SSC8L60GN6

N-Channel Enhanced MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
60V	±20V	3.4mR@10V	100A
		4.7mR@4V5	

➢ Description

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent RDSON with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit. 100% UIS + DVDS Tested.

➢ Applications

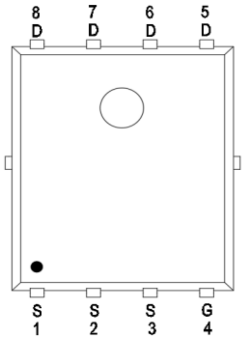
- DC/DC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification

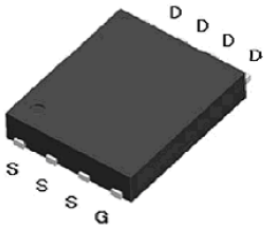
➢ Ordering Information

Device	Package	Shipping
SSC8L60GN6	PDFN5X6	5000/Reel

➢ Pin configuration

Top view





PDFN5X6

Marking

(XX: product year / YY: product week)

➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-to-Source Voltage		60	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [d]	T_C=25℃	100	A
		T_C=100℃	72	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	42	A
		T_A=70℃	30	
I_{DM}	Pulsed Drain Current [b]		250	A
P_D	Power Dissipation [c]	T_C=25℃	62.5	W
		T_C=100℃	25	
P_{DSM}	Power Dissipation [a]	T_A=25℃	5.95	W
		T_A=70℃	3.8	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		23.5	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		138	mJ
T_J	Operation junction temperature		-55~150	℃
T_{STG}	Storage temperature range		-55~150	

➢ Thermal Resistance Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	21	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	2	

Note:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper, in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The power dissipation is based on the t ≤10s thermal resistance rating.

b. Repetitive rating, pulse width limited by junction temperature.

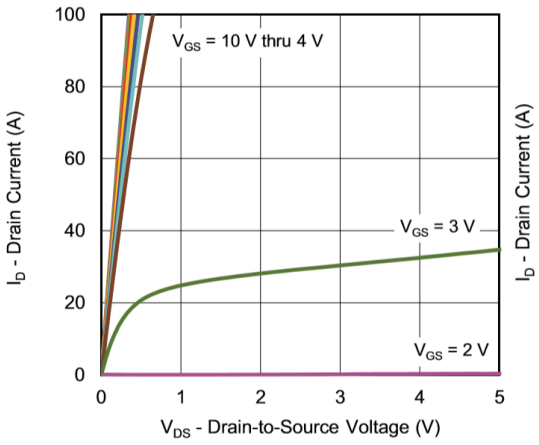
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

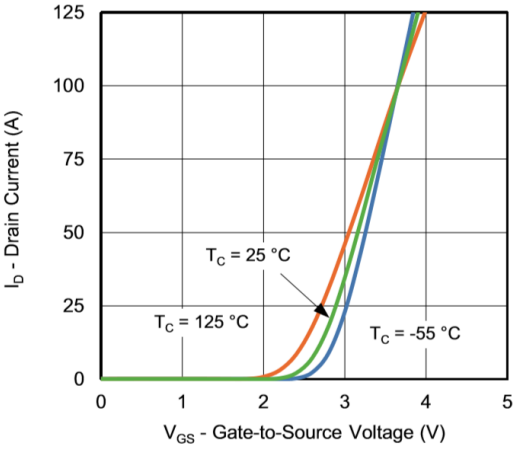
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V ,ID=250uA	60			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS ,ID=250uA	1	2	3	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=10V , ID=40A		3.4	4.4	mR
		VGS=4.5V , ID=20A		4.7	6	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=48V ,VGS=0V			1	uA
I_{GSS}	Gate-Source leak current	VGS=±20V ,VDS=0V			±100	nA
G_{FS}	Transconductance	VDS=5V ,ID=40A		42		S
V_{SD}	Forward Voltage	VGS=0V , IS=40A		0.87	1.3	V
Rg	Gate Resistance	VDS=0V, f=1MHz		1		R
Ciss	Input Capacitance	VDS=30V , VGS=0V, f=1MHz		4500		pF
Coss	Output Capacitance			1700		
Crss	Reverse Transfer Capacitance			80		
$T_{D(ON)}$	Turn-on delay time	VGS=10V, RL=2.5R VDS=30V , RG=3R		14		ns
Tr	Rise time			35		
$T_{D(OFF)}$	Turn-off delay time			70		
Tf	Fall time			45		
Q_G	Total Gate Charge	VGS=10V, VDS=30V ID=20A		76.2		nC
Q_{GS}	Gate Source Charge			13.4		
Q_{GD}	Gate Drain Charge			17.5		
Trr	Diode Recovery Time	IF=20A , di/dt=500A/us		24		ns
Qrr	Diode Recovery Charge	IF=20A , di/dt=500A/us		86		nC

