

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT7161985

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
SMART MODULAR TECHNOLOGIES, INC.	02/07/2022
SMART HIGH RELIABILITY SOLUTIONS, LLC	02/07/2022
SMART EMBEDDED COMPUTING, INC.	02/07/2022
CREELED, INC.	02/07/2022
RECEIVING PARTY DATA	
Name:	CITIZENS BANK, N.A.
Street Address:	28 STATE STREET
City:	BOSTON
State/Country:	MASSACHUSETTS
Postal Code:	02109
PROPERTY NUMBERS Total: 929	
Property Type	Number
Patent Number:	8423724
Patent Number:	8767463
Patent Number:	9424188
Patent Number:	9754634
Patent Number:	9684520
Patent Number:	8379391
Patent Number:	6707756
Patent Number:	7956450
Patent Number:	9603252
Patent Number:	9648754
Patent Number:	10529688
Patent Number:	10826989
Patent Number:	9009391
Patent Number:	9606863
Patent Number:	8935463
Patent Number:	9141292
Patent Number:	9335935

Property Type	Number
Patent Number:	9576615
Patent Number:	10877544
Patent Number:	10534619
Patent Number:	7937641
Patent Number:	7724604
Patent Number:	8644105
Patent Number:	8068378
Patent Number:	9204550
Patent Number:	9939855
Patent Number:	8250295
Patent Number:	10755757
Patent Number:	8990489
Patent Number:	8626998
Patent Number:	9779016
Patent Number:	9946469
Patent Number:	10838806
Patent Number:	10409754
Patent Number:	10338821
Patent Number:	10474362
Patent Number:	10573354
Patent Number:	10510432
Patent Number:	10551892
Patent Number:	10185609
Patent Number:	10488892
Patent Number:	11182325
Patent Number:	7155549
Patent Number:	7516263
Patent Number:	7373278
Patent Number:	7394667
Patent Number:	7394169
Patent Number:	7388757
Patent Number:	7298614
Patent Number:	7185025
Patent Number:	7539183
Patent Number:	7965504
Patent Number:	7016194
Patent Number:	7050301
Patent Number:	7136290

Property Type	Number
Patent Number:	6781481
Patent Number:	6814582
Patent Number:	7480736
Patent Number:	7251763
Patent Number:	7532616
Patent Number:	7440450
Patent Number:	7443844
Patent Number:	7187177
Patent Number:	6961249
Patent Number:	7242578
Patent Number:	7073009
Patent Number:	7020727
Patent Number:	6996643
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Patent Number:	7152126
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Patent Number:	7180900
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Patent Number:	7111066
Patent Number:	6983385
Patent Number:	8363388
Patent Number:	10321601
Patent Number:	7957138
Patent Number:	8316341
Patent Number:	8937807
Patent Number:	8506324
Patent Number:	11006548
Patent Number:	11026347

Property Type	Number
Patent Number:	9713287
Patent Number:	10039210
Patent Number:	10027600
Patent Number:	9348657
Patent Number:	10042812
Patent Number:	9414524
Patent Number:	9747184
Patent Number:	10120772
Patent Number:	9791901
Patent Number:	9311212
Patent Number:	9665447
Patent Number:	9317359
Patent Number:	9497099
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Patent Number:	10327357
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Patent Number:	6987281
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Patent Number:	8426881
Patent Number:	6958497
Patent Number:	7312474
Patent Number:	8476091
Patent Number:	8227268
Patent Number:	9112083
Patent Number:	7872268
Patent Number:	7858403
Patent Number:	6888167

Property Type	Number
Patent Number:	7341175
Patent Number:	7608860
Patent Number:	6747298
Patent Number:	7037742
Patent Number:	7611915
Patent Number:	8269241
Patent Number:	8604502
Patent Number:	7531380
Patent Number:	8378461
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Patent Number:	8748920
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Patent Number:	6853010
Patent Number:	7147739
Patent Number:	7638013
Patent Number:	7042020
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Patent Number:	7791092
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Patent Number:	7078254
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Patent Number:	7329569
Patent Number:	7642626
Patent Number:	6972438

Property Type	Number
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Patent Number:	8269240
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Patent Number:	7518158

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Patent Number:	8847257
Patent Number:	7202181
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Patent Number:	7932111
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Patent Number:	7564180
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Patent Number:	8513873
Patent Number:	9412926
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Patent Number:	7777247
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Patent Number:	8669563

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Patent Number:	7329905
Patent Number:	7977686
Patent Number:	8598606
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Patent Number:	8324635
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Patent Number:	7508466
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Patent Number:	8183588
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Patent Number:	7834375
Patent Number:	8202745
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Patent Number:	7638811
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Patent Number:	7649209
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Patent Number:	D591697
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Patent Number:	7769066
Patent Number:	8679876
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Patent Number:	7795623
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Patent Number:	8408749
Patent Number:	9024349
Patent Number:	9159888
Patent Number:	7211833
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Patent Number:	7968900
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Patent Number:	8546787

Property Type	Number
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Patent Number:	10505083
Patent Number:	9484499
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Patent Number:	8178888
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Patent Number:	7635915
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Patent Number:	8877524
Patent Number:	8022388
Patent Number:	8598565
Patent Number:	7939842
Patent Number:	9431589
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Patent Number:	D616839
Patent Number:	8058088
Patent Number:	8618569
Patent Number:	8916890
Patent Number:	8519437
Patent Number:	7910945
Patent Number:	8247836
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Patent Number:	8101443
Patent Number:	9287469
Patent Number:	8637883
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Patent Number:	D615504

Property Type	Number
Patent Number:	9147812
Patent Number:	8038497
Patent Number:	8167674
Patent Number:	9041285
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Patent Number:	8267542
Patent Number:	9335214
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Patent Number:	7843060
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Patent Number:	7821023
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Patent Number:	8513871
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Patent Number:	10266767
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Patent Number:	7718991
Patent Number:	8008676
Patent Number:	8994045
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Patent Number:	8858004
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Property Type	Number
Patent Number:	7897419
Patent Number:	8193544
Patent Number:	7915629
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Patent Number:	8710536
Patent Number:	9425172
Patent Number:	9484329
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Patent Number:	8329482
Patent Number:	8558252
Patent Number:	9437785

Property Type	Number
Patent Number:	8410512
Patent Number:	8508127
Patent Number:	8508117
Patent Number:	9464225
Patent Number:	8379407
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Patent Number:	9240526
Patent Number:	8337214
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Property Type	Number
Patent Number:	9123874
Patent Number:	8476668
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Property Type	Number
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Patent Number:	9859471
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Patent Number:	9640737
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Property Type	Number
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Patent Number:	9786825
Patent Number:	9431590
Patent Number:	D712849
Patent Number:	D713804
Patent Number:	9653643
Patent Number:	10854584
Patent Number:	10222032
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Patent Number:	9349929
Patent Number:	9786811
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Patent Number:	D703348
Patent Number:	9685585

Property Type	Number
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Patent Number:	9818919
Patent Number:	9897267
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Patent Number:	10234119

Property Type	Number
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Patent Number:	10797201
Patent Number:	10424702
Patent Number:	D746240
Patent Number:	9960322
Patent Number:	9685101
Patent Number:	9954144
Patent Number:	9215761
Patent Number:	9538590
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Patent Number:	9691949
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Property Type	Number
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Patent Number:	9780266
Patent Number:	D783547
Patent Number:	9871173
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Patent Number:	10192854
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Patent Number:	10439114
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Patent Number:	10734560
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Patent Number:	11107857
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Patent Number:	10573543
Patent Number:	10964866
Patent Number:	10957736
Patent Number:	11101410
Patent Number:	10608148
Patent Number:	10522722
Patent Number:	10811573
Patent Number:	11121298
Patent Number:	11024785
Patent Number:	D902448
Patent Number:	11145689
Patent Number:	10651351
Patent Number:	11081626
Patent Number:	10903265
Patent Number:	10903268
Patent Number:	D920934
Patent Number:	11189766
Patent Number:	10879441
Patent Number:	10985294
Patent Number:	11101411
Patent Number:	11024613
Patent Number:	11094848
Patent Number:	11083059
Patent Number:	D926714
Application Number:	11432793
Application Number:	12899228
Application Number:	16889729
Application Number:	17233433
Application Number:	17233434
Application Number:	16529919
Application Number:	16293267
Application Number:	15459161

Property Type	Number
Application Number:	17127154
Application Number:	16944874
Application Number:	16804986
Application Number:	16596300
Application Number:	16263191
Application Number:	17103509
Application Number:	13804309
Application Number:	17325970
Application Number:	14447357
Application Number:	17062119
Application Number:	14271116
Application Number:	14691314
Application Number:	14453482
Application Number:	16601826
Application Number:	17377833
Application Number:	14633734
Application Number:	16664686
Application Number:	16944356
Application Number:	15087641
Application Number:	16950142
Application Number:	17116576
Application Number:	17092939
Application Number:	15676965
Application Number:	16983553
Application Number:	16963533
Application Number:	17336454
Application Number:	16796093
Application Number:	16794414
Application Number:	17540510
Application Number:	17016701
Application Number:	16390714
Application Number:	17238934
Application Number:	16118779
Application Number:	16545357
Application Number:	16118788
Application Number:	17152127
Application Number:	17507201
Application Number:	17004486

Property Type	Number
Application Number:	17220051
Application Number:	16369003
Application Number:	16381116
Application Number:	16437878
Application Number:	16542923
Application Number:	16543009
Application Number:	16815101
Application Number:	17081522
Application Number:	16690707
Application Number:	17364987
Application Number:	17084194
Application Number:	16857721
Application Number:	17357091
Application Number:	16918137
Application Number:	16906129
Application Number:	17178511
Application Number:	16850540
Application Number:	16993470
Application Number:	17002320
Application Number:	17019593
Application Number:	17078733
Application Number:	17538078
Application Number:	17103121
Application Number:	17123381
Application Number:	17173735
Application Number:	17383923
Application Number:	29779119
Application Number:	17471951
Application Number:	17496320
Application Number:	17539628
Application Number:	17539671
Application Number:	17539678
Application Number:	17539685
Application Number:	17494264
Application Number:	17396160
Application Number:	17514012
Application Number:	17500219
Application Number:	63256077

CORRESPONDENCE DATA**Fax Number:** (704)503-2622*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:** 7045032600**Email:** msheehan@kslaw.com**Correspondent Name:** KING & SPALDING LLP**Address Line 1:** 300 S. TRYON ST., STE 1700**Address Line 2:** ATTN: MOIRA SHEEHAN**Address Line 4:** CHARLOTTE, NORTH CAROLINA 28202

ATTORNEY DOCKET NUMBER:	18588.515147
NAME OF SUBMITTER:	MOIRA SHEEHAN
SIGNATURE:	/Moira Sheehan/
DATE SIGNED:	02/07/2022

Total Attachments: 76

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PATENT SECURITY AGREEMENT dated as of February 7, 2022 (this "Agreement"), among SMART MODULAR TECHNOLOGIES, INC., a California corporation, SMART HIGH RELIABILITY SOLUTIONS, LLC, a Delaware limited liability company, SMART EMBEDDED COMPUTING, INC., a Wisconsin corporation, CREELED, INC., a Delaware corporation, (collectively, the "Grantors" and each individually, a "Grantor") and CITIZENS BANK, N.A., as Collateral Agent (in such capacity and together with successors in such capacity, the "Collateral Agent").

Reference is made to (a) the Credit Agreement dated as of February 7, 2022 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), among SMART GLOBAL HOLDINGS, INC., a Cayman Islands exempted company (the "Parent Borrower"), SMART MODULAR TECHNOLOGIES, INC., a California corporation (the "Co-Borrower" and, together with the Parent Borrower, the "Borrowers" and each a "Borrower"), the Lenders party thereto, the Issuing Banks party thereto and Citizens Bank, N.A., as Administrative Agent and Collateral Agent, and (b) the Collateral Agreement dated as of February 7, 2022 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Collateral Agreement"), among the Borrowers, the other grantors from time to time party thereto and the Collateral Agent. The Lenders and the Issuing Banks have agreed to extend credit to the Borrowers subject to the terms and conditions set forth in the Credit Agreement. Each Grantor is an Affiliate of the Borrowers, will derive substantial benefits from the extension of credit to the Borrowers pursuant to the Credit Agreement and is willing to execute and deliver this Agreement in order to induce the Lenders to make additional Loans and the Issuing Banks to issue additional Letters of Credit and as consideration for Loans previously made and Letters of Credit previously issued. Accordingly, the parties hereto agree as follows:

SECTION 1. Terms. Capitalized terms used in this Agreement and not otherwise defined herein have the meanings specified in the Collateral Agreement or the Credit Agreement, as applicable. The rules of construction specified in Section 1.01(b) of the Collateral Agreement also apply to this Agreement.

SECTION 2. Grant of Security Interest. As security for the payment or performance, as the case may be, in full of all Secured Obligations, each Grantor hereby grants to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, a security interest (the "Security Interest") in all of each Grantor's right, title and interest in, to and under the Patents now owned or at any time hereafter acquired by such Grantor, including the registrations and applications thereof listed on Schedule I (the "Patent Collateral").

SECTION 3. Collateral Agreement. The Security Interest granted to the Collateral Agent herein is granted in furtherance, and not in limitation, of the security interests granted to the Collateral Agent pursuant to the Collateral Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the Patent Collateral are more fully set forth in the Collateral Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Collateral Agreement, the terms of the Collateral Agreement shall govern.

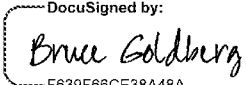
SECTION 4. Counterparts. This Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original but all of which when taken together shall constitute a single contract. Delivery of an executed signature page to this Agreement by facsimile or other electronic transmission shall be effective as delivery of a manually signed counterpart of this Agreement.

SECTION 5. GOVERNING LAW. THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAW OF THE STATE OF NEW YORK.

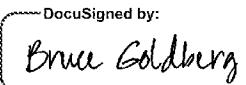
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IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

SMART MODULAR TECHNOLOGIES, INC.

By: 
Name: Bruce Goldberg
Title: Vice President and Secretary

SMART HIGH RELIABILITY SOLUTIONS LLC
SMART EMBEDDED COMPUTING, INC.
CREELED, INC.

By: 
Name: Bruce Goldberg
Title: Vice President

CITIZENS BANK, N.A., as Collateral Agent

By: 
Name: Janet Lee
Title: Managing Director

Schedule I

Patents

Patents	Owner	Patent No.	Application No.	Issue Date
DYNAMIC BACK-UP STORAGE SYSTEM WITH RAPID RESTORE AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	8,423,724	12/878,008	16-Apr-2013
NON-VOLATILE DYNAMIC RANDOM ACCESS MEMORY SYSTEM WITH NON-DELAY-LOCKED-LOOP MECHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	8,767,463	13/207,503	01-Jul-2014
NON-VOLATILE MEMORY PACKAGING SYSTEM WITH CACHING AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	9,424,188	13/303,818	23-Aug-2016
MEMORY MANAGEMENT SYSTEM WITH POWER SOURCE AND METHOD OF MANUFACTURE THEREOF	Smart Modular Technologies, Inc.	9,754,634	13/303,863	05-Sep-2017
COMPUTING SYSTEM WITH NON-DISRUPTIVE FAST MEMORY RESTORE MECHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	9,684,520	13/277,720	20-Jun-2017
MEMORY MODULE WITH VERTICALLY ACCESSED INTERPOSER ASSEMBLIES	Smart Modular Technologies, Inc.	8,379,391	12/465,560	19-Feb-2013
SYSTEM AND METHOD FOR TRANSLATION OF SDRAM AND DDR SIGNALS	Smart Modular Technologies, Inc.	6,707,756	10/097,687	16-Mar-2004
MULTI CHIP PACKAGE	Smart Modular Technologies, Inc.	7,956,450	12/416,339	07-Jun-2011
INTEGRATED CIRCUIT DEVICE SYSTEM WITH ELEVATED	Smart Modular Technologies, Inc.	9,603,252	14/077,908	21-Mar-2017

CONFIGURATION AND METHOD OF MANUFACTURE THEREOF				
INTEGRATED CIRCUIT DEVICE SYSTEM WITH ELEVATED CONFIGURATION AND METHOD OF MANUFACTURE THEREOF	Smart Modular Technologies, Inc.	9,648,754	14/231,622	09-May-2017
INTEGRATED CIRCUIT DEVICE SYSTEM WITH ELEVATED CONFIGURATION AND METHOD OF MANUFACTURE THEREOF	Smart Modular Technologies, Inc.	10,529,688	15/462,885	07-Jan-2020
DATA STORAGE SYSTEM WITH INFORMATION EXCHANGE MECHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,826,989	14/512,624	03-Nov-2020
SOLID STATE DRIVE ARCHITECTURE	SMART High Reliability Solutions, LLC	9,009,391	13/280,206	14-Apr-2015
SOLID STATE DRIVE ARCHITECTURE	SMART High Reliability Solutions, LLC	9,606,863	13/831,816	28-Mar-2017
COMPUTE ENGINE IN A SMART SSD EXPLOITING LOCALITY OF DATA	SMART High Reliability Solutions, LLC	8,935,463	14/147,462	13-Jan-2015
ENHANCED INTERFACE TO FIRMWARE OPERATING IN A SOLID STATE DRIVE	SMART High Reliability Solutions, LLC	9,141,292	14/591,887	22-Sep-2015
ENHANCED INTERFACE TO FIRMWARE OPERATING IN A SOLID STATE DRIVE	SMART High Reliability Solutions, LLC	9,335,935	14/860,605	10-May-2016
MEMORY MODULE WITH POWER MANAGEMENT SYSTEM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	9,576,615	14/884,369	21-Feb-2017
MEMORY MANAGEMENT SYSTEM WITH BACKUP SYSTEM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,877,544	14/994,065	29-Dec-2020

