P-Channel 100 V (D-S) MOSFET

V_{DS}		-100	V
$R_{DS(on),typ}$	V_{GS}=10V	215	mΩ
$R_{DS(on),typ}$	V_{GS}=4.5V	234	mΩ
I_D		-9	A

FEATURES

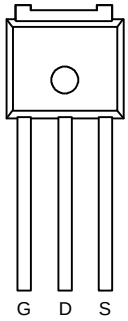
- **Halogen-free According to IEC 61249-2-21 Definition**
- TrenchFET® Power MOSFET
- 100 % R_g and UIS Tested
- Compliant to RoHS Directive 2002/95/EC

RoHS COMPLIANT
HALOGEN FREE

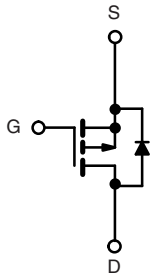
APPLICATIONS

- Power Switch
- DC/DC Converters

TO-251



Top View



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS T_C = 25 °C, unless otherwise noted				
Parameter		**Symbol**	**Limit**	**Unit**
Drain-Source Voltage		V_{DS}	- 100	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current (T_J = 150 °C)	T_C = 25 °C	I_D	- 9	A
	T_C = 70 °C		- 8	
Pulsed Drain Current		I_{DM}	- 30	
Avalanche Current		I_{AS}	- 20	
Single Avalanche Energy[a]	L = 0.1 mH	E_{AS}	16.2	mJ
Maximum Power Dissipation[a]	T_C = 25 °C	P_D	32.1[b]	W
	T_A = 25 °C[c]		2.5	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	- 55 to 150	°C

THERMAL RESISTANCE RATINGS			
Parameter	**Symbol**	**Limit**	**Unit**
Junction-to-Ambient (PCB Mount)[c]	R_{thJA}	50	°C/W
Junction-to-Case (Drain)	R_{thJC}	3.9	

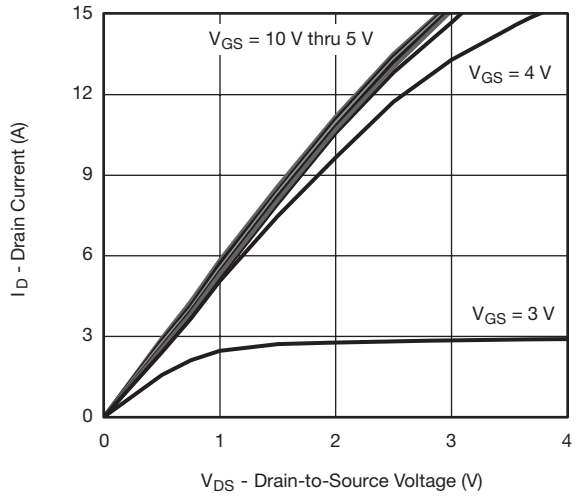
Notes:
a. Duty cycle ≤ 1 %.
b. See SOA curve for voltage derating.
c. When Mounted on 1" square PCB (FR-4 material).

SPECIFICATIONS T_J = 25 °C, unless otherwise noted						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Unit**
Static						
Drain-Source Breakdown Voltage	V_{DS}	V_{DS} = 0 V, I_D = - 250 µA	- 100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = - 250 µA	- 1		- 2.5	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ± 20 V			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = - 100 V, V_{GS} = 0 V			- 1	µA
		V_{DS} = - 100 V, V_{GS} = 0 V, T_J = 125 °C			- 50	
		V_{DS} = - 100 V, V_{GS} = 0 V, T_J = 150 °C			- 250	
On-State Drain Current[a]	$I_{D(on)}$	$V_{DS} \leq$ - 10 V, V_{GS} = - 10 V	- 15			A
Drain-Source On-State Resistance[a]	$R_{DS(on)}$	V_{GS} = - 10 V, I_D = - 3.6 A		215		mΩ
		V_{GS} = - 4.5 V, I_D = - 3.4 A		234		
Forward Transconductance[a]	g_{fs}	V_{DS} = - 15 V, I_D = - 3.6 A		12		S
Dynamic[b]						
Input Capacitance	C_{iss}	V_{GS} = 0 V, V_{DS} = - 50 V, f = 1 MHz		1300		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			41		
Total Gate Charge[c]	Q_g	V_{DS} = - 50 V, V_{GS} = - 10 V, I_D = - 3.6 A		23		nC
		V_{DS} = - 50 V, V_{GS} = - 4.5 V, I_D = - 3.6 A		11		
Gate-Source Charge[c]	Q_{gs}			3.5		
Gate-Drain Charge[c]	Q_{gd}			4.8		
Gate Resistance	R_g	f = 1 MHz	1.2	5.7	11.5	Ω
Turn-On Delay Time[c]	$t_{d(on)}$	V_{DD} = - 50 V, R_L = 17.2 Ω $I_D \cong$ - 2.9 A, V_{GEN} = - 10 V, R_g = 1 Ω		7	14	ns
Rise Time[c]	t_r			12	18	
Turn-Off Delay Time[c]	$t_{d(off)}$			33	50	
Fall Time[c]	t_f			9	18	
Drain-Source Body Diode Ratings and Characteristics T_C = 25 °C[b]						
Continuous Current	I_S				- 8.8	A
Pulsed Current	I_{SM}				- 15	
Forward Voltage[a]	V_{SD}	I_F = - 2.9 A, V_{GS} = 0 V		- 0.8	- 1.5	V
Reverse Recovery Time	t_{rr}	I_F = - 2.9 A, dI/dt = 100 A/µs		50	75	ns
Peak Reverse Recovery Current	$I_{RM(REC)}$			- 4	- 6	A
Reverse Recovery Charge	Q_{rr}			98	147	nC

