKING TRENCH MIS DEVICE WITH REDUCED GATE-TO- DRAIN CAPACITANCE	TERMINATION FOR TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION	TRENCH MIS DEVICE WITH THICK OXIDE LAYER IN BOTTOM OF GATE CONTACT TRENCH	SELF-ALIGNED DIFFERENTIAL OXIDATION IN TRENCHES BY ION IMPLANTATION	TRENCH MIS DEVICE HAVING IMPLANTED DRAIN- DRIFT REGION AND THICK BOTTOM OXIDE AND PROCESS FOR MANUFACTURING THE SAME	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
9/8/2003	10/3/2002	3/26/2004	11/25/2003	6/25/2002	12/19/2002	<u>File Date</u>
7/5/2005	7/26/2005	8/9/2005	3/7/2006	3/14/2006	4/25/2006	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL 10/104,811 6,838,722 FABRICATING TRENCH-GATED MIS DEVICES	UTL 09/927,143 6,849,898 TRENCH MIS OF THICK BOTTOM OXIDE AND METHOD OF MAKING THE SAME	UTL 10/106,896 6,875,657 GRADUATED GATE OXIDE LAYER	UTL 09/927,320 6,882,000 REDUCED GATE-TO- DRAIN CAPACITANCE	UTL 10/106,812 6,903,412 GRADUATED GATE OXIDE LAYER	UTL 10/291,153 6,909,170 SEMICONDUCTOR ASSEMBLY WITH PACKAGE USING CUP-SHAPED LEAD FRAME	
URES OF HODS OF ATING ISSUED VICES	H MIS WITH TRENCH RS AND OTTOM S AND OD OF THE SAME	OD OF 'ATING 'H MIS 'E WITH 'ED GATE LAYER ISSUED	H MIS WITH GATE-TO- ISSUED AIN TANCE	H MIS WITH ED GATE LAYER ISSUED	DUCTOR LY WITH E USING PED LEAD ME	(1 attil Description) Status
3/22/2002	8/10/2001	3/26/2002	8/10/2001	3/26/2002	11/7/2002	File Date
1/4/2005	2/1/2005	4/5/2005	4/19/2005	6/7/2005	6/21/2005	ISSUE D'AIE
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Farty
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Keel/Frame</u>

UTL	UTL	UTL	UTL	UTL	UTL	Type
08/800,972	10/211,438	08/851,608	10/176,570	09/468,429	10/317,568	Serial No.
6,590,440	6,600,193	6,627,950	6,709,930	6,744,124	6,764,906	Patent No.
LOW-SIDE BIDIRECTIONAL BATTERY DISCONNECT	TRENCH MOSFET HAVING IMPLANTED DRAIN- DRIFT REGION	TRENCH DMOS POWER TRANSISTOR WITH FIELD-SHAPING BODY PROFILE AND THREE- DIMENSIONAL GEOMETRY	THICKER OXIDE FORMATION AT THE TRENCH BOTTOM BY SELECTIVE OXIDE DEPOSITION	SEMICONDUCTOR DIE PACKAGE INCLUDING CUP- SHAPED LEADFRAME	METHOD FOR MAKING TRENCH MOSFET HAVING IMPLANTED DRAIN- DRIFT REGION	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
2/19/1997	8/2/2002	5/5/1997	6/21/2002	12/10/1999	12/12/2002	File Date
7/8/2003	7/29/2003	9/30/2003	3/23/2004	6/1/2004	7/20/2004	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

025675/0001	Siliconix incorporated	6/19/2001	6/2/1998	ISSUED	IC CHIP PACKAGE WITH DIRECTLY CONNECTED LEADS	6,249,041	09/089,310	UTL
	Siliconix incorporated	8/21/2001	4/16/1999	ISSUED	METHOD OF FORMING VERTICAL PLANAR DMOSFET WITH SELF-ALIGNED CONTACT	6,277,695	09/293,380	UTL
	Siliconix incorporated	9/4/2001	12/30/1999	ISSUED	BARRIER ACCUMULATION MODE MOSFET	6,285,060	09/476,320	UTL
	Siliconix incorporated	5/21/2002	4/7/2000	ISSUED	VERTICAL STRUCTURE FOR SEMICONDUCTOR WAFER-LEVEL CHIP SCALE PACKAGES	6,392,290	09/545,287	UTL
	Siliconix incorporated	11/5/2002	3/9/1998	ISSUED	PSEUDO-SCHOTTKY DIODE	6,476,442	09/037,557	UTL
025675/0001	Siliconix incorporated	1/21/2003	3/7/2002	ISSUED	METHOD OF MAKING TRENCH- GATED MOSFET HAVING CESIUM GATE OXIDE LAYER	6,509,233	10/094,476	UTL
025675/0001	Siliconix incorporated	3/18/2003	3/21/2001	ISSUED	METHOD OF FABRICATING TRENCH-GATED POWER MOSFET	6,534,366	09/816,717	UTL
025675/0001	Siliconix incorporated	5/27/2003	7/3/2001	ISSUED	PROCESS FOR MANUFACTURING TRENCH GATED MOSFET HAVING DRAIN/DRIFT REGION	6,569,738	09/898,652	UTL
	Domestic Loan Party	Issue Date	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	<u>Type</u>

