

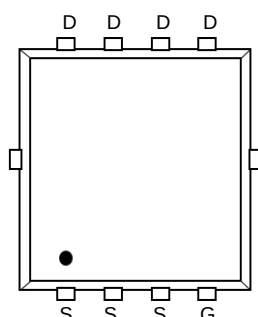
30V/30A N-Channel MOSFET

Features

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

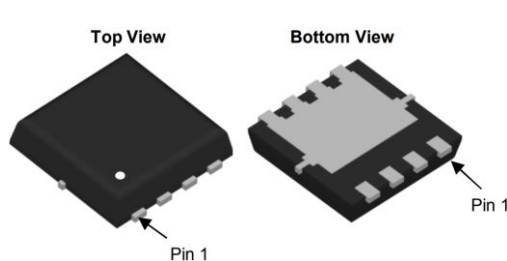
Application

- High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA
- Networking DC-DC Power System
- Load Switch

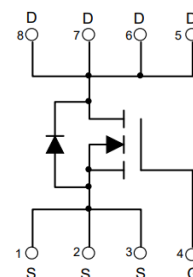


Product Summary

V_{DS}	$R_{DS(ON)} \text{ MAX}$	$I_D \text{ MAX}$
30V	9mΩ@10V	30A
	14mΩ@4.5V	



PDFN3X3-8L



Schematic diagram



Halogen-Free

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
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	30	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	80	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	30	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	27	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		60	°C/W

Electrical Characteristics (TJ=25°C 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	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	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =15A	--	6.5	9	mΩ
		V _{GS} =4.5V, I _D =15A	--	9	14	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	1300	--	pF
C _{OSS}	Output Capacitance		--	180	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	110	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =20V, I _D =12A, V _{GS} =4.5V	--	14	--	nC
Q _{gs}	Gate Source Charge		--	3.5	--	nC
Q _{gd}	Gate Drain Charge		--	7	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =12V, I _D =5A, V _{GS} =10V, R _G =3.3Ω	--	5	--	nS
t _r	Turn-on Rise Time		--	12	--	nS
t _{d(off)}	Turn-Off Delay Time		--	27	--	nS
t _f	Turn-Off Fall Time		--	10	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=10A,	--	--	1.2	V

