

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	7.5mΩ@10V	15A
	10mΩ@4.5V	



合肥矽普半导体

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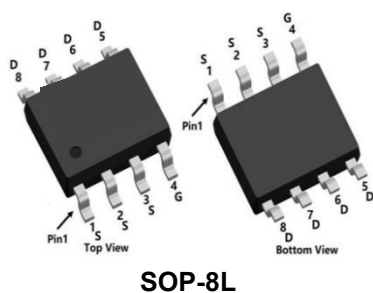
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

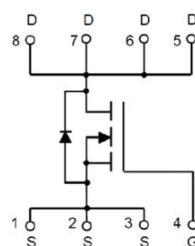
Applications

- Power switching application
- Battery management
- Uninterruptible power supply

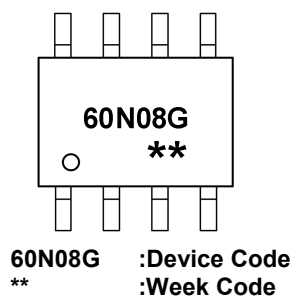
Package



Circuit Diagram



Marking



Order Information

Device	Package	Unit/Tape
SP60N08GP8	SOP-8L	4000

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	15	A
Continuous Drain Current (Ta=100°C)	I _D	10	A
Pulse Drain Current Tested	I _{DM}	60	A
Single Pulse Avalanche Energy ¹	E _{AS}	91	mJ
Power Dissipation	P _D	81	W
Thermal Resistance Junction-to-Ambient	R _{θJA}	1.54	°C/W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

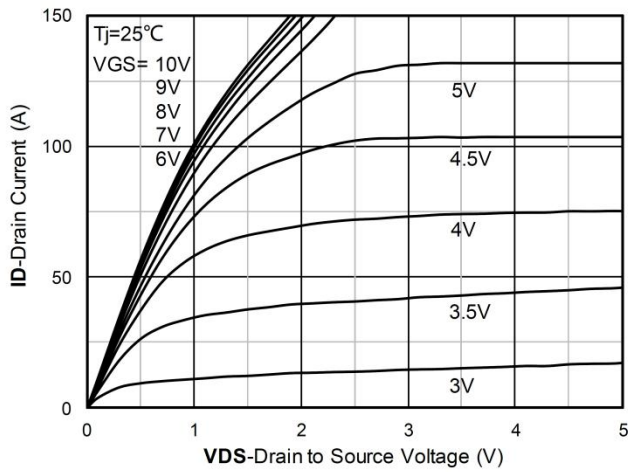
Electrical characteristics (Ta=25°C, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	ID = 250μA, VGS = 0V	60	-	-	V
Drain Cut-Off Current	I _{DSS}	VDS = 48V, VGS = 0V	-	-	1	uA
Gate Leakage Current	I _{GSS}	VGS = ±20V, VDS = 0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	VDS = VGS, ID = 250μA	1.0	1.5	2.5	V
Drain-Source ON Resistance	R _{DS(ON)}	VGS = 10V, ID = 20A	-	7.5	10	mΩ
		VGS = 4.5V, ID = 10A	-	10	13	
Dynamic Characteristics						
Input Capacitance	C _{iss}	VDS =30V, VGS = 0V, f = 1.0MHz	-	1350	-	pF
Output Capacitance	C _{oss}		-	310	-	
Reverse Transfer Capacitance	C _{rss}		-	25	-	
Total Gate Charge	Q _g	VDS=30V , VGS=10V , ID=20A	-	27.9	-	nC
Gate-Source Charge	Q _{gs}		-	7.8	-	
Gate-Drain Charge	Q _{gd}		-	6.2	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	VGS =10V,VDS =30V, ID=20A RG = 4.7Ω	-	14	-	nS
Rise Time	t _r		-	26	-	
Turn-Off Delay Time	t _{d(off)}		-	33.8	-	
Fall Time	t _f		-	26.4	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V _{SD}	VGS=0V , I _S =1A , T _J =25℃	-	-	1.2	V
Maximum Body-Diode Continuous Current	I _S		-	-	15	A
Reverse Recovery Time	T _{rr}	I _S =30A, di/dt=100A/us, T _J =25℃	-	36	-	nS
Reverse Recovery Charge	Q _{rr}		-	23	-	nC