PRV 61/257,362	Design 29/151,069	Design 29/151,024	UTL 09/502,546	UTL 09/481,135	UTL 08/487,789	UTL 09/089,250	UTL 08/919,386	Type Serial No.
362	069 D,472,528	024 D,466,873	546 6,300,744	135 6,444,527	789 5,925,411	250 6,204,533	386 6,239,463	No. Patent No.
TRANSISTOR STRUCTURE WITH FEED THROUGH SOURCE-TO- SUBSTRATE CONTACT	SEMICONDUCTOR CHIP PACKAGE	SEMICONDUCTOR CHIP PACKAGE	HIGH-EFFICIENCY BATTERY CHARGER	METHOD OF OPERATION OF PUNCH-THROUGH FIELD EFFECT TRANSISTOR	GAS-BASED SUBSTRATE DEPOSITION PROTECTION	VERTICAL TRENCH- GATED POWER MOSFET HAVING STRIPE GEOMETRY AND HIGH CELL DENSITY	LOW RESISTANCE POWER MOSFET OR OTHER DEVICE CONTAINING SILICON- GERMANIUM LAYER	<u>Title:</u> (Patent Description)
PENDING	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Ganssi	ISSUED	Status
	10/31/2002	10/31/2002	2/10/2000	1/11/2000	6/7/1995	6/2/1998	8/28/1997	File Date
11/2/2009	4/1/2003	12/10/2002	10/9/2001	9/3/2002	7/20/1999	3/20/2001	5/29/2001	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	PRV	<u>Туре</u>
06/757,582	08/225,270	07/802,352	07/451,518	08/777,636	07/498,170	61/309,824	Serial No.
4,682,405	5,416,039	5,243,212	5,108,940	5,866,931	5,132,753		Patent No.
METHOD FOR FORMING AN ELECTRICAL CONTACT IN A TRANSISTOR	METHOD OF MAKING DICDMOS STRUCTURES	A TRANSISTOR WITH A CHARGE INDUCED DRAIN EXTENSION	A MOS TRANSISTOR WITH A CHARGE INDUCED DRAIN EXTENSION	DMOS POWER TRANSISTOR WITH REDUCED NUMBER OF CONTACTS USING INTEGRATED BODY-SOURCE CONNECTIONS	OPTIMIZATION OF BV AND RDS-ON BY GRADED DOPING IN LDD AND OTHER HIGH VOLTAGE ICS	STRUCTURES OF AND METHODS OF FABRICATING DUAL GATE MIS DEVICES	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	PENDING	Status
7/22/1985	4/8/1994	12/4/1991	12/15/1989	12/31/1996	3/23/1990	3/2/2010	File Date
7/28/1987	5/16/1995	9/7/1993	4/28/1992	2/2/1999	7/21/1992		Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

025675/0001	Siliconix incorporated	1/17/1989	3/10/1986	ISSUED	METHOD FOR MANUFACTURING A POWER MOS TRANSISTOR	4,798,810	06/838,217	UTL
025675/0001	Siliconix incorporated	1/23/1990	9/8/1988	ISSUED	VERTICAL DMOS POWER TRANSITOR WITH AN INTEGRAL OPERATING CONDITION SENSOR	4,896,196	07/243,166	UTL
025675/0001	Siliconix incorporated	10/18/1988	12/13/1985	ISSUED	INSULATED GATE TRANSISTOR ARRAY	4,779,123	06/808,904	UTL
025675/0001	Siliconix incorporated	7/26/1988	8/12/1987	ISSUED	ION IMPLANTATION OF THIN FILM CRSI2 AND SIC RESISTORS	4,759,836	07/084,541	UTL
025675/0001	Siliconix incorporated	4/25/1989	2/5/1987	ISSUED	METHOD FOR OBTAINING REGIONS OF DIELECTRICALLY ISOLATED SINGLE CRYSTAL SILICON	4,824,795	07/010,924	UTL
025675/0001	Siliconix incorporated	12/18/1990	7/25/1986	ISSUED	CURRENT SOURCE WITH A PROCESS SELECTABLE TEMPERATURE COEFFICIENT	4,978,631	06/890,218	UTL
025675/0001	Siliconix incorporated	8/23/1988	1/6/1986	ISSUED	INTEGRATED BURIED ZENER DIODE AND TEMPERATURE COMPENSATION TRANSISTOR	4,766,469	06/816,593	UTL
025675/0001	Siliconix incorporated	10/30/2002	12/21/1995	ISSUED	METHOD FOR MAKING TERMINATION STRUCTURE FOR POWER MOSFET	0895290	98111605. 6	UTL
Reel/Frame	Domestic Loan Party	Issue Date	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	Type

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
07/246,937	07/195,436	07/036,777	09/978,603	06/871,006	07/138,989	06/808,575	06/894,418	Serial No.
4,920,388	4,794,436	4,853,563	6,744,119	4,716,126	4,816,882	4,674,020	4,707,909	Patent No.
POWER TRANSISTOR WITH INTEGRATED GATE RESISTOR	HIGH VOLTAGE DRIFTED-DRAIN MOS TRANSISTOR	SWITCH INTERFACE CIRCUIT FOR POWER MOSFET GATE DRIVE CONTROL	LEADFRAME HAVING SLOTS IN A DIE PAD	FABRICATION OF DOUBLE DIFFUSED METAL OXIDE SEMICONDUCTOR TRANSISTOR	POWER MOS TRANSISTOR WITH EQUIPOTENTIAL RING	POWER SUPPLY HAVING DUAL RAMP CONTROL CIRCUIT	MANUFACTURE OF TRIMMABLE HIGH VALUE POLYCRYSTALLINE SILICON RESISTORS	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
9/19/1988	5/16/1988	4/10/1987	10/15/2001	6/5/1986	12/29/1987	12/13/1985	8/8/1986	<u>File Date</u>
4/24/1990	12/27/1988	8/1/1989	6/1/2004	12/29/1987	03/28/1989	6/16/1987	11/24/1987	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