Typical Operating Characteristics

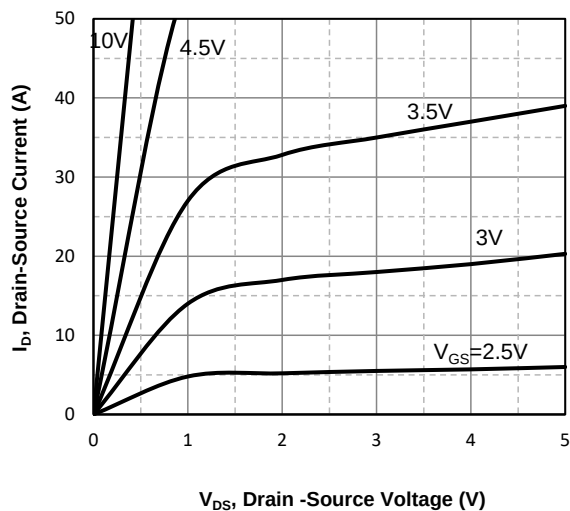


Fig1. Typical Output Characteristics

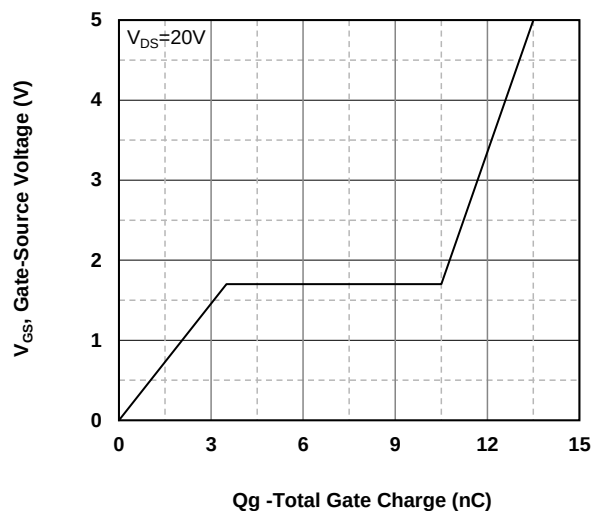


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

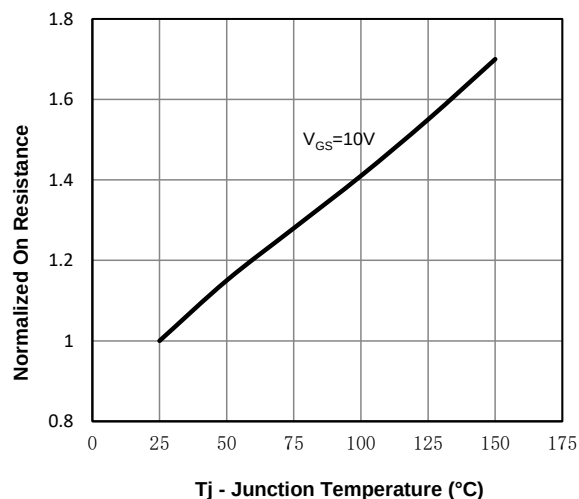


Fig3. Normalized On-Resistance Vs. Temperature

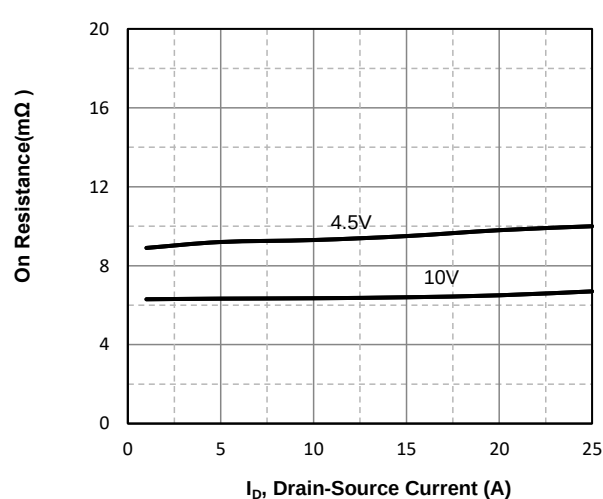


Fig4. On-Resistance Vs. Drain-Source Current

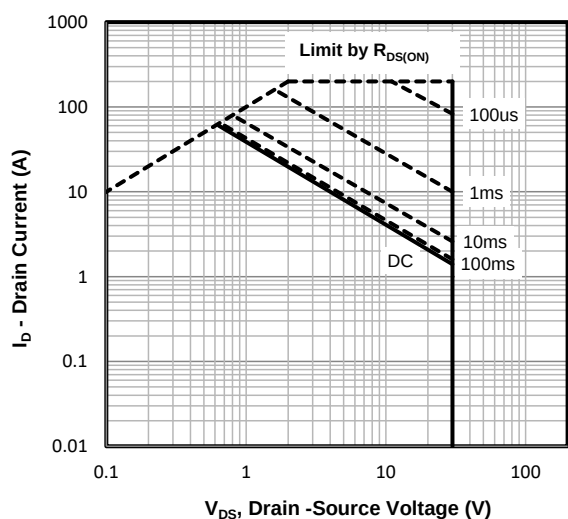


Fig5. Maximum Safe Operating Area

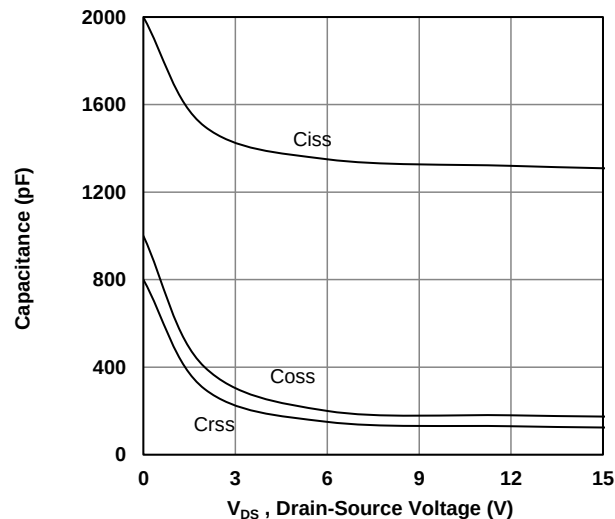


Fig6 Typical Capacitance Vs. Drain-Source Voltage

PDFN3X3-8L Package information

