

-12V/-16A P-Channel MOSFET

Features

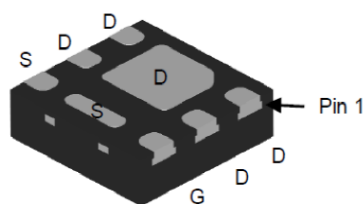
- Trench Power LV MOSFET technology
- High Power and Current handing capability
- Low Gate Charge

Application

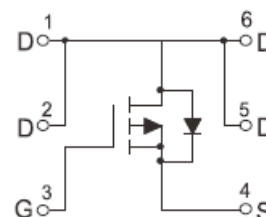
- PWM applications
- Power management
- Load switch

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-12V	18m Ω @-4.5V	-16A
	25m Ω @-2.5V	



DFN2X2-6L bottom view



Schematic diagram

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings ($T_C=25^\circ\text{C}$ Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		-12	V
V_{GS}	Gate-Source Voltage		± 12	V
T_J	Maximum Junction Temperature		150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-55 to 150	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$	-16	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$	-65	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$	-16	A
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	2.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		50	$^\circ\text{C}/\text{W}$

Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-12	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-12V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.62	-1.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _D =-6.7A	--	12	18	mΩ
		V _{GS} =-2.5V, I _D =-6.2A	--	17	25	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	--	2100	--	pF
C _{OSS}	Output Capacitance		--	275	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	235	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-10V, I _D =-10A, V _{GS} =-4.5V	--	27	--	nC
Q _{gs}	Gate Source Charge		--	4	--	nC
Q _{gd}	Gate Drain Charge		--	7	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-10V, I _D =-10A, V _{GS} =-4.5V, R _G =3Ω	--	9.5	--	nS
t _r	Turn-on Rise Time		--	15	--	nS
t _{d(off)}	Turn-Off Delay Time		--	40	--	nS
t _f	Turn-Off Fall Time		--	35	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =-8A,	--	--	-1.2	V

