(51) **Int. Cl.**
H01L 21/8234 (2006.01)
H01L 27/12 (2006.01)

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,923,071	A	7/1999	Saito	
5,932,897	A	8/1999	Kawaguchi et al.	
6,137,140	A	10/2000	Efland et al.	
6,211,552	B1	4/2001	Efland et al.	
6,552,390	B2	4/2003	Kameda	
6,882,023	B2	4/2005	Khemka et al.	
7,282,765	B2	10/2007	Xu et al.	
7,466,006	B2	12/2008	Khemka et al.	
7,473,978	B2	1/2009	Matsudai et al.	
7,535,058	B2	5/2009	Liu et al.	
7,569,884	B2	8/2009	Lee	
8,039,902	B2	10/2011	Kim et al.	
8,159,029	B2	4/2012	Su et al.	
8,193,585	B2	6/2012	Grote et al.	
8,269,275	B2	9/2012	Chen et al.	
8,282,722	B2	10/2012	Vonwiller et al.	
8,304,831	B2	11/2012	Zhu et al.	
8,330,220	B2	12/2012	Khan et al.	
8,350,327	B2	1/2013	Chung et al.	
2001/0025961	A1	10/2001	Nakamura et al.	
2001/0038125	A1*	11/2001	Ohyanagi et al.	257/347
2002/0017697	A1	2/2002	Kitamura et al.	
2006/0267044	A1	11/2006	Yang	
2007/0246771	A1	10/2007	McCormack et al.	
2007/0278568	A1	12/2007	Williams et al.	
2008/0054994	A1	3/2008	Shibib et al.	
2008/0067615	A1	3/2008	Kim	
2008/0090347	A1	4/2008	Huang et al.	
2008/0191277	A1	8/2008	Disney et al.	
2008/0246086	A1	10/2008	Korec et al.	
2009/0020813	A1	1/2009	Voldman	
2009/0224333	A1*	9/2009	Lu et al.	257/392
2011/0127607	A1	6/2011	Cai	
2011/0260247	A1	10/2011	Yang et al.	
2011/0309442	A1*	12/2011	Grote et al.	257/339
2012/0126323	A1	5/2012	Wu et al.	
2012/0126324	A1	5/2012	Takeda et al.	
2012/0161233	A1	6/2012	Ito	
2012/0205738	A1	8/2012	Yang et al.	
2013/0015523	A1	1/2013	You	
2013/0292764	A1	11/2013	Yang et al.	

OTHER PUBLICATIONS

Ming Qiao et al., "High-Voltage Thick Layer SOI Technology for PDP Scan Driver IC", Proceedings of the 23rd International Symposium on Power Semiconductor Devices & IC's, May 23-26, 2011, pp. 180-183.

R. Zhu et al., "Engineering RESURF LDMOSFETs for Robust SOA, ESD Protection and Energy Capability", 19th ISPSD, 2007, pp. 185-188.

Vijay Parthasarathy et al., "A Double RESURF LDMOS with Drain Profile Engineering for Improved ESD Robustness", IEEE Electron Device Letter, 2002, pp. 212-214, vol. 23, No. 4.

Lorenz at al., "COOMOS—A New Milestone in High Voltage Power MOS", published at ISPSD, 8 pages, 1999.

Fujihira, T. et al., "Simulated Superior Performances of Semiconductor Superjunction Devices," hoc. of the ISPSD, pp. 423-426, Jun. 1998.

U.S. Appl. No. 13/465,761, filed May 7, 2012 entitled "Semiconductor Device with Drain-End Drift Diminution" Office Action—Restriction on Apr. 29, 2013.

U.S. Appl. No. 13/465,761, filed May 7, 2012 entitled "Semiconductor Device with Drain-End Drift Diminution" Office Action—Non-Final Rejection on Jun. 27, 2013.

U.S. Appl. No. 13/465,761, filed May 7, 2012 entitled "Semiconductor Device with Drain-End Drift Diminution" Office Action—FInal Rejection on Oct. 25, 2013.

U.S. Appl. No. 13/465,761, filed May 7, 2012 entitled "Semiconductor Device with Drain-End Drift Diminution" Office Action—Non-Final Rejection on Jan. 30, 2014.

U.S. Appl. No. 13/465,761, filed May 7, 2012 entitled "Semiconductor Device with Drain-End Drift Diminution" Office Action—Notice of Allowance on Jun. 6, 2014.

U.S. Appl. No. 14/486,104, filed Sep. 15, 2014 entitled "Drain-End Drift Diminution in Semiconductor Devices" Office Action—Notice of Allowance on May 13, 2015.

* cited by examiner