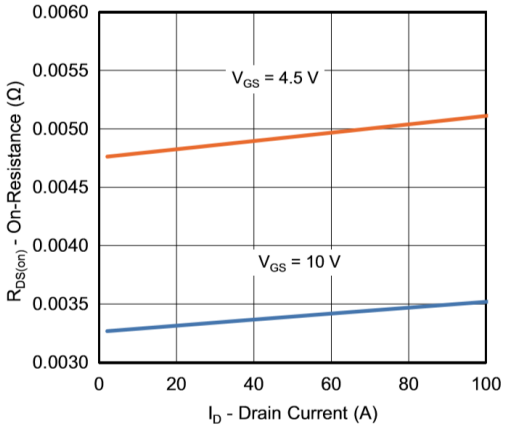
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



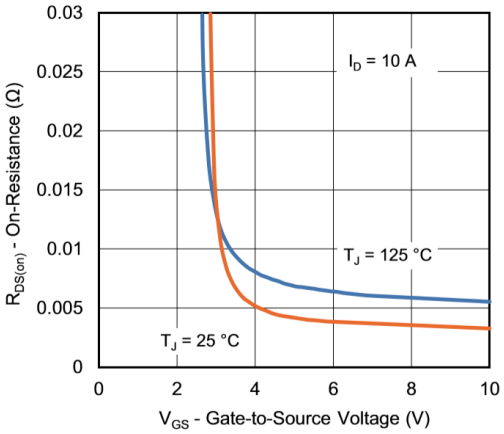
Output Characteristics



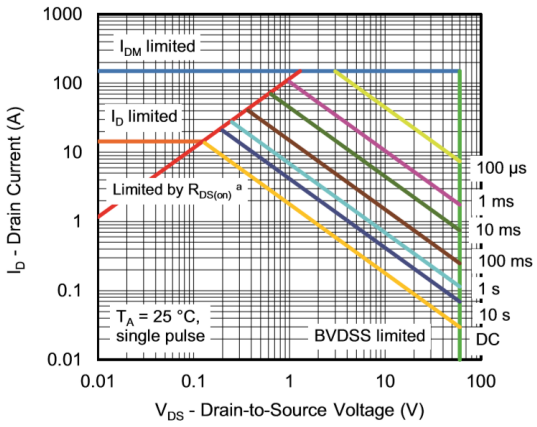
Transfer Characteristics



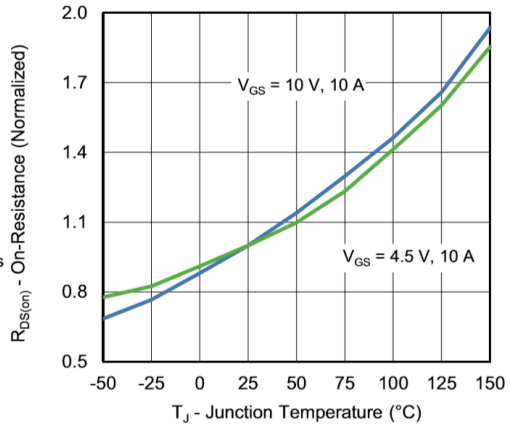
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

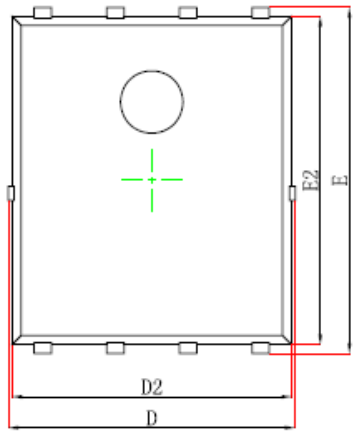


Safe Operating Area, Junction-to-Ambient

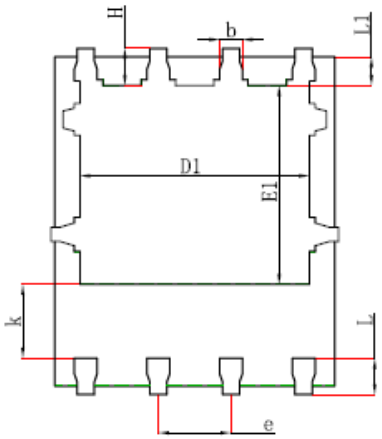


On-Resistance vs. Junction Temperature

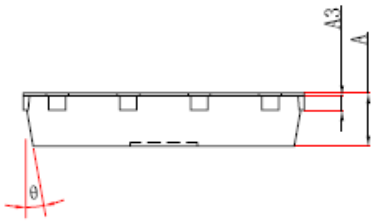
➢ Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Package：PDNF5X6-8L

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF		0.010REF	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP		0.050TYP	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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