

-30V/-30A P-Channel MOSFET

Features

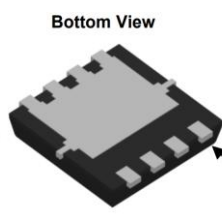
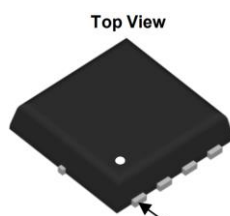
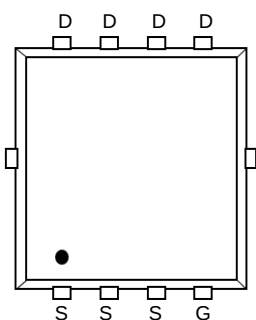
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high EAS

Product Summary

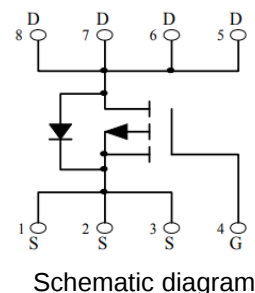
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-30V	22mΩ@-10V	-30A
	30mΩ@-4.5V	

Application

- Battery and loading switching
- Excellent package for good heat dissipation



PDFN3X3-8L



Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
E_{AS}	Single pulse avalanche energy	77	mJ
T_J, T_{STG}	Storage Temperature Range	-55 to 175	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ -30	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ -150	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ -30	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 25	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	55	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-2.2	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-10A	--	15	22	mΩ
		V _{GS} =-4.5V, I _D =-8A	--	21	30	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	--	1500	--	pF
C _{OSS}	Output Capacitance		--	327	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	276	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =-15V, I _D =-9.1A, V _{GS} =-10V	--	30	--	nC
Q _{gs}	Gate Source Charge		--	5.3	--	nC
Q _{gd}	Gate Drain Charge		--	7.6	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =-15V, I _D =-6A, V _{GS} =-10V, R _G =2.5Ω	--	14	--	nS
t _r	Turn-on Rise Time		--	20	--	nS
t _{d(off)}	Turn-Off Delay Time		--	95	--	nS
t _f	Turn-Off Fall Time		--	65	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-15A,	--	--	-1.2	V

