SSC8L60PN6

N-Channel Enhanced MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
60V	±20V	1.9mR@10V	160A

➢ 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 Tested.

➢ Applications

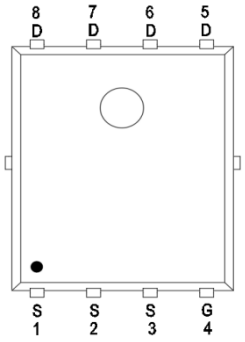
- DC/DC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification

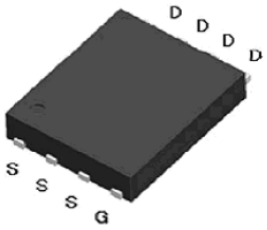
➢ Ordering Information

Device	Package	Shipping
SSC8L60PN6	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℃	160	A
		T_C=100℃	85	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	43	A
		T_A=70℃	31	
I_{DM}	Pulsed Drain Current [b]		640	A
P_D	Power Dissipation [c]	T_C=25℃	83	W
		T_C=100℃	33	
P_{DSM}	Power Dissipation [a]	T_A=25℃	5.9	W
		T_A=70℃	3.8	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		50	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		625	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	1.5	

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.

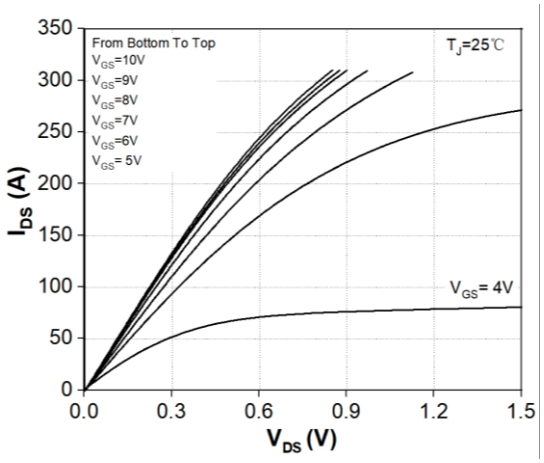
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

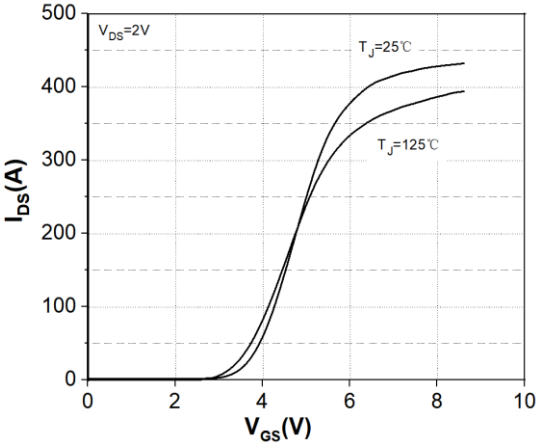
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

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=30A		1.9	2.6	mR
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=20A		42		S
V_{SD}	Forward Voltage	VGS=0V , IS=20A		0.8	1.3	V
Rg	Gate Resistance	VDS=0V, f=1MHz		1		R
Ciss	Input Capacitance	VDS=30V , VGS=0V, f=1MHz		5029		pF
Coss	Output Capacitance			825		
Crss	Reverse Transfer Capacitance			56		
$T_{D(ON)}$	Turn-on delay time	VGS=10V, RL=2.5R VDS=30V , RG=3R		19		ns
Tr	Rise time			31		
$T_{D(OFF)}$	Turn-off delay time			63		
Tf	Fall time			23		
Q_G	Total Gate Charge	VGS=10V, VDS=30V ID=20A		85		nC
Q_{GS}	Gate Source Charge			19		
Q_{GD}	Gate Drain Charge			15		
Trr	Diode Recovery Time	IF=20A , di/dt=500A/us		34		ns
Qrr	Diode Recovery Charge	IF=20A , di/dt=500A/us		70		nC

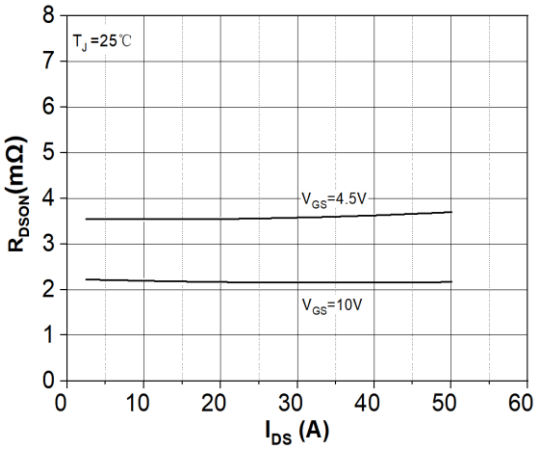
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



