P-ch 60V Fast Switching MOSFET

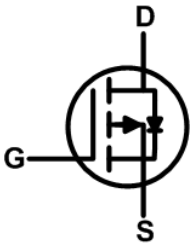
Features:

- Advanced Trench MOS Technology
- Low Gate Charge
- 100% EAS Guaranteed
- Green Device Available

SOP8 Pin Configuration

Applications:

- Load Switch.
- Power Management.
- DC/DC Converter.
- LED Backlighting.



Product Summary

BVDSS	RDSON	ID
-60V	35mΩ	-7.8A

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current, V_{GS} @ 10V[1]	-7.8	A
I_D@T_A=70℃	Continuous Drain Current, V_{GS} @ 10V[1]	-6.2	A
I_{DM}	Pulsed Drain Current[2]	-32	A
EAS	Single Pulse Avalanche Energy[3]	20	mJ
I_{AS}	Avalanche Current	-20	A
P_D@T_A=25℃	Total Power Dissipation[4]	3.1	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient [1]	---	75	℃/W
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1](t≦10S)	---	40	℃/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V , I_D=-7A	---	---	35	mΩ
		V_{GS}=-4.5V , I_D=-4A	---	---	55	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D=-250uA	-1.2	---	-2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-48V , V_{GS}=0V , T_J=25℃	---	---	-1	uA
		V_{DS}=-48V , V_{GS}=0V , T_J=55℃	---	---	-5	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
Q_g	Total Gate Charge (-4.5V)	V_{DS}=-15V , V_{GS}=-4.5V , I_D=-7A	---	24	---	nC
Q_{gs}	Gate-Source Charge		---	8.6	---	
Q_{gd}	Gate-Drain Charge		---	7.3	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-15V , V_{GS}=-10V , R_G=3.3Ω I_D=-7A	---	9	---	ns
T_r	Rise Time		---	70.7	---	
$T_{d(off)}$	Turn-Off Delay Time		---	59.8	---	
T_f	Fall Time		---	20.4	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	2217	---	pF
C_{oss}	Output Capacitance		---	310	---	
C_{rss}	Reverse Transfer Capacitance		---	238	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	---	---	-7.8	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=-1A , T_J=25℃	---	---	-1	V
t_{rr}	Reverse Recovery Time	I_F=-7A , dI/dt=100A/μs , T_J=25℃	---	30	---	nS
Q_{rr}	Reverse Recovery Charge		---	45	---	nC

Note :
1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=0.1mH,I_{AS}=-20A
4.The power dissipation is limited by 150℃ junction temperature
5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

