

60V/6.3A Dual N-Channel MOSFET

Features

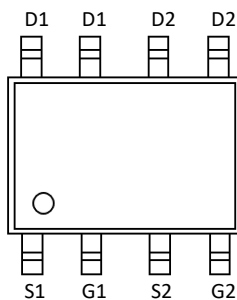
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Product Summary

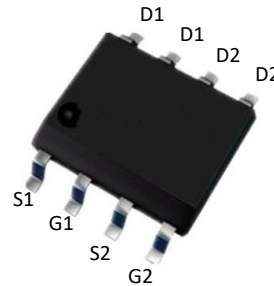
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
60V	30m Ω @10V	6.3A
	40m Ω @4.5V	

Application

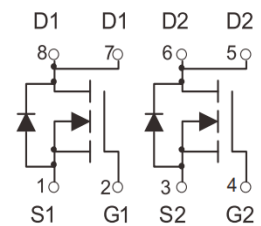
- Power switching application



Marking and pin assignment



SOP-8 top view



Schematic diagram



Halogen-Free

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

Symbol	Parameter	Rating	Unit
Common Ratings ($T_C=25^\circ\text{C}$ Unless Otherwise Noted)			
V_{DS}	Drain-Source Breakdown Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-50 to 155	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ 6.3	A
Mounted on Large Heat Sink			
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ 28	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ 6.3	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 2	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	60	$^\circ\text{C/W}$

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	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, 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	1.2	1.7	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =6.3A	--	22	30	mΩ
		V _{GS} =4.5V, I _D =5.7A	--	30	40	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	1050	--	pF
C _{OSS}	Output Capacitance		--	65	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	55	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =30V, I _D =10A, V _{GS} =10V	--	26	--	nC
Q _{gs}	Gate Source Charge		--	5.7	--	nC
Q _{gd}	Gate Drain Charge		--	5.2	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =30V, I _D =10A, V _{GS} =10V, R _G =3Ω	--	8.4	--	nS
t _r	Turn-on Rise Time		--	8.5	--	nS
t _{d(off)}	Turn-Off Delay Time		--	36	--	nS
t _f	Turn-Off Fall Time		--	5	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =10A,	--	0.8	1.2	V

