



SSC8039GN6

P-Channel Enhanced MOSFET

➤ Features

VDS	VGS	RDSON Typ.	ID
-30V	±20V	7mΩ@-10V	-64A
		8.5mΩ@-4V5	

➤ Description

The SSC8039GN6 is P-Channel enhancement MOSFET. Uses advanced trench 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.

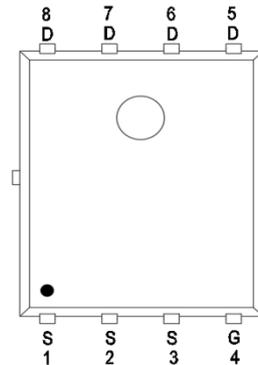
➤ Applications

- DC/DC conversion
- Power management in portable
- Load/Power Switching for portable device

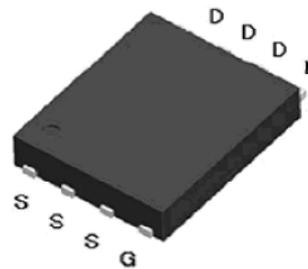
➤ Ordering Information

Device	Package	Shipping
SSC8039GN6	PDFN5X6-8L	5000/Reel

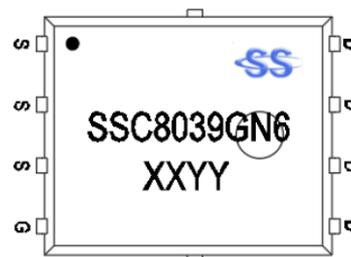
➤ Pin configuration



Top View



PDFN5X6-8L



Marking

(XXYY: Traceability Code)

**➤ Absolute Maximum Ratings (T_A=25°C unless otherwise noted)**

Symbol	Parameter	Ratings	Unit	
V _{DSS}	Drain-to-Source Voltage	30	V	
V _{GSS}	Gate-to-Source Voltage	±20	V	
I _D	Continuous Drain Current	T _C =25°C	-64	A
		T _C =100°C	-34	
I _{DSM}	Continuous Drain Current ^a	T _A =25°C	-18.5	A
		T _A =70°C	-13	
I _{DM}	Pulsed Drain Current ^b	-120	A	
P _D	Power Dissipation ^c	T _C =25°C	29	W
		T _C =100°C	11.6	
P _{DSM}	Power Dissipation ^a	T _A =25°C	2.4	W
		T _A =70°C	1.5	
I _{AS}	Avalanche Current ^b L=0.5mH Single Pulse	-22.5	A	
E _{AS}	Avalanche Energy ^b L=0.5mH Single Pulse	126	mJ	
T _J	Operation junction temperature	-55~150	°C	
T _{STG}	Storage temperature range	-55~150		
R _{θJA}	Junction-to-Ambient Thermal Resistance ^a	52	°C/W	
R _{θJC}	Junction-to-Case Thermal Resistance	4.3		

Note:

- The value of R_{θJA} is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with T_A=25°C. The value in any given application depends on the user is specific board design. The current rating is based on the t≤10s thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- 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.

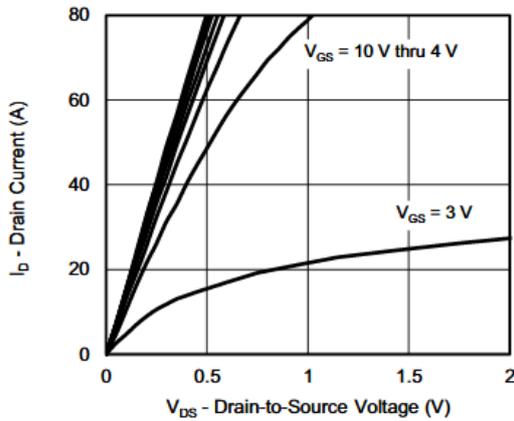


➤ **Electronics Characteristics (T_A=25°C unless otherwise noted)**

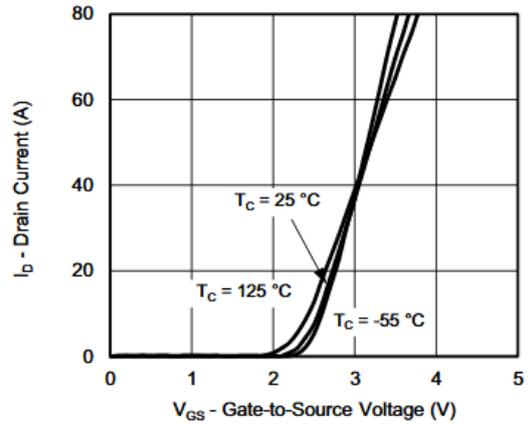
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1	-1.2	-1.8	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-20A		7	8.5	mΩ
		V _{GS} =-4.5V, I _D =-12A		8.5	12	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V			-1	μA
I _{GSS}	Gate-Source leak current	V _{GS} =±20V, V _{DS} =0V			±100	nA
G _{FS}	Transconductance	V _{DS} =-10V, I _D =-5A		38		S
V _{SD}	Forward Voltage	V _{GS} =0V, I _S =-2A		-0.7	-1.3	V
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz		4900		pF
C _{oss}	Output Capacitance			440		
C _{rss}	Reverse Transfer Capacitance			330		
T _{D(ON)}	Turn-on delay time	V _{GS} =-10V, R _L =15Ω V _{DS} =-15V, R _G =6Ω, I _D =-2A		44		ns
T _r	Rise time			31		
T _{D(OFF)}	Turn-off delay time			188		
T _f	Fall time			111		
Q _G	Total Gate Charge	V _{GS} =-10V, V _{DS} =-15V I _D =-20A		66		nC
Q _{GS}	Gate to Source Charge			9		
Q _{GD}	Gate to Drain Charge			15		