3/11/1992 6/8/1993	1/1992	3/1	ISSUED	CHIP METHOD FOR FABRICATING A HIGH VOLTAGE MOS TRANSISTOR	5,218,228	07/849,723	UTL
Siliconix incorporated		8/17/1998	PENDING	MULTILAYER SOLDER/BARRIER ATTACH FOR SEMICONDUCTOR		09/135,716	UTL
Siliconix incorporated		3/10/2009	PENDING	LEADLESS SEMICONDUCTOR PACKAGES		12/401,549	UTL
Siliconix incorporated	3/10/2009	2/27/2004	ISSUED	ENCAPSULATION METHOD FOR LEADLESS SEMICONDUCTOR PACKAGES	7,501,086В2	10/789,799	UTL
	2/15/2005	3/28/2002	ISSUED	ENCAPSULATION METHOD AND LEADFRAME FOR LEADLESS SEMICONDUCTOR PACKAGES (as amended)	6,856,006	10/113,526	UTL
	5/2/1989	11/6/1986	ISSUED	IMPLANTATION OF IONS INTO AN INSULATING LAYER TO INCREASE PLANAR PN JUNCTION BREAKDOWN VOLTAGE	4,827,324	06/927,882	UTL
	1/17/1989	2/17/1987	ISSUED	METHOD AND APPARATUS FOR INCREASING BREAKDOWN OF A PLANAR JUNCTION	4,799,100	07/014,961	UTL
	<u>Issue Date</u>	<u>File Date</u>	Status	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	Туре

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
07/089,184	09/314,621	07/141,877	07/453,367	07/167,617	07/138,999	07/095,481	07/678,578	Serial No.
4,774,196	6,268,242	4,936,930	4,958,204	4,967,245	4,914,058	4,791,462	5,132,235	Patent No.
METHOD OF BONDING SEMICONDCUTOR WAFERS	METHOD OF FORMING VERTICAL MOSFET DEVICE HAVING VOLTAGE CLAMPED GATE AND SELF-ALIGNED CONTACT	METHOD FOR IMPROVED ALIGNMENT FOR SEMICONDUCTOR DEVICES WITH BURIED LAYERS	JUNCTION FIELD- EFFECT TRANSISTOR WITH A NOVEL GATE	TRENCH POWER MOSTEF DEVICE	GROOVED DMOS PROCESS WITH VARYING GATE DIELECTRIC THICKNESS	DENSE VERTICAL J- MOS TRANSISTOR	METHOD FOR FABRICATING A HIGH VOLTAGE MOS TRANSISTOR	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	Status
8/25/1987	5/19/1999	1/6/1988	12/21/1989	3/14/1988	12/19/1987	9/10/1987	3/29/1991	File Date
9/27/1988	7/31/2001	6/26/1990	9/18/1990	10/30/1990	4/3/1990	12/13/1988	7/21/1992	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

U	U	U	U	U	U	U	UTL	UTL	T.
UTL	UTL	UTL	UTL	UTL	UTL	UTL			Туре
12/487,666	11/151,749	07/133,710	07/268,839	07/406,844	07/107,725	07/115,076	07/099,452	07/334,806	Serial No.
	7,595,547	4,890,146	5,156,989	4,952,992	5,164,325	4,845,051	4,835,586	4,929,991	Patent No.
SEMICONDUCTOR PACKAGING TECHNIQUES	SEMICONDUCTOR DIE PACKAGE INCLUDING CUP- SHAPED LEADFRAME	HIGH VOLTAGE LEVEL SHIFT SEMICONDUCTOR DEVICE	COMPLEMENTARY, ISOLATED DMOS IC TECHNOLOGY	METHOD AND APPARATUS FOR IMPROVING THE ON- CHARACTERISTICS OF A SEMICONDUCTOR DEVICE	METHOD OF MAKING A VERTICAL CURRENT FLOW FIELD EFFECT TRANSISTOR	BURIED GATE JFET	DUAL-GATE HIGH DENSITY FET	RUGGED LATERAL DMOS TRANSISTOR STRUCTURE	<u>Title:</u> (Patent Description)
PENDING	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	ISSUED	<u>Status</u>
6/19/2009	6/13/2005	12/16/1987	1 1/8/1988	9/13/1989	10/8/1987	10/29/1987	9/21/1987	4/5/1989	File Date
	9/29/2009	12/26/1989	10/20/1992	8/28/1990	11/17/1992	7/4/1989	5/30/1989	5/29/1990	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

Title: (Patent Description) Status File Date Issue Date Domestic Loan Party TRENCH DMOS POWER TRANSISTOR WITH FIELD-SHAPING BODY PROFILE AND THREE- DIMENSIONAL GEOMETRY SELF-ALIGNED LDD LATERAL DMOS TRANSISTOR WITH HIGH-VOLTAGE INTERCONNECT CAPABILITY STRUCTURES OF AND METHOD OF FABRICATING TRENCH-GATED STRUCTURES ISSUED STRUCTURES ISSUED SILICONIX incorporated 12/15/1988 10/8/1991 Siliconix incorporated Siliconix incorporated
File Date Issue Date 12/27/1988 12/10/1991 12/15/1988 10/8/1991 4/27/2004 2/28/2006
<u>Issue Date</u> 12/10/1991 10/8/1991 2/28/2006
Siliconix incorporated Siliconix incorporated Siliconix incorporated Siliconix incorporated

UTL 10/951,831 7,642,164B1	UTL 10/378,766	UTL 10/254,385	UTL 09/908,178 6,552,889	UTL 11/112,403 7,494,876
METHOD OF FORMING SELF ALIGNED CONTACTS FOR A POWER MOSFET	METHOD OF FORMING SELF ALIGNED CONTACTS FOR A POWER MOSFET METHOD OF FORMING SELF	METHOD OF FORMING SELF ALIGNED CONTACTS FOR A POWER MOSFET	CURRENT LIMITING TECHNIQUE FOR HYBRID POWER MOSFET CIRCUITS	TRENCH-GATED MIS DEVICE HAVING THICK POLYSLICON INSULATION LAYER TRENCH BOTTOM AND METHOD OF FABRICATING THE SAME
ISSUED	PENDING	PENDING	ISSUED	ISSUED
9/27/2004	3/3/2003	9/24/2002	7/17/2001	4/21/2005
1/5/2010			4/22/2003	2/24/2009
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001