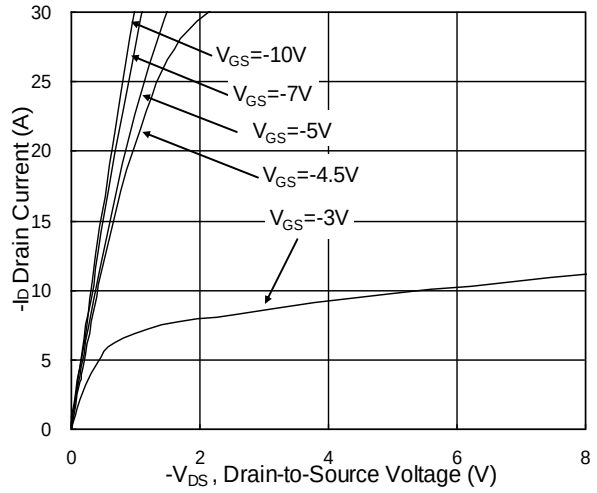


Fig.1 Typical Output Characteristics

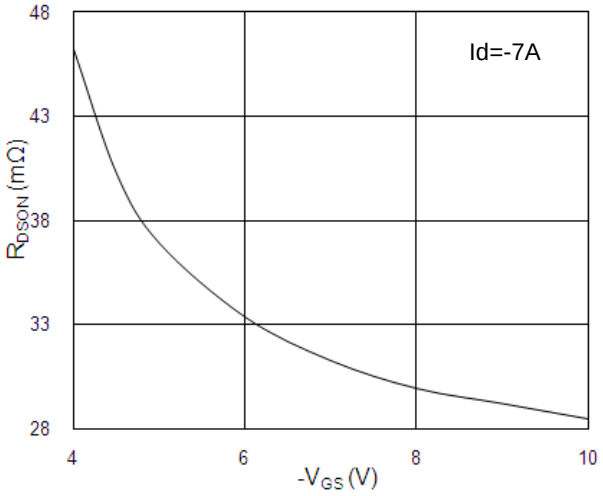


Fig.2 On-Resistance vs G-S Voltage

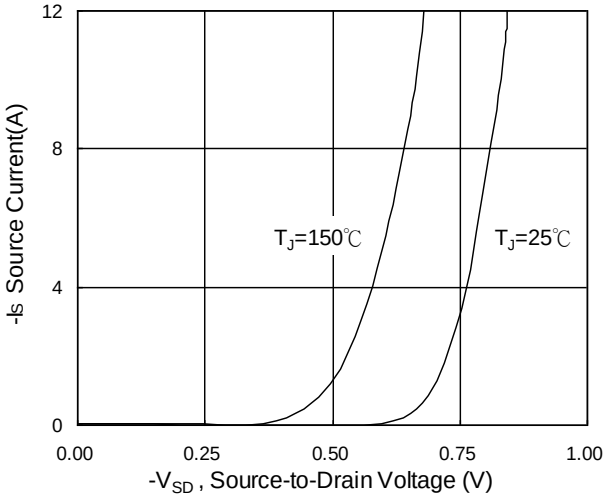


Fig.3 Source Drain Forward Characteristics

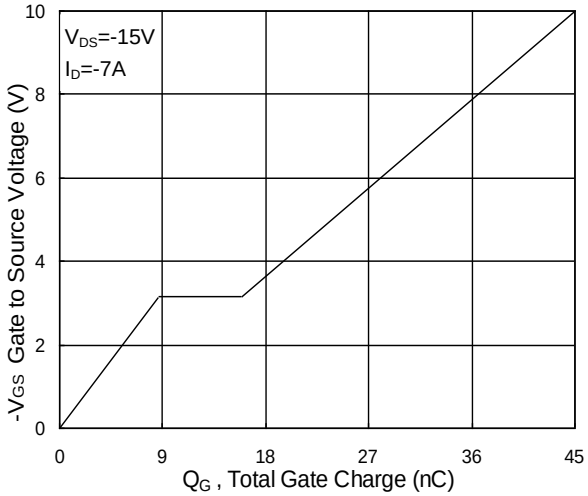


Fig.4 Gate-Charge Characteristics

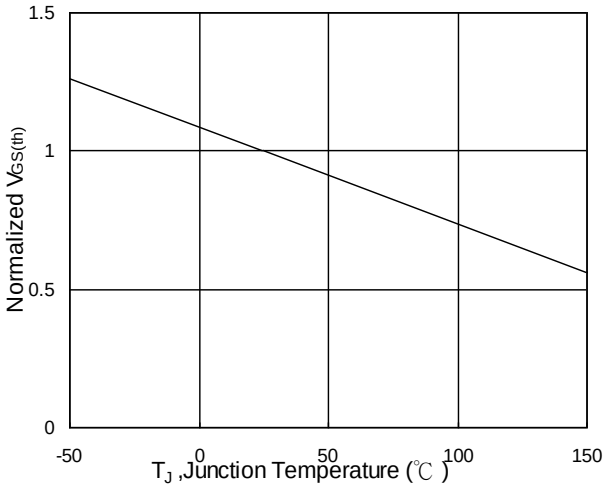


Fig.5 Normalized $V_{GS(th)}$ vs T_J