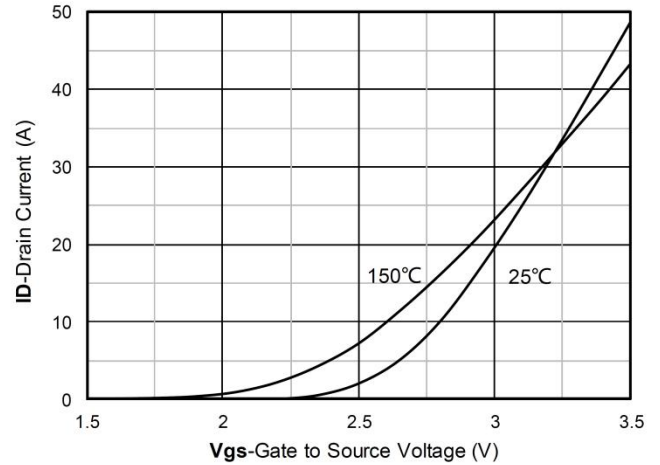
Note:

- The EAS test condition is VDD=30V, VGS=10V, L=0.5mH, RG=25Ω

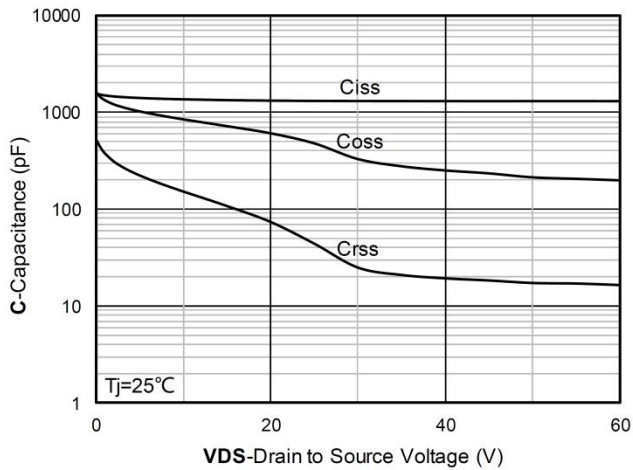
Typical Characteristics



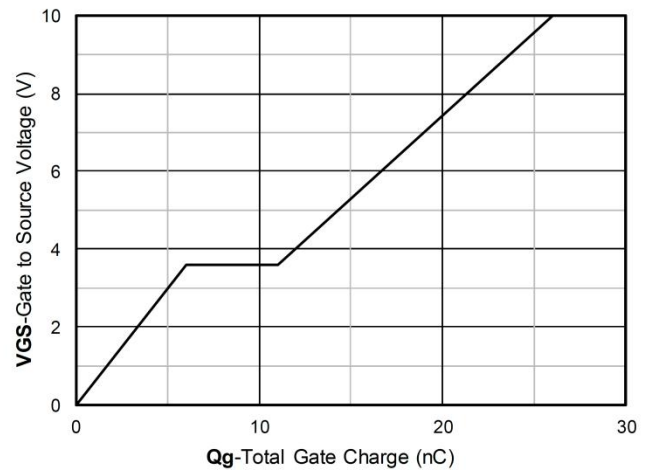
Output Characteristics



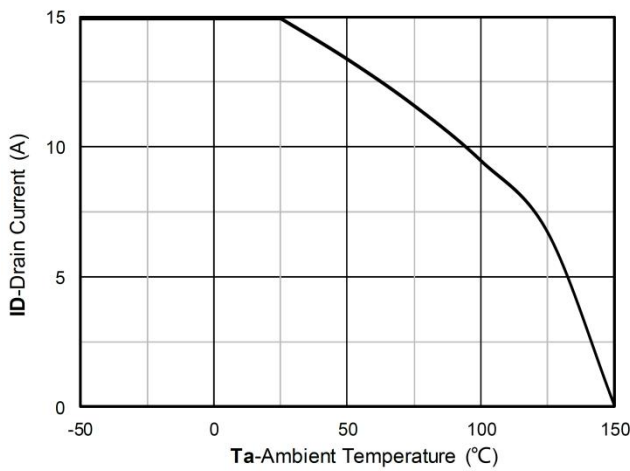
Transfer Characteristics



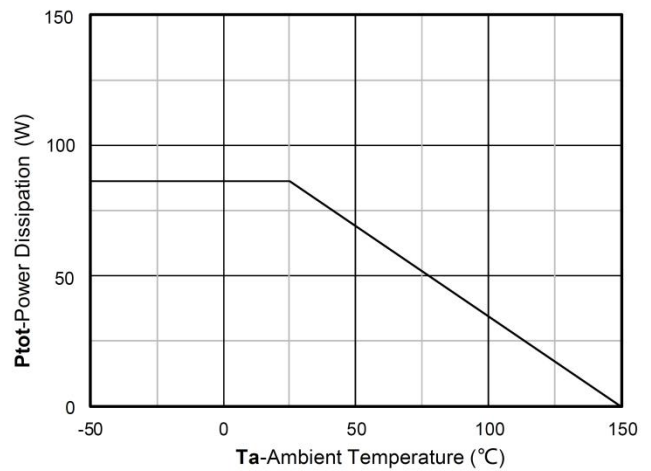