UTL	UTL	UTL	UTL	UTL	UTL	Type
12/107,738	11/040,129	10/726,922	11/724,961	10/869,382	10/247,906	Serial No.
7,833,863	7,361,558	7,279,743			6,858,471	Patent No.
METHOD OF MANUFACTURING A ISSUED CLOSED CELL TRENCH MOSFET	METHOD OF MANUFACTURING A CLOSED CELL TRENCH MOSFET	CLOSED CELL TRENCH METAL- OXIDE- SEMICONDUCTOR FIELD EFFECT TRANSISTOR	SELF-ALIGNED CONTACT IN A SEMICONDUCTOR DEVICE AND METHOD OF FABRICATING THE SAME	SELF-ALIGNED CONTACT IN A SEMICONDUCTOR DEVICE AND METHOD OF FABRICATING THE SAME	SEMICONDUCTOR SUBSTRATE WITH TRENCHES FOR REDUCING SUBSTRATE RESISTANCE	<u>Title:</u> (Patent Description)
	ISSUED	ISSUED	PENDING	PENDING	ISSUED	Status
4/22/2008	1/20/2005	12/2/2003	3/16/2007	6/15/2004	9/20/2002	<u>File Date</u>
11/16/2010	4/22/2008	10/9/2007			2/22/2005	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	TTU	UTL	UTL	Туре
11/386,927	12/571,194	11/352,031	11/023,327	12/050,929	10/846,339	Serial No.
			7,344,945		6,906,380	Patent No.
ULTRA-LOW DRAIN-SOURCE RESISTANCE POWER MOSFET	ADAPTIVE FREQUENCY COMPENSATION FOR DC-TO-DC CONVERTER	ADAPTIVE FREQUENCY COMPENSATION FOR DC-TO-DC CONVERTER	METHOD OF MANUFACTURING A DRAIN SIDE GATE TRENCH METAL- OXIDE- SEMICONDUCTOR FIELD EFFECT TRANSISTOR	STACKED TRENCH- OXIDE- OXIDE- SEMICONDUCTOR FIELD EFFECT TRANSISTOR DEVICE	DRAIN SIDE GATE TRENCH METAL- OXIDE- SEMICONDUCTOR FIELD EFFECT TRANSISTOR	<u>Title:</u> (Patent Description)
ALLOWED	ALLOWED	ALLOWED	ISSUED	PENDING	ISSUED	Status
3/21/2006	9/30/2009	2/10/2006	12/22/2004	3/18/2008	5/13/2004	File Date
			3/18/2008		6/14/2005	Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	<u>Reel/Frame</u>

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	<u>Type</u>
11/322,040	11/710,041	12/552,205	11/190,682	12/030,809	11/373,630	11/799,889	12/069,712	Serial No.
7,544,545B2			7,583,485B1					Patent No.
TRENCH POLYSILICON DIODE	PROCESS FOR FORMING A SHORT CHANNEL TRENCH MOSFET AND DEVICE FORMED THEREBY	ELECTROSTATIC DISCHARGE PROTECTION CIRCUIT FOR INTEGRATED CIRCUITS	ELECTROSTATIC DISCHARGE PROTECTION CIRCUIT FOR INTEGRATED CIRCUITS	NARROW SEMICONDUCTOR TRENCH STRUCTURE	NARROW SEMICONDUCTOR TRENCH STRUCTURE	POWER MOSFET CONTACT METALLIZATION	ULTR-LOW DRAIN- SOURCE RESISTANCE POWER MOSFET	<u>Title:</u> (Patent Description)
ISSUED	PENDING	PENDING	ISSUED	PENDING	PENDING	PENDING	PENDING	Status
12/28/2005	2/23/2007	9/1/2009	7/26/2005	2/13/2008	3/9/2006	5/2/2007	2/11/2008	File Date
6/9/2009			9/1/2009					<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL 11/4°	UTL 12/7	UTL 11/4°	UTL 11/6:	UTL 12/09	UTL 12/6		Type Seri
11/479,619	12/779,815	11/479,671	11/651,258	12/098,950	12/611,865	12/009,379 7,612	Serial No. Pate
	II C		V	П 12		7,612,431B2	Patent No.
POWER MANAGEMENT SYSTEM IMPLEMENTED IN A SINGLE SURFACE MOUNT PACKAGE	COMPLETE POWER MANAGEMENT SYSTEM IMPLEMENTED IN A SINGLE SURFACE MOUNT PACKAGE	POWER MANAGEMENT SYSTEM IMPLEMENTED IN A SINGLE, SURFACE MOUNT PACKAGE	HIGH-DENSITY POWER MOSFET WITH PI,ANARIZED METALIZATION	TRENCH METAL OXIDE SEMICONDUCTOR WITH RECESSED TRENCH MATERIAL AND REMOTE CONTACTS	TRENCH POLYSILICON DIODE	TRENCH POLYSILICON DIODE	<u>Title:</u> (Patent Description)
PENDING	PENDING	PENDING	PENDING	PENDING	PENDING	ISSUED	<u>Status</u>
6/30/2006	5/13/2010	6/30/2006	1/8/2007	4/7/2008	11/3/2009	1/17/2008	File Date
						11/3/2009	<u>Issue Date</u>
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

