

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	30mΩ@10V	5A
	40mΩ@4.5V	



合肥矽普半导体

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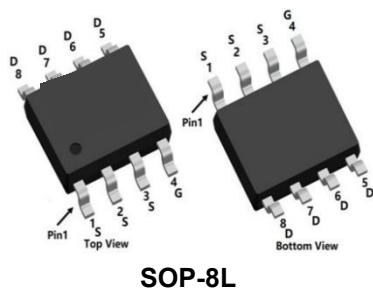
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

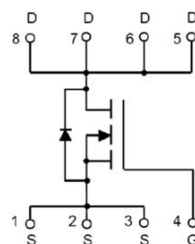
Applications

- Power Switching Application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

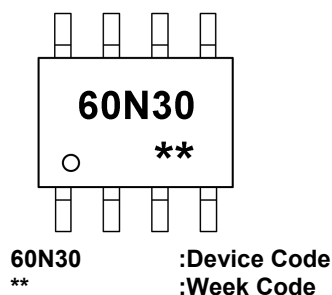
Package



Circuit Diagram



Marking



Order Information

Device	Package	Unit/Tape
SP60N30P8	SOP-8L	4000

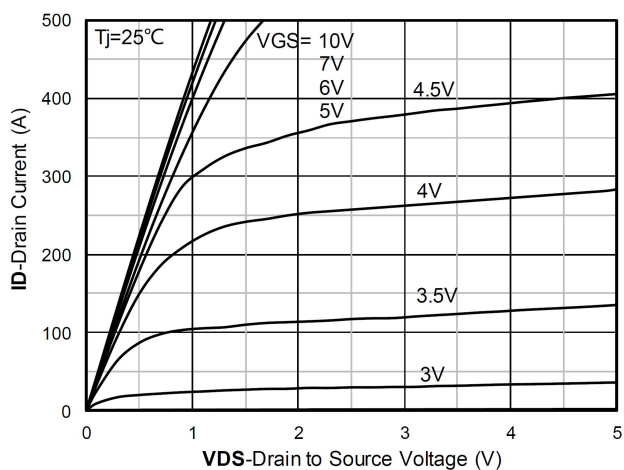
Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current	I_{DM}	20	A
Power Dissipation	P_D	2.5	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	50	$^{\circ}\text{C/W}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_J	-55 to 150	$^{\circ}\text{C}$

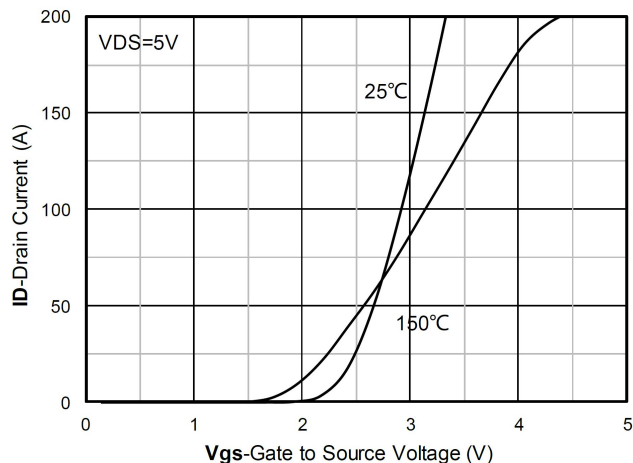
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250uA	60	-	-	V
Drain-Source Leakage Current	IDSS	VDS=48V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	VGS(th)	VGS=VDS , ID =250uA	1.2	1.6	2.5	V
Static Drain-Source On-Resistance	RDS(ON)	VGS=10V , ID=6A	-	30	40	mΩ
		VGS=4.5V , ID=4A	-	40	50	
Dynamic characteristics						
Input Capacitance	Ciss	VDS=15V , VGS=0V , f=1MHz	-	1180	-	pF
Output Capacitance	Coss		-	60	-	
Reverse Transfer Capacitance	Crss		-	45	-	
Total Gate Charge	Qg	VDS=30V , VGS=10V , ID=5A	-	14	-	nC
Gate-Source Charge	Qgs		-	2.9	-	
Gate-Drain Charge	Qgd		-	5.2	-	
Switching Characteristics						
Turn-On Delay Time	Td(on)	VDD=30V, VGS=10V , RG=3Ω, ID=2A	-	5	-	nS
Rise Time	Tr		-	15	-	
Turn-Off Delay Time	Td(off)		-	24	-	
Fall Time	Tf		-	2.3	-	
Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V , IS=1A	-	-	1.2	V