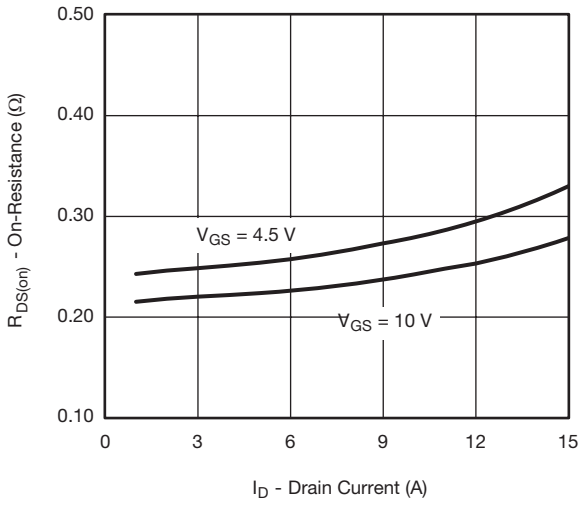
Notes:
a. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2 %.
b. Guaranteed by design, not subject to production testing.
c. Independent of operating temperature.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

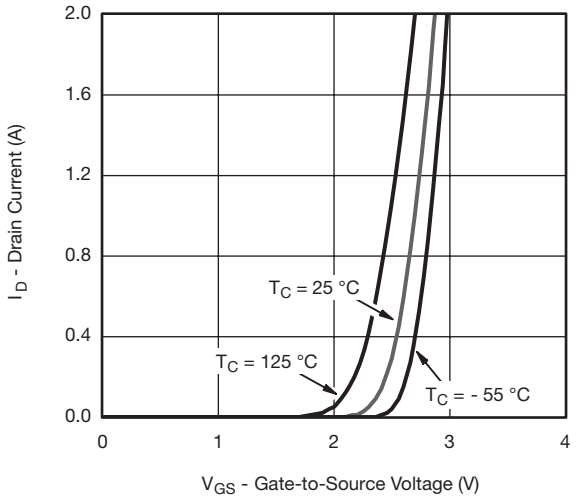
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