MEMORY MANAGEMENT SYSTEM WITH MULTIPLE BOOT DEVICES AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,534,619	15/055,448	14-Jan-2020
MEMORY MODULES WITH ERROR DETECTION AND CORRECTION	Smart Modular Technologies, Inc.	7,937,641	11/643,100	03-May-2011
CLOCK AND POWER FAULT DETECTION FOR MEMORY MODULES	Smart Modular Technologies, Inc.	7,724,604	11/552,949	25-May-2010
CLOCK AND POWER FAULT DETECTION FOR MEMORY MODULES	Smart Modular Technologies, Inc.	8,644,105	12/770,576	04-Feb-2014
CLOCK AND POWER FAULT DETECTION FOR MEMORY MODULES	Smart Modular Technologies, Inc.	8,068,378	12/770,610	29-Nov-2011
EXTENDED CAPACITY MEMORY SYSTEM WITH LOAD RELIEVED MEMORY AND METHOD OF MANUFACTURE THEREOF	Smart Modular Technologies, Inc.	9,204,550	13/633,074	01-Dec-2015
EXTENDED CAPACITY MEMORY SYSTEM WITH LOAD RELIEVED MEMORY AND METHOD OF MANUFACTURE THEREOF	Smart Modular Technologies, Inc.	9,939,855	14/942,787	10-Apr-2018
MULTI-RANK MEMORY MODULE THAT EMULATES A MEMORY MODULE HAVING A DIFFERENT NUMBER OF RANKS	Smart Modular Technologies, Inc.	8,250,295	10/752,151	21-Aug-2012
MULTI-RANK MEMORY MODULE THAT EMULATES A MEMORY MODULE HAVING A DIFFERENT NUMBER OF RANKS	Smart Modular Technologies, Inc.	10,755,757	12/902,073	25-Aug-2020
MULTI-RANK MEMORY MODULE THAT EMULATES A MEMORY MODULE HAVING A DIFFERENT NUMBER OF RANKS	Smart Modular Technologies, Inc.	8,990,489	13/568,694	24-Mar-2015
MULTI-RANK MEMORY MODULE THAT EMULATES A MEMORY	Smart Modular Technologies, Inc.	8,626,998	13/972,337	07-Jan-2014

MODULE HAVING A DIFFERENT NUMBER OF RANKS				
COMPUTING SYSTEM WITH BACKUP AND RECOVERY MACHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	9,779,016	13/940,118	03-Oct-2017
SOLID STATE STORAGE SYSTEM WITH LATENCY MANAGEMENT MECHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	9,946,469	15/076,433	17-Apr-2018
SOLID STATE STORAGE SYSTEM WITH LATENCY MANAGEMENT MECHANISM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,838,806	15/955,566	17-Nov-2020
INTERCONNECTED MEMORY SYSTEM AND METHOD OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,409,754	15/141,757	10-Sep-2019
MEMORY CONTROLLER FOR HIGH LATENCY MEMORY DEVICES	Smart Modular Technologies, Inc.	10,338,821	15/285,305	02-Jul-2019
FLASH-BASED BLOCK STORAGE SYSTEM WITH TRIMMED SPACE MANAGEMENT AND METHOF OF OPERATION THEREOF	Smart Modular Technologies, Inc.	10,474,362	15/294,678	12-Nov-2019
HIGH DENSITY MEMORY MODULE SYSTEM	Smart Modular Technologies, Inc.	10,573,354	15/273,385	25-Feb-2020
MEMORY MODULE TEST ADAPTER	Smart Modular Technologies, Inc.	10,510,432	15/659,420	17-Dec-2019
CENTRALIZED BACKUP POWER MODULE	Smart Modular Technologies, Inc.	10,551,892	15/709,257	04-Feb-2020
VIRTUAL TIMER FOR DATA RETENTION	Smart Modular Technologies, Inc.	10,185,609	15/388,704	22-Jan-2019

PORTABLE MODULE SYSTEM	Smart Modular Technologies, Inc.	10,488,892	15/789,041	26-Nov-2019
MEMORY CENTRIC COMPUTING STORAGE CONTROLLER SYSTEM	Smart Modular Technologies, Inc.	11182325	16/889,727	23-Nov-2021
VMEBUS Split-Read Transaction	SMART Embedded Computing, Inc.	7,155,549	10/899,651	26-Dec-2006
Re-Configurable PCI-Express Switching Device	SMART Embedded Computing, Inc.	7,516,263	11/364,418	07-Apr-2009
Method Of Latent Fault Checking A Cooling Module	SMART Embedded Computing, Inc.	7,373,278	11/336,230	13-May-2008
High Density Power Distribution Unit	SMART Embedded Computing, Inc.	7,394,667	11/093,628	01-Jul-2008
Power Distribution System	SMART Embedded Computing, Inc.	7,394,169	11/287,645	01-Jul-2008
Monolithic Backplane Having A First And Second Portion	SMART Embedded Computing, Inc.	7,388,757	11/287,765	17-Jun-2008
Telco Hub And Method	SMART Embedded Computing, Inc.	7,298,614	11/287,766	20-Nov-2007
Subnet Replicated Database Elements	SMART Embedded Computing, Inc.	7,185,025	10/676,484	27-Feb-2007

Multi-Service Platform System And Method	SMART Embedded Computing, Inc.	7,539,183	10/178,670	26-May-2009
Embedded Computer Chassis With Redundant Fan Trays	SMART Embedded Computing, Inc.	7,965,504	11/442,021	21-Jun-2011
Method And Apparatus For Cooling A Module Portion	SMART Embedded Computing, Inc.	7,016,194	10/927,882	21-Mar-2006
Integrated Power Supply And Air Inlet Unit	SMART Embedded Computing, Inc.	7,050,301	10/927,881	23-May-2006
Blade Circuit Cross-Connection Adapted For Peer-To-Peer Backplanes	SMART Embedded Computing, Inc.	7,136,290	11/443,784	04-Nov-2006
Methods And Apparatus For Filtering Electromagnetic Interference From A Signal In An Input/Output Port	SMART Embedded Computing, Inc.	6,781,481	10/288,795	24-Aug-2004
Rear Interconnect Blade For Rack Mounted Systems	SMART Embedded Computing, Inc.	6,814,582	10/291,024	09-Nov-2004
Method Of Discovering And Operating A Payload Node	SMART Embedded Computing, Inc.	7,480,736	10/822,360	20-Jan-2009
Boundary Scan Testing System	SMART Embedded Computing, Inc.	7,251,763	11/076,478	31-Jul-2007
Fabric Enabled Storage Module	SMART Embedded Computing, Inc.	7,532,616	10/947,970	12-May-2009

Payload Module Having A Switched Fabric Enabled Mezzanine Card	SMART Embedded Computing, Inc.	7,440,450	10/947,740	21-Oct-2008
Switched Fabric Mezzanine Storage Module	SMART Embedded Computing, Inc.	7,443,844	10/947,738	28-Oct-2008
Method Of Monitoring A Power Distribution Unit	SMART Embedded Computing, Inc.	7,187,177	11/093,855	06-Mar-2007
Latching Apparatus For Mounting A Computer Module	SMART Embedded Computing, Inc.	6,961,249	10/426,484	01-Nov-2005
N/2 Slot Switch Module	SMART Embedded Computing, Inc.	7,242,578	10/441,705	10-Jul-2007
VXS Payload Module And Method	SMART Embedded Computing, Inc.	7,073,009	10/839,841	04-Jul-2006
Full-Span Switched Fabric Carrier Module And Method	SMART Embedded Computing, Inc.	7,020,727	10/854,818	28-Mar-2006
Method Of VME Module Transfer Speed Auto-Negotiation	SMART Embedded Computing, Inc.	6,996,643	10/836,706	07-Feb-2006
Integrally Embedded Backplane Data Device And Method	SMART Embedded Computing, Inc.	7,155,547	10/884,417	26-Dec-2006
Multi-Network Modules With Hot-Swap Capability	SMART Embedded Computing, Inc.	7,307,987	10/947,972	11-Dec-2007

Method Of Transporting A RapidIO Packet Over An IP Packet Network	SMART Embedded Computing, Inc.	7,620,047	10/997,300	17-Nov-2009
Switch Module Having One Of 3U And 9U Form Factor	SMART Embedded Computing, Inc.	7,154,747	10/947,971	26-Dec-2006
Stacked 3U Payload Module Unit	SMART Embedded Computing, Inc.	7,152,126	10/917,090	19-Dec-2006
3U Payload Module Configurations	SMART Embedded Computing, Inc.	7,254,039	10/973,733	07-Aug-2007
Method Of Communicating A VMEBUS Signal Over IP Packet Network	SMART Embedded Computing, Inc.	7,120,725	10/996,891	10-Oct-2006
Method Of VMEBUS Split-Read Transaction	SMART Embedded Computing, Inc.	7,254,659	10/899,611	07-Aug-2007
Highly Available Power Distribution System	SMART Embedded Computing, Inc.	7,141,893	11/093,854	28-Nov-2006
Method For Failover Management In A Synchronous Optical Network Using Standard Protocols	SMART Embedded Computing, Inc.	6,738,345	09/598,090	18-May-2004
Apparatus And Method For Electrically Coupling A Bezel	SMART Embedded Computing, Inc.	6,977,819	09/957,999	20-Dec-2005
Cabinet For Cooling Electronic Modules	SMART Embedded Computing, Inc.	6,611,428	10/216,955	26-Aug-2003

Multi-Service Platform Module	SMART Embedded Computing, Inc.	7,228,338	10/107,967	05-Jun-2007
Communications System Embedding Communications Session Into ATM Virtual Circuit At Line Interface Card And Routing The Virtual Circuit To A Processor Card Via A Backplane	SMART Embedded Computing, Inc.	7,180,900	10/367,045	20-Feb-2007
Method Of Flow Control	SMART Embedded Computing, Inc.	7,274,660	10/222,733	25-Sep-2007
Method Of Operating A Storage Device	SMART Embedded Computing, Inc.	7,111,066	10/107,618	19-Sep-2006
Configurable Baseboard To Power A Mezzanine Card And Method	SMART Embedded Computing, Inc.	6,983,385	10/261,930	03-Jan-2006
System And Method For Supplying Power To Electronics Enclosures Utilizing Distributed DC Power Architectures	SMART Embedded Computing, Inc.	8,363,388	12/580,498	29-Jan-2013
System and Method For Restricting Airflow Through A Portion Of An Electronics Enclosure	SMART Embedded Computing, Inc.	10,321,601	12/580,477	11-Jun-2019
System And Method For Blocking Lateral Airflow Paths Between Modules In An Electronic Equipment Enclosure	SMART Embedded Computing, Inc.	7,957,138	12/580,449	07-Jun-2011
Hardware Description Language (HDL) Generation Systems And Methods For Custom Circuit Boards	SMART Embedded Computing, Inc.	8,316,341	12/561,329	20-Nov-2012

Circuit Board Heatsink And Heatframe Structures With Heater Element For Circuit Board Operation At Below Zero Temperature	SMART Embedded Computing, Inc.	8,937,807	13/300,871	20-Jan-2015
USB Receptacle With A Riser At Its End	SMART Embedded Computing, Inc.	8,506,324	13/325,135	13-Aug-2013
Method And Device To Provide Uniform Cooling In Rugged Environments	SMART Embedded Computing, Inc.	11,006,548	13/757,038	11-May-2021
Configurable Cooling For Rugged Environments	SMART Embedded Computing, Inc.	11,026,347	13/724,952	01-Jun-2021
Integrated Thermal Inserts And Cold Plate	SMART Embedded Computing, Inc.	9,713,287	13/741,710	18-Jul-2017
Integrated Thermal Inserts And Cold Plate	SMART Embedded Computing, Inc.	10,039,210	15/616,257	31-Jul-2018
Time-Division Multiplexing Data Aggregation Over High Speed Serializer/Deserializer Lane	SMART Embedded Computing, Inc.	10,027,600	14/482,295	17-Jul-2018
Method And System Of Synchronizing Processors To The Same Computational Point	SMART Embedded Computing, Inc.	9,348,657	14/254,930	24-May-2016
Method And System Of Synchronizing Processors To The Same Computational Point	SMART Embedded Computing, Inc.	10,042,812	15/148,271	07-Aug-2018
Extended Heat Frame For Printed Circuit Board	SMART Embedded Computing, Inc.	9,414,524	14/023,521	09-Aug-2016

Operation Of I/O In A Safe System	SMART Embedded Computing, Inc.	9,747,184	14/219,043	29-Aug-2017
Operation Of I/O In A Safe System	SMART Embedded Computing, Inc.	10,120,772	15/651,023	06-Nov-2018
Safety Relay Box System	SMART Embedded Computing, Inc.	9,791,901	14/141,580	17-Oct-2017
Task Based Voting For Fault-Tolerant Fail Safe Computer Systems	SMART Embedded Computing, Inc.	9,311,212	14/141,594	12-Apr-2016
Fault-Tolerant Failsafe Computer System Using COTS Components	SMART Embedded Computing, Inc.	9,665,447	14/140,686	30-May-2017
Reliable, Low Latency Hardware And Software Inter-Process Communication Channel For Safety Critical System	SMART Embedded Computing, Inc.	9,317,359	14/219,051	19-Apr-2016
Voting Architecture For Safety And Mission Critical Systems	SMART Embedded Computing, Inc.	9,497,099	14/219,057	15-Nov-2016
Modular Electronics For Cylinders	SMART Embedded Computing, Inc.	9,288,929	14/490,169	15-Mar-2016
Thermal Conduction To A Cylindrical Shaft	SMART Embedded Computing, Inc.	10,327,357	14/490,186	18-Jun-2019
Alignment Mechanism For Cabling To A Cylinder Head	SMART Embedded Computing, Inc.	9,439,312	14/490,226	06-Sep-2016

Direct Connect Algorithm	SMART Embedded Computing, Inc.	9,367,375	14/251,677	14-Jun-2016
End To End FPGA Diagnostics For A Safety System	SMART Embedded Computing, Inc.	10,338,995	15/456,034	02-Jul-2019
FPGA Mismatched Packet Stop For A Safety System	SMART Embedded Computing, Inc.	10,372,579	15/455,619	06-Aug-2019
Daisy-Chain Of Safety Systems	SMART Embedded Computing, Inc.	10,621,031	15/624,319	14-Apr-2020
Printed Circuit Board Electrical Connector Locking Via Threaded Fasteners	SMART Embedded Computing, Inc.	11,083,099	16/668,019	03-Aug-2021
Carrier For One Or More Solid State Drives (SSDs)	SMART Embedded Computing, Inc.	11,023,020	16/667,975	01-Jun-2021
Signal Pairing For Module Expansion Of A Failsafe Computing System	SMART Embedded Computing, Inc.	10,621,024	15/700,561	14-Apr-2020
High Precision Timer In CPU Cluster	SMART Embedded Computing, Inc.	10,110,367	13/799,167	23-Oct-2018
Inverted Light Emitting Diode on Conductive Substrate	CreeLED, Inc.	7,170,097	10/367,495	30-Jan-2007
Light Emitting Diode with Degenerate Coupling Structure	CreeLED, Inc.	7,482,183	11/625,377	27-Jan-2009
Light Emitting Diode with Metal Coupling Structure	CreeLED, Inc.	7,531,840	11/627,399	12-May-2009

Group III Nitride Contact Structures for Light Emitting Devices	CreeLED, Inc.	6,987,281	10/366,053	17-Jan-2006
Group III-Nitride LED with Silicon Carbide Cladding Layer	CreeLED, Inc.	6,952,024	10/365,901	04-Oct-2005
Light Emitting Diodes Including Two Reflector Layers	CreeLED, Inc.	8,426,881	12/360,216	23-Apr-2013
Group III Nitride Based Light Emitting Diode Structures with a Quantum Well and Superlattice, Group III Nitride Based Quantum Well Structures and Group III Nitride Based Superlattice Structures	CreeLED, Inc.	6,958,497	10/140,796	25-Oct-2005
Group III Nitride Based Superlattice Structures	CreeLED, Inc.	7,312,474	10/963,666	25-Dec-2007
Methods and Systems for Fabricating Broad Spectrum Light Emitting Devices	CreeLED, Inc.	8,476,091	12/951,177	02-Jul-2013
Methods of Fabricating Group III Nitride Based Light Emitting Diode Structures with a Quantum Well and Supperlattice, Group III Nitride Based Quantum Well Structures and Group III Nitride Based Superlattice Structures	CreeLED, Inc.	8,227,268	11/875,353	24-Jul-2012
Group III Nitride Based Light Emitting Diode Structures with a Quantum Well and Superlattice, Group III Nitride based Quantum Well Structures and Group III Nitride Based Superlattice Structures	CreeLED, Inc.	9,112,083	13/535,026	18-Aug-2015
Improved Substrate Buffer Structure for Group III Nitride Devices	CreeLED, Inc.	7,872,268	11/110,545	18-Jan-2011
Methods and Systems for Fabricating Broad Spectrum Light Emitting Devices	CreeLED, Inc.	7,858,403	10/267,093	28-Dec-2010
Ultraviolet Light Emitting Diode	CreeLED, Inc.	RE43,725	11/432,793	09-Oct-2012

Flip Chip Bonding of Light Emitting Devices and Light Emitting Devices Suitable for Flip-Chip Bonding	CreeLED, Inc.	6,888,167	10/185,252	03-May-2005
Bonding of Light Emitting Diodes Having Shaped Substrates	CreeLED, Inc.	7,341,175	10/832,971	11-Mar-2008
Flip Chip Bonding of Light Emitting Devices and Light Emitting Devices Suitable for Flip-Chip Bonding	CreeLED, Inc.	7,608,860	11/772,419	27-Oct-2009
Collets for Bonding of Light Emitting Diodes Having Shaped Substrates	CreeLED, Inc.	6,747,298	10/185,350	08-Jun-2004
Methods of Fabricating Light Emitting Devices Using Mesa Regions and Passivation Layers	CreeLED, Inc.	7,037,742	10/825,647	02-May-2006
Methods of Manufacturing Light Emitting Diodes Including Barrier Layers/Sublayers	CreeLED, Inc.	7,611,915	11/688,605	03-Nov-2009
Methods of Manufacturing Light Emitting Diodes Including Barrier Layers/Sublayers	CreeLED, Inc.	8,269,241	12/564,458	18-Sep-2012
Methods of Manufacturing Light Emitting Diodes Including Barrier Layers/Sublayers	CreeLED, Inc.	8,604,502	13/586,642	10-Dec-2013
Light-Emitting Devices Having an Active Region with Electrical Contacts Coupled to Opposing Surfaces Thereof and Methods of Forming the Same	CreeLED, Inc.	7,531,380	10/818,619	12-May-2009
Light Emitting Devices having an Action Region with Electrical Contacts Coupled to Opposing Surfaces Thereof	CreeLED, Inc.	8,378,461	12/463,736	19-Feb-2013
Light Emitting Devices Having an Anti-reflective Layer that has a Graded Index of Refraction and Methods of Forming the Same	CreeLED, Inc.	7,087,936	10/818,620	08-Aug-2006
Light-Emitting Devices Having an Antireflective Layer that Has a Graded Index of Refraction and Methods of Forming the Same	CreeLED, Inc.	8,748,920	11/478,873	10-Jun-2014

