Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	7.5mΩ@10V	68A
	10mΩ@4.5V	

合肥矽普半导体
Siliup Semiconductor Technology Co.Ltd
技术 品质 服务
www.siliup.com

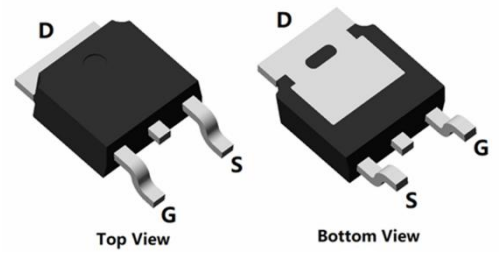
Feature

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

Applications

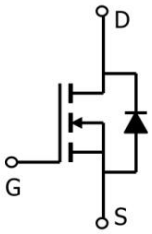
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

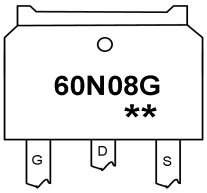


TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



60N08G : **Product code**
****** : **Week code**

Order Information

Device	Package	Unit/Tape
SP60N08GTH	TO-252	2500

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

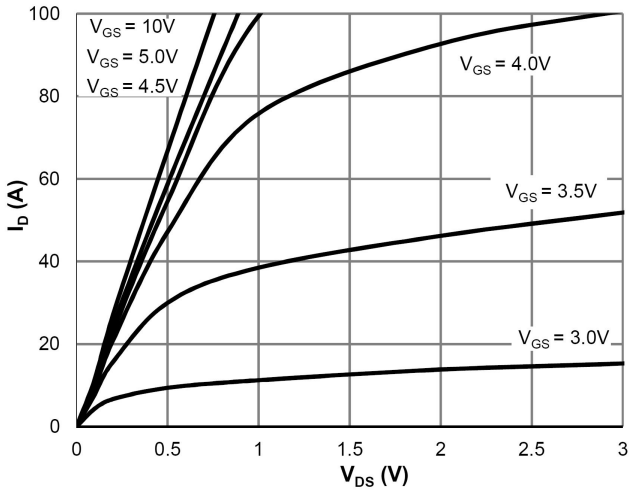
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (Tc=25°C)	I_D	68	A
Continuous Drain Current (Tc=100°C)	I_D	45	A
Pulse Drain Current Tested	I_{DM}	272	A
Single Pulse Avalanche Energy[1]	E_{AS}	182	mJ
Power Dissipation (Tc=25°C)	P_D	68	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	1.84	°C/W
Maximum Junction Temperature	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Electrical characteristics (Ta=25℃, unless otherwise noted)

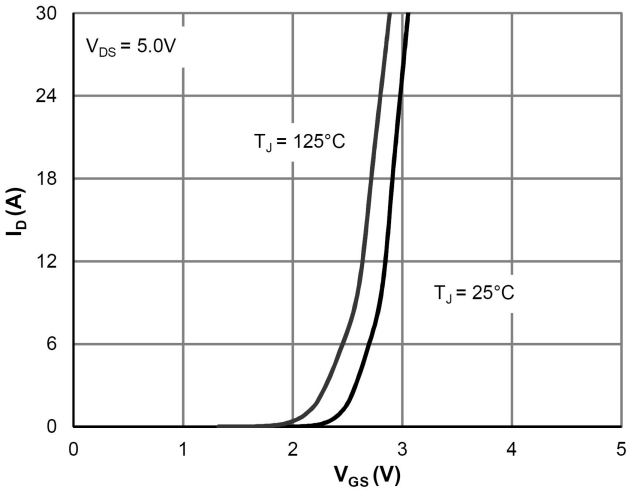
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V, ID=250mA	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	VDS=48V, VGS=0V	-	-	1	uA
Gate Leakage Current	I_{GSS}	VGS=±20V, VDS=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS, ID=250uA	1	1.5	2.5	V
Drain-Source On-state 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}	VGS=0V, VDS=30V,F=1MHz	-	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	$t_{d(on)}$	VDD=30V, ID=20A, VGS=10V, R_G=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 , IS=1A , TJ=25℃	-	-	1.2	V
Maximum Body-Diode Continuous Current	I_S		-	-	68	A
Reverse Recovery Time	Trr	I_S=30 A,di/dt=100 A/μs, T_J=25℃	-	36	-	nS
Reverse Recovery Charge	Qrr		-	23	-	nC

