



SSC8039GN6

P-Channel Enhanced MOSFET

➤ **Features**

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

➤ **Description**

This device 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.

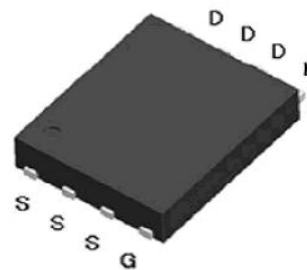
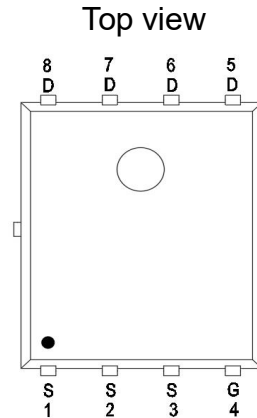
➤ **Applications**

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

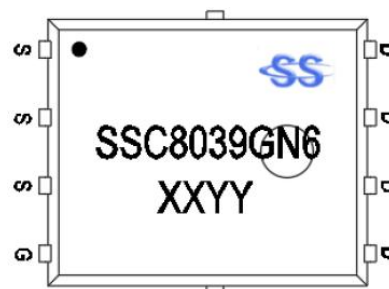
➤ **Ordering Information**

Device	Package	Shipping
SSC8039GN6	PDFN5X6	5000/Reel

➤ **Pin configuration**



PDFN5X6



Marking

**➤ Absolute Maximum Ratings**($T_A=25^\circ\text{C}$ 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	$T_C=25^\circ\text{C}$	-64	A
		$T_C=100^\circ\text{C}$	-34	
I_{DSM}	Continuous Drain Current ^a	$T_A=25^\circ\text{C}$	-18.5	A
		$T_A=70^\circ\text{C}$	-13	
I_{DM}	Pulsed Drain Current ^b	-120	A	
P_D	Power Dissipation ^c	$T_C=25^\circ\text{C}$	29	W
		$T_C=100^\circ\text{C}$	11.6	
P_{DSM}	Power Dissipation ^a	$T_A=25^\circ\text{C}$	2.4	W
		$T_A=70^\circ\text{C}$	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	$^\circ\text{C}$	
T_{STG}	Storage temperature range	-55~150		
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a	52	$^\circ\text{C/W}$	
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	4.3		

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 current rating 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 $T_{J(MAX)}=150^\circ\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

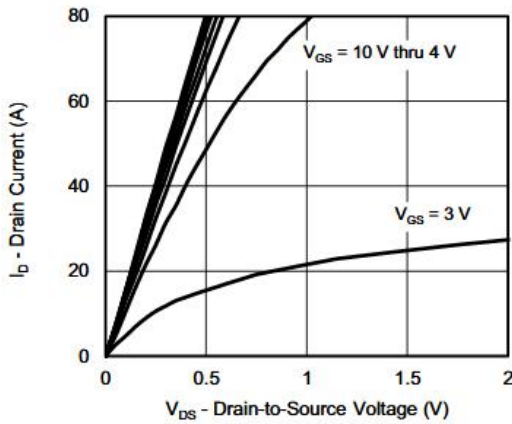


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

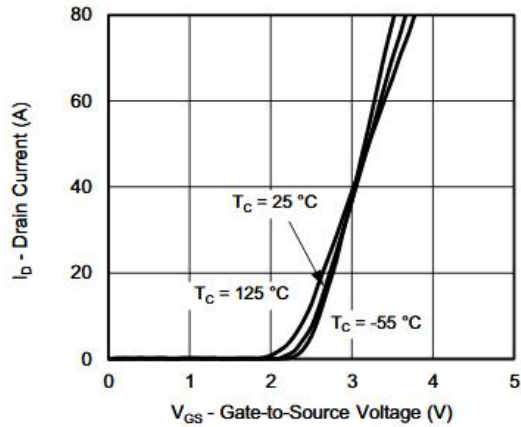
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.2	-1.8	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-20A$		7	8.5	mR
		$V_{GS}=-4.5V, I_D=-12A$		8.5	10	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 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	$V_{GS}=-10V, R_L=15R$ $V_{DS}=-15V, R_G=6R, I_D=-2A$		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		