Light-Emitting Devices having Coplanar Electrical Contacts Adjacent to a Substrate Surface Opposite an Active Region and Methods of Forming Same	CreeLED, Inc.	7,714,345	10/818,592	11-May-2010
Phosphor-Coated Light Emitting Diodes Including Tapered Sidewalls, and Fabrication Methods Therefor	CreeLED, Inc.	6,853,010	10/659,241	08-Feb-2005
Systems for Assembling Components on Submounts and Methods Therefor	CreeLED, Inc.	7,147,739	10/325,616	12-Dec-2006
Systems for Assmbling Components on Submounts and Methods therefor	CreeLED, Inc.	7,638,013	11/585,515	29-Dec-2009
Light Emitting Device Incorporating a Luminescent Material	CreeLED, Inc.	7,042,020	10/248,754	09-May-2006
Light Emitting Device Incorporating a Luminescent Material	CreeLED, Inc.	6,967,116	10/853,921	22-Nov-2005
Multicomponent Solid State White Light	CreeLED, Inc.	7,005,679	10/427,274	28-Feb-2006
Multiple Component Solid State White Lamp	CreeLED, Inc.	7,791,092	11/347,645	07-Sep-2010
Multiple Component Solid State White Lamp	CreeLED, Inc.	8,901,585	12/845,629	02-Dec-2014
Reflective Ohmic Contacts for Silicon Carbide Including a Layer Consisting of Nickel, Methods of Fabricating Same, and Light Emitting Diodes Including the Same	CreeLED, Inc.	6,794,684	10/368,063	21-Sep-2004
LED Fabrication via Ion Implant Isolation	CreeLED, Inc.	7,338,822	10/840,463	04-Mar-2008
LED Fabrication via Ion Implant Isolation	CreeLED, Inc.	7,592,634	11/154,619	22-Sep-2009
LED Fabrication via Ion Implant Isolation	CreeLED, Inc.	7,943,406	12/327,882	17-May-2011
LED Fabrication Via Ion Implant Isolation	CreeLED, Inc.	7,943,954	12/507,288	17-May-2011

Light Emitting Devices for Light Conversion and Methods and Semiconductor Chips for Fabricating the Same	CreeLED, Inc.	6,885,033	10/385,034	26-Apr-2005
Methods of Fabricating Light Emitting Devices for Light Conversion	CreeLED, Inc.	7,405,094	11/011,545	29-Jul-2008
Methods of Fabricating Light Emitting Devices for Light Conversion	CreeLED, Inc.	8,941,125	12/173,393	27-Jan-2015
Light-Emitting Devices Having Multiple Encapsulation Layers with at Least One of the Encapsulation Layers Including Nanoparticles and Methods of Forming the Same	CreeLED, Inc.	7,868,343	10/818,912	11-Jan-2011
Light-Emitting Devices Having Multiple Encapsulation Layers with at Least One of the Encapsulation Layers Including Nanoparticles and Methods of Forming the Same	CreeLED, Inc.	8,946,755	12/953,803	03-Feb-2015
LED Package Die Having a Small Footprint	CreeLED, Inc.	6,897,486	10/721,641	24-May-2005
LED Package Die Having a Small Footprint	CreeLED, Inc.	7,078,254	11/034,598	18-Jul-2006
Composite Leadframe LED Package and Method of Making the Same	CreeLED, Inc.	7,692,206	10/721,654	06-Apr-2010
Methods of Forming Semiconductor Devices Having Self-Aligned Semiconductor Mesas and Contact Layers	CreeLED, Inc.	7,160,747	10/741,705	09-Jan-2007
Semiconductor Devices Having Self Aligned Semiconductor Mesas And Contact Layers	CreeLED, Inc.	7,613,219	11/520,383	03-Nov-2009
Methods of Forming Semiconductor Devices Including Mesa Structures and Multiple Passivation Layers	CreeLED, Inc.	7,329,569	10/741,240	12-Feb-2008
Semiconductor Devices Including Mesa Structures and Multiple Passivation Layers	CreeLED, Inc.	7,642,626	11/959,725	05-Jan-2010

Light Emitting Diode with Porous SiC Substrate and Method for Fabricating	CreeLED, Inc.	6,972,438	10/676,953	06-Dec-2005
Composite White Light Source and Method for Fabricating	CreeLED, Inc.	9,142,734	10/786,755	22-Sep-2015
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	7,264,378	10/446,532	04-Sep-2007
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	8,530,915	13/022,365	10-Sep-2013
POWER SURFACE MOUNT LIGHT EMITTING DIE PACKAGE	CreeLED, Inc.	8,710,514	13/481,334	29-Apr-2014
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	7,244,965	10/692,351	17-Jul-2007
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	7,775,685	11/703,721	17-Aug-2010
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	8,188,488	11/689,868	29-May-2012
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	7,659,551	11/694,046	09-Feb-2010
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	7,976,186	12/856,320	12-Jul-2011
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	8,608,349	13/023,263	17-Dec-2013
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	8,167,463	13/023,268	01-May-2012
Power Surface Mount Light Emitting Die Package	CreeLED, Inc.	8,622,582	13/023,273	07-Jan-2014
High Efficiency LEDs with Tunnel Junction Layer	CreeLED, Inc.	7,737,451	11/362,472	15-Jun-2010
High Efficiency LEDs with Tunnel Junction Layer	CreeLED, Inc.	8,324,637	12/782,107	04-Dec-2012
Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	7,915,085	10/666,399	29-Mar-2011
Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	10,546,978	12/506,989	28-Jan-2020
Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	10,164,158	12/862,640	25-Dec-2018

Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	9,093,616	13/072,371	28-Jul-2015
Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	9,105,817	14/209,652	11-Aug-2015
High Powered Light Emitter Packages with Compact Optics	CreeLED, Inc.	9,666,772	10/836,743	30-May-2017
Transmissive Optical Elements Including Transparent Plastic Shell Having a Phosphor Dispersed Therein, and Methods of Fabricating Same	CreeLED, Inc.	7,029,935	10/659,240	18-Apr-2006
Solid Metal Block Mounting Substrates for Semiconductor Light Emitting Devices	CreeLED, Inc.	7,183,587	10/659,108	27-Feb-2007
Methods of Processing Semiconductor Wafer Backsides Having Light Emitting Devices (LEDs) Thereon and LEDs So Formed	CreeLED, Inc.	7,291,529	10/987,135	06-Nov-2007
LED Bonding Structures and Methods of Fabricating LED Bonding Structures	CreeLED, Inc.	7,462,861	11/114,639	09-Dec-2008
LED Bonding Structures and Methods of Fabricating LED Bonding Structures	CreeLED, Inc.	7,642,121	12/268,466	05-Jan-2010
LED with Conductively Joined Bonding Structure	CreeLED, Inc.	8,076,670	12/614,700	13-Dec-2011
Lift-off Process for GaN Films Formed on SiC Substrates and Devices Fabricated Using the Method	CreeLED, Inc.	7,825,006	10/841,016	02-Nov-2010
Method for Fabricating Group-III Nitride Devices and Devices Fabricated Using Method	CreeLED, Inc.	7,332,365	10/848,937	19-Feb-2008
Power Light Emitting Die Package with Reflecting Lens and the Method of Making the Same	CreeLED, Inc.	7,456,499	10/861,929	25-Nov-2008
Power Light Emitting Die Package with Reflecting Lens and the Method of Making the Same	CreeLED, Inc.	8,446,004	12/215,319	21-May-2013

Power Light Emitting Die Package with Reflecting Lens and the Method of Making the Same	CreeLED, Inc.	8,932,886	13/897,952	13-Jan-2015
Composite Optical Lens with an Integrated Reflector	CreeLED, Inc.	7,280,288	10/861,639	09-Oct-2007
LED with Self Aligned Bond Pad	CreeLED, Inc.	RE43,412	12/899,228	29-May-2012
Semiconductor Light Emitting Devices Including Flexible Film Having Therein an Optical Element, and Methods of Assembling Same	CreeLED, Inc.	7,355,284	10/811,598	08-Apr-2008
Semiconductor Light Emitting Devices Including Flexible Silicone Film Having a Lens Therein	CreeLED, Inc.	7,858,998	12/031,951	28-Dec-2010
Semiconductor Light Emitting Devices Including Multiple Semiconductor Light Emitting Elements in a Substrate Cavity	CreeLED, Inc.	8,269,240	12/484,667	18-Sep-2012
Semiconductor Light Emitting Devices Including Flexible Silicone Film Having a Lens Therein	CreeLED, Inc.	8,455,909	13/356,046	04-Jun-2013
Light Emitting Devices with Self Aligned Ohmic Contact	CreeLED, Inc.	7,402,837	10/987,136	22-Jul-2008
Semiconductor Light Emitting Devices and Submounts and Methods for Forming the Same	CreeLED, Inc.	7,518,158	10/987,894	14-Apr-2009
Semiconductor Light Emitting Devices and Submounts and Methods for Forming the Same	CreeLED, Inc.	8,138,000	12/397,555	20-Mar-2012
Semiconductor Light Emitting Devices and Submounts	CreeLED, Inc.	8,847,257	13/372,765	30-Sep-2014
Etching of Substrates of Light Emitting Diodes	CreeLED, Inc.	7,202,181	10/811,350	10-Apr-2007
Etching of Substrates of Light Emitting Diodes	CreeLED, Inc.	7,488,692	11/710,838	10-Feb-2009
Substrate Removal Process for High Light Extract LEDs	CreeLED, Inc.	7,932,111	11/064,798	26-Apr-2011

Substrate Removal Process for High Light Extract LEDs	CreeLED, Inc.	9,559,252	13/093,622	31-Jan-2017
LED with Current Confinement Structure and Surface Roughening	CreeLED, Inc.	7,335,920	11/042,030	26-Feb-2008
LED with Current Confinement Structure and Surface Roughening	CreeLED, Inc.	8,410,490	11/983,515	02-Apr-2013
LED with Current Confinement Structure and Surface Roughening	CreeLED, Inc.	8,410,499	12/079,486	02-Apr-2013
LED with Current Confinement Structure and Surface Roughening	CreeLED, Inc.	8,541,788	12/581,759	24-Sep-2013
LED with Current Confinement Structure and Surface Roughening	CreeLED, Inc.	8,772,792	13/974,505	08-Jul-2014
Methods of Assembly for a Semiconductor Light Emitting Device Package	CreeLED, Inc.	7,405,093	10/920,613	29-Jul-2008
Methods for Packaging Light Emitting Devices and Packaged Light Emitting Devices	CreeLED, Inc.	7,279,346	11/044,126	09-Oct-2007
Packaged Light Emitting Devices	CreeLED, Inc.	7,928,456	11/849,530	19-Apr-2011
Packaged Light Emitting Devices	CreeLED, Inc.	8,154,043	13/080,968	10-Apr-2012
Methods for Packaging of a Semiconductor Light Emitting Device	CreeLED, Inc.	7,326,583	11/044,779	05-Feb-2008
Semiconductor Light Emitting Devices Including a Luminescent Conversion Element	CreeLED, Inc.	7,517,728	11/055,194	14-Apr-2009
Reflector Packages and semiconductor Light Emitting Devices Including The Same	CreeLED, Inc.	7,612,383	11/953,110	03-Nov-2009
Semiconductor Light Emitting Devices Including a Luminescent Conversion Element and Methods for Packaging the Same	CreeLED, Inc.	7,799,586	12/398,626	21-Sep-2010
Semiconductor Light Emitting Devices Including an Optically	CreeLED, Inc.	8,039,859	12/886,001	18-Oct-2011

Transmissive Element and Methods for Packaging the Same				
III-Nitride Optoelectronic Device Structure with High Al AlGaN Diffusion Barrier	CreeLED, Inc.	7,282,744	10/840,515	16-Oct-2007
Methods of Coating Semiconductor Light Emitting Elements by Evaporating Solvent From a Suspension	CreeLED, Inc.	7,217,583	10/946,587	15-May-2007
Methods of Coating Semiconductor Light Emitting Elements by Evaporating Solvent From a Suspension	CreeLED, Inc.	7,569,407	11/799,702	04-Aug-2009
Reflective Optical Elements for Semiconductor Light Emitting Devices	CreeLED, Inc.	7,118,262	10/898,608	10-Oct-2006
Semiconductor Light Emitting Devices Including Patternable Films Comprising Transparent Silicone and Phosphor, and Methods of Manufacturing Same	CreeLED, Inc.	7,372,198	10/947,704	13-May-2008
Methods of Manufacturing Semiconductor Light Emitting Devices Including Patternable Films Comprising Transparent Silicon and Phosphor	CreeLED, Inc.	7,591,702	11/944,804	22-Sep-2009
High Efficiency Group III Nitride-Silicon Carbide Light Emitting Diode	CreeLED, Inc.	7,259,402	10/951,042	21-Aug-2007
Light Emission Device and Method Utilizing Multiple Emitters and Multiple Phosphors	CreeLED, Inc.	7,564,180	11/032,363	21-Jul-2009
Light Emission Device and Method Utilizing Multiple Emitters	CreeLED, Inc.	8,120,240	12/419,896	21-Feb-2012
Light Emission Device and Method Utilizing Multiple Emitters	CreeLED, Inc.	8,513,873	13/274,821	20-Aug-2013
High Power Solid State Lamp	CreeLED, Inc.	9,412,926	11/149,999	09-Aug-2016

Deep Ultraviolet Light Emitting Devices and Methods of Fabricating Deep Ultraviolet Light Emitting Devices	CreeLED, Inc.	8,772,757	12/030,539	08-Jul-2014
Semiconductor Light Emitting Device Mounting Substrates Including a Conductive Lead Extending Therein and Methods of Packaging Same	CreeLED, Inc.	7,777,247	11/035,716	17-Aug-2010
Ultra-Thin Ohmic Contacts for P-Type Nitride Light Emitting Devices and Methods of Forming	CreeLED, Inc.	8,089,090	11/191,111	03-Jan-2012
Ultra-Thin Ohmic Contacts for P-Type Nitride Light Emitting Devices and Methods of Forming	CreeLED, Inc.	8,759,868	13/271,865	24-Jun-2014
Light Emitting Devices Having a Reflective Bond Pad and Methods of Fabricating Light Emitting Devices Having a Reflective Bond Pad	CreeLED, Inc.	7,557,380	10/899,793	07-Jul-2009
Light Emitting Devices Having a Roughened Reflective Bond Pad and Methods of Fabricating Light Emitting Devices Having a Roughened Reflective Bond Pad	CreeLED, Inc.	7,557,379	12/123,137	07-Jul-2009
Light Emitting devices Having Roughened/Reflective Contacts and Methods of Fabricating Same	CreeLED, Inc.	8,669,563	12/476,519	11-Mar-2014
Light Emitting devices Having Roughened/Reflective Contacts and Methods of Fabricating Same	CreeLED, Inc.	8,471,269	13/313,302	25-Jun-2013
LED with Substrate Modifications for Enhanced Light Extraction and Method for Making Same	CreeLED, Inc.	7,534,633	11/083,460	19-May-2009
LED with Substrate Modifications for Enhanced Light Extraction and Method of Making Same	CreeLED, Inc.	8,617,909	12/384,277	31-Dec-2013
Chip-Scale Methods for Packaging Light Emitting Devices and Chip-Scale Packaged Light Emitting Devices	CreeLED, Inc.	7,329,905	11/171,893	12-Feb-2008

Chip-Scale Packaging of Light Emitting Devices and Packaged Light Emitting Devices	CreeLED, Inc.	7,977,686	12/027,313	12-Jul-2011
Solid Metal block Semiconductor Light Emitting Device Mounting Substrates and Packages	CreeLED, Inc.	8,598,606	12/363,000	03-Dec-2013
Solid Metal Block Semiconductor Light Emitting Device Mounting Substrates	CreeLED, Inc.	7,906,793	12/484,713	15-Mar-2011
Roughened High Refractive Index Layer/LED for High Light Extraction	CreeLED, Inc.	8,674,375	11/187,075	18-Mar-2014
High Output Small Area Group III-Nitride LEDs	CreeLED, Inc.	8,513,686	11/037,965	20-Aug-2013
Light Emitting Devices with Active Layers that Extend into Opened Pits	CreeLED, Inc.	7,446,345	11/118,987	04-Nov-2008
Methods of Forming Light Emitting Devices with Active Layers that Extend into Opened Pits	CreeLED, Inc.	7,611,917	12/243,507	03-Nov-2009
Power Lamp Package	CreeLED, Inc.	8,669,572	11/149,998	11-Mar-2014
Side Emitting Optical Coupling Device	CreeLED, Inc.	8,541,795	11/247,563	24-Sep-2013
Side Emitting Optical Coupling Device	CreeLED, Inc.	9,287,474	14/010,828	15-Mar-2016
High Efficacy White LED	CreeLED, Inc.	8,288,942	11/227,667	16-Oct-2012
LED Package with Flexible Polyimide Circuit and Method of Manufacturing LED Package	CreeLED, Inc.	8,610,134	11/476,836	17-Dec-2013
LED with Substrate Modifications for Enhanced Light Extraction and Method of Making Same	CreeLED, Inc.	7,759,682	11/210,713	20-Jul-2010
LED with Substrate Modifications for Enhanced Light Extraction and Method of Making Same	CreeLED, Inc.	8,034,647	12/821,069	11-Oct-2011
Semiconductor Light Emitting Circuits Including Light Emitting Diodes and	CreeLED, Inc.	7,535,180	11/098,086	19-May-2009

Four Layer Semiconductor Shunt Devices				
Semiconductor Light Emitting Circuits Including Light Emitting Diodes and Semiconductor Shunt Devices	CreeLED, Inc.	8,283,869	12/419,480	09-Oct-2012
Solid Colloidal Dispersions for Backlighting of Liquid Crystal Displays	CreeLED, Inc.	7,304,694	11/034,240	04-Dec-2007
Multi-Element LED Lamp Package	CreeLED, Inc.	7,829,899	11/416,804	09-Nov-2010
Multi-Element LED Lamp Package	CreeLED, Inc.	8,324,635	12/895,108	04-Dec-2012
MULTI-ELEMENT LED LAMP PACKAGE	CreeLED, Inc.	8,629,459	13/674,937	14-Jan-2014
MULTI-ELEMENT LED LAMP PACKAGE	CreeLED, Inc.	8,847,242	14/136,846	30-Sep-2014
Systems and Methods for Laser Backlighting of Liquid Crystal Displays	CreeLED, Inc.	7,508,466	11/273,431	24-Mar-2009
Semiconductor Devices Having Low Threading Dislocations and Improved Light Extraction and Methods of Making the Same	CreeLED, Inc.	9,318,327	11/563,712	19-Apr-2016
High Efficiency Group III-Nitride LED with Lenticular Surface	CreeLED, Inc.	8,174,037	11/082,470	08-May-2012
High Efficiency Group III Nitride LED with Lenticular Surface	CreeLED, Inc.	8,154,039	12/401,832	10-Apr-2012
High Efficiency Group III Nitride LED with Lenticular Surface	CreeLED, Inc.	8,183,588	12/401,843	22-May-2012
High Efficiency Group III-Nitride LED with Lenticular Surface	CreeLED, Inc.	8,692,267	13/188,361	08-Apr-2014
High Efficiency Group III-Nitride LED with Lenticular Surface	CreeLED, Inc.	8,878,209	14/183,955	04-Nov-2014
Laser Diode Orientation on Miscal Substrate	CreeLED, Inc.	7,884,447	11/994,406	08-Feb-2011
Laser Diode Orientation on Miscal Substrate	CreeLED, Inc.	8,378,463	12/974,332	19-Feb-2013