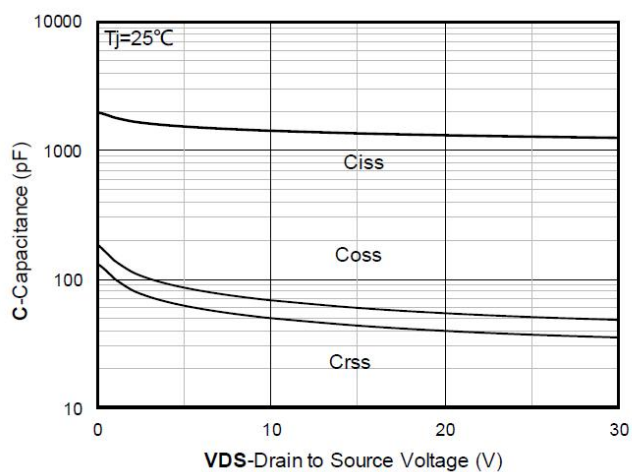
Typical Characteristics



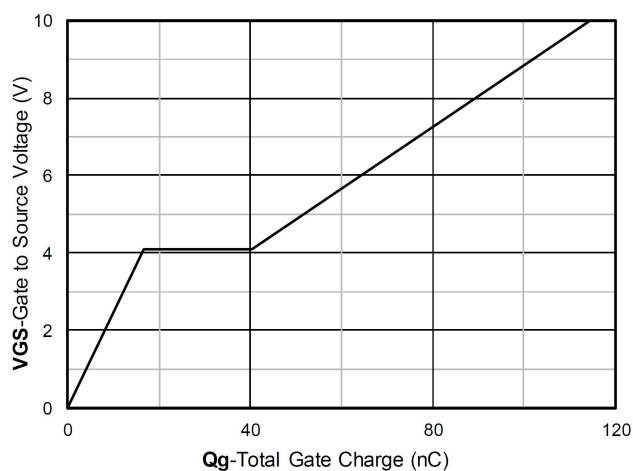
Output Characteristics



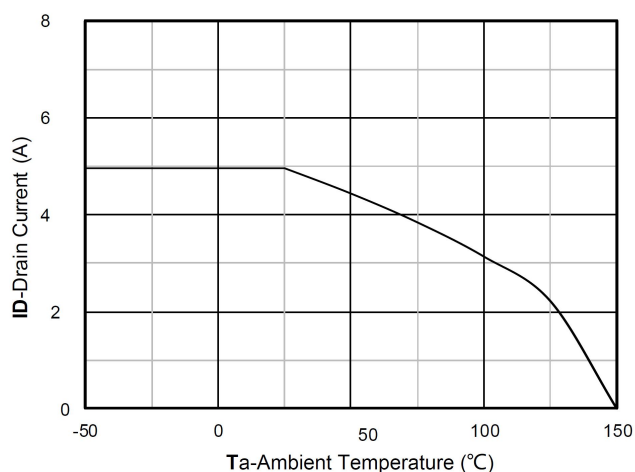
Transfer Characteristics



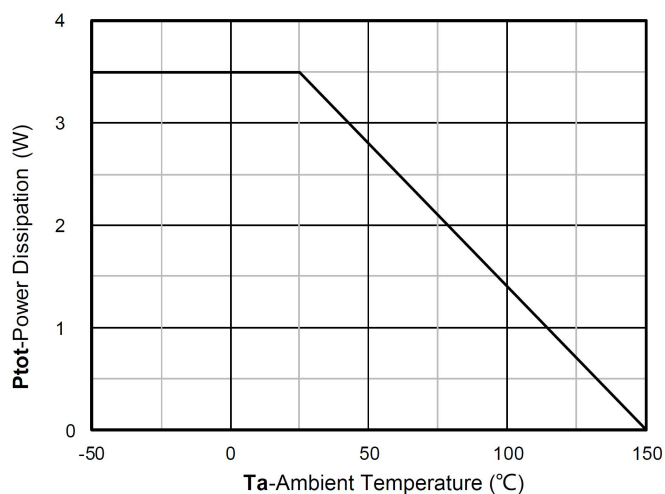
Capacitance Characteristics



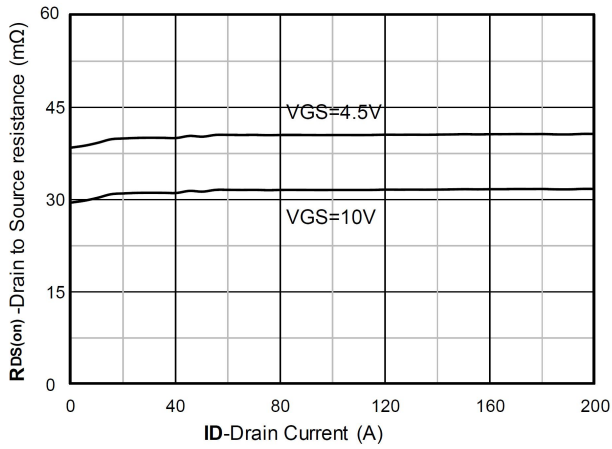