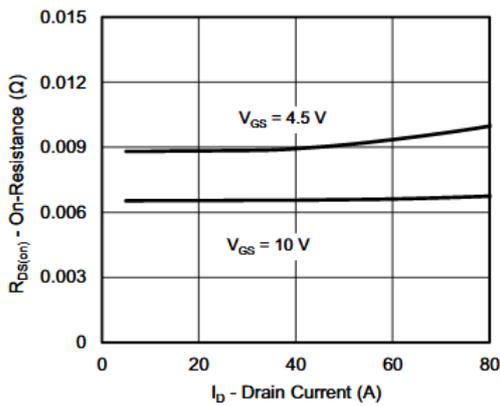
➤ Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



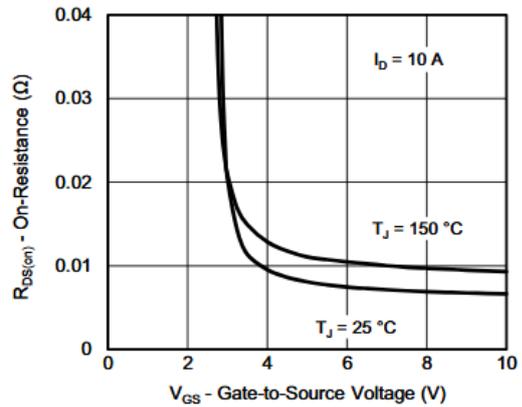
Output Characteristics



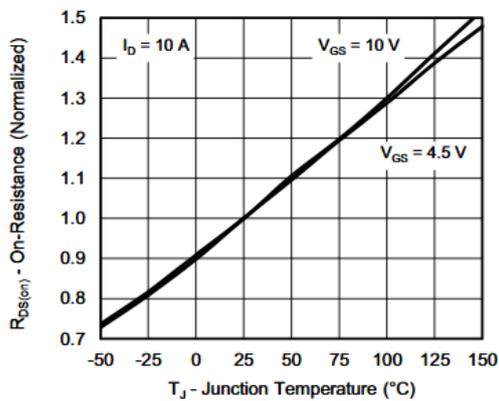
Transfer Characteristics



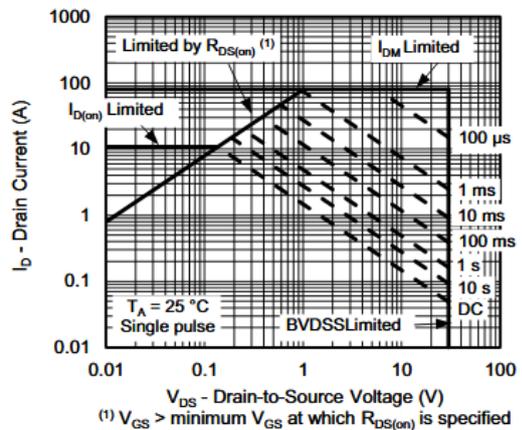
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



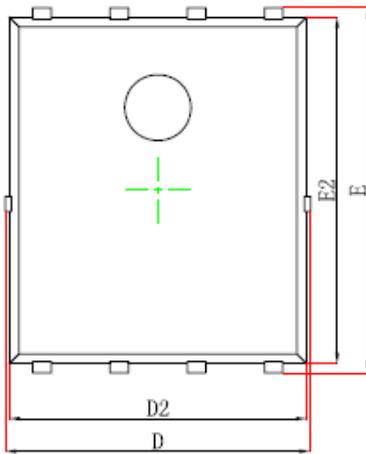
On-Resistance vs. Junction Temperature



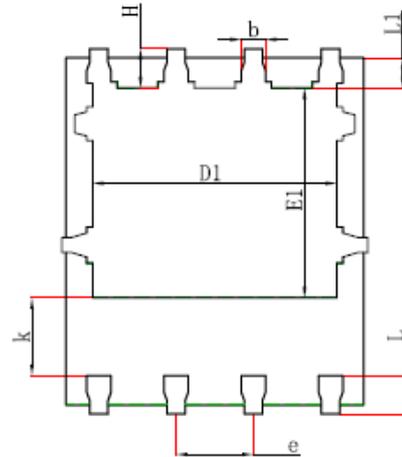
Safe Operating Area, Junction-to-Ambient



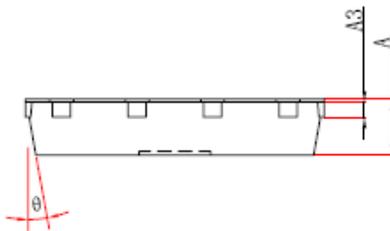
➤ Package Information



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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