Typical Operating Characteristics

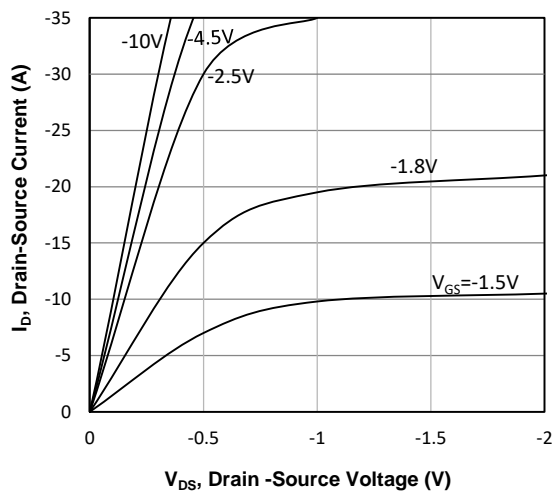


Fig1. Typical Output Characteristics

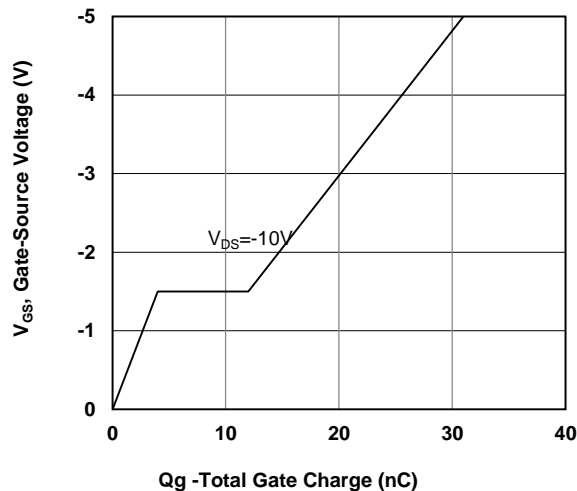


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

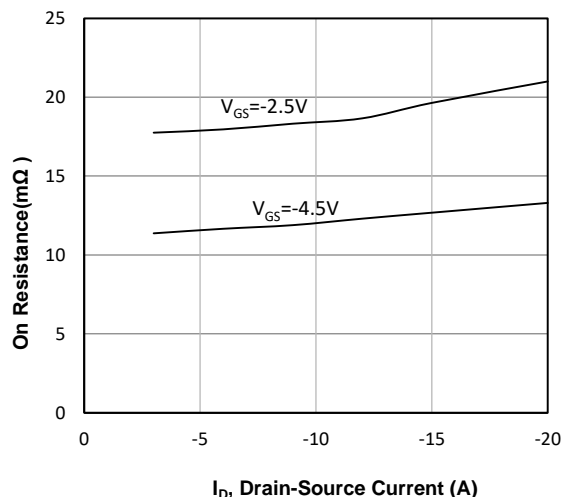


Fig3. Drain-Source on Resistance

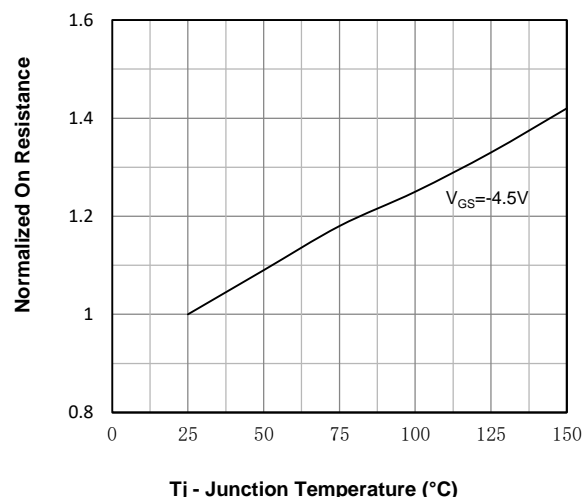


Fig4. Normalized On-Resistance Vs. Temperature

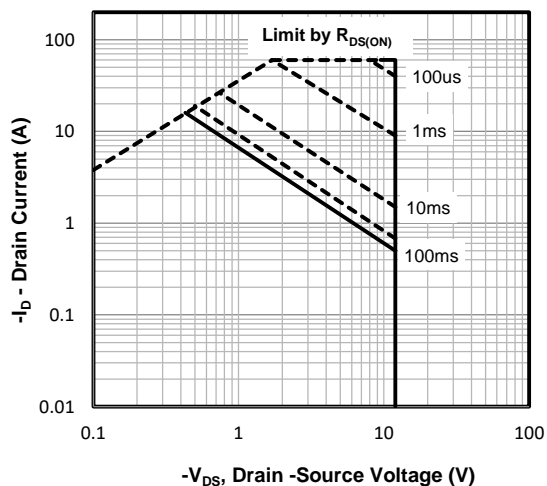


Fig5. Maximum Safe Operating Area

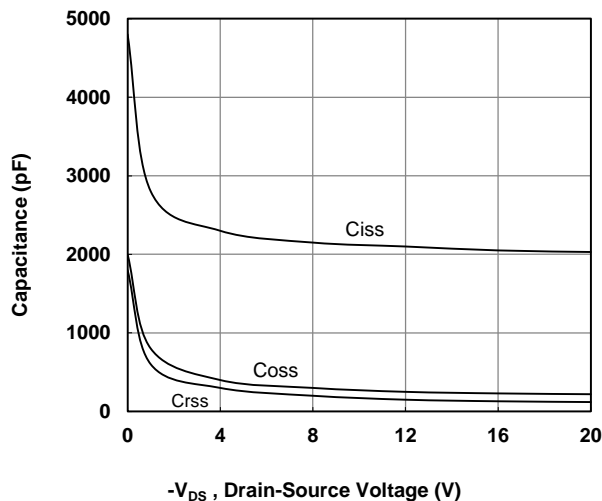
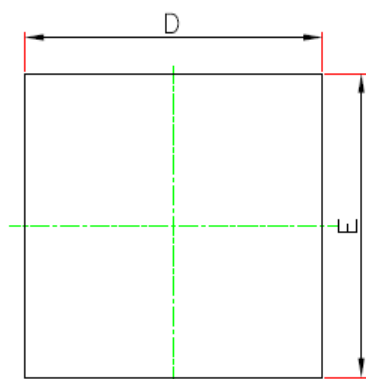
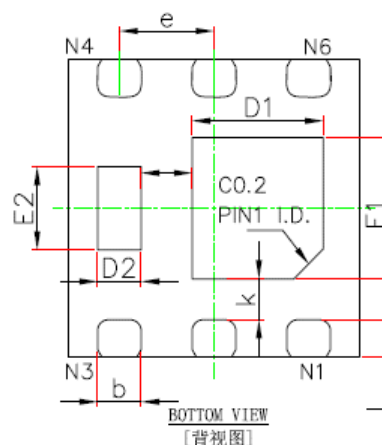
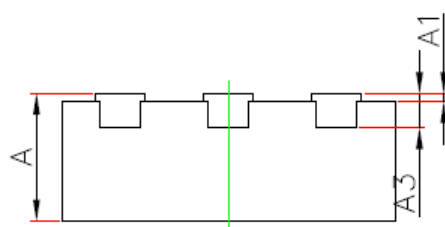


Fig6 Typical Capacitance Vs. Drain-Source Voltage

DFN2X2-6L Package information

 TOP VIEW
[顶视图]

 BOTTOM VIEW
[背视图]

 SIDE VIEW
[侧视图]

Symbol	Dimensions in Millimeters(mm)	
	Min	Max
A	0.600	0.700
A1	0.000	0.050
A3	0.203REF	
b	0.315	0.415
D	1.924	2.076
E	1.924	2.076
e	0.650TYP	
L	0.224	0.376
k	0.200	-
E1	1.000	1.200
D1	0.900	1.100
E2	0.700	0.900
D2	0.150	0.350

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