Typical Operating Characteristics

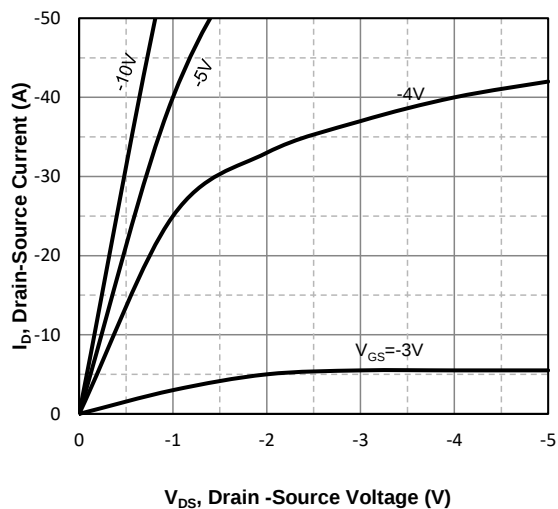


Fig1. Typical Output Characteristics

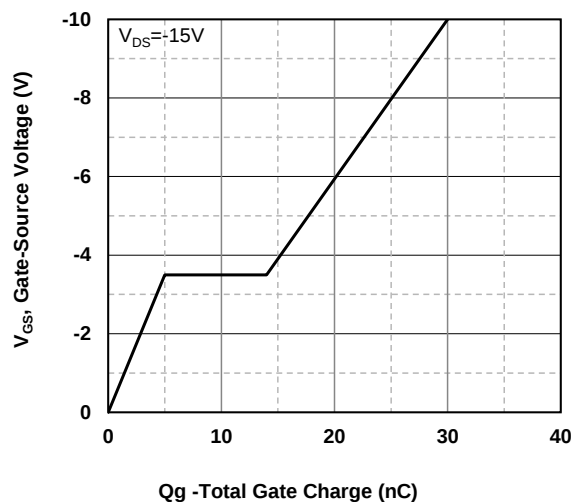


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

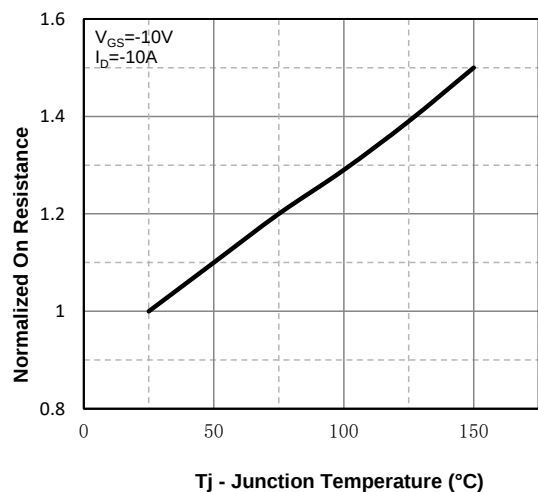


Fig3. Normalized On-Resistance Vs. Temperature

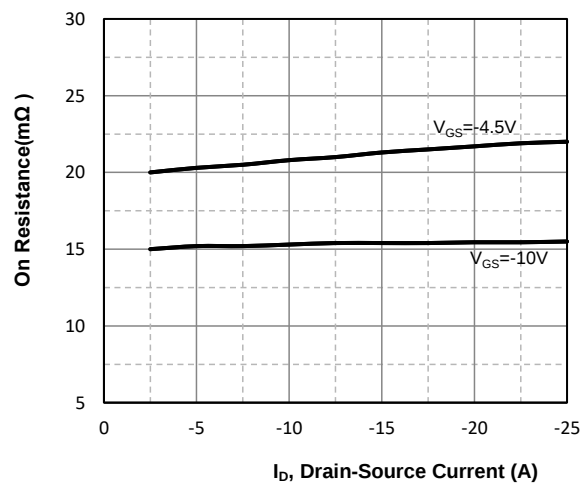


Fig4. On-Resistance Vs. Drain-Source Current

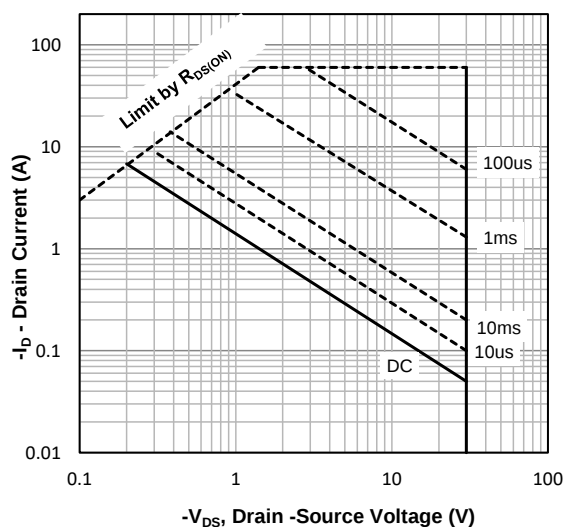


Fig5. Maximum Safe Operating Area

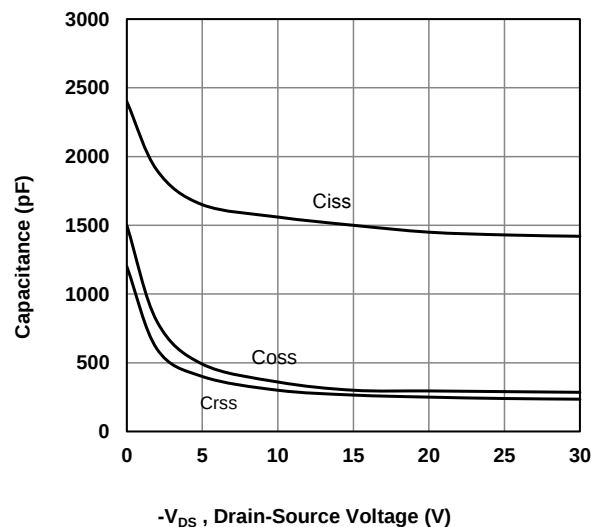


Fig6. Typical Capacitance Vs. Drain-Source Voltage

PDFN3X3-8L Package information