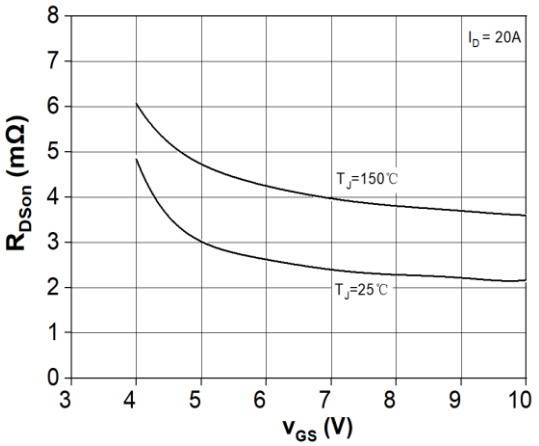
Output Characteristics@Tj= 25℃



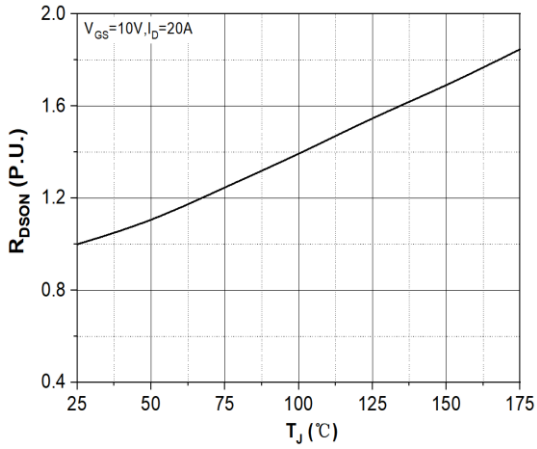
Transfer Characteristics@Tj= 25/125℃



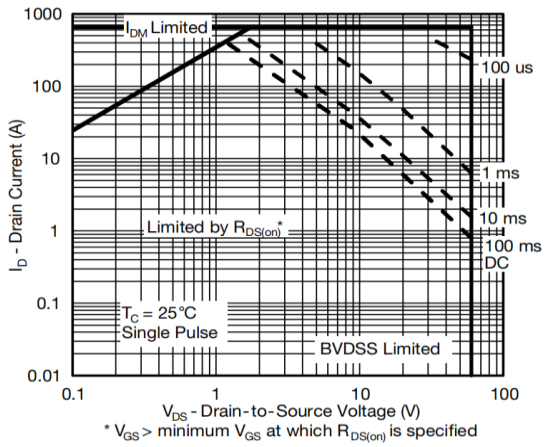
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage

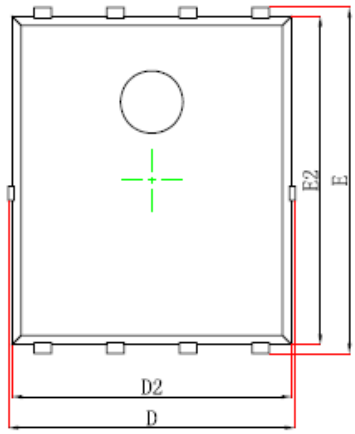


On-Resistance vs. Junction temperature

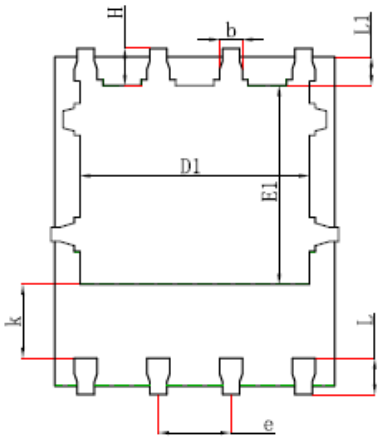


Safe Operating Area

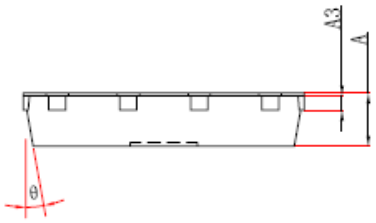
➢ Package Information



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°

DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.