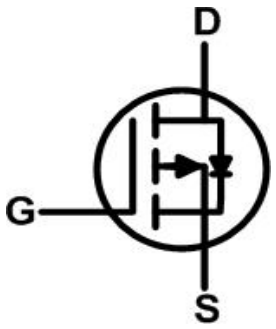
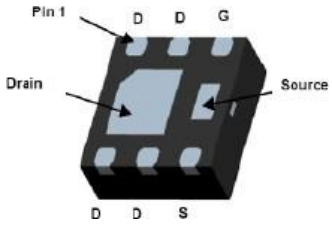
★ Green Device Available
★ Super Low Gate Charge
★ Excellent CdV/dt effect decline
★ Advanced high cell density Trench technology



Description

The XR1216 is the high cell density trenched P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.
The XR1216 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

DFN2X2-6L Pin Configuration



BVDSS	RDSON	ID
-15V	11mΩ	-16A

Absolute Maximum Ratings

Symbol	Parameter	Rating		Units
		10s	Steady State	
V_{DS}	Drain-Source Voltage	-15		V
V_{GS}	Gate-Source Voltage	±12		V
I_D@T_C=25℃	Continuous Drain Current, V_{GS} @ -10V[1]	-16		A
I_D@T_C=100℃	Continuous Drain Current, V_{GS} @ -10V[1]	-10		A
I_{DM}	Pulsed Drain Current[2]	-65		A
I_{AS}	Avalanche Current	- 8		A
P_D@T_C=25℃	Total Power Dissipation[4]	2.8		W
T_{STG}	Storage Temperature Range	-55 to 150		℃
T_J	Operating Junction Temperature Range	-55 to 150		℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient [1]	---	50	℃/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-15	-18	---	V
$\triangle BV_{DSS}/\triangle T_J$	BV_{DSS} Temperature Coefficient	Reference to 25℃ , I_D=-1mA	---	-0.022	---	V/℃
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V , I_D=-15A	---	11	18	mΩ
		V_{GS}=-4.5V , I_D=-10A	---	14	22	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1.0	---		V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	4.6	---	mV/℃
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-24V , V_{GS}=0V , T_J=25℃	---	---	-1	uA
		V_{DS}=-24V , V_{GS}=0V , T_J=55℃	---	---	-5	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±25V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5V , I_D=-15A	---	19	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	13	---	Ω
Q_g	Total Gate Charge (-4.5V)	V_{DS}=-15V , V_{GS}=-4.5V , I_D=-15A	---	35	---	nC
Q_{gs}	Gate-Source Charge		---	5	---	
Q_{gd}	Gate-Drain Charge		---	10	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-15V , V_{GS}=-10V , R_G=3.3Ω, I_D=-15A	---	11	---	ns
T_r	Rise Time		---	35	---	
$T_{d(off)}$	Turn-Off Delay Time		---	30	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	2600	---	pF
C_{oss}	Output Capacitance		---	670	---	
C_{rss}	Reverse Transfer Capacitance		---	560	---	
Diode Characteristics						
I_S	Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	---	---	-16	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=-1A , T_J=25℃	---	---	-1.2	V

Note :
1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=0.1mH,I_{AS}=-38A
4.The power dissipation is limited by 150℃ junction temperature
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Electrical and Thermal Characteristics