Title						TRANSISTOR			
Serial No. Patent No. (Patent Description) Serial No. Patent No. (Patent Description) HIGH MOBILITY POWER METAL- OWER METAL- OXIDE LI1/644.553 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR HIGH MOBILITY PENDING FIELD-EFFECT TRANSISTORS HIGH MOBILITY PENDING FIELD-EFFECT TRANSISTORS FIELD-EFFECT TRANSISTORS FIELD-EFFECT TRANSISTORS FIELD-EFFECT TRANSISTORS FIELD-EFFECT FIELD-EFFECT TRANSISTORS FIELD-EFFECT FIELD-EFFECT TRANSISTORS FIELD-EFFECT DISCHARGE DISCHARGE DISCHARGE DISCHARGE PENDING FIELD-EFFECT TRENCH MOSTET ACTURE SIliconix incorporated Siliconix incorporated Siliconix incorporated TRENCH MOSTET ACTURE TRENCH MO	025675/0001	Siliconix incorporated		5/12/2008	PENDING	DENSITY POWER FIELD EFFECT		12/119,367	UTL
Serial No. Patent No. (Patent Description) Status Elle Date Issue Date Domestic Loan Party						HIGH CURRENT			
Serial No. Patent No. (Patent Description) Status Eile Date Issue Date Domestic Loan Party						CHARGE BALANCE			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party	025675/0001	Siliconix incorporated		9/3/2008	PENDING	TERMINATION		12/203,846	UTL
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						MOSFET ACTIVE			
Serial No. Patent No. (Palent Deciption) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FLOATING GATIE STRUCTURE WITH HIGH HIGH HIGH HIGH HIGH LECTROSTATIC DISCHARGE PERFORMANCE PERFORMANCE A CURRENT MODE BOOST CONVERTER USING SLOPE COMPENSATION SELF-ALIGNED TRENCH MOSET OXNDE OXNDE OXNDE OXNOFT CONVERTER USING SLOPE TRENCH MOSET AND METHOD OF MANUFACTURE MANUFACTURE MANUFACTURE FIELD-EFFECT PENDING 1/17/2008 Siliconix incorporated Siliconix incorporated Siliconix incorporated Siliconix incorporated Siliconix incorporated Siliconix incorporated MANUFACTURE FIELD-EFFECT PENDING 2/13/2008 Siliconix incorporated MANUFACTURE FIELD-EFFECT PENDING 2/13/2008 Siliconix incorporated						TRANSISTOR			
Serial No. Patent No. (Patent Death Date) Serial No. (Patent No.) (Patent Death Domestic Loan Party HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FLACTING GATE STRUCTURE WITH LIM64 MORE PENDING STRUCTURE WITH STRUCTURE WITH ELECTROSTATIC DISCHARGE PENDING LIN655.493 FLOATING SLOPE COMPENSATION SELF-ALIGNED ACURENTS SIDE ACURENT MOSFET CONVERTER USING SLOPE COMPENSATION SELF-ALIGNED AND METHOD OF MANUFACTURE SELF-REPAIRING PENDING 1/17/2008 Siliconix incorporated Siliconi	025675/0001	Siliconix incorporated		2/13/2008	PENDING	FIELD EFFECT		12/030,719	UTL
Serial No. Patent No. (Patent December 1988) Serial No. (Patent No. (Patent MOBILITY HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FILED-EFFECT TRANSISTO						SELF-REPAIRING			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						MANUFACTURE			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party POWER METAL- OXIDE 11/644,553 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE 12/123,664 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FIANTIC OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FIANTIC TURE WITH HIGH ELECTROSTATIC DISCHARGE PERFORMANCE A CURRENT MODE USING SLOPE USING SLOPE COMPENSATION SELF-ALIGNED TRENCH MOSFETT STRUCTURE TIRE PENDING 1/18/2007 SIliconix incorporated	025675/0001	Siliconix incorporated		1/17/2008	PENDING	AND METHOD OF		12/015,723	UTL
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party 11/644.553 HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated 12/123.664 HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated 12/123.664 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated 11/655.493 FLOATING GATE STRUCTURE WITH HIGH ELECTROSTATIC DISCHARGE PERFORMANCE PERFORMANCE PERFORMANCE DISCHARGE PERFORMANCE DISCHARGE PERFORMANCE DISCHARGE PENDING 1/18/2007 Siliconix incorporated Siliconix incorporated						SELF-ALIGNED TRENCH MOSEET			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party 11/644.553 HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated 12/123.664 HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated 12/123.664 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS FLOATING GATE STRUCTURE WITH HIGH HIGH HIGH HIGH DISCHARGE PERFORMANCE ALLOWED FIENDING 5/20/2008 Siliconix incorporated 11/655.493 STRUCTURE WITH ELECTROSTATIC DISCHARGE PERFORMANCE PENDING 1/18/2007 Siliconix incorporated 11/655.493 ACURRENT MODE PERFORMANCE PENDING 6/26/2007 Siliconix incorporated 11/655.493 ACURRENT MODE PERFORMANCE Siliconix incorporated Siliconix incorporated						COMPENSATION			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party	025675/0001	Siliconix incorporated		6/26/2007	PENDING	USING SLOPE		11/823,373	TIO
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party				5		BOOST CONVERTER			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						PERFORMANCE			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						DISCHARGE			
Serial No. Patent No. Patent Description) Status File Date Issue Date Domestic Loan Party	02001010001	omeomy meorborated		1710/2007		ELECTROSTATIC		111000,100	Ċ
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party	025675/0001	Siliconia incorporated		1/18/2007	PENDING	HIGH		11/655 403	ITI
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party 11/644,553 HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated 12/123,664 HIGH MOBILITY POWER METAL-OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated 12/123,664 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated FLOATING GATE FLOATING GATE Siliconix incorporated						STRUCTURE WITH			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party 11/644,553 HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR PENDING 12/22/2006 Siliconix incorporated 11/644,553 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated 12/123,664 SEMICONDUCTOR FIELD-EFFECT TRANSISTORS ALLOWED 5/20/2008 Siliconix incorporated						FLOATING GATE			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party 11/644,553 HIGH MOBILITY POWER METAL-OXIDE PENDING 12/22/2006 Siliconix incorporated 11/644,553 FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated HIGH MOBILITY POWER METAL-OXIDE ALLOWED 5/20/2008 Siliconix incorporated 12/123,664 SEMICONDUCTOR FIELD-EFFECT ALLOWED 5/20/2008 Siliconix incorporated						TRANSISTORS			
Serial No.Patent No.(Patent Description)StatusFile DateIssue DateDomestic Loan Party11/644,553HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTORPENDING12/22/200612/22/2006Siliconix incorporated11/644,553SEMICONDUCTOR FIELD-EFFECT TRANSISTORSPENDING12/22/2006Siliconix incorporated12/123,664HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTORALLOWED5/20/2008Siliconix incorporated						FIELD-EFFECT			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE STATE PENDING 12/22/2006 Siliconix incorporated SIIICONIX incorporated SIII	025675/0001	Siliconix incorporated		5/20/2008	ALLOWED	SEMICONDUCTOR		12/123,664	UTL
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT TRANSISTORS HIGH MOBILITY POWER METAL- POWER METAL-						OXIDE			
Title: Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE POWER METAL- OXIDE SEMICONDUCTOR PENDING 12/22/2006 Siliconix incorporated 111/644,553 FIELD-EFFECT TRANSISTORS PENDING 12/22/2006 Siliconix incorporated						POWER METAL-			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE 11/644,553 HOWER METAL- OXIDE SEMICONDUCTOR FIELD-EFFECT PENDING 12/22/2006 Siliconix incorporated						TRANSISTORS			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE 111/644,553 HOWER METAL- OXIDE SEMICONDUCTOR PENDING 12/22/2006 Siliconix incorporated						FIELD-EFFECT			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party HIGH MOBILITY POWER METAL- OXIDE	1000/5/9620	Siliconix incorporated		12/22/2006	PENDING	SEMICONDUCTOR		11/644,555	UIL)
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party POWER METAL- POWER METAL-	005/75/0001			100000	PENTANO	OXIDE		111/1/650	1
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						POWER METAL-			
Serial No. Patent No. (Patent Description) Status File Date Issue Date Domestic Loan Party						HIGH MOBILITY			
Title:	Reel/Frame	Domestic Loan Party	Issue Date	File Date	Status	(Patent Description)	Patent No.	Serial No.	Type
						<u>Title:</u>			

