

20V/10A N-Channel MOSFET

Features

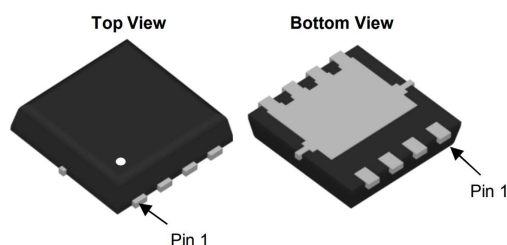
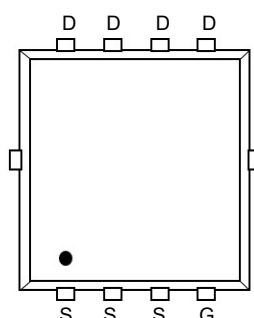
- Trench Power LV MOSFET technology
- High Power and Current handling capability
- Low Gate Charge

Product Summary

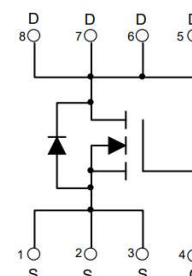
V_{DS}	$R_{DS(ON)} \text{ MAX}$	$I_D \text{ MAX}$
20V	23mΩ@4.5V	10A
	25mΩ@2.5V	

Application

- PWM applications
- Power management
- Load switch



PDFN3X3-8L



Schematic diagram



Halogen-Free

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

Symbol	Parameter	Rating	Unit
--------	-----------	--------	------

Common Ratings (TC=25°C Unless Otherwise Noted)