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

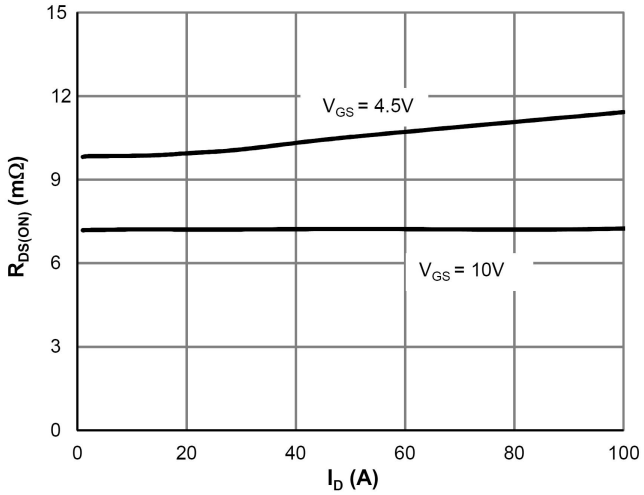
Typical Characteristics



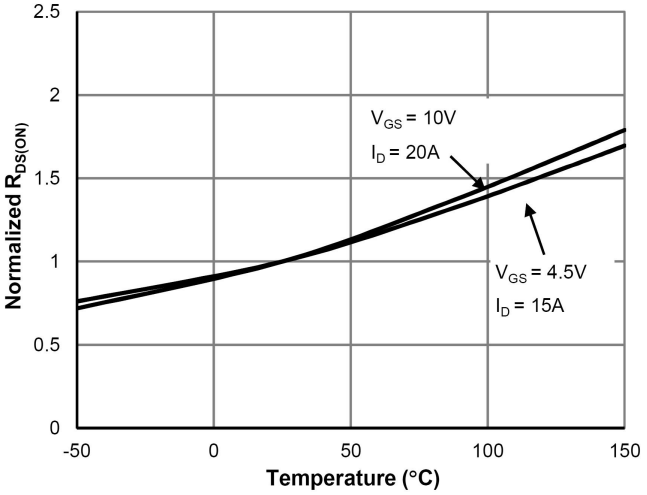
Saturation Characteristics



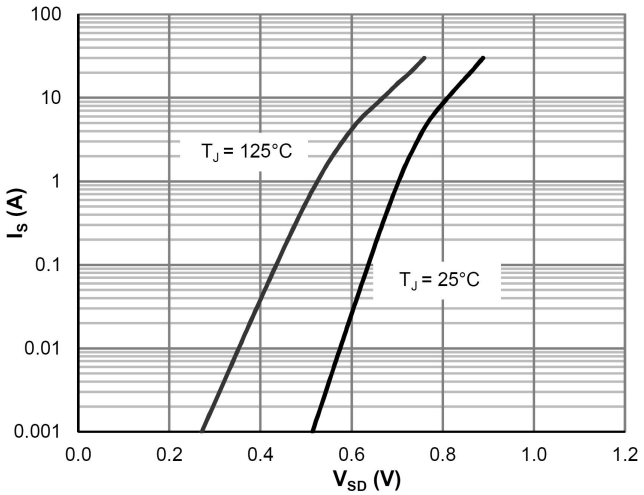
Transfer Characteristics



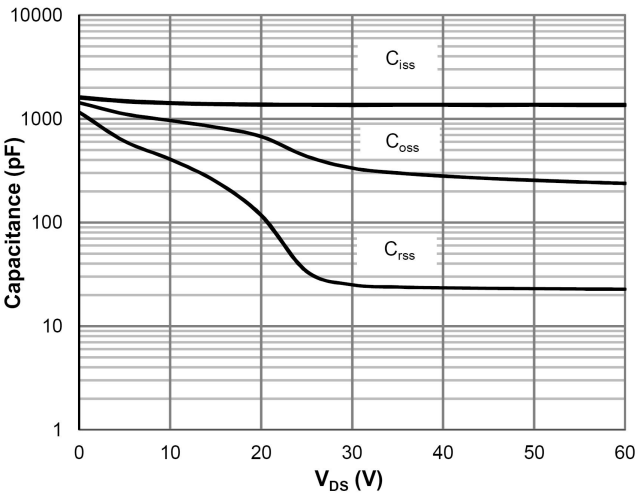