Group III Nitride Based Laser Diode and Method for Fabricating Same	CreeLED, Inc.	7,813,400	11/600,617	12-Oct-2010
Group III Nitride Based Laser Diode and Method for Fabricating Same	CreeLED, Inc.	8,050,304	12/880,392	01-Nov-2011
Method for Coating Semiconductor Device Using Droplet Deposition	CreeLED, Inc.	7,569,406	11/328,887	04-Aug-2009
Method for Coating Semiconductor Device Using Droplet Deposition	CreeLED, Inc.	8,043,874	12/491,162	25-Oct-2011
Method for Coating Semiconductor Device Using Droplet Deposition	CreeLED, Inc.	8,390,016	13/237,789	05-Mar-2013
High Output Group III Nitride Light Emitting Diodes	CreeLED, Inc.	9,905,731	12/796,365	27-Feb-2018
Independent Control of Light Emitting Diodes	CreeLED, Inc.	8,328,405	12/545,600	11-Dec-2012
Packages for Semiconductor Light Emitting Devices Utilizing Dispensed Encapsulants	CreeLED, Inc.	7,365,371	11/197,096	29-Apr-2008
Submounts for Semiconductor Light Emitting Devices and Methods of Forming Packaged Light Emitting Devices Including Dispensed Encapsulants	CreeLED, Inc.	7,834,375	12/100,647	16-Nov-2010
Submounts for Semiconductor Light Emitting Devices and Methods of Forming Packaged Light Emitting Devices Including Dispensed Encapsulants	CreeLED, Inc.	8,202,745	12/938,815	19-Jun-2012
Submounts for Semiconductor Light Emitting Devices and Methods of Forming Packaged Light Emitting Devices Including Dispensed Encapsulants	CreeLED, Inc.	8,835,952	13/149,197	16-Sep-2014
Efficient Emitting LED Package and Method for Efficiently Emitting Light	CreeLED, Inc.	7,703,945	11/476,520	27-Apr-2010
Efficient Emitting LED Package and Method for Efficiently Emitting Light	CreeLED, Inc.	7,963,666	12/732,014	21-Jun-2011
System for and Method for Closed Loop Electrophoretic Deposition of	CreeLED, Inc.	8,563,339	11/473,089	22-Oct-2013

Phosphor Materials on Semiconductor Devices				
Packages for Semiconductor Light Emitting Devices Utilizing Dispensed Reflectors and Methods of Forming the Same	CreeLED, Inc.	7,521,728	11/336,369	21-Apr-2009
Uniform Emission LED Package	CreeLED, Inc.	8,969,908	11/398,214	03-Mar-2015
Method of Forming Three-Dimensional Features on Light Emitting Diode for Improved Light Extraction	CreeLED, Inc.	7,384,809	11/461,018	10-Jun-2008
Three Demensional Features on Light Emitting Diodes for Improved Light Extraction	CreeLED, Inc.	7,829,906	12/030,404	09-Nov-2010
Method of Forming Three Dimensional Features on Light Emitting Diodes for Improved Light Extraction	CreeLED, Inc.	8,263,995	12/917,960	11-Sep-2012
Light Emitting Diode with High Aspect Ratio Sub-Micron Roughness for Light Extraction and Methods of Forming	CreeLED, Inc.	7,932,106	11/498,418	26-Apr-2011
Light Emitting Diode with High Aspect Ratio Sub-Micron Roughness for Light Extraction and Methods of Forming	CreeLED, Inc.	8,507,924	13/045,246	13-Aug-2013
Improved External Extraction Light Emitting Diode based upon Crystallographic Faceted Surfaces	CreeLED, Inc.	7,791,061	11/343,180	07-Sep-2010
Improved External Extraction Light Emitting Diode based upon Crystallographic Faceted Surfaces	CreeLED, Inc.	8,357,923	12/834,608	22-Jan-2013
Undoped and Unintentionally Doped Buffer Structures	CreeLED, Inc.	8,409,972	11/734,218	02-Apr-2013
Alternative Doping for Group III-Nitride LEDs	CreeLED, Inc.	7,812,354	11/567,236	12-Oct-2010

Permanent Wafer Bonding Using Metal Alloy Preform Discs	CreeLED, Inc.	10,873,002	11/584,135	22-Dec-2020
Leadframe-Based Packages for Solid State Light Emitting Devices and Methods of Forming Leadframe-Based Packages for Solid State Light Emitting Devices	CreeLED, Inc.	7,960,819	11/486,244	14-Jun-2011
Leadframe-Based Packages for Solid State Light Emitting Devices and Methods of Forming Leadframe-Based Packages for Solid State Light Emitting Devices	CreeLED, Inc.	8,044,418	11/657,347	25-Oct-2011
Leadframe-Based Packages for Solid State Light Emitting Devices and Methods of Forming Leadframe-Based Packages for Solid State Light Emitting Devices	CreeLED, Inc.	8,193,547	13/153,930	05-Jun-2012
Leadframe-Based Packages for Solid State Light Emitting Devices and Methods of Forming Leadframe-Based Packages for Solid State Light Emitting Devices	CreeLED, Inc.	8,941,134	13/242,103	27-Jan-2015
Dielectric Wafer Level Bonding and with Conductive Feed-Throughs for Electrical Connection and Thermal Management	CreeLED, Inc.	9,368,428	11/732,559	14-Jun-2016
Light emitting diode package with optical element	CreeLED, Inc.	8,735,920	11/496,922	27-May-2014
Transparent LED Chip	CreeLED, Inc.	8,212,262	11/673,317	03-Jul-2012
Quantum Wells for Light Conversion	CreeLED, Inc.	9,018,619	11/545,131	28-Apr-2015
Expandable LED Array Interconnect	CreeLED, Inc.	7,897,980	11/595,720	01-Mar-2011
Integrated Heat Spreader for Light Emitting Devices (LEDS) and Related Assemblies	CreeLED, Inc.	7,808,013	11/590,480	05-Oct-2010

Encapsulating and Forming Optical Element on LED Package by Liquid Injection Molding	CreeLED, Inc.	7,763,478	11/507,191	27-Jul-2010
Semiconductor Light Emitting Device Substrate Strips and Packaged Semiconductor Light Emitting Devices	CreeLED, Inc.	8,039,848	12/835,013	18-Oct-2011
Semiconductor Light Emitting Device Substrate Strips and Packaged Semiconductor Light Emitting Devices	CreeLED, Inc.	8,410,491	13/253,657	02-Apr-2013
Thermocompression Molding of Plastic Optical Elements	CreeLED, Inc.	7,850,887	11/440,166	14-Dec-2010
Microscale Optoelectronic Device Packages	CreeLED, Inc.	8,436,371	11/753,483	07-May-2013
Multiple Color Lighting Element Cluster Tiles for Solid State Lighting Panels	CreeLED, Inc.	7,993,021	11/601,295	09-Aug-2011
LED Lighting Units and Assemblies with Edge Connections	CreeLED, Inc.	7,621,655	11/600,642	24-Nov-2009
LED Lighting Units and Assemblies with Edge Connectors	CreeLED, Inc.	7,789,529	12/582,372	07-Sep-2010
Graded Dielectric Layer	CreeLED, Inc.	7,638,811	11/685,761	29-Dec-2009
Light Emitting Diodes Packages	CreeLED, Inc.	7,648,257	11/379,709	19-Jan-2010
Light Emitting Diodes Packages	CreeLED, Inc.	8,192,056	12/634,783	05-Jun-2012
Submounts for Semiconductor Light Emitting Device Packages and Semiconductor Light Emitting Device Packages Including the Same	CreeLED, Inc.	7,655,957	11/412,381	02-Feb-2010
Semiconductor Light Emitting Device Packages Including Submounts	CreeLED, Inc.	8,378,374	12/685,883	19-Feb-2013
Side-View Surface Mount White LED	CreeLED, Inc.	7,649,209	11/739,307	19-Jan-2010

Side-View Surface Mount White LED	CreeLED, Inc.	8,362,512	12/635,818	29-Jan-2013
Side-View Surface Mount White LED	CreeLED, Inc.	8,487,337	13/046,982	16-Jul-2013
Side-View Surface Mount LED	CreeLED, Inc.	8,390,022	13/347,243	05-Mar-2013
Packaged Light Emitting Devices Including Multiple Index Lenses and Methods of Fabricating the Same	CreeLED, Inc.	7,646,035	11/443,741	12-Jan-2010
Packaged Light Emitting Devices Including Multiple Index Lenses and Methods of Fabricating the Same	CreeLED, Inc.	7,952,115	12/624,885	31-May-2011
LED Package Element with Internal Meniscus for Bubble-Free Hollow Floating Lens Placement	CreeLED, Inc.	7,804,147	11/496,918	28-Sep-2010
Ohmic Contacts to Nitrogen Polarity GaN	CreeLED, Inc.	8,021,904	12/012,376	20-Sep-2011
Lamp Packages	CreeLED, Inc.	D591,697	29/248,311	05-May-2009
Lamp Packages	CreeLED, Inc.	D640,645	29/328,924	28-Jun-2011
Lamp Packages	CreeLED, Inc.	D681,573	29/392,801	07-May-2013
Nickel Tin Bonding System for Semiconductor Wafers and Devices	CreeLED, Inc.	8,643,195	11/428,158	04-Feb-2014
Modified Gold-Tin System with Increased Melting Temperature for Wafer Bonding	CreeLED, Inc.	7,855,459	11/534,317	21-Dec-2010
Light Emitting Diode	CreeLED, Inc.	D606,948	29/249,263	29-Dec-2009
Light Emitting Diode	CreeLED, Inc.	D605,612	29/331,898	08-Dec-2009
LED Lighting Tiles	CreeLED, Inc.	D585847	29/248,867	03-Feb-2009
Optoelectronic Device with Upconverting Luminophoric Medium	CreeLED, Inc.	8,297,061	11/832,785	30-Oct-2012

Partially Filterless Liquid Crystal Display Devices and Methods of Operating the Same	CreeLED, Inc.	7,952,544	11/675,250	31-May-2011
Partially Filterless and Two-Color Subpixel Liquid Crystal Display Devices, and Mobile Electronic Devices Including the Same, and Methods of Operating the Same	CreeLED, Inc.	8,836,624	11/847,882	16-Sep-2014
Methods of Forming Packaged Semiconductor Light Emitting Devices Having Front Contacts by Compression Molding	CreeLED, Inc.	9,061,450	11/705,233	23-Jun-2015
Packaged Semiconductor Light Emitting Devices Having Multiple Optical Elements and Methods of Forming the Same	CreeLED, Inc.	8,669,573	12/984,242	11-Mar-2014
Packaged Semiconductor Light Emitting Devices Having Multiple Optical Elements and Methods of Forming the Same	CreeLED, Inc.	8,822,245	13/486,223	02-Sep-2014
Packaged Semiconductor Light Emitting Devices Having Multiple Optical Elements	CreeLED, Inc.	7,709,853	11/705,305	04-May-2010
Method of Uniform Phosphors Chip Coating and LED Package Fabricated Using Method	CreeLED, Inc.	7,943,952	11/881,683	17-May-2011
Self Aligned Diode Fabrication Method and Self Aligned Laser Diode	CreeLED, Inc.	8,045,595	11/600,618	25-Oct-2011
Wire Bond Free Wafer Level LED	CreeLED, Inc.	9,634,191	11/985,410	25-Apr-2017
Wire Bond Free Wafer Level LED	CreeLED, Inc.	10,199,360	15/449,510	05-Feb-2019
LED Chip Design for White Conversion	CreeLED, Inc.	9,401,461	11/775,958	26-Jul-2016
Semiconductor Light Emitting Devices with Applied Wavelength Conversion Materials	CreeLED, Inc.	7,863,635	11/835,044	04-Jan-2011

Semiconductor Light Emitting Devices with Applied Wavelength Conversion Materials and Methods for Forming the Same	CreeLED, Inc.	9,054,282	12/976,769	09-Jun-2015
Cerium and Europium Doped Single Crystal Phosphors	CreeLED, Inc.	8,119,028	12/250,828	21-Feb-2012
Cerium and Europium Doped Phosphor Compositions and Light Emitting Devices Including the Same	CreeLED, Inc.	8,597,543	13/366,637	03-Dec-2013
Light Emitting Diode	CreeLED, Inc.	D608,739	29/306,911	26-Jan-2010
Laser Diode and Method for Fabricating Same	CreeLED, Inc.	7,769,066	11/600,604	03-Aug-2010
Laser Diode and Method for Fabricating Same	CreeLED, Inc.	8,679,876	12/826,305	25-Mar-2014
Muliti-Chip Light Emitting Device Lamps for Providing High-CRI Warm White Light and Light Fixtures Including the Same	CreeLED, Inc.	8,125,137	11/743,324	28-Feb-2012
Muliti-Chip Light Emitting Device Lamps for Providing High-CRI Warm White Light and Light Fixtures Including the Same	CreeLED, Inc.	8,410,680	12/941,030	02-Apr-2013
Muliti-Chip Light Emitting Device Lamps for Providing High-CRI Warm White Light and Light Fixtures Including the Same	CreeLED, Inc.	8,847,478	13/851,688	30-Sep-2014
Light Emitting Devices Having Current Reducing Structures and Methods of Forming Light Emitting Devices Having Current Reducing Structures	CreeLED, Inc.	7,795,623	11/715,687	14-Sep-2010
Light Emitting Devices Having Current Reducing Structures and Methods of Forming Light Emitting Devices Having Current Reducing Structures	CreeLED, Inc.	8,163,577	12/879,692	24-Apr-2012

Light Emitting Devices Having Current Reducing Structures and Methods of Forming Light Emitting Devices Having Current Reducing Structures	CreeLED, Inc.	8,436,368	13/406,251	07-May-2013
Light Emitting Devices Having Current Reducing Structures and Methods of Forming Light Emitting Devices Having Current Reducing Structures	CreeLED, Inc.	8,704,240	13/856,928	22-Apr-2014
LED with Integrated Constant Current Driver	CreeLED, Inc.	8,111,001	11/879,665	07-Feb-2012
LED with Integrated Constant Current Driver	CreeLED, Inc.	8,232,739	13/347,228	31-Jul-2012
LED with Integrated Constant Current Driver	CreeLED, Inc.	8,569,970	13/532,451	29-Oct-2013
LED with Integrated Constant Current Driver	CreeLED, Inc.	8,810,151	13/677,709	19-Aug-2014
Phosphor Position in Light Emitting Diodes	CreeLED, Inc.	8,425,271	11/839,562	23-Apr-2013
Encapsulant Profile for Light Emitting Diodes	CreeLED, Inc.	7,910,938	11/839,603	22-Mar-2011
Encapsulant Profile for Light Emitting Diodes	CreeLED, Inc.	8,766,298	13/040,088	01-Jul-2014
Encapsulant Profile for Light Emitting Diodes	CreeLED, Inc.	8,766,298	13/040,088	22-Feb-2017
Reflective Mounting Substrates for Light Emitting Diodes	CreeLED, Inc.	9,178,121	11/611,600	03-Nov-2015
Side Mountable Semiconductor Light Emitting Device Packages, Panels	CreeLED, Inc.	7,910,944	11/744,286	22-Mar-2011
Side Mountable Semiconductor Light Emitting Device Packages, Panels and Methods of Forming the Same	CreeLED, Inc.	8,502,261	13/038,628	06-Aug-2013
Light Emitting Diode	CreeLED, Inc.	D595,673	29/276,271	07-Jul-2009
Light Emitting Diodes	CreeLED, Inc.	D621802	29/334,956	17-Aug-2010

Light Emitting Diodes	CreeLED, Inc.	D669,040	29/365,193	16-Oct-2012
Thermal Transfer in Solid State Light Emitting Apparatus and Methods of Manufacturing	CreeLED, Inc.	7,922,360	11/674,696	12-Apr-2011
Thermal Transfer in Solid State Light Emitting Apparatus and Methods of Manufacturing	CreeLED, Inc.	8,408,749	13/071,632	02-Apr-2013
Wafer-level Phosphor Coating Method and Devices Fabricated Utilizing Method	CreeLED, Inc.	9,024,349	11/656,759	05-May-2015
Wafer-level Phosphor Coating Method and Devices Fabricated Utilizing Method	CreeLED, Inc.	9,159,888	11/899,790	13-Oct-2015
Light Emitting Diodes Including Barrier Layers/Sublayers (as amended)	CreeLED, Inc.	7,211,833	11/039,566	01-May-2007
Group III Nitride Based Quantum Well Light Emitting Device Structures with an Indium Containing Capping Structure	CreeLED, Inc.	7,692,182	10/899,791	06-Apr-2010
LED Chip	CreeLED, Inc.	D602,450	29/327,786	20-Oct-2009
Tiles for Solid State Lighting Units	CreeLED, Inc.	8,123,375	12/093,698	28-Feb-2012
Encapsulant With Scatterer to Tailor Spatial Emission Pattern and Color Uniformity in Light Emitting Diodes	CreeLED, Inc.	7,999,283	11/818,818	16-Aug-2011
Multiple Conversion Material Light Emitting diode Package and Method of Fabricating Same	CreeLED, Inc.	9,012,937	11/974,431	21-Apr-2015
Lamp Packages	CreeLED, Inc.	D594,827	29/250,973	23-Jun-2009
High Performance LED Package	CreeLED, Inc.	7,968,900	11/624,954	28-Jun-2011
Group III Nitride Based Quantum Well Light Emitting Device Structures with an Indium Containing Capping Structure	CreeLED, Inc.	8,044,384	12/698,658	25-Oct-2011