Capacitance Characteristics



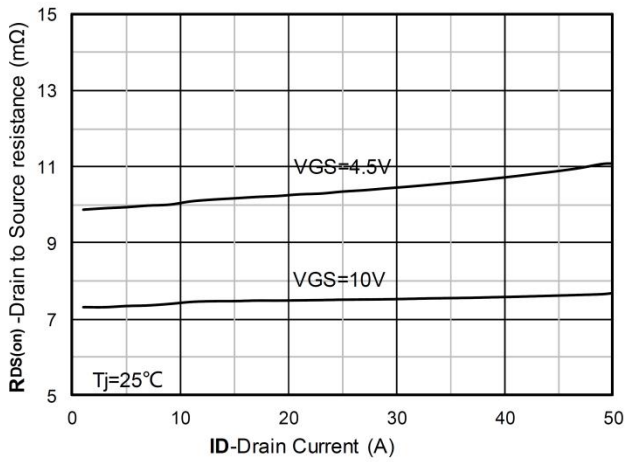
Gate Charge



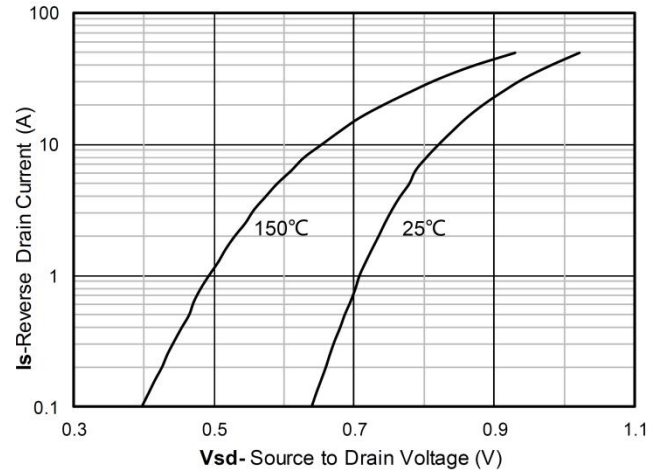
Current dissipation



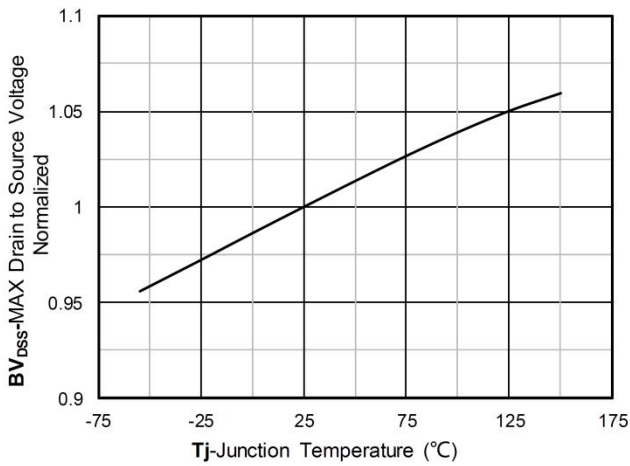
Power dissipation



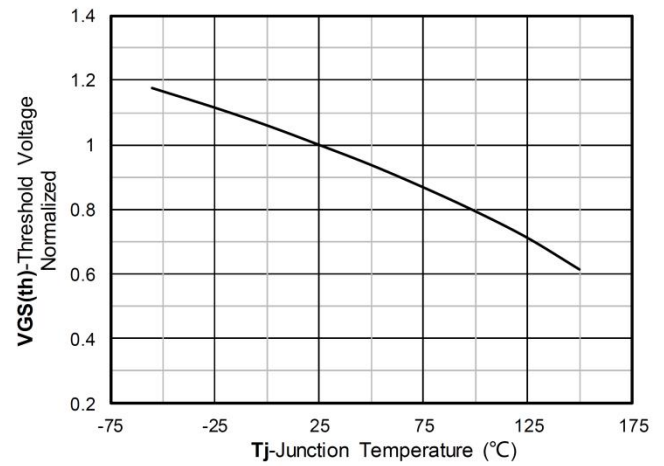
$R_{DS(on)}$ VS Drain Current



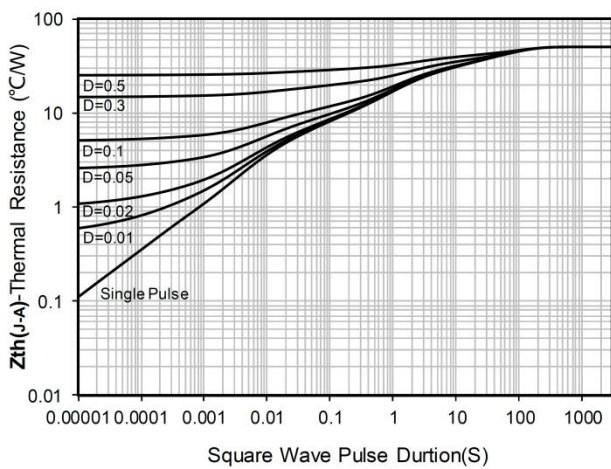
Forward characteristics of reverse diode



