



SSC8LA8GN6

N-Channel Enhanced MOSFET

➤ Features

VDS	VGS	RDSON Typ.	ID
120V	±20V	6mΩ@10V	90A

➤ 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.

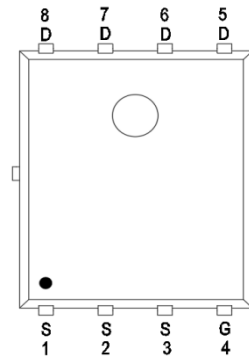
➤ Applications

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

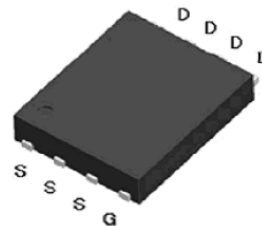
➤ Ordering Information

Device	Package	Shipping
SSC8LA8GN6	PDFN5X6-8L	5000/Reel

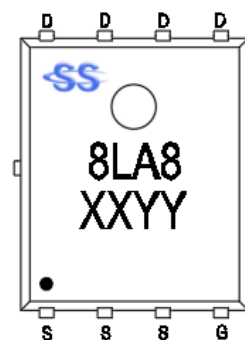
➤ Pin configuration



Top View



PDFN5X6-8L



Marking

(XX: product year / YY: product week)

**➤ Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)**

Symbol	Parameter	Ratings	Unit	
V_{DSS}	Drain-to-Source Voltage	120	V	
V_{GSS}	Gate-to-Source Voltage	± 20	V	
I_D	Continuous Drain Current ^d	$T_C=25^{\circ}\text{C}$	91	A
		$T_C=100^{\circ}\text{C}$	45	
I_{DSM}	Continuous Drain Current ^a	$T_A=25^{\circ}\text{C}$	12	A
		$T_A=70^{\circ}\text{C}$	8	
I_{DM}	Pulsed Drain Current ^b	360	A	
P_D	Power Dissipation ^c	$T_C=25^{\circ}\text{C}$	113	W
		$T_C=100^{\circ}\text{C}$	45	
P_{DSM}	Power Dissipation ^a	$T_A=25^{\circ}\text{C}$	2	W
		$T_A=70^{\circ}\text{C}$	1.28	
I_{AS}	Avalanche Current ^b $L=0.5\text{mH}$ Single Pulse	45	A	
E_{AS}	Avalanche Energy ^b $L=0.5\text{mH}$ Single Pulse	480	mJ	
T_J	Operation junction temperature	-55~150	$^{\circ}\text{C}$	
T_{STG}	Storage temperature range	-55~150		

➤ Thermal Resistance Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a	62.5	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	1.1	

Note:

- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user is specific board design. The power dissipation is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on $T_{J(\text{MAX})}=150^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.
- The maximum current rating is package limited.

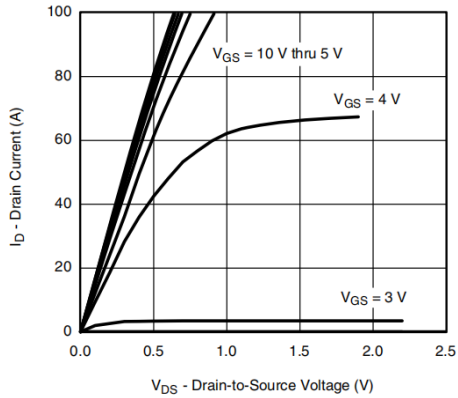


➤ **Electronics Characteristics (T_A=25°C unless otherwise noted)**

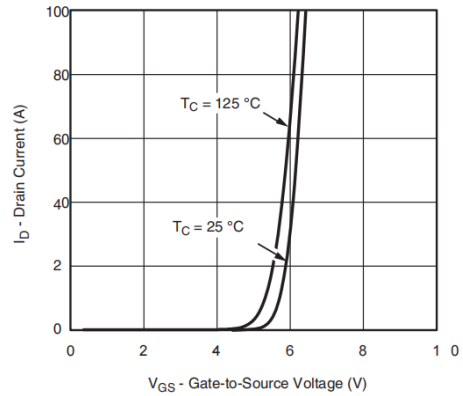
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	120			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	2.8	4	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =20A		6	8.5	mΩ
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =80V, V _{GS} =0V			1	uA
I _{GSS}	Gate-Source leak current	V _{GS} =±20V, V _{DS} =0V			±100	nA
G _{FS}	Transconductance	V _{DS} =5V, I _D =20A		60		S
V _{SD}	Forward Voltage	V _{GS} =0V, I _S =20A		0.8	1.3	V
R _g	Gate Resistance	V _{DS} =0V, f=1MHz		2.1		R
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz		3700		pF
C _{oss}	Output Capacitance			355		
C _{rss}	Reverse Transfer Capacitance			17		
T _{D(ON)}	Turn-on delay time	V _{GS} =10V, R _L =2.5R V _{DS} =50V, R _G =3R		22		ns
T _r	Rise time			18		
T _{D(OFF)}	Turn-off delay time			49		
T _f	Fall time			19		
Q _G	Total Gate Charge	V _{GS} =10V, V _{DS} =50V I _D =20A		56		nC
Q _{GS}	Gate Source Charge			12		
Q _{GD}	Gate Drain Charge			14		
T _{rr}	Diode Recovery Time	I _F =20A, di/dt=200A/us		66		ns
Q _{rr}	Diode Recovery Charge	I _F =20A, di/dt=200A/us		102		nC