Group III Nitride Based Quantum Well Light Emitting Device Structures with an Indium Containing Capping Structure	CreeLED, Inc.	8,546,787	13/250,715	01-Oct-2013
LED Chip	CreeLED, Inc.	D593,968	29/328,502	09-Jun-2009
Design for Wafer Level White LED Chip and Fabrication Process	CreeLED, Inc.	10,505,083	11/827,626	10-Dec-2019
Transparent Ohmic Contacts on Light Emitting Diodes with Carrier Substrates	CreeLED, Inc.	9,484,499	11/738,171	01-Nov-2016
Light-Emitting Device Packages Using Light Scattering Particles of Different Size	CreeLED, Inc.	11,114,594	11/895,573	07-Sep-2021
Flip-Chip Phosphor Coating Method and Devices Fabricated Utilizing Method	CreeLED, Inc.	8,878,219	12/008,477	04-Nov-2014
Semiconductor Light Emitting Devices with High Color Rendering	CreeLED, Inc.	8,178,888	12/024,400	15-May-2012
Semiconductor Light Emitting Device Packages and Methods	CreeLED, Inc.	7,964,888	11/788,001	21-Jun-2011
Semiconductor Light Emitting Device Packages and Methods	CreeLED, Inc.	8,791,491	13/164,185	29-Jul-2014
Group III Nitride Based Quantum Well Light Emitting Device Structures with an Indium Containing Capping Structure	CreeLED, Inc.	9,054,253	14/015,466	09-Jun-2015
LED Chip	CreeLED, Inc.	D566,057	29/275,362	08-Apr-2008
LED Chip	CreeLED, Inc.	D582,866	29/284,431	16-Dec-2008
LED Chip	CreeLED, Inc.	D566,056	29/275,303	08-Apr-2008
Apparatus, System & Method for Use in Mounting Electronic Elements (SMD)	CreeLED, Inc.	7,635,915	11/380,402	22-Dec-2009

Apparatus, System & Method for Use in Mounting Electronic Elements (SMD)	CreeLED, Inc.	8,362,605	12/614,989	29-Jan-2013
Emission Tuning Methods and Devices Fabricated Utilizing	CreeLED, Inc.	8,877,524	12/414,457	04-Nov-2014
Broadband Light Emitting Device Lamps for Providing White Light Output	CreeLED, Inc.	8,022,388	12/371,226	20-Sep-2011
Broadband Light Emitting Device Lamps for Providing White Light Output	CreeLED, Inc.	8,598,565	13/215,889	03-Dec-2013
Light Emitting Device Packages, Light Emitting Diode (LED) Packages, and Related Methods	CreeLED, Inc.	7,939,842	11/895,795	10-May-2011
Textured Encapsulant Surface in LED Packages	CreeLED, Inc.	9,431,589	12/002,429	30-Aug-2016
LED Chip	CreeLED, Inc.	D583,338	29/284,434	23-Dec-2008
LED Chip	CreeLED, Inc.	D616,839	29/327,793	01-Jun-2010
Phosphor Coating Systems and Methods for Light Emitting Structures and Packaged Light Emitting Diodes Including Phosphor	CreeLED, Inc.	8,058,088	12/014,404	15-Nov-2011
Phosphor Coating Systems and Methods for Light Emitting Structures and Packaged Light Emitting Diodes Including Phosphor	CreeLED, Inc.	8,618,569	13/272,712	31-Dec-2013
Light Emitting Diodes with Light Filters	CreeLED, Inc.	8,916,890	12/051,212	23-Dec-2014
Polarization Doping in Nitride Based Diodes	CreeLED, Inc.	8,519,437	11/900,952	27-Aug-2013
Nickel Tin Bonding System with Barrier Layer for Semiconductor Wafers and Devices	CreeLED, Inc.	7,910,945	11/844,127	22-Mar-2011
Nickel Tin Bonding System with Barrier Layer for Semiconductor Wafers and Devices	CreeLED, Inc.	8,247,836	13/035,005	21-Aug-2012

LEDs Using Single Crystalline Phosphor and Methods of Fabricating Same	CreeLED, Inc.	7,859,000	12/082,444	28-Dec-2010
LEDs Using Single Crystalline Phosphor and Methods of Fabricating Same	CreeLED, Inc.	8,101,443	12/961,789	24-Jan-2012
Encapsulation for Phosphor-Converted White Light Emitting Diode	CreeLED, Inc.	9,287,469	12/151,089	15-Mar-2016
Low Index Spacer Layer in LED Devices	CreeLED, Inc.	8,637,883	12/077,638	28-Jan-2014
Indium Nitride-Based Ohmic Contact Layers for Gallium-Nitride Based Devices	CreeLED, Inc.	7,791,101	12/145,213	07-Sep-2010
Indium Nitride-Based Ohmic Contact Layers for Gallium-Nitride Based Devices	CreeLED, Inc.	7,943,924	12/850,979	17-May-2011
Lamp Packages	CreeLED, Inc.	D623,607	29/284,854	14-Sep-2010
Light Emitting Diode Package and Method of Fabricating Same	CreeLED, Inc.	9,070,850	11/982,275	30-Jun-2015
Light Emitting Diode Package and Method of Fabricating Same	CreeLED, Inc.	10,892,383	14/705,228	12-Jan-2021
LED Array and Method for Fabricating Same	CreeLED, Inc.	10,295,147	11/982,276	21-May-2019
Emitter Package	CreeLED, Inc.	D615,504	29/292,900	11-May-2010
Method for Assembling LED Package	CreeLED, Inc.	9,147,812	12/145,280	29-Sep-2015
Methods of Fabricating Light Emitting Deices by Selective Deposition of Light Conversion Materials Based on Measured Emission Characteristics	CreeLED, Inc.	8,038,497	12/428,149	18-Oct-2011
Phosphor Distribution in LED Lamps Using Centrifugal Force	CreeLED, Inc.	8,167,674	11/956,989	01-May-2012
Phosphor Distribution in LED Lamps Using Centrifugal Force	CreeLED, Inc.	9,041,285	13/429,053	26-May-2015

LED Chips Having Fluorescent Substrates with Microholes and Methods for Fabricating	CreeLED, Inc.	9,196,799	12/229,366	24-Nov-2015
Improved binning of Light sources for Lighting of Flat Panel Displays	CreeLED, Inc.	8,267,542	12/126,079	18-Sep-2012
Improved binning of Light sources for Lighting of Flat Panel Displays	CreeLED, Inc.	9,335,214	13/548,646	10-May-2016
Improved Bond-Pad Design for enhancing Light Extraction from LED Chips	CreeLED, Inc.	8,384,115	12/185,031	26-Feb-2013
Droop-Free High Output Light Emitting Devices and Methods of Fabricating and Operating Same	CreeLED, Inc.	7,843,060	12/199,592	30-Nov-2010
Droop-Free High Output Light Emitting Devices and Methods of Fabricating and Operating Same	CreeLED, Inc.	8,524,515	12/938,877	03-Sep-2013
Solid State Lighting Component	CreeLED, Inc.	7,821,023	12/154,691	26-Oct-2010
Solid State Lighting Component	CreeLED, Inc.	8,217,412	12/883,979	10-Jul-2012
Solid State Lighting Component	CreeLED, Inc.	8,698,171	13/489,035	15-Apr-2014
Solid State Lighting Component	CreeLED, Inc.	9,076,940	13/971,547	07-Jul-2015
Apparatus and Methods for Combining Light Emitters	CreeLED, Inc.	8,350,461	12/057,748	08-Jan-2013
Apparatus and Methods for Combining Light Emitters	CreeLED, Inc.	8,513,871	13/714,955	20-Aug-2013
Phosphor Composition	CreeLED, Inc.	9,428,688	12/271,945	30-Aug-2016
PHOSPHOR COMPOSITION	CreeLED, Inc.	10,266,767	15/234,433	23-Apr-2019
PHOSPHOR COMPOSITION	CreeLED, Inc.	10,767,111	16/296,818	08-Sep-2020
Lighting Device	CreeLED, Inc.	8,033,692	11/751,982	11-Oct-2011

Lighting Device	CreeLED, Inc.	8,529,104	13/233,302	10-Sep-2013
Lighting Device and Method of Making	CreeLED, Inc.	7,718,991	11/751,990	18-May-2010
Solid State Light Emitting Device and Method of Making Same	CreeLED, Inc.	8,008,676	11/753,103	30-Aug-2011
Lighting Device and Method of Making Same	CreeLED, Inc.	8,994,045	11/870,679	31-Mar-2015
Lighting Device and Lighting Method	CreeLED, Inc.	7,901,111	11/947,323	08-Mar-2011
Fault Tolerant Light Emitters, Systems Incorporating Fault Tolerant Light Emitters and Methods of Fabricating Fault Tolerant Light Emitters	CreeLED, Inc.	9,391,118	12/017,558	12-Jul-2016
Lighting Device	CreeLED, Inc.	7,614,759	11/614,180	10-Nov-2009
Lighting Device	CreeLED, Inc.	8,328,376	12/570,712	11-Dec-2012
Lighting Device	CreeLED, Inc.	8,858,004	13/660,131	14-Oct-2014
Illumination Devices Using Externally Interconnected Arrays of Light Emitting Devices, and Methods of Fabricating Same	CreeLED, Inc.	10,586,787	12/017,600	10-Mar-2020
Illumination Devices and Methods of Fabricating Same	CreeLED, Inc.	10,157,898	15/464,801	18-Dec-2018
Wafer Level Phosphor Coating Technique for Warm Light Emitting Diodes	CreeLED, Inc.	8,232,564	12/287,764	31-Jul-2012
Light Source with Near Field Mixing	CreeLED, Inc.	9,273,830	12/475,261	01-Mar-2016
Light Emitting Diode	CreeLED, Inc.	D608,307	29/323,659	19-Jan-2010
Light Emitting Diode	CreeLED, Inc.	D614,592	29/342,451	27-Apr-2010

Forming Light Emitting Devices Including Custom Wavelength Conversion Structures	CreeLED, Inc.	7,955,875	12/238,976	07-Jun-2011
Light Emitting Diode with Improved Light Extraction	CreeLED, Inc.	8,575,633	12/329,713	05-Nov-2013
Light Emitting Diode with a Dielectric Mirror Having a Lateral Configuration	CreeLED, Inc.	8,017,963	12/329,722	13-Sep-2011
Color Correction for Wafer Level White LED's	CreeLED, Inc.	7,897,419	12/317,528	01-Mar-2011
Color Correction for Wafer Level White LEDs	CreeLED, Inc.	8,193,544	13/018,254	05-Jun-2012
Composite High Reflectivity Layer	CreeLED, Inc.	7,915,629	12/316,097	29-Mar-2011
Composite High Reflectivity Layer	CreeLED, Inc.	8,598,609	13/071,349	03-Dec-2013
Composite High Reflectivity Layer	CreeLED, Inc.	8,710,536	14/047,566	29-Apr-2014
LIGHT EMITTER ARRAY	CreeLED, Inc.	9,425,172	12/288,957	23-Aug-2016
Array Layouts for Color Mixing	CreeLED, Inc.	9,484,329	12/629,735	01-Nov-2016
High Voltage Low Current Surface-Emitting LED	CreeLED, Inc.	7,985,970	12/418,816	26-Jul-2011
High Voltage Low Current Surface-Emitting LED	CreeLED, Inc.	8,530,921	13/190,126	10-Sep-2013
Light Emitting Diode	CreeLED, Inc.	D621,799	29/330,657	17-Aug-2010
Light Emitting Diode	CreeLED, Inc.	D635,527	29/353,652	05-Apr-2011
Luminescent Particles, Methods and Light Emitting Devices Including the Same	CreeLED, Inc.	8,287,759	12/466,782	16-Oct-2012
Luminescent Particles, Methods and Light Emitting Devices Including the Same	CreeLED, Inc.	8,608,979	13/611,719	17-Dec-2013

Lighting Structures Including Diffuser Particles Comprising Phosphor Host Materials	CreeLED, Inc.	8,547,009	12/500,679	01-Oct-2013
Methods for Combining Light Emitting Devices in a Packages and Packages Including Combined Light Emitting Devices	CreeLED, Inc.	7,967,652	12/425,855	28-Jun-2011
Methods for Combining Light Emitting Devices in a Packages and Packages Including Combined Light Emitting Devices	CreeLED, Inc.	8,333,631	12/838,677	18-Dec-2012
Improved High Reflectivity Mirrors and Method for Making Same	CreeLED, Inc.	9,362,459	12/553,025	07-Jun-2016
Photonic Crystal Phosphor Light Conversion Structures for Light Emitting Devices	CreeLED, Inc.	9,991,427	12/719,297	05-Jun-2018
Solid State Emitter Package Including Multiple Emitters	CreeLED, Inc.	7,893,445	12/614,553	22-Feb-2011
Solid State Emitter Packages including Accessory Lens	CreeLED, Inc.	8,362,499	13/008,898	29-Jan-2013
LED Packages with Scattering Particle Regions	CreeLED, Inc.	8,415,692	12/498,253	09-Apr-2013
Saturated Yellow Phosphor Converted LED and Blue Converted Red LED	CreeLED, Inc.	9,335,006	12/643,670	10-May-2016
High Reflective Substrate of Light Emitting Devices with Improved Light Output	CreeLED, Inc.	9,012,938	12/757,179	21-Apr-2015
Semiconductor Light Emitting Diodes having reflective Structures and Methods of Fabricating Same	CreeLED, Inc.	8,368,100	12/463,709	05-Feb-2013
Lateral Semiconductor Light Emitting Diodes Having Large Area Contacts	CreeLED, Inc.	8,643,039	13/023,788	04-Feb-2014
Lateral Semiconductor Light Emitting Diodes Having Large Area Contacts	CreeLED, Inc.	9,397,266	14/159,209	19-Jul-2016
Group III Nitride Based Light Emitting Diode Structures with Multiple Quantum Well Structures Having Varying Well Thickness	CreeLED, Inc.	8,575,592	12/699,541	05-Nov-2013

Lighting Device	CreeLED, Inc.	8,957,435	12/769,354	17-Feb-2015
LED Package with Increased Feature Sizes	CreeLED, Inc.	8,866,169	12/757,891	21-Oct-2014
LED Chip	CreeLED, Inc.	D635,525	29/335,819	05-Apr-2011
Front End Scribing of Light Emitting Diode (LED) Wafers and Resulting Devices	CreeLED, Inc.	8,216,867	12/482,165	10-Jul-2012
Light Emitting Diode	CreeLED, Inc.	D641,719	29/338,186	19-Jul-2011
Solid State Lighting Device	CreeLED, Inc.	7,923,739	12/479,318	12-Apr-2011
Solid State Lighting Device	CreeLED, Inc.	8,497,522	13/082,699	30-Jul-2013
Solid State Lighting Device	CreeLED, Inc.	8,866,166	13/953,438	21-Oct-2014
White-Emitting LED Chips and Method for Making Same	CreeLED, Inc.	8,329,482	12/771,938	11-Dec-2012
White LEDs with Emission Wavelength Correction	CreeLED, Inc.	8,558,252	13/219,486	15-Oct-2013
Light Emitting Diodes Including Integrated Backside Reflector and Die Attach	CreeLED, Inc.	9,437,785	12/538,602	06-Sep-2016
Heat Post Package for Improved Thermal Resistance	CreeLED, Inc.	8,410,512	12/625,943	02-Apr-2013
High CRI lighting device by adding cyan color	CreeLED, Inc.	8,508,127	12/720,387	13-Aug-2013
HIGH CRI LIGHTING DEVICE WITH ADDED LONG-WAVELENGTH BLUE COLOR	CreeLED, Inc.	8,508,117	13/030,421	13-Aug-2013
Luminescent Particles, Methods of Identifying Same and Light Emitting Devices Including the Same	CreeLED, Inc.	9,464,225	12/619,838	11-Oct-2016
APPARATUS FOR MOUNTING AND ELECTRICAL CONNECTION	CreeLED, Inc.	8,379,407	12/574,918	19-Feb-2013

OF A CONNECTOR BETWEEN A PACKAGE LED LAMP AND A PCB				
APPARATUS FOR FLEXIBLE MOUNTING AND ELECTRICAL CONNECTION	CreeLED, Inc.	8,792,250	13/718,589	29-Jul-2014
Solid State Light Emitting Diode Packages with Leadframes and Ceramic Material and Methods of Forming the Same	CreeLED, Inc.	9,240,526	12/766,293	19-Jan-2016
Electrical Connectors and Light Emitting Device Package and Methods of Assembling the Same	CreeLED, Inc.	8,337,214	12/719,287	25-Dec-2012
ELECTRICAL CONNECTORS AND LIGHT EMITTING DEVICE PACKAGE AND METHODS OF ASSEMBLING THE SAME	CreeLED, Inc.	8,727,789	13/724,581	20-May-2014
Light Transmission Control for Masking Appearance of Solid State Light Sources	CreeLED, Inc.	10,546,846	12/842,639	28-Jan-2020
High Power LEDs with Non-Polymer Material Lenses and Methods of Making the Same	CreeLED, Inc.	9,391,247	12/970,789	12-Jul-2016
Recipient Luminophoric Mediums Having Narrow-Spectrum Luminescent Materials and Related Semiconductor Light Emitting Devices and Methods	CreeLED, Inc.	8,921,875	13/104,238	30-Dec-2014
High Voltage waire Bond Free LEDs	CreeLED, Inc.	8,536,584	12/905,995	17-Sep-2013
Systems and Methods for Application of Optical Materials to Optical Elements	CreeLED, Inc.	8,940,561	12/717,048	27-Jan-2015
Electronic Device Submounts Including Conductive Substrates with Thermally Conductive Vias	CreeLED, Inc.	8,772,817	12/976,664	08-Jul-2014
Lighting Devices that Comprise One or More Solid State Light Emitters	CreeLED, Inc.	9,518,715	12/704,995	13-Dec-2016

Lighting Devices that Comprise One or More Solid State Light Emitters	CreeLED, Inc.	8,773,007	13/022,978	08-Jul-2014
Light Engine Module with Removable Circuit Board	CreeLED, Inc.	9,605,812	14/278,600	28-Mar-2017
Light Engine Modules including a Support and a Solid State Light Emitter	CreeLED, Inc.	10,119,660	15/434,516	06-Nov-2018
Lighting Devices that Comprise One or More Solid State Light Emitters	CreeLED, Inc.	10,222,004	15/788,376	05-Mar-2019
Lighting Devices that Comprise One or More Solid State Light Emitters	CreeLED, Inc.	10,451,224	16/246,899	22-Oct-2019
Warm White LEDs Having High Color Rendering Index Values and Related Luminophoric Mediums	CreeLED, Inc.	8,643,038	12/720,390	04-Feb-2014
Light Emitting Devices and Systems Having Tunable Chromaticity and Methods of Tuning the Chromaticity of Light Emitting Devices and Systems	CreeLED, Inc.	8,339,029	12/756,725	25-Dec-2012
Light Emitting Devices and Systems Having Tunable Chromaticity and Methods of Tuning the Chromaticity of Light Emitting Devices and Systems	CreeLED, Inc.	8,740,663	13/682,894	03-Jun-2014
LIGHT EMITTER DEVICE PACKAGES, MODULES AND METHODS	CreeLED, Inc.	9,583,681	13/367,898	28-Feb-2017
Light Emitting Device Array Assemblies and Related Methods	CreeLED, Inc.	9,048,392	13/093,431	02-Jun-2015
Structures and Substrates for Mounting Optical Elements and Methods and Devices for Providing the Same Background	CreeLED, Inc.	9,508,904	13/017,757	29-Nov-2016
Semiconductor Light Emitting Devices with Optical Coatings and Methods of Making Same	CreeLED, Inc.	9,515,229	12/887,067	06-Dec-2016
Light Emitting Diode (LED) Package	CreeLED, Inc.	D648,686	29/360,791	15-Nov-2011

