-12V/-16A P-Channel MOSFET

Features

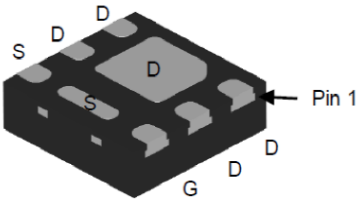
- Trench Power LV MOSFET technology
- High Power and Current handing capability
- Low Gate Charge

Product Summary

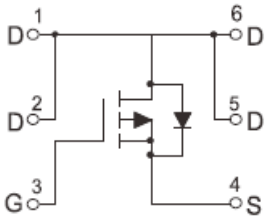
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-12V	18mΩ@-4.5V	-16A
	25mΩ@-2.5V	

Application

- PWM applications
- Power management
- Load switch



DFN2X2-6L bottom view

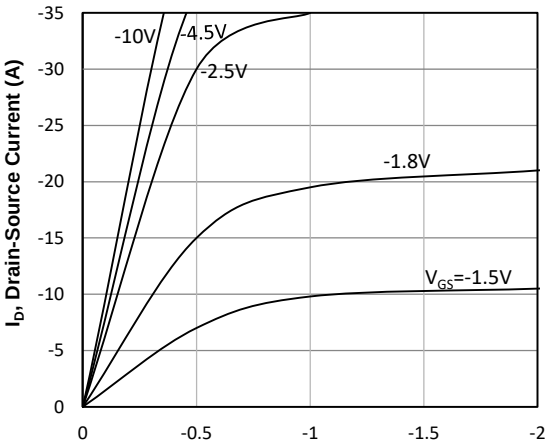


Schematic diagram

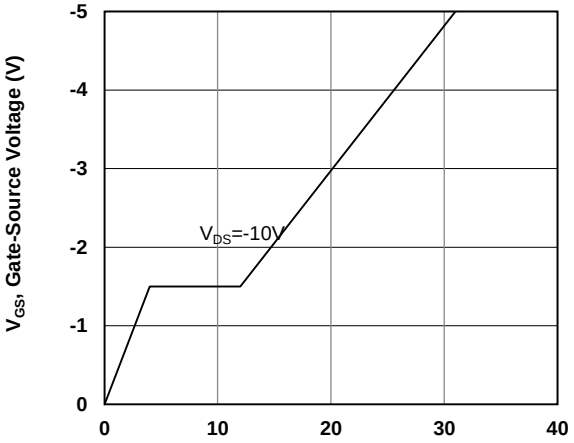
Absolute Maximum Ratings (TA=25℃unless otherwise noted)				
Symbol	**Parameter**		**Rating**	**Unit**
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		-12	V
V_{GS}	Gate-Source Voltage		±12	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature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

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	**Parameter**	**Condition**	**Min**	**Typ**	**Max**	**Unit**
Static Electrical Characteristics @ TJ = 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 @ TJ = 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	Tj=25℃，Is=-8A，	--	--	-1.2	V

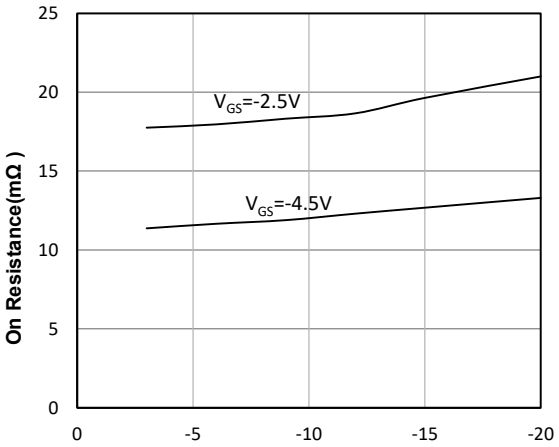
Typical Operating Characteristics



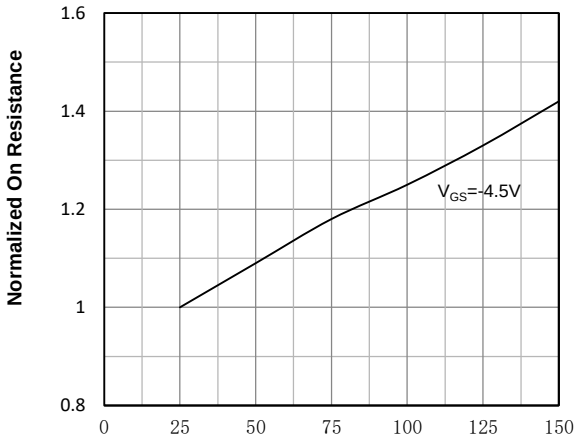
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