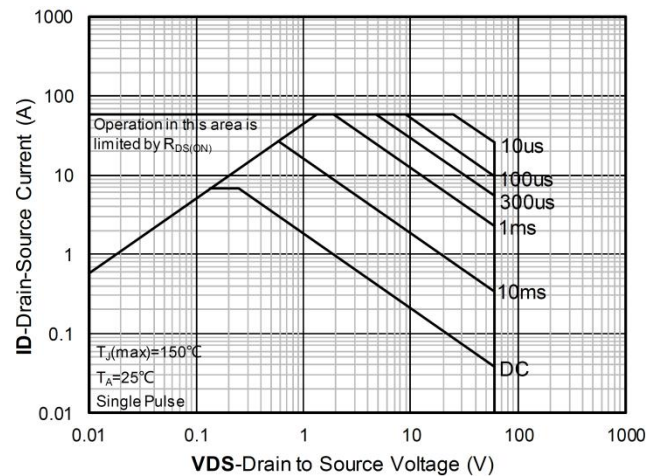
Normalized breakdown voltage



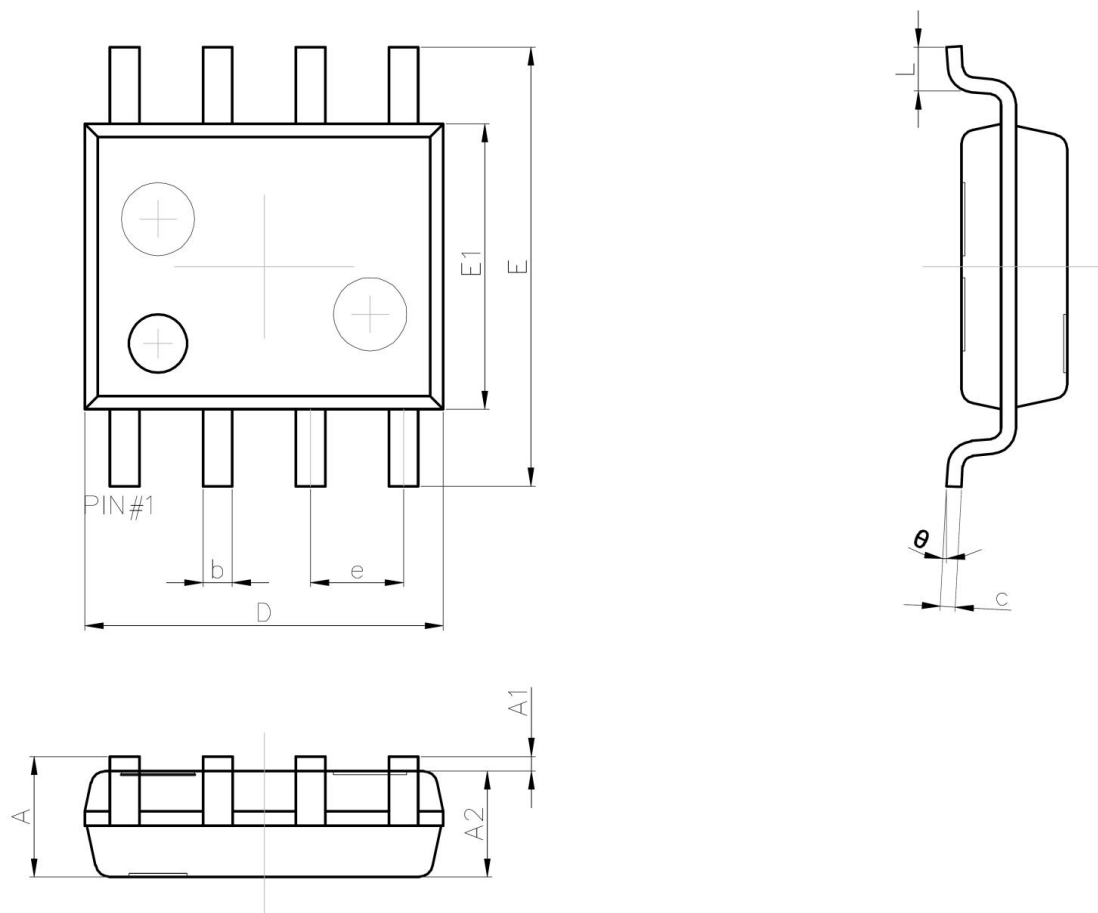
Normalized Threshold voltage



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°