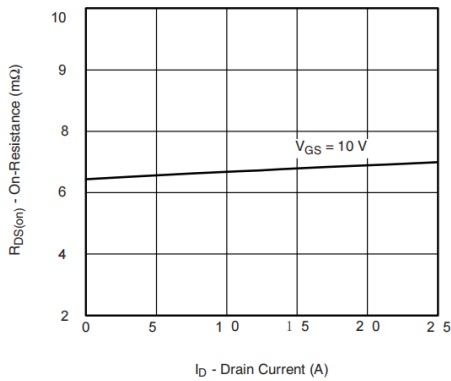
➤ Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



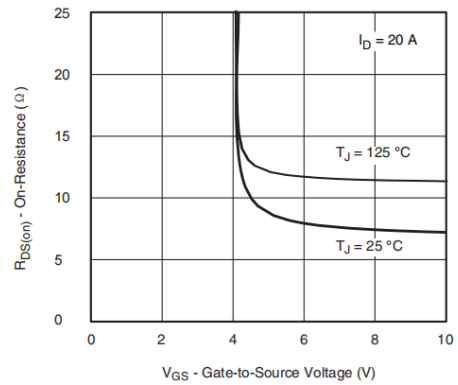
Output Characteristics



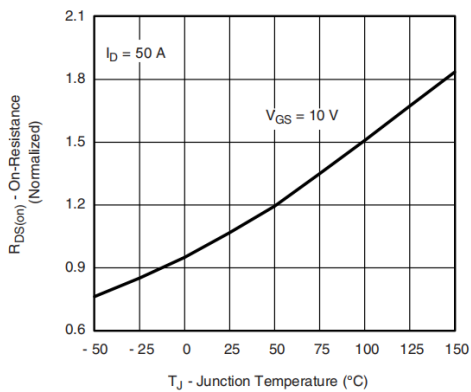
Transfer Characteristics



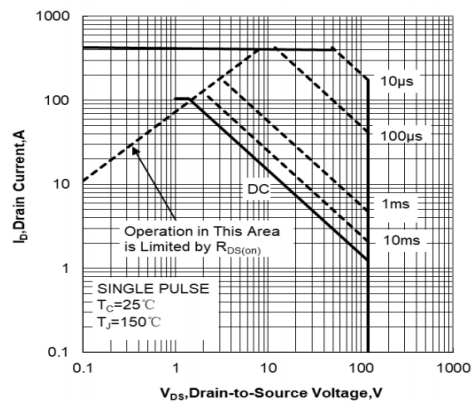
On-Resistance vs. Drain Current



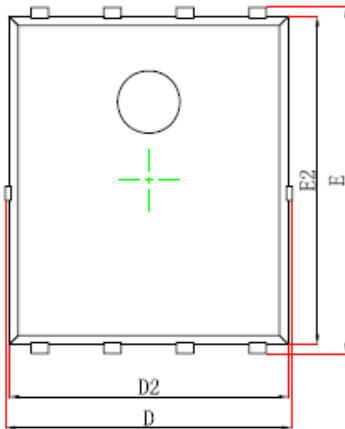
On-Resistance vs. Gate-to-Source Voltage



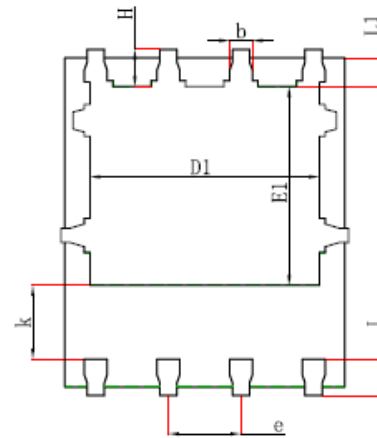
On-Resistance vs. Junction temperature



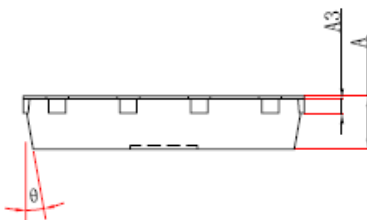
Safe Operating Area

➤ Package Information


Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

PDFN5X6-8L

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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