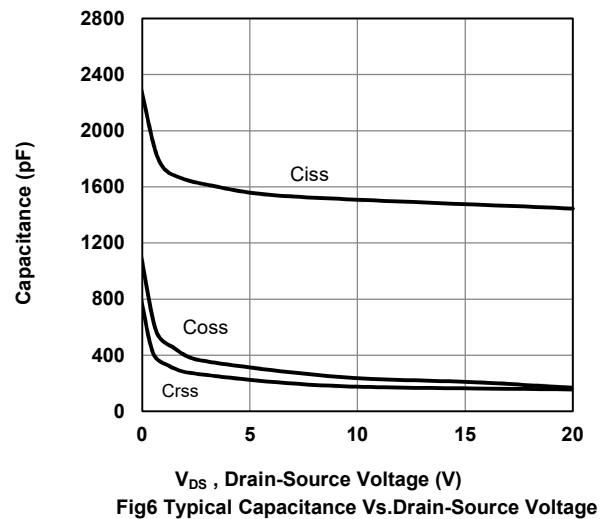
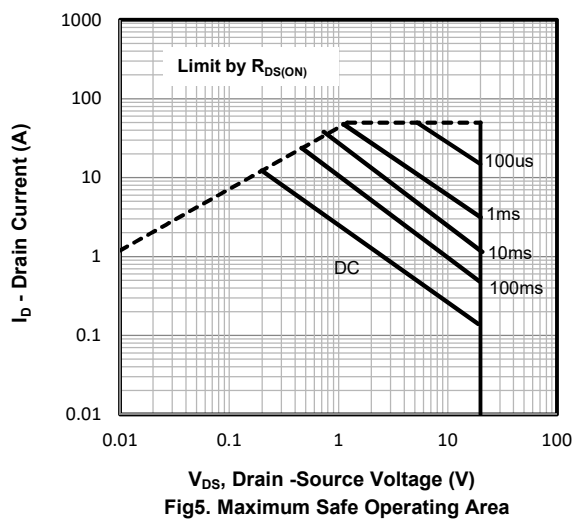
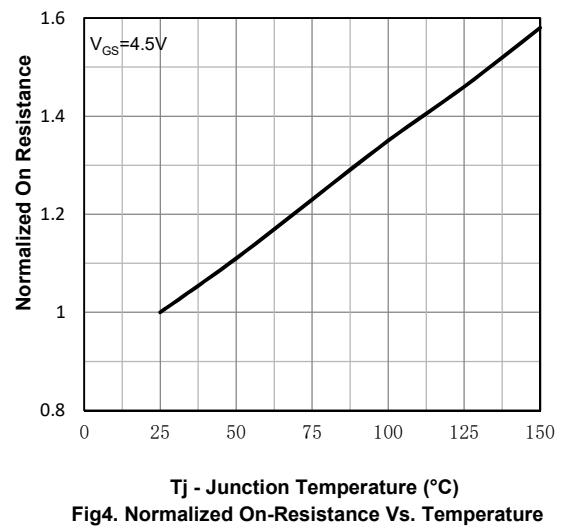
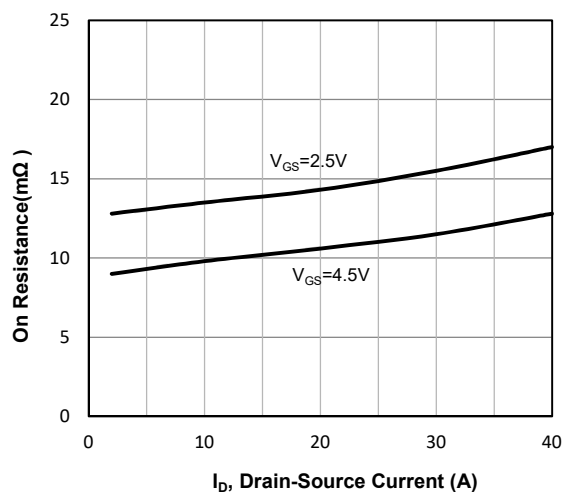
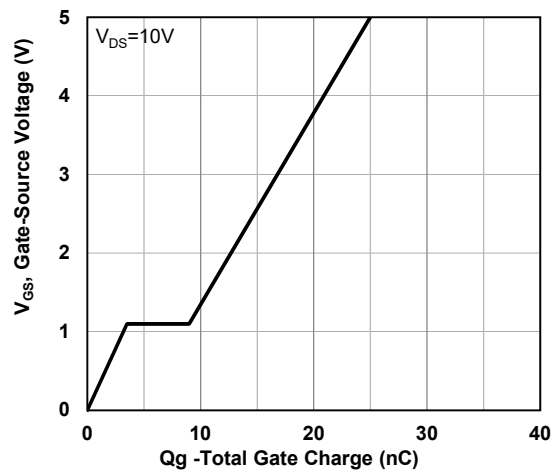
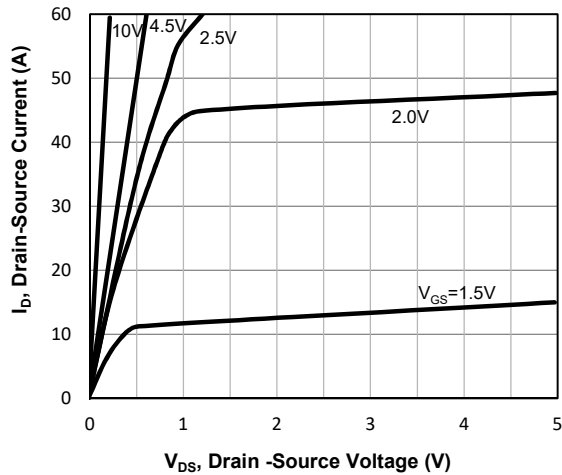
V _{DS}	Drain-Source Breakdown Voltage		20	V
V _{GS}	Gate-Source Voltage		±12	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	Tc=25°C	10	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	35	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	10	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	1.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		65	°C/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	20	–	–	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, 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	0.6	1.1	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =10A	–	9.4	23	mΩ
		V _{GS} =2.5V, I _D =5A	–	13.2	25	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	–	1544	–	pF
C _{OSS}	Output Capacitance		–	210	–	pF
C _{RSS}	Reverse Transfer Capacitance		–	201	–	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =10A, V _{GS} =4.5V	–	23.5	–	nC
Q _{gs}	Gate Source Charge		–	2.8	–	nC
Q _{gd}	Gate Drain Charge		–	5.75	–	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =10A, V _{GS} =4.5V, R _G =3Ω	–	3	–	nS
t _r	Turn-on Rise Time		–	10	–	nS
t _{d(off)}	Turn-Off Delay Time		–	35	–	nS
t _f	Turn-Off Fall Time		–	12	–	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =10A,	–	–	1.2	V

Typical Operating Characteristics



PDFN3X3-8L Package information