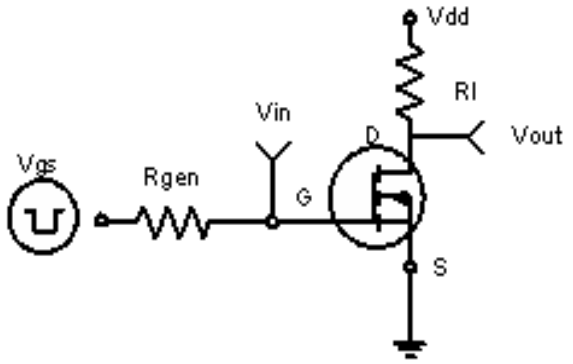


Figure 1:Switching Test Circuit

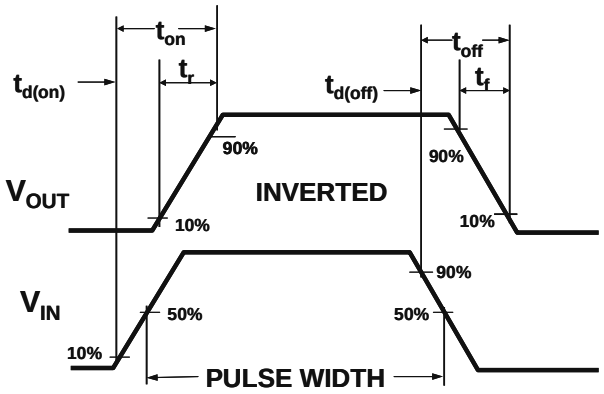


Figure 2:Switching Waveforms

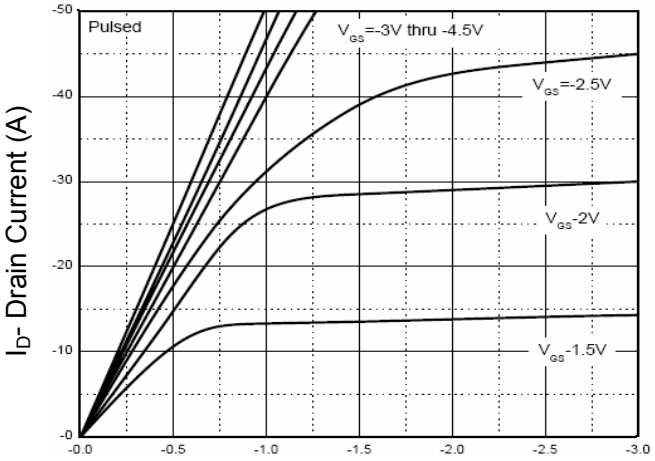


Figure 3 Output Characteristics

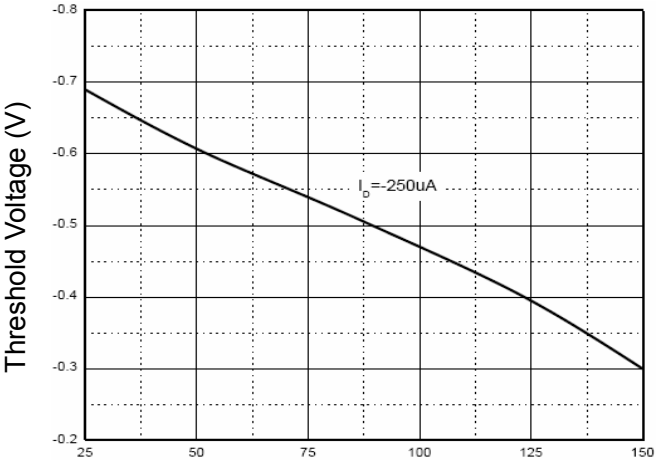


Figure 4 Drain Current

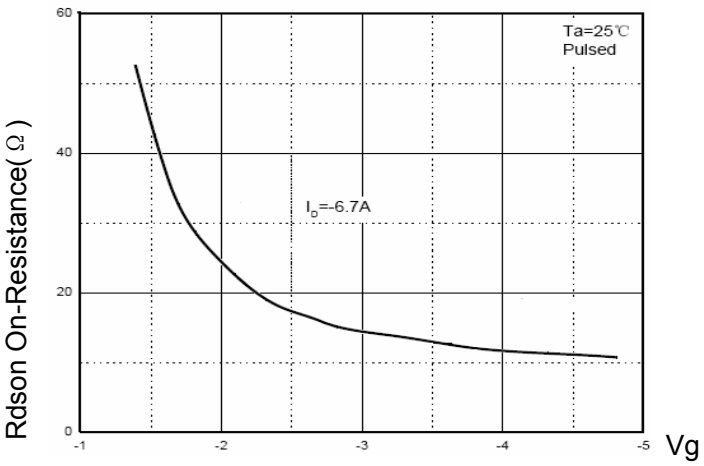


Figure 5 Rdson vs Vgs