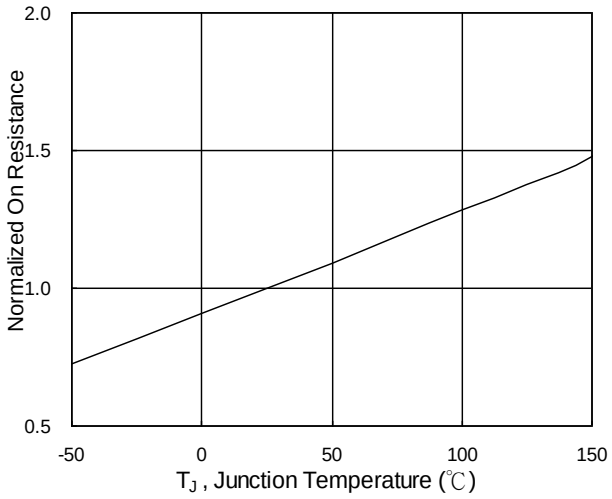


Fig.6 Normalized R_{DSON} vs T_J

Typical Characteristics

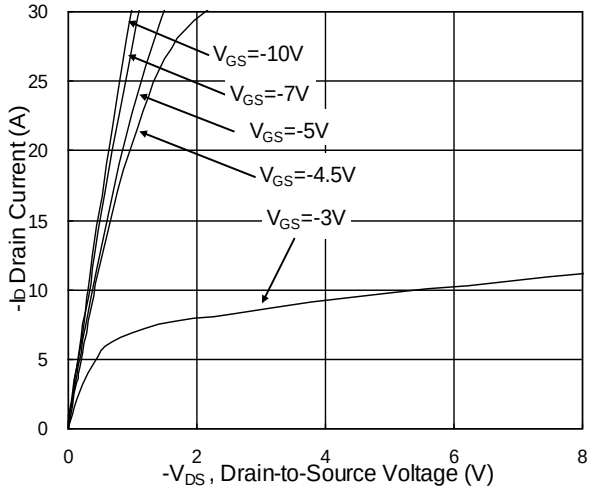
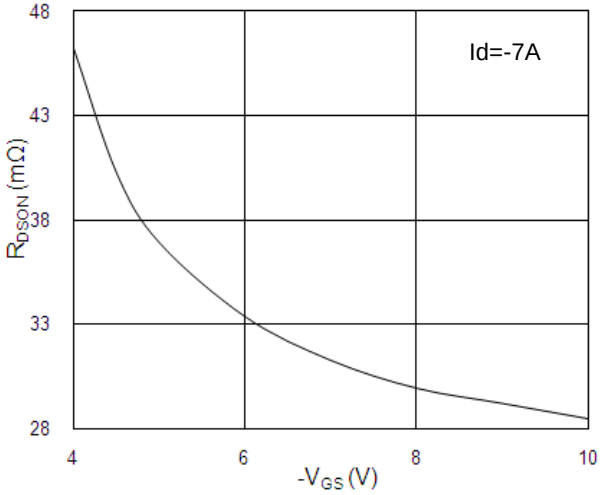


Fig.1 Typical Output Characteristics



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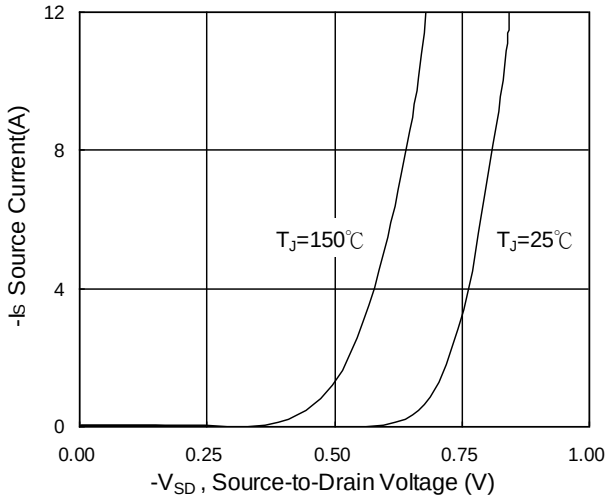

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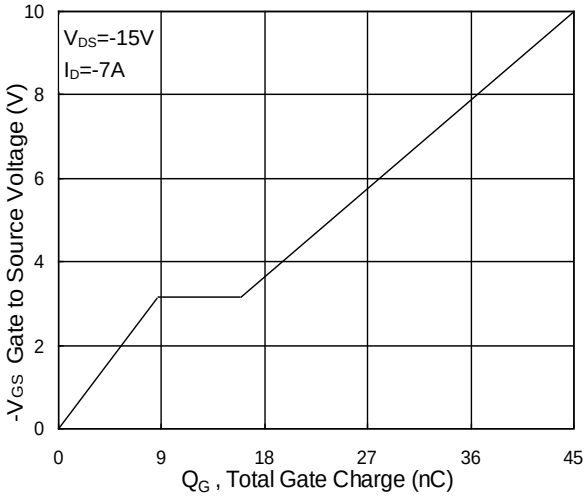