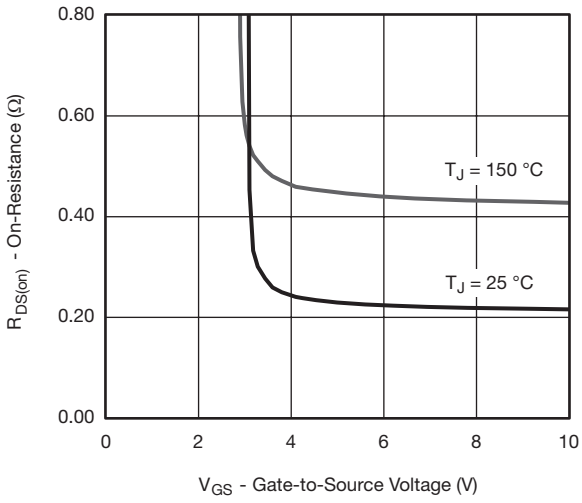
Output Characteristics



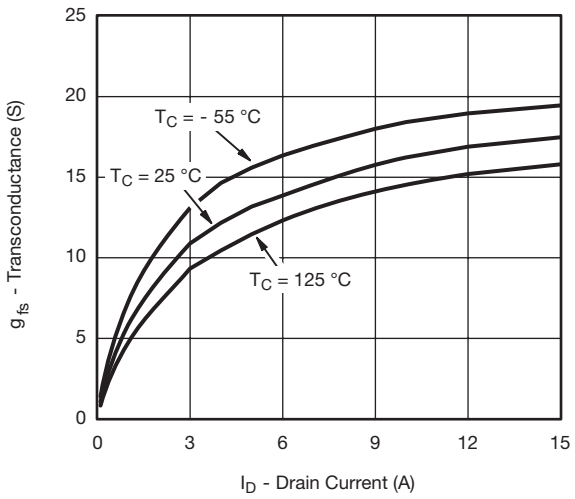
On-Resistance vs. Drain Current



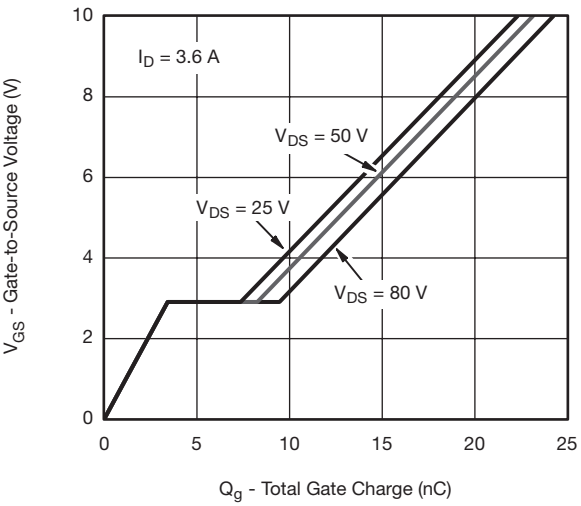
Transfer Characteristics



On-Resistance vs. Gate-to-Source Voltage

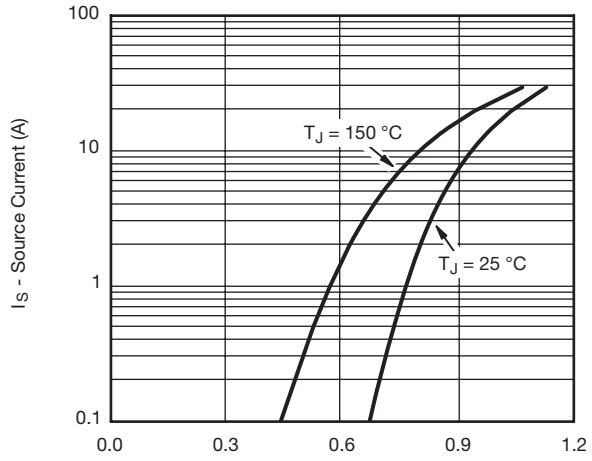


Transconductance

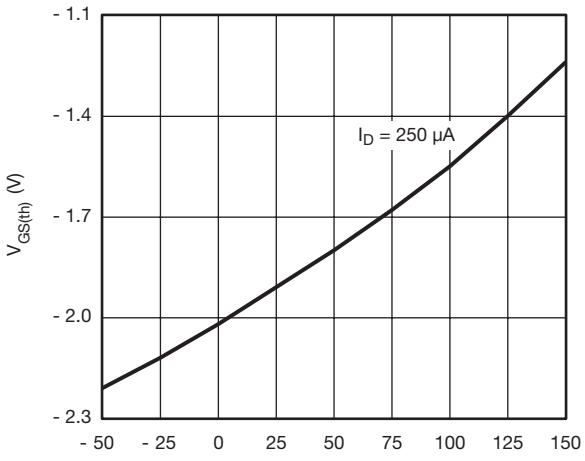


Gate Charge

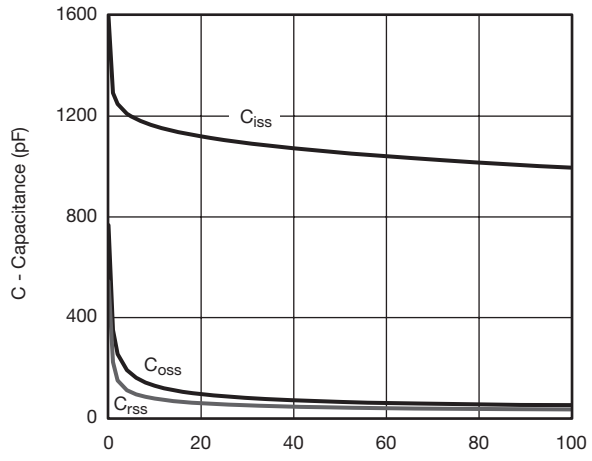
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



