

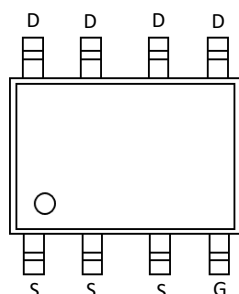
-40V/-10A P-Channel MOSFET

Features

- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

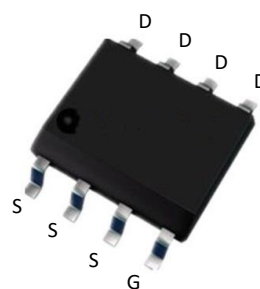
Application

- PWM applications
- Power management
- Load switch

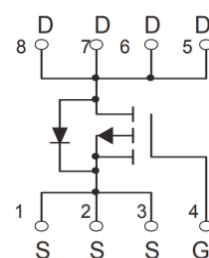


Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-40V	15mΩ@-10V	-10A
	20mΩ@-4.5V	



SOP-8 top view



Schematic diagram

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings ($T_C=25^{\circ}\text{C}$ Unless Otherwise Noted)

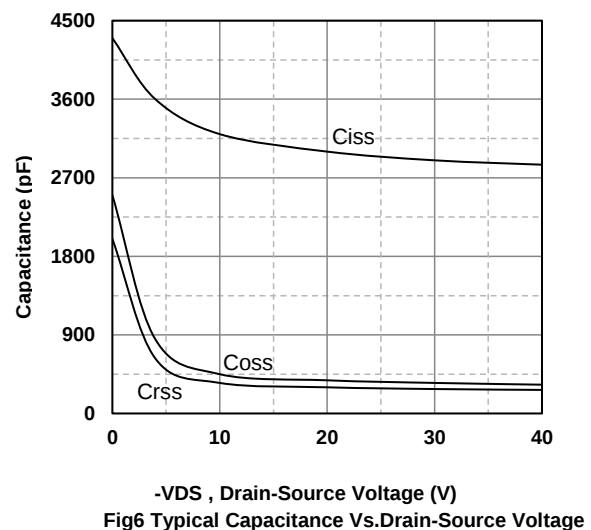
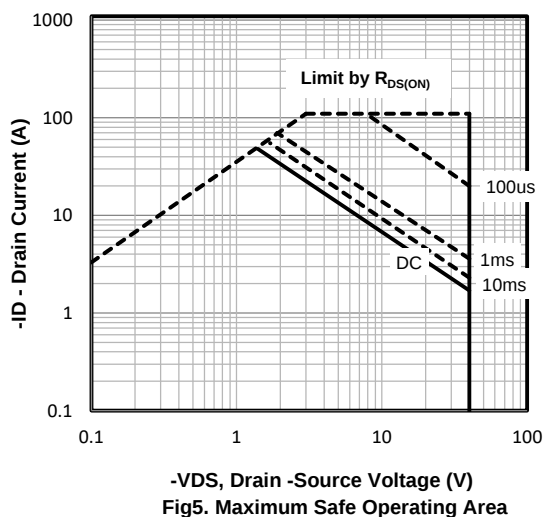
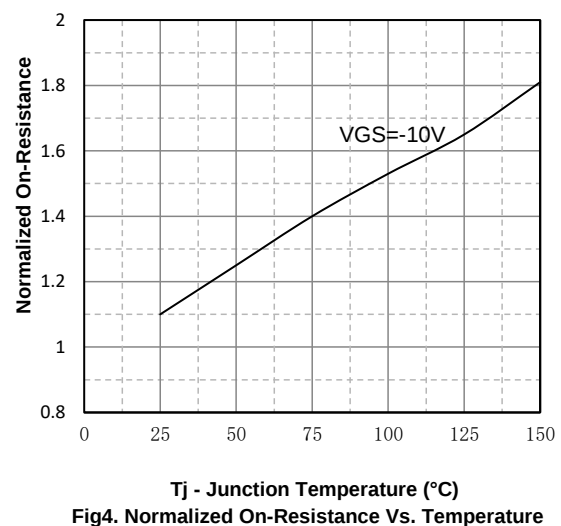
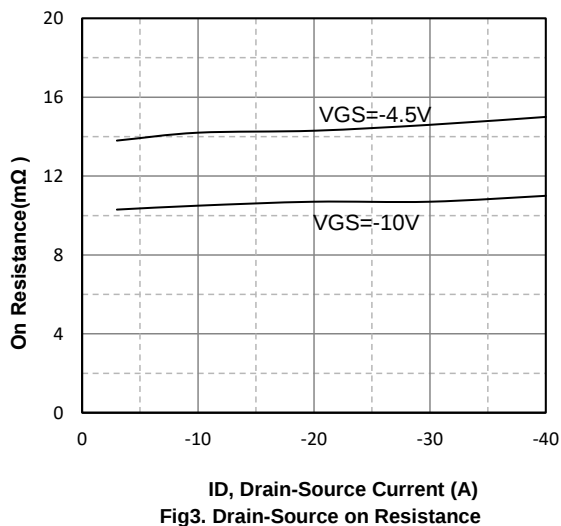
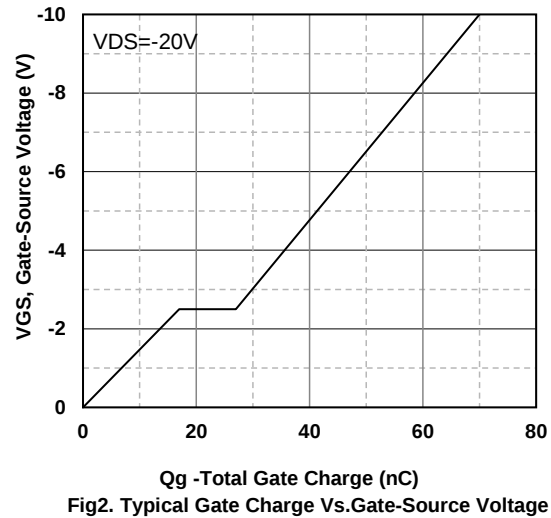
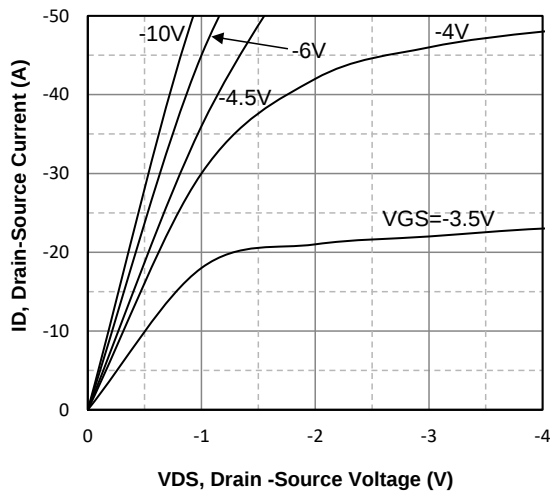
V_{DS}	Drain-Source Breakdown Voltage	-40	V
V_{GS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
I_S	Diode Continuous Forward Current	$T_C=25^{\circ}\text{C}$ -10	A