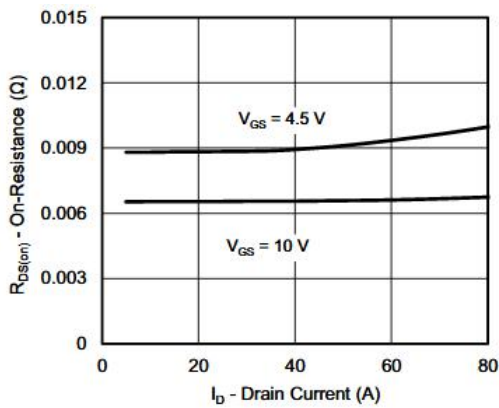
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



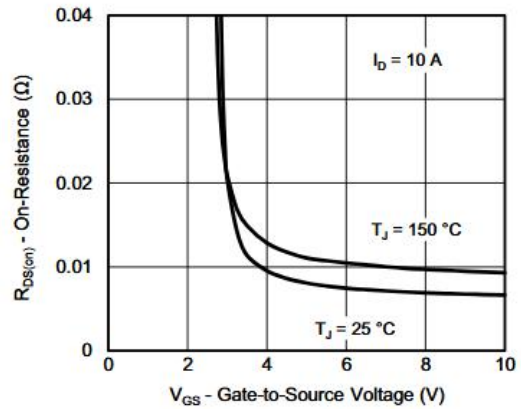
Output Characteristics



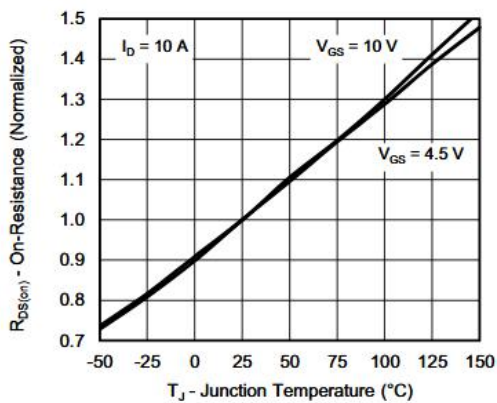
Transfer Characteristics



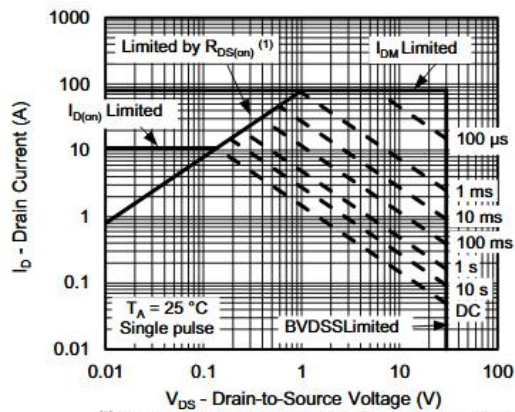
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



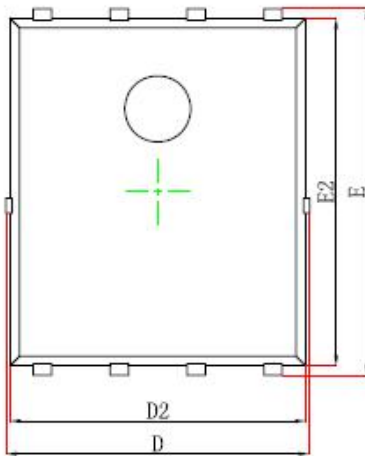
On-Resistance vs. Junction Temperature



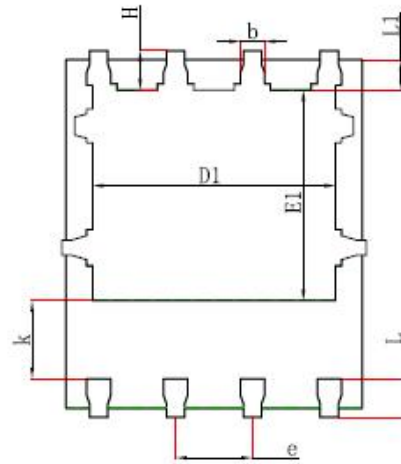
Safe Operating Area, Junction-to-Ambient



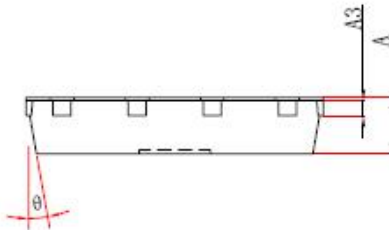
➤ Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Package: DNF5X6-8L

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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