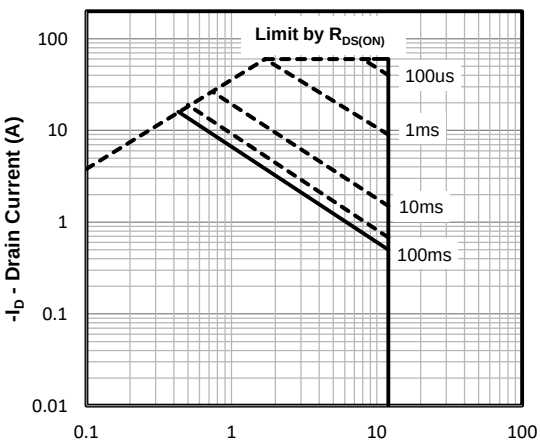
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs.Gate-Source Voltage



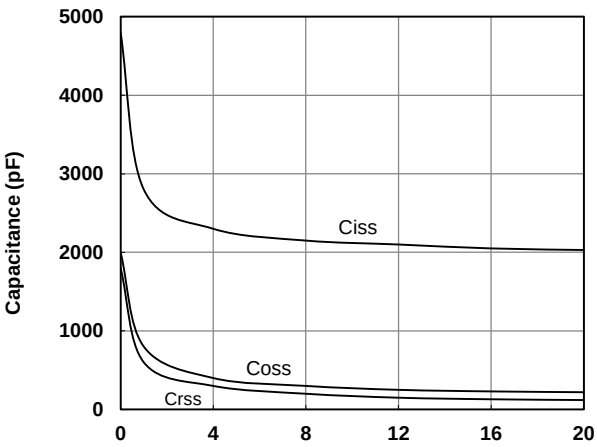
I_D, Drain-Source Current (A)
Fig3. Drain-Source on Resistance



Tj - Junction Temperature (°C)
Fig4. Normalized On-Resistance Vs. Temperature

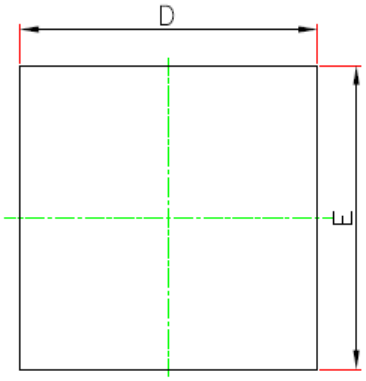


$-V_{DS}$, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area

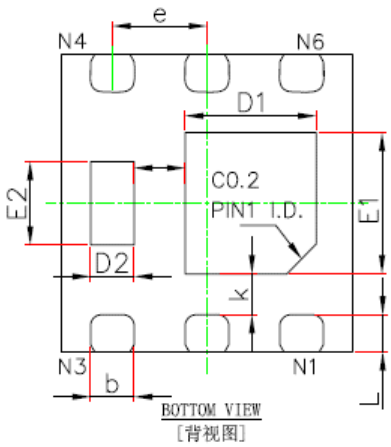


$-V_{DS}$, Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs.Drain-Source Voltage

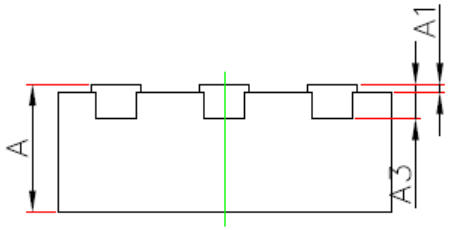
DFN2X2-6L Package information



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