Gate Charge



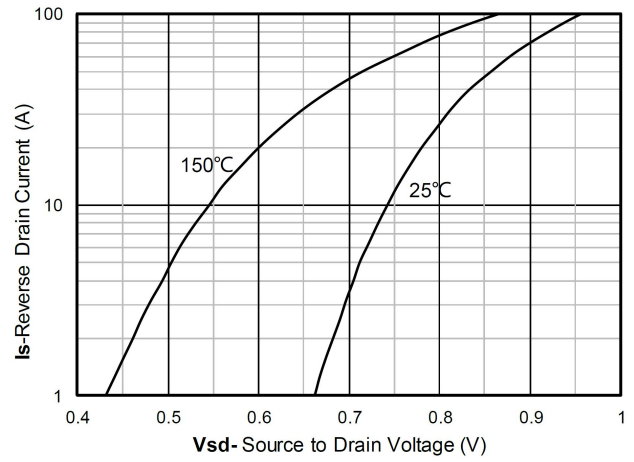
Current dissipation



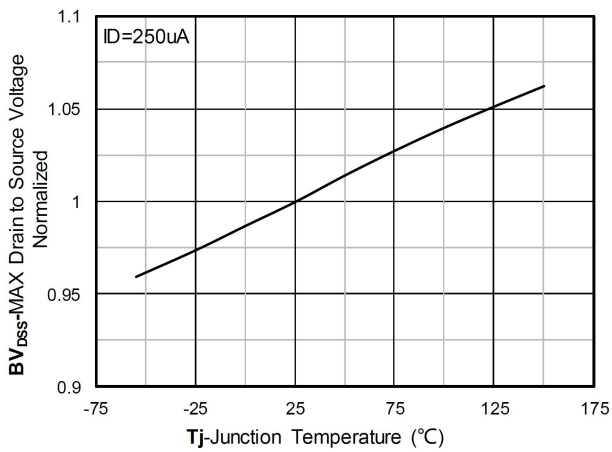
Power dissipation



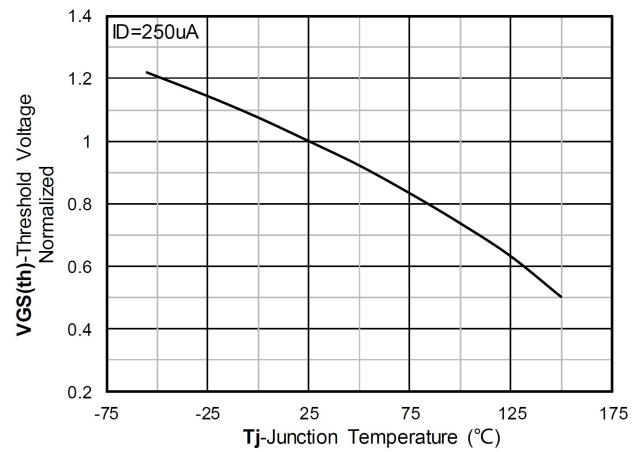
$R_{DS(on)}$ VS Drain Current



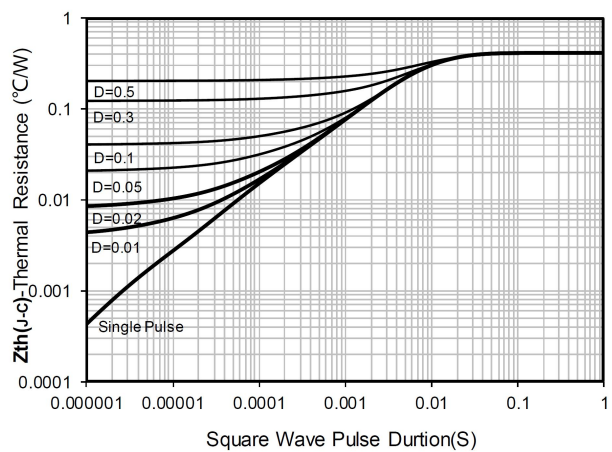
Forward characteristics of reverse diode