Mounted on Large Heat Sink

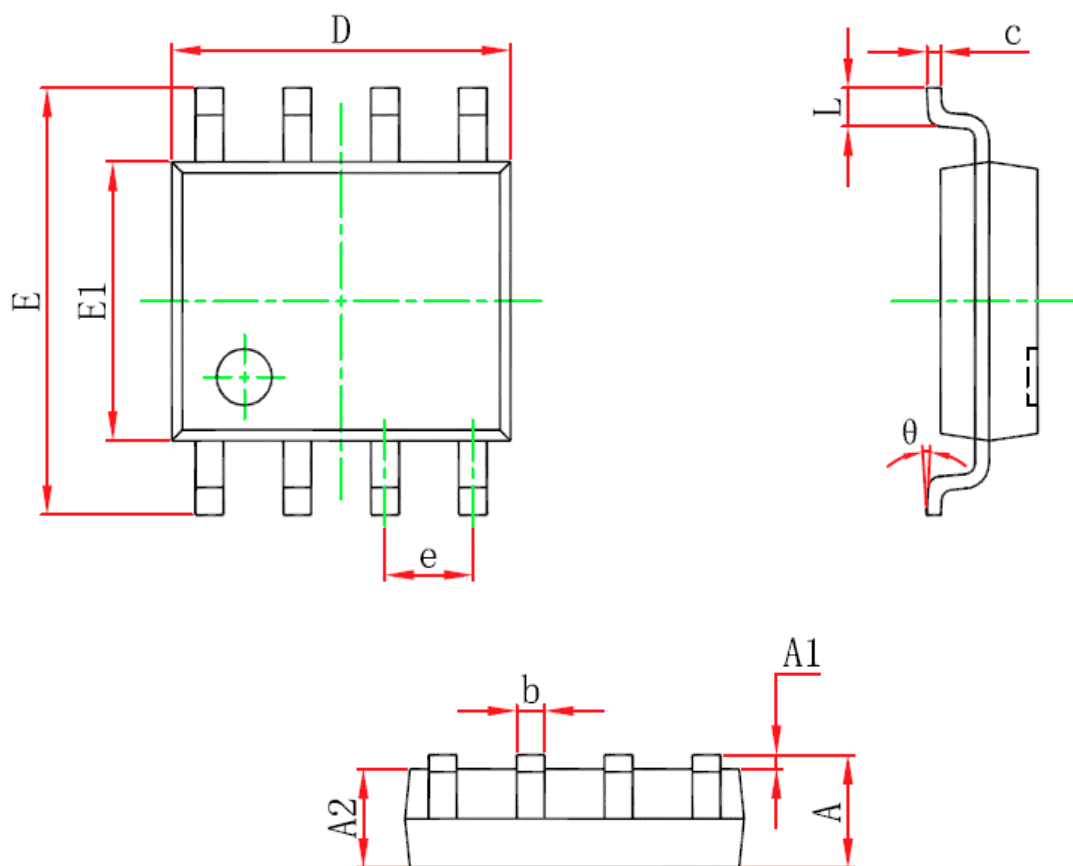
I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}\text{C}$ -45	A
I_D	Continuous Drain Current@ $G_S=10V$	$T_C=25^{\circ}\text{C}$ -10	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}\text{C}$ 3.2	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	40	$^{\circ}\text{C/W}$

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	VGS=0V, ID=-250μA	-40	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	VDS=-40V, VGS=0V	--	--	-1	uA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.8	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	VGS=-10V, ID=-12A	--	11	15	mΩ
		VGS=-4.5V, ID=-10A	--	16	20	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	VDS=-20V, VGS=0V, f=1MHz	--	2980	--	pF
C _{OSS}	Output Capacitance		--	380	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	300	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	VDS=-20V, ID=-12A, VGS=-10V	--	75	--	nC
Q _{gs}	Gate Source Charge		--	14	--	nC
Q _{gd}	Gate Drain Charge		--	15	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=-12V, ID=-1A, VGS=-10V, RG=3.3Ω	--	10	--	nS
t _r	Turn-on Rise Time		--	17	--	nS
t _{d(off)}	Turn-Off Delay Time		--	38	--	nS
t _f	Turn-Off Fall Time		--	25	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-20A,	--	--	-1.2	V

Typical Operating Characteristics



SOP-8 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270(BSC)		0.050(BSC)	
E	5.800	6.200	0.028	0.035
E1	3.800	4.000	0.057	0.069
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°