Typical Operating Characteristics

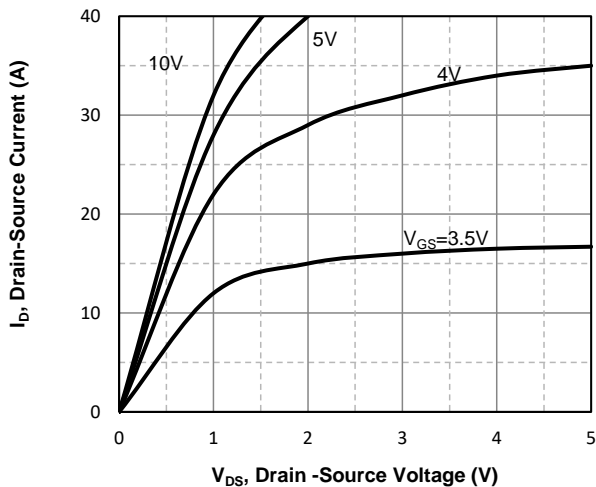


Fig1. Typical Output Characteristics

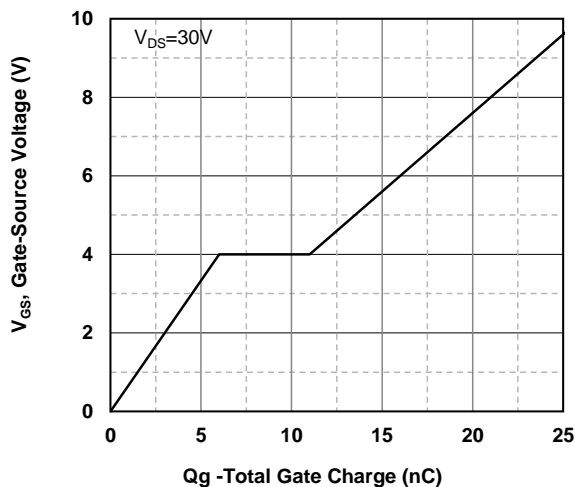


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

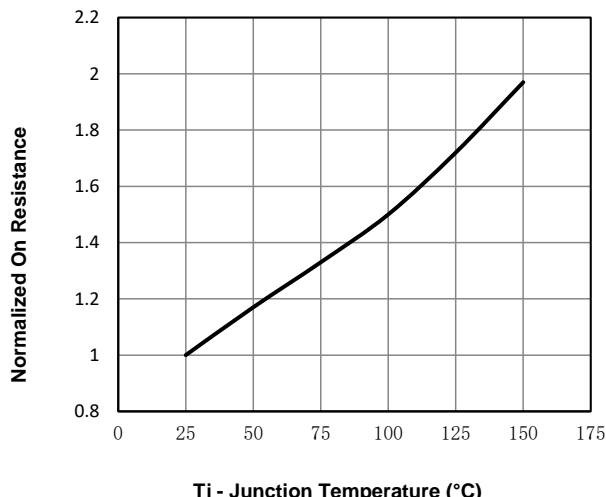


Fig3. Normalized On-Resistance Vs. Temperature

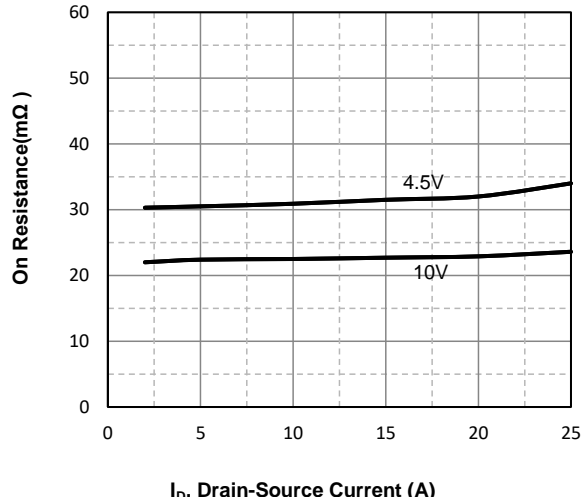


Fig4. On-Resistance Vs. Drain-Source Current

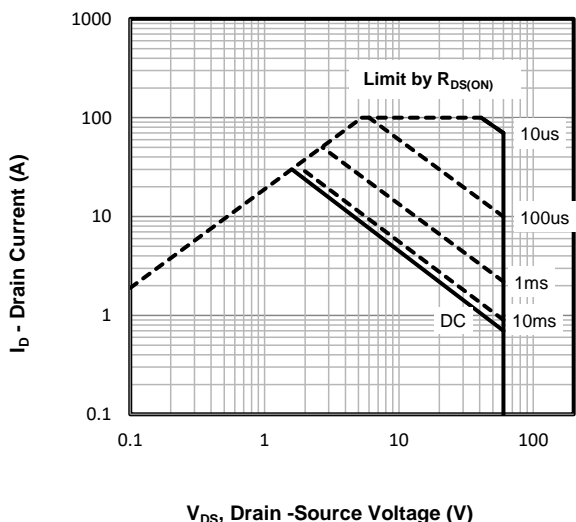


Fig5. Maximum Safe Operating Area

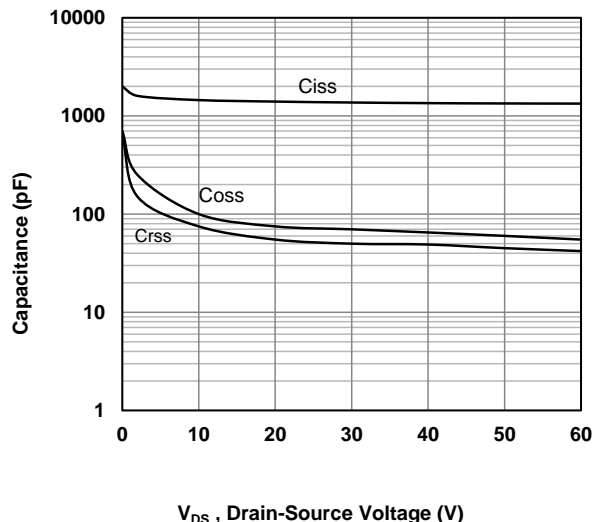
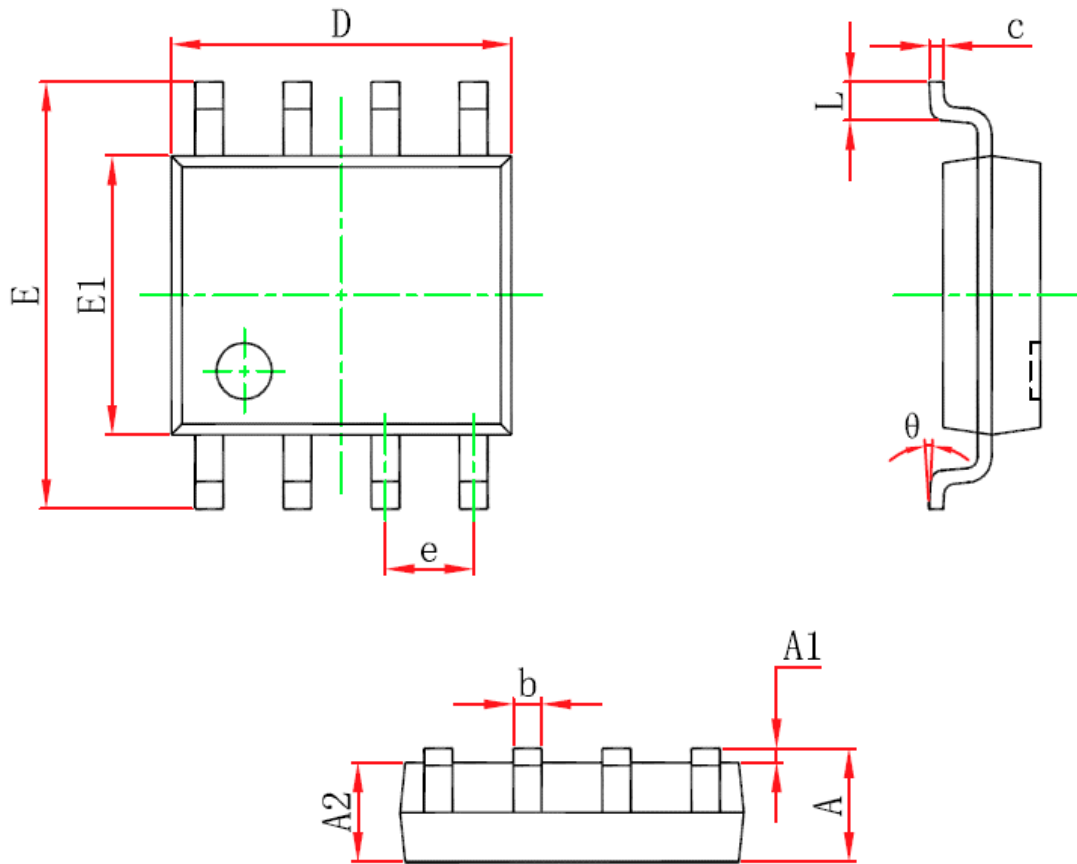


Fig6. Typical Capacitance Vs. Drain-Source

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
theta	0°	8°	0°	8°

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