025675/0001	Siliconix incorporated		6/25/2010	PENDING	FIELD BOOSTED METAL-OXIDE- SEMICONDUCTOR FIELD EFFECT TRANSISTOR		12/824,075	UTL
025675/0001	Siliconix incorporated		11/02/2009	PENDING	TRANSISTOR STRUCTURE WITH FEED THROUGH SOURCE-TO - SUBSTRATE CONTACT		61/257,362	UTL
025675/0001	Siliconix incorporated		10/30/2009	PENDING	SEMICONDUCTOR DEVICE WITH TRENCH-LIKE FEED-THROUGHS		12/610,148	UTL
025675/0001	Siliconix incorporated		7/1/2010	PENDING	POWER SWITCH WITH ACTIVE SNUBBER		12/829,247	UTL
025675/0001	Siliconix incorporated		8/31/2010	PENDING	SYSTEM AND METHOD FOR SUBSTRATE WAFER BACK SIDE AND EDGE CROSS SECTION SEALS		12/873,147	UTL
025675/0001	Siliconix incorporated		8/27/2009	PENDING	SUPER JUNCTION TRENCH POWER MOSFET DEVICE FABRICATION		12/549,190	UTL
025675/0001	Siliconix incorporated	8/27/2009	8/27/2009	PENDING	SUPER JUNCTION TRENCH POWER MOSFET DEVICES		12/548,841	TTU
025675/0001	Siliconix incorporated		10/21/2009	PENDING	SPLIT GATE SEMICONDUCTOR DEVICE WITH CURVED GATE OXIDE PROFILE		12/603,028	UTL
Reel/Frame	Domestic Loan Party	Issue Date	File Date	Status	<u>Title:</u> (Patent Description)	Patent No.	<u>Serial No.</u>	<u>Туре</u>

UTL	UTL	UTL	UTL	UTL	UTL	UTL	UTL	Type
11/373,630	10/264,816	09/428,299	10/146,539	61/309,824	12/730,230	12/788,158	12/869,554	Serial No.
	6,921,697	6,348,712	7,186,609					Patent No.
NARROW SEMICONDUCTOR TRENCH STRUCTURE	METHOD FOR MAKING TRENCH MIS DEVICE WITH REDUCED GATE-TO- DRAIN CAPACITANCE	HIGH DENSITY TRENCH-GATED POWER MOSFET	METHOD OF FABRICATING TRENCH JUNCTION BARRIER ERCTIFIER	STRUCTURES OF AND METHODS OF FABRICATING DUAL GATE MIS DEVICES	SEMICONDUCTOR PACKAGES INCLUDING DIE AND L-SHAPED LEAD AND METHOD OF MANUFACTURING	SUPER-HIGH DENSITY POWER TRENCH MOSFET	STRUCTURES OF AND METHODS OF FABRICATING SPLIT GATE MIS DEVICES	Title: (Patent Description)
PENDING	ISSUED	ISSUED	ISSUED	PENDING	PENDING	PENDING	PENDING	Status
3/9/2006	10/03/2002	10/27/1999	5/14/2002	3/02/2010	3/24/2010	5/26/2010	8/26/2010	File Date
	07/26/2005	2/19/2002	3/6/2007					Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
031170/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