Light Emitting Diode (LED) Package	CreeLED, Inc.	D659,657	29/401,692	15-May-2012
Semiconductor Light Emitting Devices with Densely Packed Phosphor Layer at Light Emitting Surface	CreeLED, Inc.	8,410,679	12/887,097	02-Apr-2013
Semiconductor Light Emitting Devices with Densely Packed Phosphor Layer at Light Emitting Surface	CreeLED, Inc.	8,684,781	13/780,132	01-Apr-2014
Semiconductor Light Emitting Devices with Densely Packed Phosphor Layer at Light Emitting Surface	CreeLED, Inc.	8,884,510	14/177,931	11-Nov-2014
Conformally Coated Light Emitting Devices and Methods for Providing the Same	CreeLED, Inc.	9,166,126	13/017,845	20-Oct-2015
Methods of Fabricating Light Emitting Devices Including Multiple Sequenced Luminophoric Layers, and Devices so Fabricated	CreeLED, Inc.	8,957,438	13/082,034	17-Feb-2015
Solid State Light Emitting Devices Including Nonhomogeneous Luminophoric Particle Size Layers	CreeLED, Inc.	8,742,654	13/035,520	03-Jun-2014
Lighting Device with Flexibly Coupled Heatsinks	CreeLED, Inc.	9,395,057	13/022,542	19-Jul-2016
Light Emitting Device Packages with Improved Heat Transfer	CreeLED, Inc.	8,598,602	12/825,075	03-Dec-2013
LIGHT EMITTING DEVICE PACKAGES WITH IMPROVED HEAT TRANSFER	CreeLED, Inc.	9,123,874	14/094,341	01-Sep-2015
High Voltage Low Current Surface-Emitting LED	CreeLED, Inc.	8,476,668	12/814,241	02-Jul-2013
High Voltage Low Current Surface-Emitting LED	CreeLED, Inc.	9,093,293	13/190,094	28-Jul-2015
LED PACKAGE WITH EFFICIENT, ISOLATED THERMAL PATH	CreeLED, Inc.	8,269,244	12/853,812	18-Sep-2012

LED PACKAGE WITH EFFICIENT, ISOLATED THERMAL PATH	CreeLED, Inc.	8,878,217	13/616,759	04-Nov-2014
Compact Optically Efficient Solid State Lighting Source with Integrated Thermal Management	CreeLED, Inc.	10,842,016	13/177,415	17-Nov-2020
Package for Lightin Emitting Diode(LED) Lighting	CreeLED, Inc.	D643,819	29/365,939	23-Aug-2011
PACKAGE FOR LIGHT EMITTING DIODE (LED) LIGHTING	CreeLED, Inc.	D667,801	29/397,017	25-Sep-2012
PACKAGE FOR LIGHT EMITTING DIODE (LED) LIGHTING	CreeLED, Inc.	D708,156	29/432,988	01-Jul-2014
COMPONENTS AND METHODS FOR LIGHT EMITTING DIODE (LED) LIGHTING	CreeLED, Inc.	11,101,408	13/367,929	24-Aug-2021
Solid State Lighting Component Package with reflective Layer	CreeLED, Inc.	8,803,201	13/017,778	12-Aug-2014
Methods for Combining Light Emitting Devices in a White Light Emitting Apparatus that Mimics Incandescent Dimming characteristics and Solid State Lighting Apparatus of General Illumination that Mimic Incandescent Dimming Characteristics	CreeLED, Inc.	8,950,892	13/050,110	10-Feb-2015
Methods for Combining Light Emitting Devices in a White Light Emitting Apparatus that Mimics Incandescent Dimming Characteristics and Solid State Lighting Apparatus for General Illumination that Mimic Incandescent Dimming Characteristics	CreeLED, Inc.	9,642,207	14/615,120	02-May-2017
High Density Multi-Chip LED Devices	CreeLED, Inc.	9,041,042	13/017,502	26-May-2015
High-Density Emitter Package	CreeLED, Inc.	D658,139	29/384,360	24-Apr-2012
High Efficiency LEDs	CreeLED, Inc.	8,455,882	13/250,289	04-Jun-2013
Multi-Chip LED Devices	CreeLED, Inc.	8,696,159	13/017,407	15-Apr-2014

Emitter Package	CreeLED, Inc.	D660,257	29/384,363	22-May-2012
MULTIPLE CONFIGURATION LIGHT EMITTING DEVICES AND METHODS	CreeLED, Inc.	9,627,361	13/017,575	18-Apr-2017
MULTIPLE CONFIGURATION LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D650,343	29/384,476	13-Dec-2011
Light Emitting Devices and Methods	CreeLED, Inc.	8,648,359	13/227,961	11-Feb-2014
Methods, System, and Apparatus for Determining Optical Properties of Elements of Lighting Components Having Similar Color Points	CreeLED, Inc.	8,589,120	13/015,996	19-Nov-2013
Red Nitride Phosphors	CreeLED, Inc.	8,906,263	13/152,863	09-Dec-2014
Gallium-Substituted Yttrium Aluminum Garnet Phosphor for High CRI LED Components	CreeLED, Inc.	8,747,697	13/154,872	10-Jun-2014
Light Emitting Devices with Low Packaging Factor	CreeLED, Inc.	8,957,440	13/252,448	17-Feb-2015
LIGHT-EMITTING DIODE COMPONENT	CreeLED, Inc.	9,035,328	13/021,496	19-May-2015
Light Emitting Devices for Light Emitting Diodes (LEDs)	CreeLED, Inc.	8,564,000	13/028,972	22-Oct-2013
Light Emitting Devices	CreeLED, Inc.	8,624,271	13/104,558	07-Jan-2014
Light Emitting Devices for Light Emitting Diodes (LEDs)	CreeLED, Inc.	9,203,004	14/043,494	01-Dec-2015
Light Emitting Devices for Light Emitting Diodes (LEDs)	CreeLED, Inc.	9,209,354	14/148,102	08-Dec-2015
LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D650,760	29/379,636	20-Dec-2011
LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D667,803	29/407,084	25-Sep-2012
LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D676,395	29/408,955	19-Feb-2013

ATTACHMENT DEVICES AND METHODS FOR LIGHT EMITTING DEVICES	CreeLED, Inc.	9,300,062	13/282,172	29-Mar-2016
Light Emitting Diodes with Low Junction Temperature and Solid State Backlight Components Including Light Emitting Diodes with Low Junction Temperature	CreeLED, Inc.	8,698,184	13/011,417	15-Apr-2014
Light Emitting Device Package	CreeLED, Inc.	D676,000	29/380,387	12-Feb-2013
LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D648,687	29/380,549	15-Nov-2011
LIGHT EMITTING DEVICE PACKAGE	CreeLED, Inc.	D661,264	29/403,433	05-Jun-2012
LED ARRAY HAVING EMBEDDED LED AND METHOD THEREOF	CreeLED, Inc.	9,245,874	13/088,693	26-Jan-2016
Solid State Lighting Devices and Methods	CreeLED, Inc.	8,686,445	12/969,267	01-Apr-2014
Lighting Apparatus Providing Increased Luminous Flux While Maintaining Color Point and CRI	CreeLED, Inc.	8,698,388	13/042,959	15-Apr-2014
High Brightness Light Emitting Diode (LED) Packages, Systems, and Methods with Improved Resin Filling and High Adhesion	CreeLED, Inc.	9,859,471	13/362,683	02-Jan-2018
Light-Emitting Diode (LED) for Achieving an Asymmetric Light Output	CreeLED, Inc.	9,263,636	13/100,786	16-Feb-2016
Horizontal Light Emitting Diodes Including Phosphor Particles	CreeLED, Inc.	9,640,737	13/018,013	02-May-2017
Lamp Packages	CreeLED, Inc.	D691,973	29/396,909	22-Oct-2013
LED Chip	CreeLED, Inc.	D673,126	29/396,911	25-Dec-2012
LED Chip	CreeLED, Inc.	D689,031	29/436,228	03-Sep-2013

Light Emitting Diode (LED) Arrays Including Direct Die Attach and Related Assemblies	CreeLED, Inc.	9,754,926	13/027,006	05-Sep-2017
High Brightness LED Package	CreeLED, Inc.	D679,842	29/382,394	09-Apr-2013
HIGH BRIGHTNESS LED PACKAGE	CreeLED, Inc.	D704,358	29/451,761	06-May-2014
Light Emitting Diode (LED) Devices, Systems, and Methods	CreeLED, Inc.	9,111,778	13/011,609	18-Aug-2015
Light Emitting Device Packages, Systems and Methods	CreeLED, Inc.	8,860,043	13/019,812	14-Oct-2014
Light Emitting Diode	CreeLED, Inc.	D689,830	29/383,908	17-Sep-2013
Light Emitting Diode	CreeLED, Inc.	D675,581	29/396,907	05-Feb-2013
Light Emitting Diode	CreeLED, Inc.	D682,225	29/393,910	14-May-2013
Light Emitting Diode	CreeLED, Inc.	D672,731	29/383,906	18-Dec-2012
SOLID STATE LIGHTING DEVICE INCLUDING GREEN SHIFTED RED COMPONENT	CreeLED, Inc.	8,664,846	13/440,992	04-Mar-2014
Reflective Mounting Substrates for Flip-Chip Mounted Horizontal LEDs	CreeLED, Inc.	9,673,363	13/178,791	06-Jun-2017
Semiconductor Light Emitting Diodes Having Multiple Bond Pads and Current Spreading Structures	CreeLED, Inc.	9,362,455	13/034,267	07-Jun-2016
Light Emitting Diode	CreeLED, Inc.	D675,580	29/386,077	05-Feb-2013
Light Emitting Diodes	CreeLED, Inc.	D673,125	29/386,078	25-Dec-2012
LIGHT EMITTING DEVICES, SYSTEMS AND METHODS	CreeLED, Inc.	9,490,235	13/224,850	08-Nov-2016
Coated Phosphors and Light Emitting Devices Including the Same	CreeLED, Inc.	8,729,790	13/152,833	20-May-2014

COATED PHOSPHORS AND LIGHT EMITTING DEVICES INCLUDING THE SAME	CreeLED, Inc.	9,537,052	14/246,375	03-Jan-2017
METHODS OF DETERMINING AND MAKING RED NITRIDE COMPOSITIONS	CreeLED, Inc.	8,814,621	13/153,155	26-Aug-2014
LIGHT EMITTER PACKAGES AND DEVICES HAVING IMPROVED WIRE BONDING AND RELATED METHODS	CreeLED, Inc.	9,099,616	13/603,586	04-Aug-2015
LIGHT EMITTING DIODE (LED) PACKAGES AND RELATED METHODS	CreeLED, Inc.	10,043,960	13/296,812	07-Aug-2018
Encapsulant with Index Matched Thixotropic Agent	CreeLED, Inc.	10,147,853	13/051,894	04-Dec-2018
Solid State Lighting Device Including Multiple Wavelength Conversion Materials	CreeLED, Inc.	8,884,508	13/292,577	11-Nov-2014
Complex Primary Optics and Methods of Fabrication	CreeLED, Inc.	8,564,004	13/306,589	22-Oct-2013
LED CHIP	CreeLED, Inc.	D691,569	29/388,240	15-Oct-2013
Gap Engineering for Flip-Chip Mounted Horizontal LEDs	CreeLED, Inc.	9,660,153	13/112,502	23-May-2017
Composite High Reflectivity Layer	CreeLED, Inc.	8,680,556	13/415,626	25-Mar-2014
LIGHT EMITTING DIODE (LED) PACKAGES, SYSTEMS, DEVICES AND RELATED METHODS	CreeLED, Inc.	8,610,140	13/462,450	17-Dec-2013
LIGHT EMITTING DIE (LED) PACKAGES AND RELATED METHODS	CreeLED, Inc.	10,256,385	13/187,232	09-Apr-2019
LED Structure with Enhanced Mirror Reflectivity	CreeLED, Inc.	8,686,429	13/168,689	01-Apr-2014
Methods of Forming Optical Conversion Material Caps and Light Emitting Devices Including Pre-	CreeLED, Inc.	9,444,024	13/293,475	13-Sep-2016

Formed Optical Conversion Material Caps				
High Reflective Board or Substrate for LEDs	CreeLED, Inc.	9,105,824	13/370,696	11-Aug-2015
Conformal Gel Layers for Light Emitting Diodes and Methods of Fabricating Same	CreeLED, Inc.	8,525,190	13/160,793	03-Sep-2013
METHODS OF DETERMINING AND MAKING RED NITRIDE COMPOSITIONS	CreeLED, Inc.	9,318,669	13/361,276	19-Apr-2016
LED Component	CreeLED, Inc.	D700,584	29/396,759	04-Mar-2014
LIGHT EMITTER DEVICE PACKAGES, COMPONENTS, AND METHODS FOR IMPROVED CHEMICAL RESISTANCE AND RELATED METHODS	CreeLED, Inc.	10,490,712	13/554,769	26-Nov-2019
LIGHT EMITTER DEVICES AND METHODS, UTILIZING LIGHT EMITTING DIODES (LEDs), FOR IMPROVED LIGHT EXTRACTION	CreeLED, Inc.	9,496,466	13/312,508	15-Nov-2016
LIGHTING DEVICE INCLUDING MULTIPLE WAVELENGTH CONVERSION MATERIAL LAYERS	CreeLED, Inc.	8,957,580	13/372,063	17-Feb-2015
LIGHT EMITTER DEVICES HAVING IMPROVED CHEMICAL AND PHYSICAL RESISTANCE AND RELATED METHODS	CreeLED, Inc.	9,240,530	13/444,394	19-Jan-2016
LIGHT EMITTER DEVICES HAVING IMPROVED LIGHT OUTPUT AND RELATED METHODS	CreeLED, Inc.	9,343,441	13/444,399	17-May-2016
LIGHTING DEVICE INCLUDING MULTIPLE ENCAPSULANT MATERIAL LAYERS	CreeLED, Inc.	8,946,747	13/372,076	03-Feb-2015

HIGH VOLTAGE ARRAY LIGHT EMITTING DIODE (LED) DEVICES AND METHODS	CreeLED, Inc.	8,729,589	13/671,089	20-May-2014
HIGH VOLTAGE ARRAY LIGHT EMITTING DIODE (LED) DEVICES AND METHODS	CreeLED, Inc.	9,194,567	14/189,500	24-Nov-2015
LED Chip	CreeLED, Inc.	D582865	29/280,949	16-Dec-2008
IMPROVED LIGHT EMITTING DEVICES AND METHODS	CreeLED, Inc.	8,455,908	13/336,540	04-Jun-2013
IMPROVED LIGHT EMITTING DEVICES AND METHODS	CreeLED, Inc.	8,921,869	13/908,597	30-Dec-2014
IMPROVED LIGHT EMITTING DEVICES AND METHODS	CreeLED, Inc.	8,575,639	13/435,912	05-Nov-2013
LIGHT EMITTING DEVICES FOR LIGHT EMITTING DIODES (LEDs)	CreeLED, Inc.	8,994,057	14/052,201	31-Mar-2015
LIGHT EMITTING DIODES (LEDs), DEVICES, AND METHODS FOR PROVIDING FAILURE MITIGATION IN LED ARRAYS	CreeLED, Inc.	8,809,880	13/793,882	19-Aug-2014
Lamp Packages	CreeLED, Inc.	D689,209	29/402,571	03-Sep-2013
Lamp Packages	CreeLED, Inc.	D689,210	29/402,573	03-Sep-2013
LIGHT EMITTING DEVICE COMPONENT	CreeLED, Inc.	D702,653	29/404,913	15-Apr-2014
LIGHT EMITTING DEVICE COMPONENT	CreeLED, Inc.	D736,725	29/487,954	18-Aug-2015
LIGHT EMITTING DEVICES AND SUBSTRATES WITH IMPROVED PLATING	CreeLED, Inc.	9,590,155	13/828,895	07-Mar-2017
LIGHT EMITTING DEVICES INCLUDING MULTIPLE ANODES AND CATHODES	CreeLED, Inc.	9,515,055	13/471,164	06-Dec-2016
Solid State Lighting Apparatus	CreeLED, Inc.	D708,155	29/418,797	01-Jul-2014

LIGHT EMITTING DEVICES AND COMPONENTS HAVING EXCELLENT CHEMICAL RESISTANCE AND RELATED METHODS	CreeLED, Inc.	10,211,380	13/309,177	19-Feb-2019
LIGHT EMITTER DEVICES AND METHODS WITH REDUCED DIMENSIONS AND IMPROVED LIGHT OUTPUT	CreeLED, Inc.	10,008,637	13/312,518	26-Jun-2018
YELLOW PHOSPHOR HAVING AN INCREASED ACTIVATOR CONCENTRATION AND A METHOD OF MAKING A YELLOW PHOSPHOR	CreeLED, Inc.	9,447,319	13/714,992	20-Sep-2016
Solid State Lighting Component Package with Layer	CreeLED, Inc.	9,287,475	13/554,628	15-Mar-2016
LIGHT EMITTER DEVICES AND COMPONENTS WITH CHEMICAL RESISTANCE AND RELATED METHODS	CreeLED, Inc.	10,686,107	13/691,102	16-Jun-2020
Light Emitting Diode Primary Optic for Beam Shaping	CreeLED, Inc.	8,931,929	13/544,662	13-Jan-2015
Light Emitting Diode (LED) Arrays Including Direct Die Attach and Related Assemblies	CreeLED, Inc.	9,831,220	13/424,699	28-Nov-2017
Light Emitting Diode (LED) Arrays Including Direct Die Attach and Related Assemblies	CreeLED, Inc.	9,053,958	13/463,267	09-Jun-2015
LIGHT EMITTING DEVICE	CreeLED, Inc.	D707,192	29/412,168	17-Jun-2014
LIGHT EMITTING DEVICE COMPONENT	CreeLED, Inc.	D705,181	29/412,166	20-May-2014
Gel Underfill Layers for Light Emitting Diodes and Methods of Fabricating Same	CreeLED, Inc.	8,957,430	13/369,996	17-Feb-2015
LIGHT EMITTING DEVICES AND PACKAGES AND RELATED METHODS WITH ELECTRODE MARKS ON LEADS	CreeLED, Inc.	9,246,060	13/762,912	26-Jan-2016