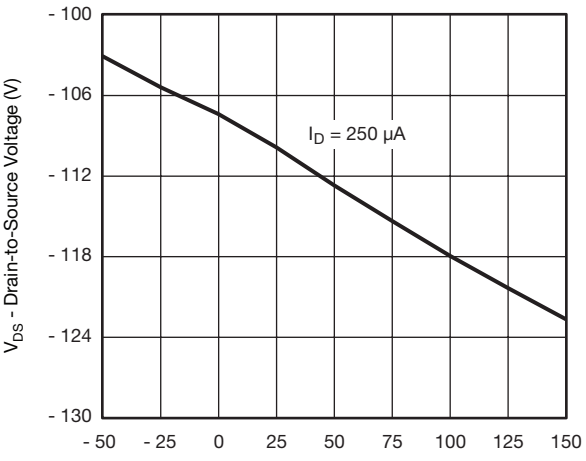
Source-Drain Diode Forward Voltage



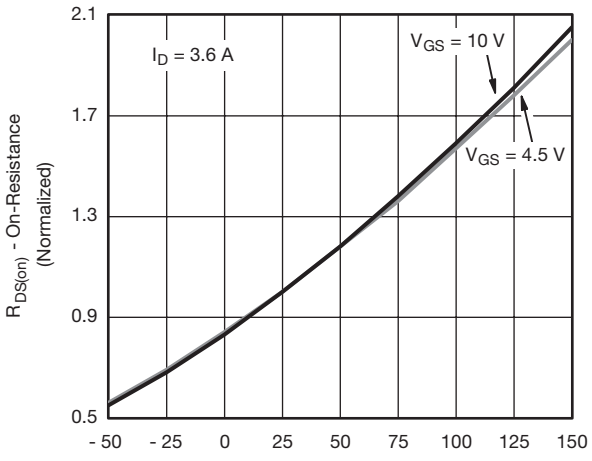
Threshold Voltage



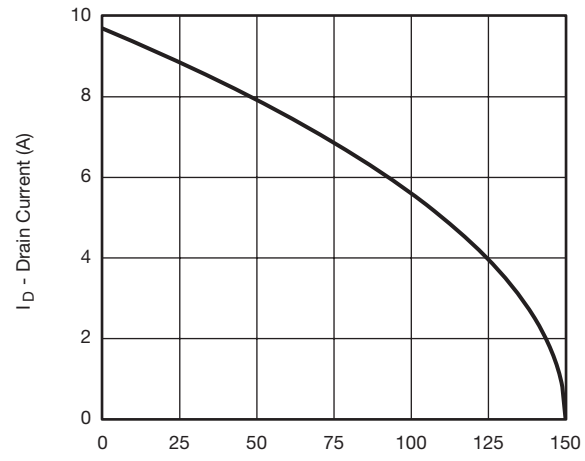
Capacitance



Drain Source Breakdown vs. Junction Temperature

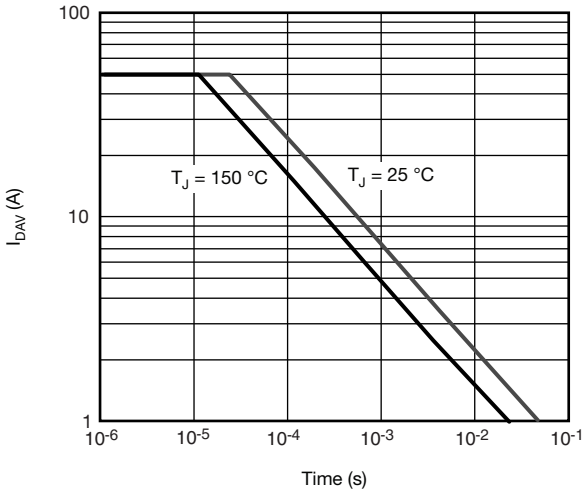


On-Resistance vs. Junction Temperature

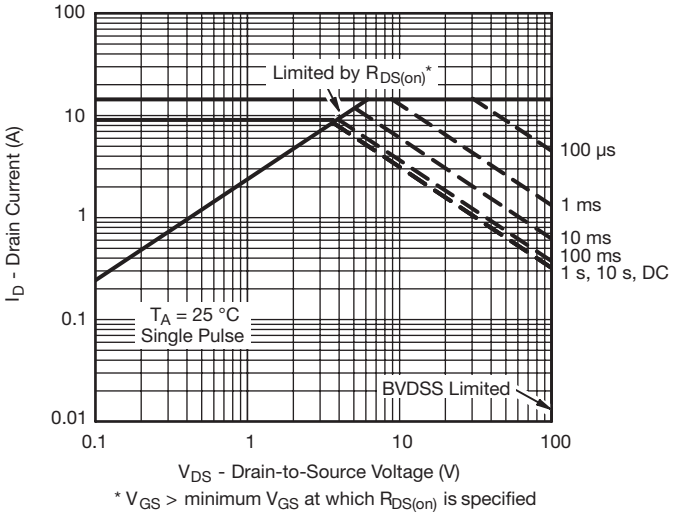