UTL	UTL	UTL	UTL	UTL	UTL	UTL	Туре
13/551,516	13/484,114	13/478,037	13/475,255	13/460,600	13/460,567	13/370,243	Serial No.
							Patent No.
CURRENT MODE BOOST CONVERTER USING SLOPE COMPENSATION	ADAPTIVE CHARGE BALANCED EDGE TERMINATION	STACKED TRENCH METAL-OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR DEVICE	SEMICONDUCTOR DEVICE HAVING REDUCED GATE CHARGES AND SUPERIOR FIGURE OF MERIT	METHOD OF FORMING A HYBRID SPLIT GATE SEMICONDUCTOR	HYBRID SPLIT GATE SEMICONDUCTOR	STRUCTURES OF AND METHODS OF FABRICATING POWERMOS WITH TERMINATION TRENCH HAVING THICK OXIDE FOR THE HIGH BDdss	<u>Title:</u> (Patent Description)
PENDING	PENDING	PENDING	PENDING	PENDING	PENDING	FILED	Status
7/17/2012	5/30/2012	5/22/2012	5/18/2012	4/30/2012	4/30/2012	2/9/2012	File Date
							Issue Date
Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	Siliconix incorporated	<u>Domestic Loan Party</u>
031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	031170/0001	Reel/Frame

031170/0001	Siliconix incorporated		3/14/2013	PENDING	METHOD OF FABRICATING STACKED DIE PACKAGE		13/830,041	UTL
031170/0001	Siliconix incorporated		3/14/2013	PENDING	POWER MOSFET PACKAGE WITH STACK DIE, LDMOS DIE STRUCTURE, FLIP CHIP ON LEADFRAME AND SOURCE, DRAIN AND GATE CLIPS		13/829,623	UTL
031170/0001	Siliconix incorporated		12/31/2012	PENDING	ADAPTIVE CHARGE BALANCED MOSFET TECHNIQUES		13/732,284	UTL
1000/071160	Siliconix incorporated		12/27/2012	PENDING	TRENCH METAL OXIDE SEMICONDUCTOR WITH RECESSED TRENCH MATERIAL AND REMOTE CONTACTS		13/728,997	UTL
031170/0001	Siliconix incorporated		10/17/2012	PENDING	POWER MOSFET CONTACT METALIZATION		13/654,230	UTL
000/071180	Siliconix incorporated		9/19/2012	PENDING	BREAKDOWN VOLTAGE BLOCKING DEVICE		13/622,997	UTL
1000/071150	Siliconix incorporated		9/18/2012	PENDING	HIGH CURRENT DENSITY POWER FIELD EFFECT TRANSISTOR		13/622,322	UTL
1000/071120	Siliconix incorporated		8/2/2012	PENDING	PREVENTING REVERSE CONDUCTION		13/565,672	UTL
Reel/Frame	<u>Domestic Loan Party</u>	<u>Issue Date</u>	<u>File Date</u>	<u>Status</u>	<u>Title:</u> (Patent Description)	Patent No.	Serial No.	Туре

Type UTL UTL 08/487,789 13/867,964 Serial No. Patent No. 5,925,411 CURRENT LIMITING SYSTEMS AND <u>Title:</u> (Patent Description) GAS-BASED SUBSTRATE **PROTECTION** DEPOSITION METHODS PENDING ISSUED Status 4/22/2013 File Date 6/7/1995 Issue Date 7/20/1999 Siliconix incorporated Siliconix incorporated Domestic Loan Party 031170/0001 031170/0001 Reel/Frame

(b) U.S. Trademarks and Trademark Applications

VRPower	MICROBUCK	FRED PT	POWERTAB	HEXFRED	FLIPKY	TurboFET	POWERPAK	TRENCHFET	SKYFET	SI STYLIZED	POWERPAIR	POLARPAK	MICRO FOOT	LITTLE FOOT	CHIPFET	<u>Trademark</u>
Siliconix incorporated	Siliconix incorporated	Vishay Siliconix Technology C.V. composed of Siliconix incorporated, General Partner, Siliconix Semiconductor, Inc. and Vishay Siliconix LLC	Vishay Siliconix Technology C.V. composed of Siliconix incorporated, General Partner, Siliconix Semiconductor, Inc. and Vishay Siliconix LLC	Vishay Siliconix Technology C.V.	Vishay Siliconix Technology C.V.	Siliconix incorporated	Legal Owner									
United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	United States	Country
77/896,876	77/900,236	3,662,946	3,704,345	1,753,724	3,073,909	3759042	2672428	2035560	3469285	3087499	3732445	2990388	2701037	1727230	2696001	<u>Reg.#</u>
12/18/2009	12/23/2009	8/4/2009	11/3/2009	2/23/1993	3/28/2006	3/9/2010	1/7/2003	2/4/1997	7/15/2008	5/2/2006	12/29/2009	8/30/2005	3/25/2003	10/27/1992	3/11/2003	Reg. Date
004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	004453/0500	Reel/Frame

PATENT REEL: 049826 FRAME: 0400

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				1	10000000
VRPower	THUNDERFET	SILICONIX	MICROBUCK	THUNDERFET	<u>Trademark</u>
Siliconix incorporated	<u>Legal Owner</u>				
United States	Country				
4,198,891	4,060,661	4,053,107	3.929,833	77/945,647	Reg.#
8/28/2012	11/22/2011	11/8/2011	12/2/1975	Filed 2/26/2010	Reg. Date
5105/0896	5105/0896	5105/0896	5105/0896	004453/0500	Reel/Frame

Patents and Trademarks of Vishay Sprague, Inc.