Low Temperature High Strength Metal Stack for Die Attachment	CreeLED, Inc.	9,443,903	13/361,569	13-Sep-2016
CERAMIC-BASED LIGHT EMITTING DIODE (LED) DEVICES, COMPONENTS AND METHODS	CreeLED, Inc.	8,895,998	13/436,247	25-Nov-2014
CERAMIC-BASED LIGHT EMITTING DIODE (LED) DEVICES, COMPONENTS, AND METHODS	CreeLED, Inc.	9,806,246	13/836,709	31-Oct-2017
CERAMIC-BASED LIGHT EMITTING DIODE (LED) DEVICES, COMPONENTS, AND METHODS	CreeLED, Inc.	9,786,825	13/836,940	10-Oct-2017
CERAMIC-BASED LIGHT EMITTING DIODE (LED) PACKAGES AND METHODS	CreeLED, Inc.	9,431,590	14/216,146	30-Aug-2016
LIGHT EMITTING DIODE (LED) PACKAGE WITH MULTIPLE ANODES AND CATHODES	CreeLED, Inc.	D712,849	29/420,874	09-Sep-2014
LIGHT EMITTING DIODE (LED) PACKAGE WITH MULTIPLE ANODES AND CATHODES	CreeLED, Inc.	D713,804	29/420,876	23-Sep-2014
Wafer Level Packaging of Light Emitting Diodes (LEDs)	CreeLED, Inc.	9,653,643	13/608,397	16-May-2017
Wafer Level Packaging of Light Emitting Diodes (LEDs)	CreeLED, Inc.	10,854,584	15/499,520	01-Dec-2020
LIGHT EMITTER COMPONENTS AND METHODS HAVING IMPROVED ELECTRICAL CONTACTS	CreeLED, Inc.	10,222,032	13/800,260	05-Mar-2019
SUBMOUNT BASED SURFACE MOUNT DEVICE (SMD) LIGHT EMITTER COMPONENTS AND METHODS	CreeLED, Inc.	10,134,961	13/800,284	20-Nov-2018
LIGHT EMITTER COMPONENTS AND METHODS HAVING IMPROVED PERFORMANCE	CreeLED, Inc.	8,916,896	13/774,248	23-Dec-2014

Multi-Segment LED Components and LED Lighting Apparatus Including the Same	CreeLED, Inc.	9,609,709	13/590,982	28-Mar-2017
Multi-Segment LED Lighting Apparatus Configurations	CreeLED, Inc.	9,179,512	13/672,315	03-Nov-2015
SOLID STATE LIGHTING APPARATUSES AND RELATED METHODS	CreeLED, Inc.	8,970,131	13/769,273	03-Mar-2015
SOLID STATE LIGHTING APPARATUSES AND RELATED METHODS	CreeLED, Inc.	9,414,454	13/769,277	09-Aug-2016
Solid State Lighting Apparatus and Methods of Forming	CreeLED, Inc.	9,055,643	13/798,721	09-Jun-2015
MULTI-DIE LED PACKAGE	CreeLED, Inc.	9,082,921	13/441,620	14-Jul-2015
LIGHT EMITTING DIODE	CreeLED, Inc.	D706,231	29/417,220	03-Jun-2014
Light Emitting Diode (LED) Contact Structures and Process for Fabricating the Same	CreeLED, Inc.	9,437,783	13/466,590	06-Sep-2016
LED-ARRAY LIGHT SOURCE WITH ASPECT RATIO GREATER THAN 1	CreeLED, Inc.	9,401,103	13/441,558	26-Jul-2016
LED-ARRAY PACKAGE	CreeLED, Inc.	D703,624	29/417,704	29-Apr-2014
LIGHT EMITTER PACKAGE	CreeLED, Inc.	D704,154	29/433,842	06-May-2014
SUBMOUNT BASED LIGHT EMITTER COMPONENTS AND METHODS	CreeLED, Inc.	8,878,204	13/829,962	04-Nov-2014
LED Based Lighting System	CreeLED, Inc.	8,772,798	13/602,950	08-Jul-2014
MULTI-CHIP LIGHT EMITTER PACKAGES AND RELATED METHODS	CreeLED, Inc.	9,172,012	13/796,045	27-Oct-2015
LIGHT EMITTER PACKAGES, SYSTEMS, AND METHODS	CreeLED, Inc.	10,439,112	13/554,776	08-Oct-2019

HAVING IMPROVED PERFORMANCE				
LIGHT EMITTER PACKAGES, SYSTEMS, AND METHODS HAVING IMPROVED PERFORMANCE	CreeLED, Inc.	9,349,929	13/713,410	24-May-2016
Tilted Emission LED Array	CreeLED, Inc.	9,786,811	13/833,272	10-Oct-2017
LIGHT EMITTING DIODE (LED) PACKAGE	CreeLED, Inc.	D709,464	29/423,422	22-Jul-2014
Semiconductor Light Emitting Diodes with Crack-Tolerant Barrier Structures and Methods of Fabricating the Same	CreeLED, Inc.	9,496,458	13/790,369	15-Nov-2016
LED Package with Encapsulant Having Planar Surfaces	CreeLED, Inc.	9,048,396	13/649,052	02-Jun-2015
LED Package with Encapsulant Having Planar Surfaces	CreeLED, Inc.	9,865,780	14/661,874	09-Jan-2018
LED Package	CreeLED, Inc.	D711,840	29/424,353	26-Aug-2014
LED PACKAGE	CreeLED, Inc.	D725,613	29/424,861	31-Mar-2015
LIGHT EMITTER DEVICE	CreeLED, Inc.	D721,339	29/425,831	20-Jan-2015
Lamp Package	CreeLED, Inc.	D703,348	29/426,661	22-Apr-2014
Quantum Dot Narrow-Band Downconverters for High Efficiency LEDs	CreeLED, Inc.	9,685,585	13/837,442	20-Jun-2017
LIGHT EMITTING DIODE (LED) PACKAGE	CreeLED, Inc.	D711,841	29/430,291	26-Aug-2014
LED Package	CreeLED, Inc.	D718,258	29/431,064	25-Nov-2014
Submount-Free Light Emitting Diode (LED) Components and Methods of Fabricating Same	CreeLED, Inc.	9,318,674	13/759,229	19-Apr-2016

Electrostatic Phosphor Coating Systems and Methods for Light Emitting Structures and Packaged Light Emitting Diodes Including Phosphor Coating	CreeLED, Inc.	9,589,852	13/947,623	07-Mar-2017
LED Package with Multiple Element Light Source and Encapsulant Having Planar Surfaces	CreeLED, Inc.	9,818,919	13/649,067	14-Nov-2017
LIGHT EMITTER COMPONENTS, SYSTEMS, AND RELATED METHODS	CreeLED, Inc.	9,897,267	13/838,654	20-Feb-2018
LIGHT EMITTER PACKAGES AND METHODS	CreeLED, Inc.	10,295,124	13/779,146	21-May-2019
IMPROVED WIRE BONDS FOR LIGHT EMITTER DEVICES	CreeLED, Inc.	D753,612	29/431,542	12-Apr-2016
Wafer Level Packaging of Multiple Light Emitting Diodes (LEDs) on a Single Carrier Die	CreeLED, Inc.	9,666,764	13/801,743	30-May-2017
MULTI-CHIP LIGHT EMITTER PACKAGES AND RELATED METHODS	CreeLED, Inc.	9,666,762	13/796,954	30-May-2017
LIGHT EMITTING DIODE (LED) PACKAGE	CreeLED, Inc.	D749,051	29/439,629	09-Feb-2016
LIGHT EMITTING DIODE (LED) PACKAGE	CreeLED, Inc.	D738,832	29/444,591	15-Sep-2015
SUBMOUNT BASED SURFACE MOUNT DEVICE (SMD) LIGHT EMITTER COMPONENTS AND METHODS	CreeLED, Inc.	9,780,268	13/755,993	03-Oct-2017
LED Assembly	CreeLED, Inc.	10,094,523	13/866,587	09-Oct-2018
Light Emitting Diodes Having Group III Nitride Surface Features Defined by a Mask and Crystal Planes, and Fabrication Methods Thereof	CreeLED, Inc.	8,896,008	13/868,361	25-Nov-2014
Light Emitting Diodes Having Group III Nitride Surface Features Defined	CreeLED, Inc.	9,281,445	14/519,746	08-Mar-2016

by a Mask and Crystal Planes, and Fabrication Methods Thereof				
Substrate Based Light Emitter Devices, Components, and Related Methods	CreeLED, Inc.	9,735,198	13/834,195	15-Aug-2017
Substrate Based Light Emitter Devices, Components, and Related Methods	CreeLED, Inc.	11,004,890	15/676,961	11-May-2021
CONNECTOR DEVICES, SYSTEMS, AND RELATED METHODS FOR LIGHT EMITTER COMPONENTS	CreeLED, Inc.	9,215,792	13/839,130	15-Dec-2015
LIGHT EMITTER DEVICE	CreeLED, Inc.	D712,850	29/451,177	09-Sep-2014
Solid State Lighting Component Package with Conformal Reflective Coating	CreeLED, Inc.	9,923,132	13/902,411	20-Mar-2018
Solid State Lighting Component Package with Conformal Reflective Coating	CreeLED, Inc.	10,944,031	15/885,215	09-Mar-2021
LIGHT EMITTING DEVICE	CreeLED, Inc.	D738,542	29/452,692	08-Sep-2015
Semiconductor Light Emitting devices Including Red Phosphors that Exhibit Good Color Rendering Properties and Related Red Phosphors	CreeLED, Inc.	9,219,202	14/255,607	22-Dec-2015
LED Package	CreeLED, Inc.	D735,683	29/453,958	04-Aug-2015
LED Package	CreeLED, Inc.	D758,976	29/462,795	14-Jun-2016
SOLID STATE LIGHTING DEVICE AND FABRICATION METHODS INCLUDING DEPOSITED LIGHT-AFFECTING ELEMENTS	CreeLED, Inc.	9,099,575	13/943,043	04-Aug-2015
Solid State Lighting Apparatus with High Scotopic/Photopic (S/P) Ratio	CreeLED, Inc.	9,240,528	14/045,474	19-Jan-2016

Silazane-Containing Materials for Light Emitting Diodes	CreeLED, Inc.	9,935,246	14/143,820	03-Apr-2018
Light Emitting Diode Dielectric Mirror	CreeLED, Inc.	9,461,201	13/909,927	04-Oct-2016
LIGHT EMITTER DEVICE	CreeLED, Inc.	D739,565	29/459,231	22-Sep-2015
LIGHT EMITTER DEVICE	CreeLED, Inc.	D740,453	29/459,233	06-Oct-2015
Chip with Integrated Phosphor	CreeLED, Inc.	10,439,107	14/053,404	08-Oct-2019
LIGHT EMITTER DEVICES AND METHODS FOR LIGHT EMITTING DIODE (LED) CHIPS	CreeLED, Inc.	9,461,024	13/956,814	04-Oct-2016
LED Package with Encapsulant Having Curved and Planar Surfaces	CreeLED, Inc.	9,887,327	13/957,290	06-Feb-2018
LED Package with Encapsulant	CreeLED, Inc.	D718,725	29/462,353	02-Dec-2014
Semiconductor Light Emitting Devices Including Multiple Red Phosphors that Exhibit Good Color Rendering Properties with Increased Brightness	CreeLED, Inc.	10,074,781	14/471,697	11-Sep-2018
MULTIPLE VOLTAGE LIGHT EMITTER PACKAGES, SYSTEMS, AND RELATED METHODS	CreeLED, Inc.	10,234,119	14/286,344	19-Mar-2019
Phosphor-Converted Light Emitting Device	CreeLED, Inc.	10,283,681	14/120,297	07-May-2019
High Voltage Monolithic LED Chip	CreeLED, Inc.	9,728,676	14/050,001	08-Aug-2017
High Voltage Monolithic LED Chip	CreeLED, Inc.	10,115,860	15/647,823	30-Oct-2018
High Voltage Monolithic LED Chip	CreeLED, Inc.	10,797,201	16/173,617	06-Oct-2020
Compact LED Package with Reflectivity Layer	CreeLED, Inc.	10,424,702	14/183,218	24-Sep-2019
LIGHT EMITTING DIODE (LED) PACKAGE	CreeLED, Inc.	D746,240	29/478,014	29-Dec-2015

Solid State Lighting Devices and Methods for Incorporating Notch Filtering Materials	CreeLED, Inc.	9,960,322	14/259,890	01-May-2018
Solid State Light-Emitting Devices with Improved Contrast	CreeLED, Inc.	9,685,101	14/259,943	20-Jun-2017
Wafer Level Contact Pad Solder Bumping for Surface Mount Devices with Non-Planar Recessed Contacting Surfaces	CreeLED, Inc.	9,954,144	14/152,829	24-Apr-2018
Solid State Lighting Devices with Color Point Non-Coincident with Blackbody Locus	CreeLED, Inc.	9,215,761	14/278,464	15-Dec-2015
SOLID STATE LIGHTING APPARATUSES, SYSTEMS, AND RELATED METHODS	CreeLED, Inc.	9,538,590	14/639,743	03-Jan-2017
LIGHT EMITTER DEVICES AND METHODS FOR LIGHT EMITTING DIODE (LED) CHIPS	CreeLED, Inc.	9,000,470	14/168,561	07-Apr-2015
Method to Form Primary Optic with Variable Shapes and/or Geometries without a Substrate	CreeLED, Inc.	9,601,670	14/329,807	21-Mar-2017
SUBMOUNT BASED LIGHT EMITTER COMPONENTS AND METHODS	CreeLED, Inc.	9,691,949	14/292,331	27-Jun-2017
SUBMOUNT BASED LIGHT EMITTER COMPONENTS AND METHODS	CreeLED, Inc.	10,797,204	14/292,244	06-Oct-2020
Light Emitting Diode (LED) Components Including Contact Expansion Frame	CreeLED, Inc.	9,660,161	14/325,047	23-May-2017
LIGHT EMITTING DIODE (LED) COMPONENT COMPRISING A PHOSPHOR WITH IMPROVED EXCITATION PROPERTIES	CreeLED, Inc.	9,437,788	14/453,878	06-Sep-2016
LED Packages with Chips Having Insulated Surfaces	CreeLED, Inc.	10,622,522	14/478,571	14-Apr-2020

SOLDER PADS, METHODS, AND SYSTEMS FOR CIRCUITRY COMPONENTS	CreeLED, Inc.	9,961,770	14/337,377	01-May-2018
Voltage Configurable Solid State Lighting Apparatuses, Systems, and Related Methods	CreeLED, Inc.	9,826,581	14/961,439	21-Nov-2017
LIGHT EMITTING DIODE (LED) COMPONENT COMPRISING A PHOSPHOR WITH IMPROVED EXCITATION PROPERTIES	CreeLED, Inc.	9,331,253	14/476,049	03-May-2016
Wire Bonded Light Emitting Diode (LED) Components Including Reflective Layer and Methods of Fabricating Same	CreeLED, Inc.	9,214,607	14/478,147	15-Dec-2015
High Efficiency LEDs and Methods of Manufacturing	CreeLED, Inc.	10,658,546	14/602,040	19-May-2020
LED Package with Truncated Encapsulant	CreeLED, Inc.	D790,486	29/503,928	27-Jun-2017
Blue Light Emitting Devices that Include Phosphor-Converted Blue Light Emitting Devices	CreeLED, Inc.	9,219,201	14/529,327	22-Dec-2015
LIGHT EMITTING DIODE (LED) COMPONENTS AND METHODS	CreeLED, Inc.	10,453,825	14/538,526	22-Oct-2019
Solid State Lighting Apparatuses with Non-Uniformly Spaced Emitters for Improved Heat Distribution, Systems Having the Same, And Methods Having the Same	CreeLED, Inc.	10,267,506	14/961,470	23-Apr-2019
Light Emitting Diode (LED) Components Including LED Dies That are Directly Attached to Lead Frames	CreeLED, Inc.	9,601,673	14/550,186	21-Mar-2017
Light Emitting Diode (LED) Components Including LED Dies That are Attached to Lead Frames	CreeLED, Inc.	10,950,769	15/432,146	16-Mar-2021
LEADFRAME BASED LIGHT EMITTER COMPONENTS AND RELATED METHODS	CreeLED, Inc.	9,406,594	14/550,443	02-Aug-2016

GROUP III NITRIDE BASED LED STRUCTURES INCLUDING MULTIPLE QUANTUM WELLS WITH BARRIER-WELL UNIT INTERFACE LAYERS	CreeLED, Inc.	9,985,168	14/546,524	29-May-2018
GROUP III NITRIDE BASED LED STRUCTURES INCLUDING MULTIPLE QUANTUM WELLS WITH BARRIER-WELL UNIT INTERFACE LAYERS	CreeLED, Inc.	10,224,454	15/970,959	05-Mar-2019
GROUP III NITRIDE BASED LED STRUCTURES INCLUDING MULTIPLE QUANTUM WELLS WITH BARRIER-WELL UNIT INTERFACE LAYERS	CreeLED, Inc.	10,756,231	16/267,636	25-Aug-2020
Group III Nitride Based LED Structures Including Multiple Quantum Wells with Barrier-Well Unit Interface Layers	CreeLED, Inc.	11,088,295	16/998,651	10-Aug-2021
LED Package with Multiple Element Light Source and Endcapsulant Having Curved and/or Planar Surfaces	CreeLED, Inc.	10,468,565	14/575,805	05-Nov-2019
Light Emitting Diode Device	CreeLED, Inc.	D826,871	29/511,587	28-Aug-2018
Contact Pads for LED Chips	CreeLED, Inc.	D892,066	29/655,949	04-Aug-2020
Low Optical Loss Flip Chip Solid State Lighting Device	CreeLED, Inc.	10,991,861	15/280,438	27-Apr-2021
High Voltage Monolithic LED Chip with Improved Reliability	CreeLED, Inc.	10,243,121	14/699,302	26-Mar-2019
High Voltage Monolithic LED Chip with Improved Reliability	CreeLED, Inc.	10,957,830	16/290,084	23-Mar-2021
Graded Vias for LED Chip P- and N-Contacts	CreeLED, Inc.	9,412,907	14/690,284	09-Aug-2016
SOLID STATE LIGHT EMITTER COMPONENT	CreeLED, Inc.	D778,848	29/523,168	14-Feb-2017
LED Package	CreeLED, Inc.	D777,122	29/518,882	24-Jan-2017