Current Derating

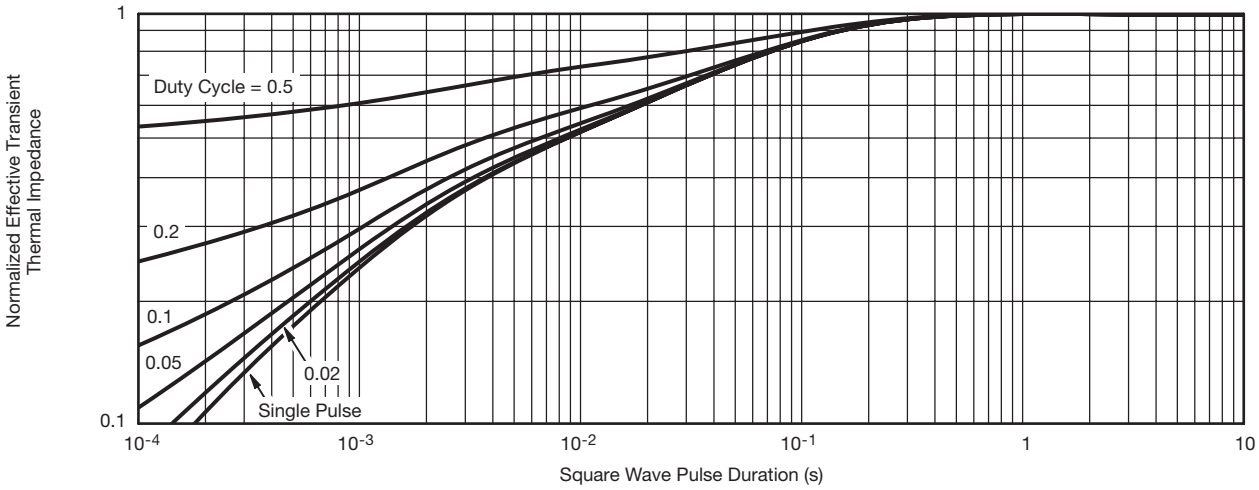
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



Single Pulse Avalanche Current Capability vs. Time

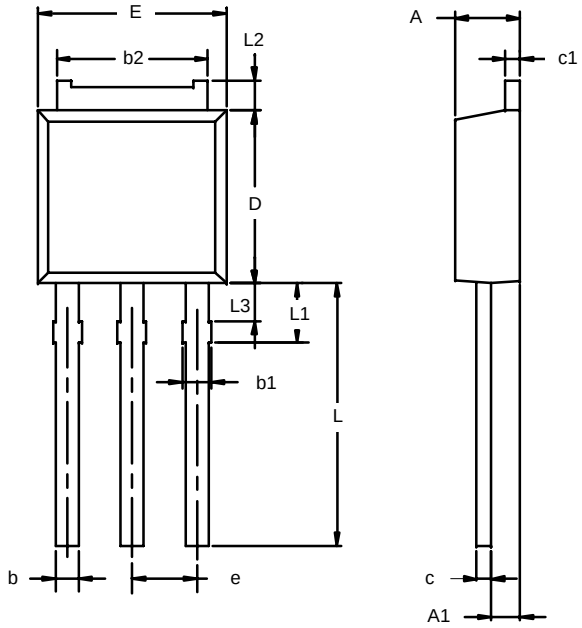


Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Case

TO-251AA P AK



Note: Dimension L3 is for reference only.