$R_{DS(ON)}$ vs. Drain Current



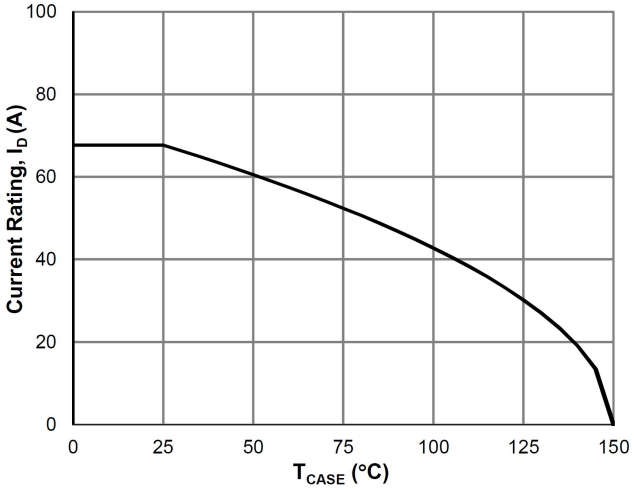
$R_{DS(ON)}$ vs. Junction Temperature



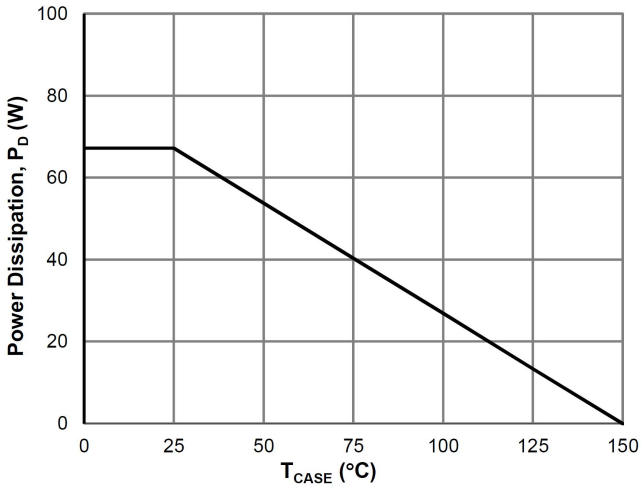
Body-Diode Characteristics



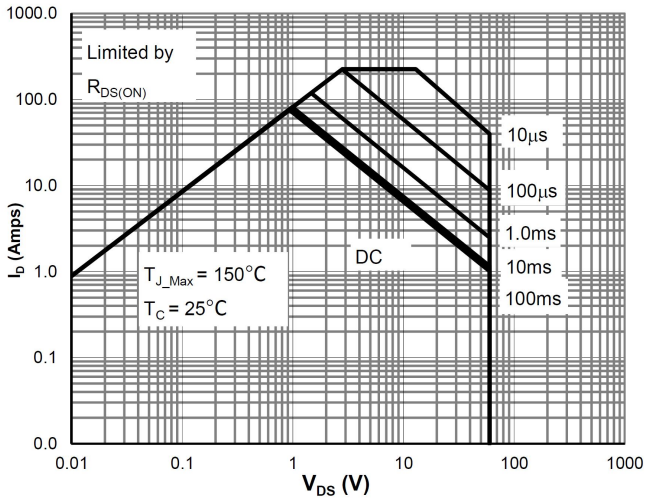
Capacitance Characteristics



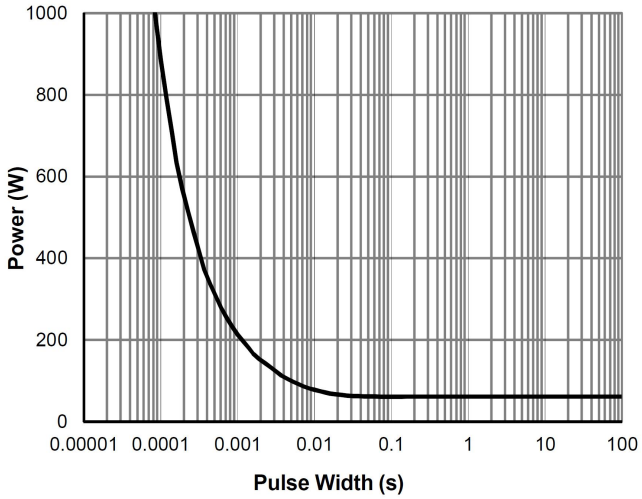