Fig.4 Gate-Charge Characteristics

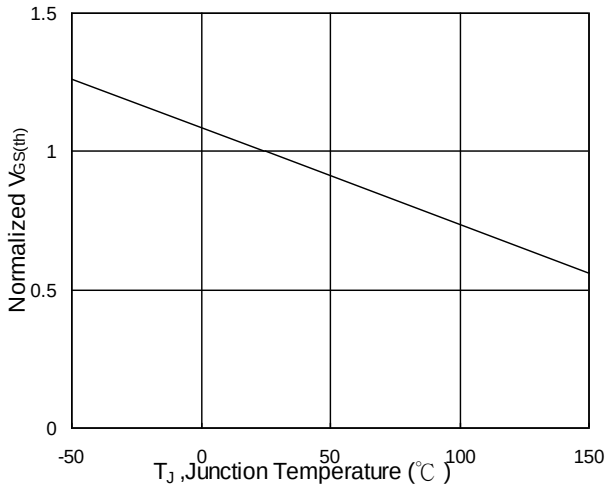


Fig.5 Normalized $V_{GS(th)}$ vs T_J

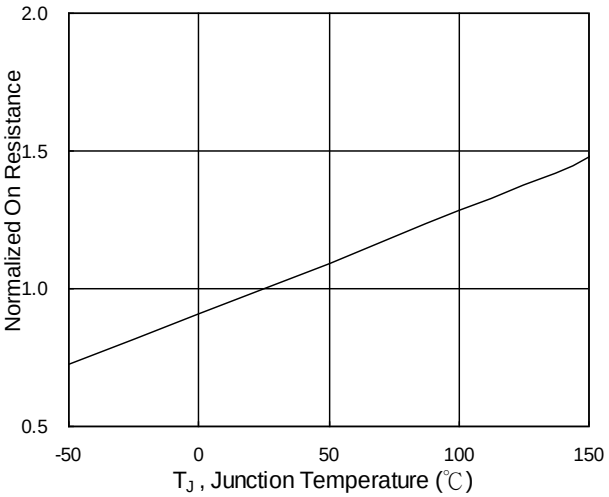
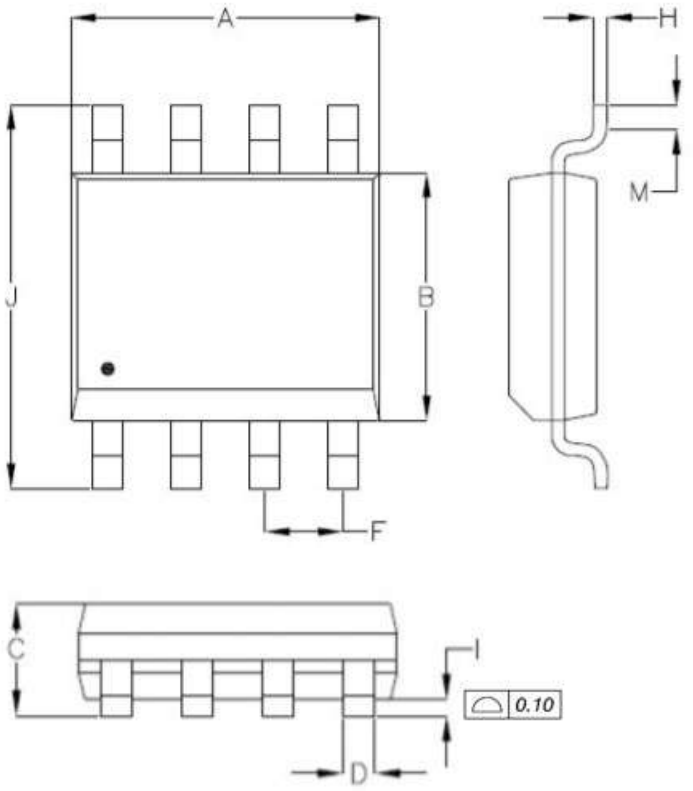


Fig.6 Normalized R_{DSON} vs T_J

SOP-8L Package Outline



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.700	5.150	0.185	0.203
B	3.700	4.100	0.146	0.161
C	1.23	1.753	0.048	0.069
D	0.310	0.510	0.012	0.020
F	1.070	1.470	0.042	0.058
H	0.160	0.254	0.006	0.010
I	0.050	0.254	0.002	0.010
J	5.750	6.250	0.226	0.246
M	0.400	1.270	0.016	0.050

Land Pattern
(Only for Reference)