U.S. Patent Registrations and Patent Applications

(a)

			Title:					
Type	Serial No.	Patent No.	(Patent Description)	<u>Status</u>	File Date	Issue Date	Domestic Loan Party	Reel/Frame
UTL	09/441,434	6,184,775	SURFACE MOUNT RESISTOR	ISSUED	11/16/1999	2/6/2001	Vishay Sprague, Inc.	025675/0001
UTL	10/091,792	6,859,999	METHOD FOR MANUFACTURING A POWER CHIP RESISTOR	ISSUED	3/6/2002	3/1/2005	Vishay Techno Components, LLC	025675/0001
UTL	09/074,185	6,159,817	MULTI-TAP THIN FILM INDUCTOR	ISSUED	5/7/1998	12/12/2000	Vishay EFI, Inc.	025675/0001
UTL	11/759,523		CERAMIC DIELECTRIC FORMULATION FOR BROAD BAND UHF ANTENNA	PUBLISHED	6/7/2007		Vishay Sprague, Inc.	025675/0001
UTL	11/266,915	7,449,032	METHOD OF MANUFACTURING SURFACE MOUNT CAPACITOR	ISSUED	11/4/2005	11/11/2008	Vishay Sprague, Inc.	025675/0001
UTL	11/359,711	7,336,475	HIGH VOLTAGE CAPACITORS	ISSUED	2/22/2006	2/26/2008	Vishay Vitramon, Inc.	025675/0001
UTL	11/293,673	7,283,350	SURFACE MOUNT CHIP CAPACITOR	ISSUED	12/2/2005	10/16/2007	Vishay Sprague, Inc.	025675/0001
UTL	11/264,977	7,221,555	SURFACE MOUNT CHIP CAPACITOR	ISSUED	11/2/2005	5/22/2007	Vishay Sprague, Inc.	025675/0001
UTL	11/266,632	7,179,309	SURFACE MOUNT CHIP CAPACITOR	ISSUED	11/3/2005	2/20/2007	Vishay Sprague, Inc.	025675/0001
UTL	11/259,503	7,167,357	SURFACE MOUNT MELF CAPACITOR	ISSUED	10/26/2005	1/23/2007	Vishay Sprague, Inc.	025675/0001
UTL	11/132,116	7,161,797	SURFACE MOUNT CAPACITOR AND METHOD OF MAKING SAME	ISSUED	5/17/2005	1/9/2007	Vishay Sprague, Inc.	025675/0001
UTL	10/792,138	7,088,573	SURFACE MOUNT MELF CAPACITOR	ISSUED	3/2/2004	8/8/2006	Vishay Sprague, Inc.	025675/0001

UTL 07/	UTL 07/	UTL 12/	UTL 12/	UTL 12/	UTL 12/	UTL 12/	UTL 12/	UTL 09/	UTL 10/	UTL 10/	Type Se
07/677,204	07/677,203	12/553,508	12/189,465	12/052,251	12/189,492	12/107,349	12/759,769	09/758,800	10/792,135	10/792,639	Serial No.
5,053,927	5,099,397							6,541,302	6,914,770	7,085,127	Patent No.
MOLDED FUZED SOLID ELECTROLYTE CAPACITOR	FUZED SOLID ELECTROLYTE CAPACITOR	BULK CAPACITOR AND METHOD	HIGH VOLTAGE CAPACITORS	ELECTROPHORETIC ALLY DEPOSITED CATHODE CAPACITOR	HIGH VOLTAGE CAPACITORS	FRAME PACK AGED ARRAY ELECTRONIC COMPONENT	HERMETICALLY SEALED WET ELECTROLYTIC CAPACITOR	METHOD OF FORMING TERMINATION ON CHIP COMPONENTS	SURFACE MOUNT FLIPCHIP CAPACITOR	SURFACE MOUNT CHIP CAPACITOR	<u>Title:</u> (Patent Description)
ISSUED	ISSUED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	PUBLISHED	ISSUED	ISSUED	ISSUED	Status
3/29/1991	3/29/1991	9/3/2009	8/11/2008	3/20/2008	8/11/2008	4/22/2008	4/14/2010	1/11/2001	3/2/2004	3/2/2004	File Date
10/1/1991	3/24/1992							4/1/2003	7/5/2005	8/1/2006	Issue Date
Sprague Electric Company	Sprague Electric Company	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Vishay Sprague, Inc.	Domestic Loan Party
025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	025675/0001	Reel/Frame

U.S. Trademarks and Trademark Applications

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Trademark	Legal Owner	Country	Reg.#	Reg. Date	Reel/Frame
HVARC GUARD	Vishay Sprague, Inc.	United States	3256019	6/26/2007	004453/0500
MICROTAN	Vishay Sprague, Inc.	United States	3526660	11/4/2008	004453/0500
SPECTROL	Vishay Thin Film, LLC	United States	858837	10/22/1968	004453/0500
SPRAGUE	Vishay Sprague, Inc.	United States	859,975	11/12/1968	004453/0500
SUPERTAN	Vishay Sprague, Inc.	United States	1492049	6/14/1988	004453/0500
TANTAMOUNT	Vishay Sprague, Inc.	United States	1380243	1/28/1986	004453/0500
VITRAMON	Vishay Sprague, Inc.	United States	1238139	5/17/1983	004453/0500
VITRAMON	Vishay Sprague, Inc.	United States	839,908	3/10/1966	004453/0500
SPRAGUE	Vishay Sprague, Inc.	United States	3762167	3/23/2016	004453/0500
CERA-MITE	Vishay Sprague, Inc.	United States	2126097	3/7/2000	004453/0500

PATENT REEL: 049826 FRAME: 0404

RECORDED: 07/17/2019

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