Dim	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	2.21	2.38	0.087	0.094
A1	0.89	1.14	0.035	0.045
b	0.71	0.89	0.028	0.035
b1	0.76	1.14	0.030	0.045
b2	5.23	5.43	0.206	0.214
c	0.46	0.58	0.018	0.023
c1	0.46	0.58	0.018	0.023
D	5.97	6.22	0.235	0.245
E	6.48	6.73	0.255	0.265
e	2.28 BSC		0.090 BSC	
L	3.89	9.53	0.153	0.375
L1	1.91	2.28	0.075	0.090
L2	0.89	1.27	0.035	0.050
L3	1.15	1.52	0.045	0.060

ECN: S-03946—Rev. E, 09-Jul-01
DWG: 5346

Disclaimer

All products due to improve reliability, function or design or for other reasons, product specifications and data are subject to change without notice.

Taiwan VBsemi Electronics Co., Ltd., branches, agents, employees, and all persons acting on its or their representatives (collectively, the "Taiwan VBsemi"), assumes no responsibility for any errors, inaccuracies or incomplete data contained in the table or any other any disclosure of any information related to the product.(www.VBsemi.com)

Taiwan VBsemi makes no guarantee, representation or warranty on the product for any particular purpose of any goods or continuous production. To the maximum extent permitted by applicable law on Taiwan VBsemi relinquished: (1) any application and all liability arising out of or use of any products; (2) any and all liability, including but not limited to special, consequential damages or incidental ; (3) any and all implied warranties, including a particular purpose, non-infringement and merchantability guarantee.

Statement on certain types of applications are based on knowledge of the product is often used in a typical application of the general product VBsemi Taiwan demand that the Taiwan VBsemi of. Statement on whether the product is suitable for a particular application is non-binding. It is the customer's responsibility to verify specific product features in the products described in the specification is appropriate for use in a particular application. Parameter data sheets and technical specifications can be provided may vary depending on the application and performance over time. All operating parameters, including typical parameters must be made by customer's technical experts validated for each customer application. Product specifications do not expand or modify Taiwan VBsemi purchasing terms and conditions, including but not limited to warranty herein.

Unless expressly stated in writing, Taiwan VBsemi products are not intended for use in medical, life saving, or life sustaining applications or any other application. Wherein VBsemi product failure could lead to personal injury or death, use or sale of products used in Taiwan VBsemi such applications using client did not express their own risk. Contact your authorized Taiwan VBsemi people who are related to product design applications and other terms and conditions in writing.

The information provided in this document and the company's products without a license, express or implied, by estoppel or otherwise, to any intellectual property rights granted to the VBsemi act or document. Product names and trademarks referred to herein are trademarks of their respective representatives will be all.

Material Category Policy

Taiwan VBsemi Electronics Co., Ltd., hereby certify that all of the products are determined to be oHS compliant and meets the definition of restrictions under Directive of the European Parliament 2011/65 / EU, 2011 Nian. 6. 8 Ri Yue restrict the use of certain hazardous substances in electrical and electronic equipment (EEE) - modification, unless otherwise specified as inconsistent.(www.VBsemi.com)

Please note that some documents may still refer to Taiwan VBsemi RoHS Directive 2002/95 / EC. We confirm that all products identified as consistent with the Directive 2002/95 / EC European Directive 2011/65 /.

Taiwan VBsemi Electronics Co., Ltd. hereby certify that all of its products comply identified as halogen-free halogen-free standards required by the JEDEC JS709A. Please note that some Taiwanese VBsemi documents still refer to the definition of IEC 61249-2-21, and we are sure that all products conform to confirm compliance with IEC 61249-2-21 standard level JS709A.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by VBsemi Elec ***manufacturer:***

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E FDPF9N50NZ FW216A-TL-2W FW231A-TL-E APT5010JVR NTNS3A92PZT5G IRF100S201 JANTX2N5237 2SK2464-TL-E 2SK3818-DL-E FCA20N60_F109 FDZ595PZ STD6600NT4G FSS804-TL-E 2SJ277-DL-E 2SK1691-DL-E 2SK2545(Q,T) D2294UK 405094E 423220D MCH6646-TL-E TPCC8103,L1Q(CM 367-8430-0972-503 VN1206L 424134F 026935X 051075F SBVS138LT1G 614234A 715780A NTNS3166NZT5G 751625C 873612G IRF7380TRHR IPS70R2K0CEAKMA1 RJK60S3DPP-E0#T2 RJK60S5DPK-M0#T0 APT5010JVFR APT12031JFLL APT12040JVR DMN3404LQ-7 NTE6400 JANTX2N6796U JANTX2N6784U JANTXV2N5416U4 SQM110N05-06L-GE3 SIHF35N60E-GE3