SOLID STATE LIGHTING COMPONENTS	CreeLED, Inc.	10,683,971	15/143,261	16-Jun-2020
Solid State Lighting Components	CreeLED, Inc.	10,962,199	16/901,624	30-Mar-2021
Self-Aligned Floating Mirror for Contact Vias	CreeLED, Inc.	10,186,644	14/860,483	22-Jan-2019
SOLID STATE LIGHT EMITTER DEVICES AND METHODS	CreeLED, Inc.	10,074,635	14/802,655	11-Sep-2018
STABILIZED QUANTUM DOT STRUCTURE AND METHOD OF MAKING A STABILIZED QUANTUM DOT STRUCTURE	CreeLED, Inc.	9,780,266	15/196,906	03-Oct-2017
LED Package	CreeLED, Inc.	D783,547	29/529,243	11-Apr-2017
Light Emitting Devices Having Closely-Spaced Broad-Spectrum and Narrow-Spectrum Luminescent Materials and Related Methods	CreeLED, Inc.	9,871,173	15/184,104	16-Jan-2018
Light Emitting Devices Having Closely-Spaced Broad-Spectrum and Narrow-Spectrum Luminescent Materials and Related Methods	CreeLED, Inc.	10,109,773	15/832,848	23-Oct-2018
Light Emitter Components and Related Methods	CreeLED, Inc.	10,192,854	15/192,790	29-Jan-2019
High Density Pixelated LED and Devices and Methods Thereof	CreeLED, Inc.	10,529,696	15/399,729	07-Jan-2020
High Density Pixelated LED and Devices and Methods Thereof	CreeLED, Inc.	10,312,224	15/401,240	04-Jun-2019
High Density Pixelated LED and Devices and Methods Thereof	CreeLED, Inc.	10,910,352	16/414,162	02-Feb-2021
LIGHT EMITTING DIODES, COMPONENTS AND RELATED METHODS	CreeLED, Inc.	10,290,777	15/657,027	14-May-2019
LIGHT EMITTING DIODES, COMPONENTS AND RELATED METHODS	CreeLED, Inc.	10,964,858	16/380,400	30-Mar-2021

Light Emitting Diodes, Components and Related Methods	CreeLED, Inc.	10,879,435	16/797,173	29-Dec-2020
LIGHT EMITTING DEVICE	CreeLED, Inc.	D823,492	29/579,906	17-Jul-2018
LIGHT EMITTING DIODES, COMPONENTS AND RELATED METHODS	CreeLED, Inc.	10,431,568	15/264,547	01-Oct-2019
LIGHT EMITTING DIODE (LED) DEVICES, COMPONENTS AND METHODS	CreeLED, Inc.	10,804,251	15/359,517	13-Oct-2020
Light Emitting Diodes, Components and Related Methods	CreeLED, Inc.	10,361,349	15/694,591	23-Jul-2019
High Brightness, Low-CRI Semiconductor Light Emitting Devices Including Narrow-Spectrum Luminescent Materials	CreeLED, Inc.	9,905,735	15/475,366	27-Feb-2018
TUNABLE INTEGRATED OPTICS LED COMPONENTS AND METHODS	CreeLED, Inc.	10,410,997	15/593,042	10-Sep-2019
Tunable Integrated Optics LED Components and Methods	CreeLED, Inc.	10,847,501	16/525,100	24-Nov-2020
SUBSTRATES FOR LIGHT EMITTING DIODES AND RELATED METHODS	CreeLED, Inc.	10,439,114	15/453,594	08-Oct-2019
LED Apparatuses and Methods for High Lumen Output Density	CreeLED, Inc.	10,672,957	15/654,323	02-Jun-2020
Configurable Circuit Layout for LEDs	CreeLED, Inc.	10,734,560	15/826,417	04-Aug-2020
LIGHT EMITTING DIODES, COMPONENTS AND RELATED METHODS	CreeLED, Inc.	11,101,248	15/681,205	24-Aug-2021
Light Emitting Diodes, Components and Related Methods	CreeLED, Inc.	11,107,857	15/912,155	31-Aug-2021
High Density Pixelated-LED Chips and Chip Array Devices	CreeLED, Inc.	10,651,357	16/053,980	12-May-2020

High Density Pixelated-LED Chips and Chip Array Devices, and Fabrication Methods	CreeLED, Inc.	10,734,363	16/174,584	04-Aug-2020
Stabilized Quantum Dot Composite and Method of Making a Stabilized Quantum Dot Composite	CreeLED, Inc.	10,347,799	15/809,241	09-Jul-2019
Stabilized Quantum Dot Composite and Method of Making a Stabilized Quantum Dot Composite	CreeLED, Inc.	10,879,433	16/419,261	29-Dec-2020
Stabilized Luminescent Nanoparticles Comprising a Perovskite Semiconductor and Method of Fabrication	CreeLED, Inc.	10,741,730	15/809,213	11-Aug-2020
Light Emitting Devices Including Narrowband Converters for Outdoor Lighting Applications	CreeLED, Inc.	10,541,353	15/809,353	21-Jan-2020
Light Emitting Device	CreeLED, Inc.	D851,790	29/616,841	18-Jun-2019
Light Emitting Device	CreeLED, Inc.	D890,961	29/689,497	21-Jul-2020
Solid State Lighting Devices with Opposing Emission Directions	CreeLED, Inc.	10,529,773	15/896,805	07-Jan-2020
Reflective Layers for Light-Emitting Diodes	CreeLED, Inc.	11,031,527	15/882,103	08-Jun-2021
Clear Coating for Light Emitting Device Exterior Having Chemical Resistance and Related Methods	CreeLED, Inc.	11,056,625	15/899,196	06-Jul-2021
LED Apparatuses and Methods	CreeLED, Inc.	10,453,827	15/993,540	22-Oct-2019
Apparatus and Methods for Mass Transfer of Electronic Die	CreeLED, Inc.	10,573,543	15/967,529	25-Feb-2020
LED Device, System, and Method with Adaptive Patterns	CreeLED, Inc.	10,964,866	16/107030	30-Mar-2021
Light Emitting Diode (LED) Components and Methods	CreeLED, Inc.	10,957,736	15/918,839	23-Mar-2021
LED Systems, Apparatuses, and Methods	CreeLED, Inc.	11,101,410	15/997,350	24-Aug-2021

Stabilized Fluoride Phosphor for Light Emitting Diode (LED) Applications	CreeLED, Inc.	10,608,148	15/994,105	31-Mar-2020
Light-Emitting Diode Package with Light-Altering Material	CreeLED, Inc.	10,522,722	15/957,454	31-Dec-2019
Light-Emitting Diode Package with Light-Altering Material	CreeLED, Inc.	10,811,573	16/686,457	20-Oct-2020
Light-Emitting Diode Packages with Individually Controllable Light-Emitting Diode Chips	CreeLED, Inc.	11,121,298	16/118,762	14-Sep-2021
Light-Emitting Diode Packages	CreeLED, Inc.	11,024,785	16/118,747	01-Jun-2021
Light Emitting Diode Package	CreeLED, Inc.	D902,448	29/661,900	17-Nov-2020
Indicia for Light Emitting Diode Chips	CreeLED, Inc.	11,145,689	16/203,709	12-Oct-2021
Light Emitting Diode Packages	CreeLED, Inc.	10,651,351	16/189,195	12-May-2020
Light Emitting Diode Packages	CreeLED, Inc.	11,081,626	16/850,108	03-Aug-2021
Pixelated LED Chips and Chip Array Devices, and Fabrication Methods	CreeLED, Inc.	10,903,265	16/229,986	26-Jan-2021
Pixelated LED Chips and Chip Array Devices, and Fabrication Methods	CreeLED, Inc.	10,903,268	17/008,544	26-Jan-2021
Light Emitting Diode Chip	CreeLED, Inc.	D920,934	29/658,067	01-Jun-2021
Light Emitting Diode Packages	CreeLED, Inc.	11,189,766	16/249,246	30-Nov-2021
Interconnects for Light Emitting Diode Chips	CreeLED, Inc.	10,879,441	16/222,173	29-Dec-2020
Contact Structures for Light Emitting Diode Chips	CreeLED, Inc.	10,985,294	16/357,949	20-Apr-2021
Light Emitting Diode Packages	CreeLED, Inc.	11,101,411	16/453,447	24-Aug-2021
Lumiphoric Material Region Arrangements for Light Emitting Diode Packages	CreeLED, Inc.	11,024,613	16/675,750	01-Jun-2021

Light-Emitting Diode Chip Structures	CreeLED, Inc.	11,094,848	16/542,458	17-Aug-2021
Lumiphoric Arrangements for Light Emitting Diode Packages	CreeLED, Inc.	11,083,059	16/592,364	03-Aug-2021
Light Emitting Diode Package	CreeLED, Inc.	D926,714	29/711,302	03-Aug-2021

II. Patent Applications

Applications	Owner	Application No.	Filing Date
CATASTROPHIC EVENT MEMORY BACKUP-SYSTEM	Smart Modular Technologies, Inc.	16/889,729	01-Jun-2020
DYNAMICALLY TUNABLE NON-VOLATILE MEMORY	Smart Modular Technologies, Inc.	17/233,433	16-Apr-2021
THERMAL THROTTLING MEMORY SYSTEM	Smart Modular Technologies, Inc.	17/233,434	16-Apr-2021
Universal Bracket For Multiple Form Factors Of PCIe Cards In OCP Sled Environments	SMART Embedded Computing, Inc.	16/529,919	02-Aug-2019
Molded Chip Fabrication Method and Apparatus	CreeLED, Inc.	16/293,267	05-Mar-2019
Formation of Nitride-Based Optoelectronic and Electronic Device Structures on Lattice-Matched Substrates	CreeLED, Inc.	15/459,161	15-Mar-2017
Light Emitting Diode Package and Method of Fabricating Same	CreeLED, Inc.	17/127,154	18-Dec-2020

PHOSPHOR COMPOSITION	CreeLED, Inc.	16/944,874	31-Jul-2020
Illumination Devices Using Externally Interconnected Arrays of Light Emitting Devices, and Methods of Fabricating Same	CreeLED, Inc.	16/804,986	28-Feb-2020
Lighting Devices that Comprise One or More Solid State Light Emitters	CreeLED, Inc.	16/596,300	08-Oct-2019
Light Emitting Devices and Components Having Improved Chemical Resistance and Related Methods	CreeLED, Inc.	16/263,191	31-Jan-2019
Wafer Level Packaging of Light Emitting Diodes (LEDs)	CreeLED, Inc.	17/103,509	24-Nov-2020
LED Dome with Improved Color Spatial Uniformity	CreeLED, Inc.	13/804,309	14-Mar-2013
Wafer Level Packaging of Multiple Light Emitting Diodes (LEDs) on a Single Carrier Die	CreeLED, Inc.	17/325,970	20-May-2021
Nanocomposite Compositions and Methods of Making	CreeLED, Inc.	14/447,357	30-Jul-2014
High Voltage Monolithic LED Chip	CreeLED, Inc.	17/062,119	02-Oct-2020
Optical Element with Integrated Indicator	CreeLED, Inc.	14/271,116	06-May-2014
Multi-Segment Monolithic LED Chip	CreeLED, Inc.	14/691,314	20-Apr-2015
Multi-Layer Conversion Material for Down Conversion In Solid State Lighting	CreeLED, Inc.	14/453,482	06-Aug-2014
Light Emitting Diode (LED) Components and Methods	CreeLED, Inc.	16/601,826	15-Oct-2019

Group III Nitride Based LED Structures Including Multiple Quantum Wells with Barrier-Well Unit Interface Layers	CreeLED, Inc.	17/377,833	16-Jul-2021
Non-Magnified LED for High Center-Beam Candle	CreeLED, Inc.	14/633,734	27-Feb-2015
LED Package with Multiple Element Light Source and Endcapsulant Having Curved and/or Planar Surfaces	CreeLED, Inc.	16/664,686	25-Oct-2019
High Voltage Monolithic LED Chip with Improved Reliability	CreeLED, Inc.	16/944,356	31-Jul-2020
LIGHT EMITTING DIODES AND METHODS WITH ENCAPSULATION	CreeLED, Inc.	15/087,641	31-Mar-2016
High Density Pixelated LED and Devices and Methods Thereof	CreeLED, Inc.	16/950,142	17-Nov-2020
Light Emitting Diodes, Components and Related Methods	CreeLED, Inc.	17/116,576	09-Dec-2020
TUNABLE INTEGRATED OPTICS LED COMPONENTS AND METHODS	CreeLED, Inc.	17/092,939	09-Nov-2020
LIGHT EMITTING DIODES AND METHODS	CreeLED, Inc.	15/676,965	14-Aug-2017
High Density Pixelated-LED Chips and Chip Array Devices, and Fabrication Methods	CreeLED, Inc.	16/983,553	03-Aug-2020
Reflective Layers for Light-Emitting Diodes	CreeLED, Inc.	16/963,533	21-Jul-2020
Reflective Layers for Light-Emitting Diodes	CreeLED, Inc.	17/336,454	02-Jun-2021
Apparatus and Methods for Mass Transfer of Electronic Die	CreeLED, Inc.	16/796,093	20-Feb-2020

Stabilized Fluoride Phosphor for Light Emitting Diode (LED) Applications	CreeLED, Inc.	16/794,414	19-Feb-2020
Stabilized Fluoride Phosphor for Light Emitting Diode (LED) Applications	CreeLED, Inc.	17/540,510	02-Dec-2021
Light-Emitting Diode Package with Light-Altering Material	CreeLED, Inc.	17/016,701	10-Sep-2020
Semiconductor Light Emitting Devices Including Superstrates with Patterned Surfaces	CreeLED, Inc.	16/390,714	22-Apr-2019
Light-Emitting Diode Packages	CreeLED, Inc.	17/238,934	23-Apr-2021
Light-Emitting Diodes, Light-Emitting Diode Arrays and Related Devices	CreeLED, Inc.	16/118,779	31-Aug-2018
Light-Emitting Diodes, Light-Emitting Diode Arrays and Related Devices	CreeLED, Inc.	16/545,357	20-Aug-2019
Group III Nitride LED Structures with Improved Electrical Performance	CreeLED, Inc.	16/118,788	31-Aug-2018
Pixelated LED Chips and Chip Array Devices, and Fabrication Methods	CreeLED, Inc.	17/152,127	19-Jan-2021
Light Emitting Diode Packages	CreeLED, Inc.	17/507,201	21-Oct-2021
Interconnects for Light Emitting Diode Chips	CreeLED, Inc.	17/004,486	27-Aug-2020
Contact Structures for Light Emitting Diode Chips	CreeLED, Inc.	17/220,051	01-Apr-2021
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/369,003	29-Mar-2019
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/381,116	11-Apr-2019

Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/437,878	11-Jun-2019
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/542,923	16-Aug-2019
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/543,009	16-Aug-2019
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	16/815,101	11-Mar-2020
Active Control of Light Emitting Diodes and Light Emitting Diode Displays	CreeLED, Inc.	17/081,522	27-Oct-2020
Submount Structures for Light Emitting Diode Packages	CreeLED, Inc.	16/690,707	21-Nov-2019
Lumiphoric Arrangements for Light Emitting Diode Packages	CreeLED, Inc.	17/364,987	01-Jul-2021
Texturing for High Density Pixelated-LED Chips and Chip Array Devices	CreeLED, Inc.	17/084,194	29-Oct-2020
Light-Emitting Diode Chip with Electrical Overstress Protection	CreeLED, Inc.	16/857,721	24-Apr-2020
LED Chips with Irregular Microtextured Light Extraction Surfaces, and Fabrication Method	CreeLED, Inc.	17/357,091	24-Jun-2021
Lens Arrangements for Light-Emitting Diode Packages	CreeLED, Inc.	16/918,137	01-Jul-2020
Active Electrical Elements with Light-Emitting Diodes	CreeLED, Inc.	16/906,129	19-Jun-2020
Solid State Light Emitting Device with Improved Color Emission	CreeLED, Inc.	17/178,511	18-Feb-2021

Light-Altering Material Arrangements for Light-Emitting Devices	CreeLED, Inc.	16/850,540	16-Apr-2020
Light-Altering Particle Arrangements for Light Emitting Devices	CreeLED, Inc.	16/993,470	14-Aug-2020
Binder Materials for Light-Emitting Devices	CreeLED, Inc.	17/002,320	25-Aug-2020
Spacer Layer Arrangements for Light Emitting Diodes	CreeLED, Inc.	17/019,593	14-Sep-2020
Pixelated-LED Chips with Inter-Pixel Underfill Materials, and Fabrication Methods	CreeLED, Inc.	17/078,733	23-Oct-2020
LED Chips and Devices with Textured Light-Extracting Portions, and Fabrication Methods	CreeLED, Inc.	17/538,078	30-Nov-2021
Cover Structure Arrangements for Light Emitting Diode Packages	CreeLED, Inc.	17/103,121	24-Nov-2020
Support Structures for Light emitting Diode Packages	CreeLED, Inc.	17/123,381	16-Dec-2020
Optical Arrangements in Cover Structures for Light Emitting Diode Packages and Related Methods	CreeLED, Inc.	17/173,735	11-Feb-2021
High Power Light-Emitting diode Arrays and Related Devices	CreeLED, Inc.	17/383,923	23-Jul-2021
Light Emitting Diode Package	CreeLED, Inc.	29/779,119	16-Apr-2021
Localized Surface Plasmon Resonance for enhanced Photoluminescence of Lumiphoric Materials	CreeLED, Inc.	17/471,951	10-Sep-2021
Broad Electromagnetic Spectrum Light-Emitting Diode Packages	CreeLED, Inc.	17/496,320	07-Oct-2021

Light-Emitting Diode Chips and manufacturing Processes Thereof	CreeLED, Inc.	17/539,628	01-Dec-2021
Light-Emitting Diode Chips and manufacturing Processes Thereof	CreeLED, Inc.	17/539,671	01-Dec-2021
Light-Emitting Diode Chips and manufacturing Processes Thereof	CreeLED, Inc.	17/539,678	01-Dec-2021
Light-Emitting Diode Chips and manufacturing Processes Thereof	CreeLED, Inc.	17/539,685	01-Dec-2021
Lumiphoric Material Arrangements for Multiple-Junction Light-Emitting Diodes	CreeLED, Inc.	17/494,264	05-Oct-2021
Edge Structures for Light Shaping in Light-Emitting Diode Chips	CreeLED, Inc.	17/396,160	06-Aug-2021
Polarization Structures for Light-Emitting Diodes	CreeLED, Inc.	17/514,012	29-Oct-2021
Integrated Warning Structures for Energized Ultraviolet Light-Emitting Diode Packages	CreeLED, Inc.	17/500,219	13-Oct-2021
Integration of Secondary Optics into Chip Covers for Improved Optical Emission of High Intensity LEDs	CreeLED, Inc.	63/256,077	15-Oct-2021