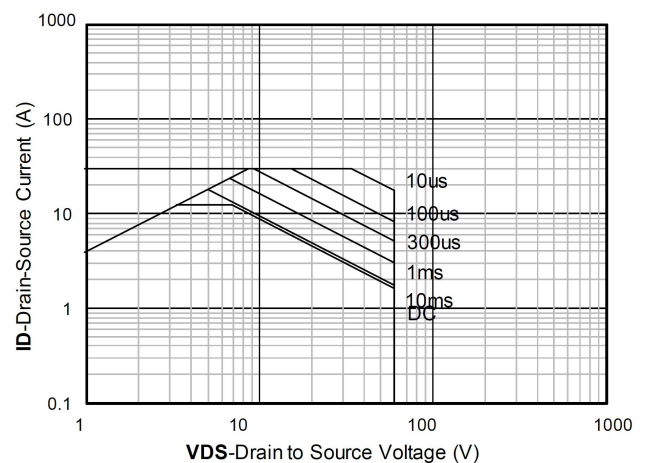
Normalized breakdown voltage



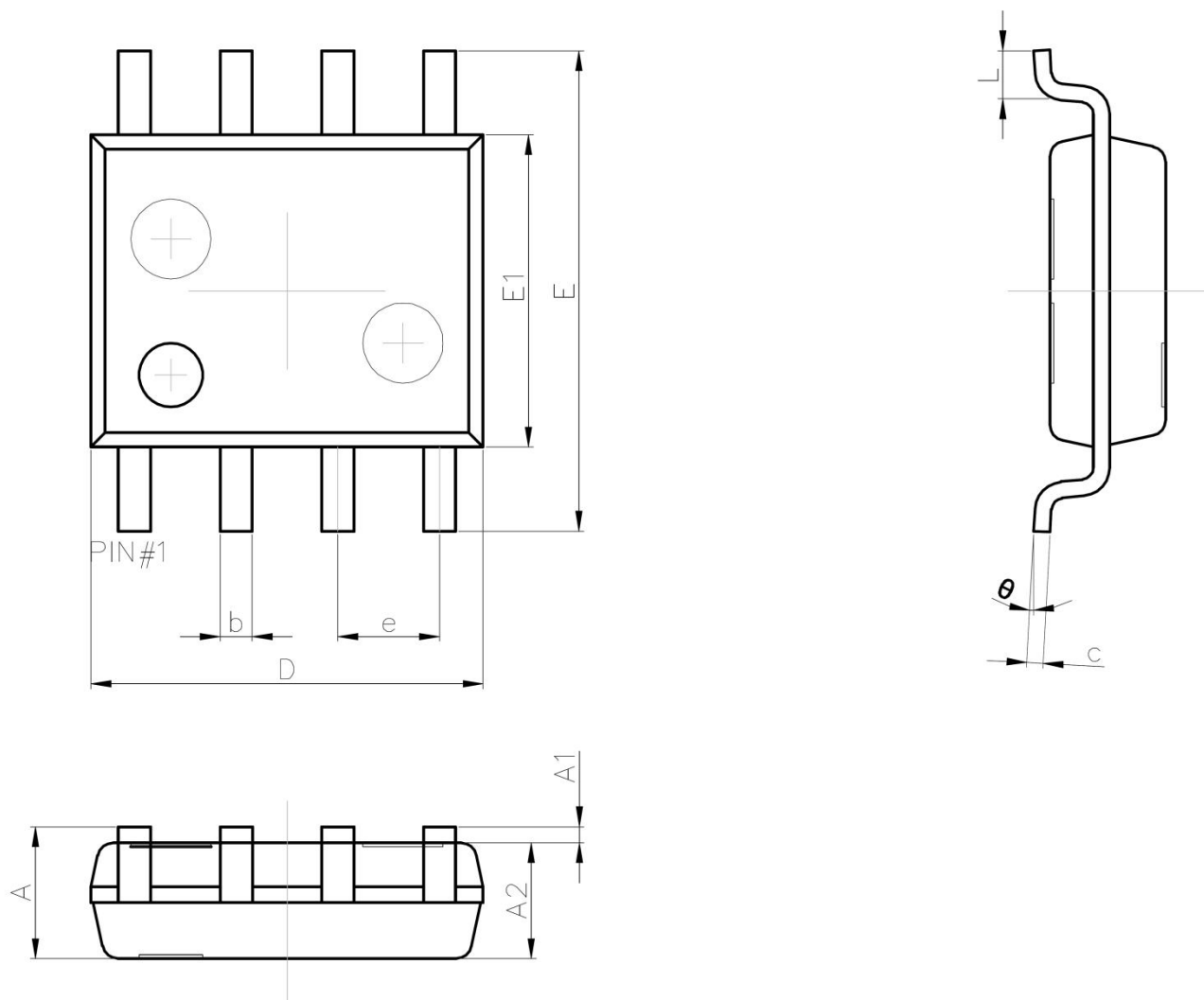
Normalized Threshold voltage



Maximum Transient Thermal Impedance



Safe Operation Area

SOP-8L Package Information


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°