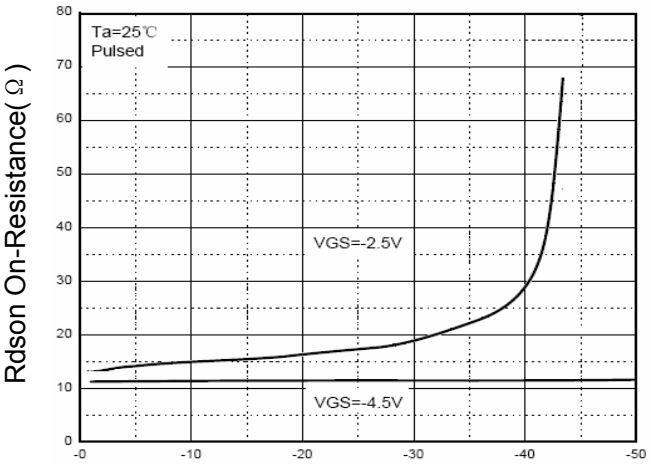


Figure 6 Drain-Source On-Resistance

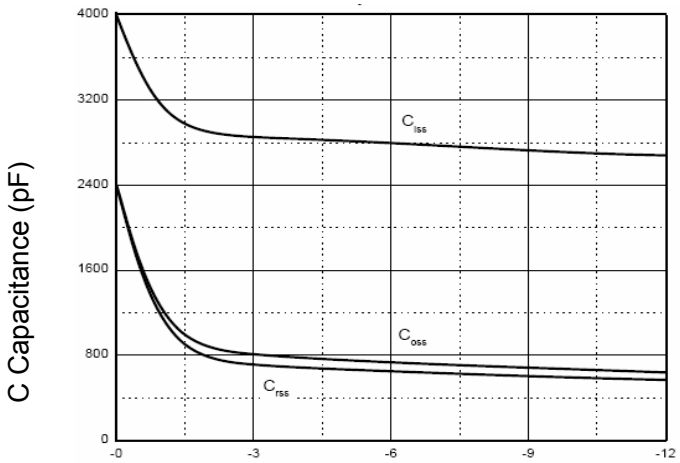


Figure 7 Capacitance vs Vds

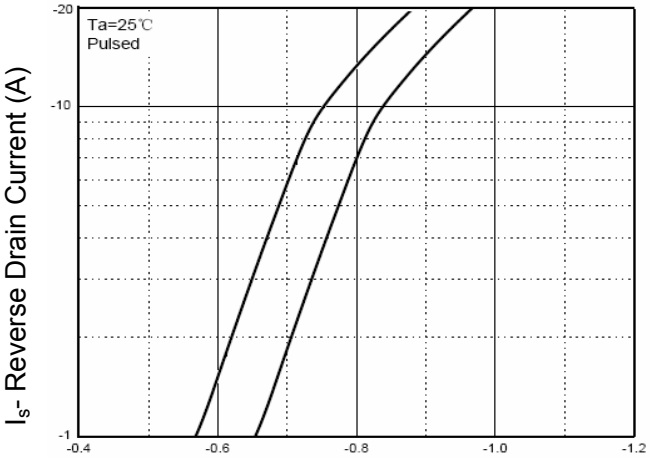
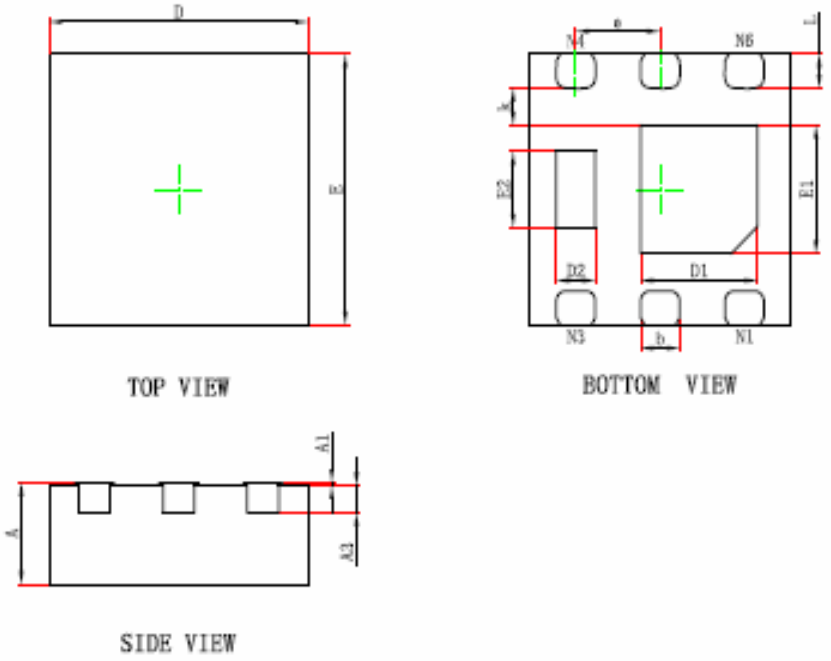


Figure 8 Source- Drain Diode Forward

DFN2X2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013

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