Current De-rating



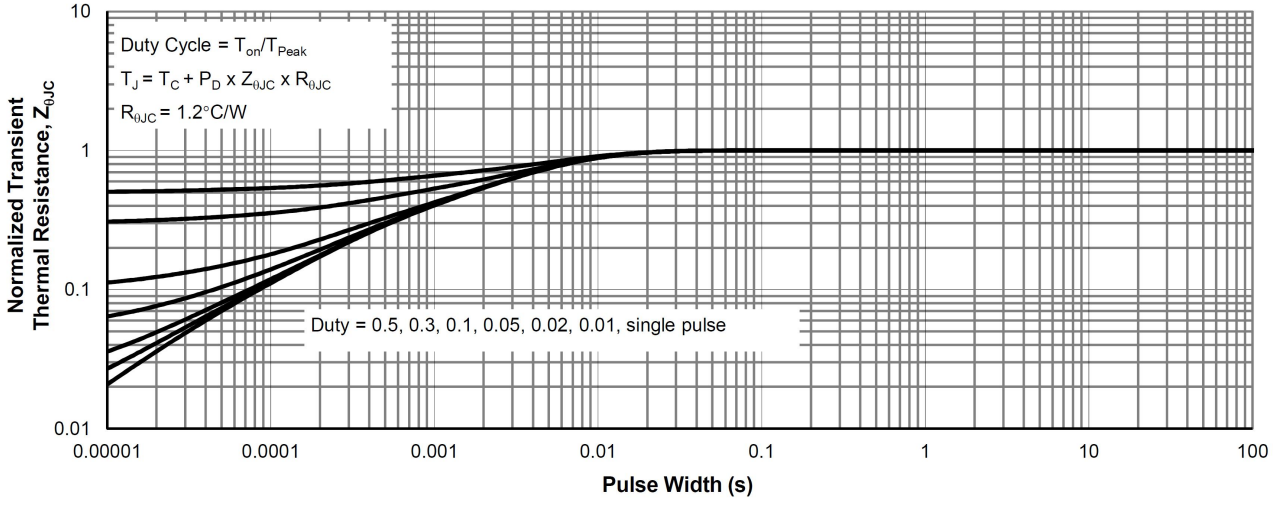
Power De-rating



Maximum Safe Operating Area

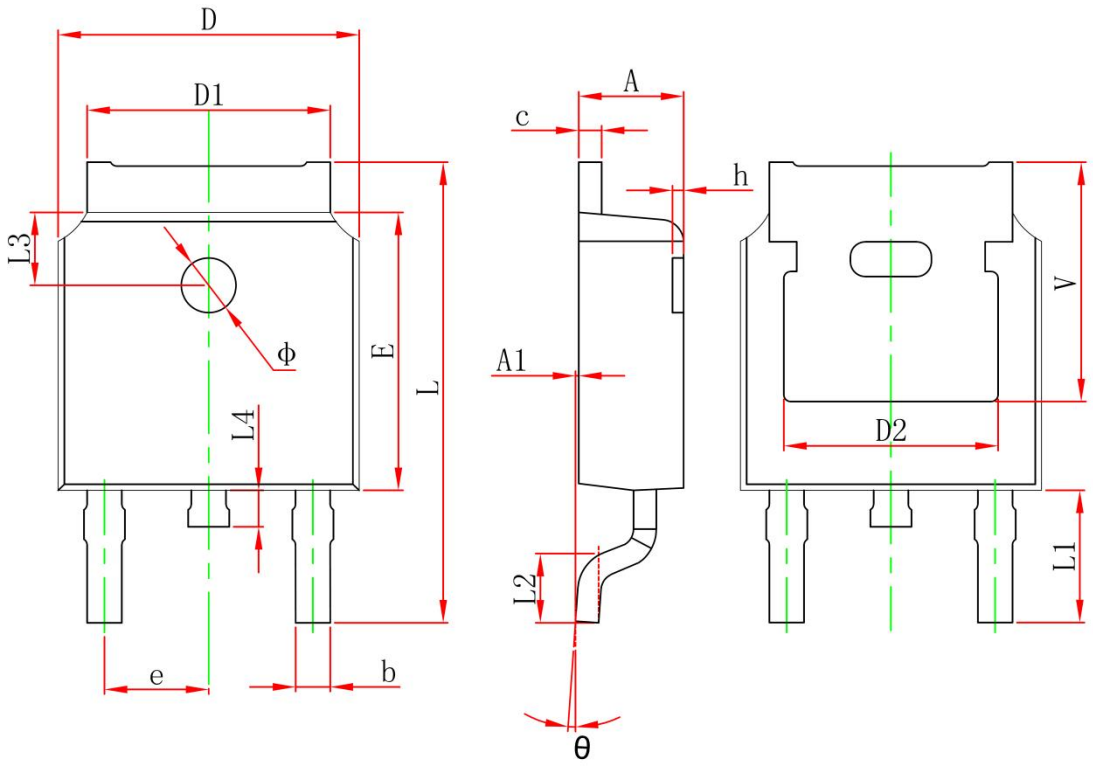


Single Pulse Power Rating, Junction-to-Case



Normalized Maximum Transient Thermal Impedance

TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	