SSC8L660GN6

Dual Asymmetric N-Channel Enhancement Mode MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
60V	±20V	9.5mΩ@10V	60A
		12.5mΩ@4V5	

➢ Description

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

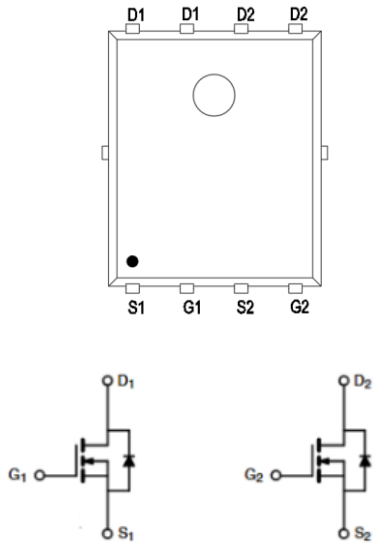
➢ Applications

- DCDC converters
- Wireless Charging
- Motor Drive Control
- Load Switch

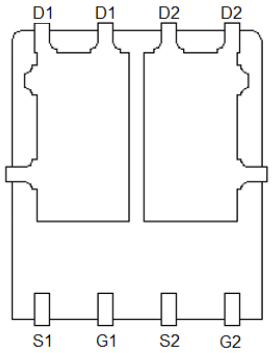
➢ Ordering Information

Device	Package	shipping
SSC8L660GN6	PDFN5x6	5000/Reel

➢ Pin configuration



Top view



Bottom View

Marking

(XX: year/YY: week)

➢ Absolute Maximum Ratings(TA=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℃	60	A
		T_C=100℃	30	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	16.5	A
		T_A=70℃	11.5	
I_{DM}	Pulsed Drain Current [b]		240	A
P_D	Power Dissipation [c]	T_C=25℃	56	W
		T_C=100℃	22	
P_{DSM}	Power Dissipation [a]	T_A=25℃	4.4	W
		T_A=70℃	2.8	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		18	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		81	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]	28	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	2.2	

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 current rating is based on the t≤ 10s thermal resistance rating.

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

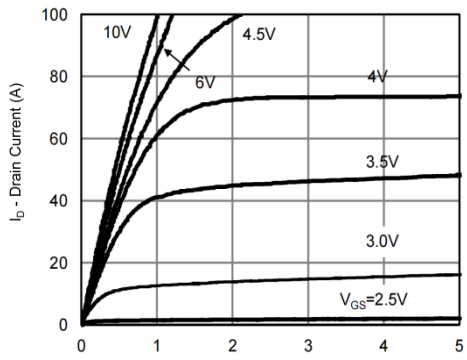
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

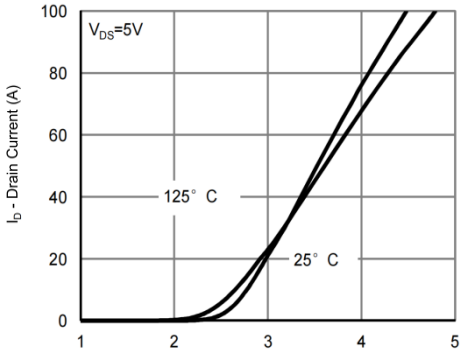
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

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	1.8	2.4	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=10V , ID=30A		9.5	11.5	mΩ
		VGS=4.5V , ID=20A		12.5	15.5	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=60V, VGS=0V			1	uA
I_{GSS}	Gate-Source leak current	VGS=±20V, VDS=0V			±100	nA
G_{FS}	Transconductance	VDS=5V, ID=20A		30		S
V_{SD}	Forward Voltage	VGS=0V, IS=20A		0.8	1.3	V
Rg	Gate Resistance	VDS=0V, f=1MHz		1.4		Ω
Ciss	Input Capacitance	VDS=30V, VGS=0V, f=1MHz		980		pF
Coss	Output Capacitance			392		
Crss	Reverse Capacitance			36		
$T_{D(ON)}$	Turn-on delay time	VGS=10V, RL=1.5Ω VDS=30V , RG=3Ω		4.9		ns
Tr	Rise time			3.9		
$T_{D(OFF)}$	Turn-off delay time			18		
Tf	Fall time			7.5		
Q_G	Total Gate Charge	VGS=10V, VDS=30V ID=20A		17		nC
Q_{GS}	Gate Source Charge			2.8		
Q_{GD}	Gate Drain Charge			3.7		
Trr	Diode Recovery Time	IF=20A , di/dt=500A/us		23		ns
Qrr	Diode Recovery Charge	IF=20A , di/dt=500A/us		53		nC

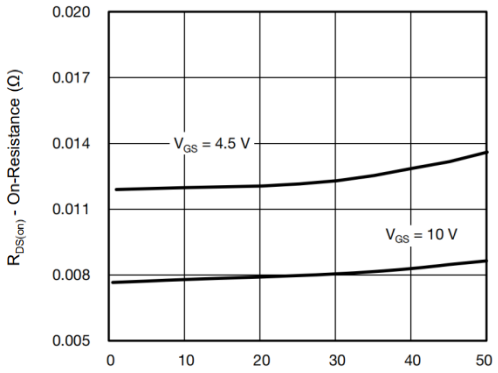
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



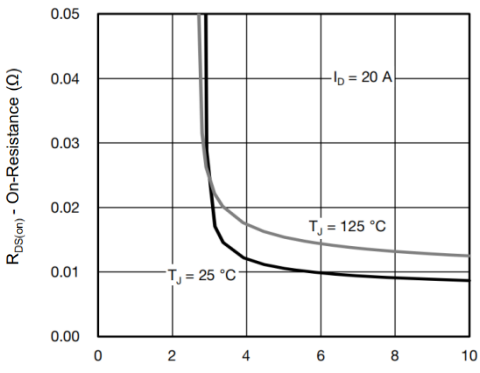
Output Characteristics



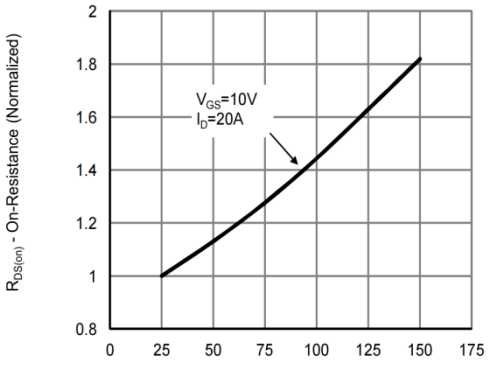
Transfer Characteristics



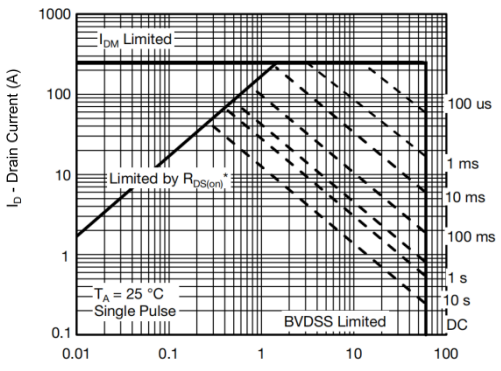
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



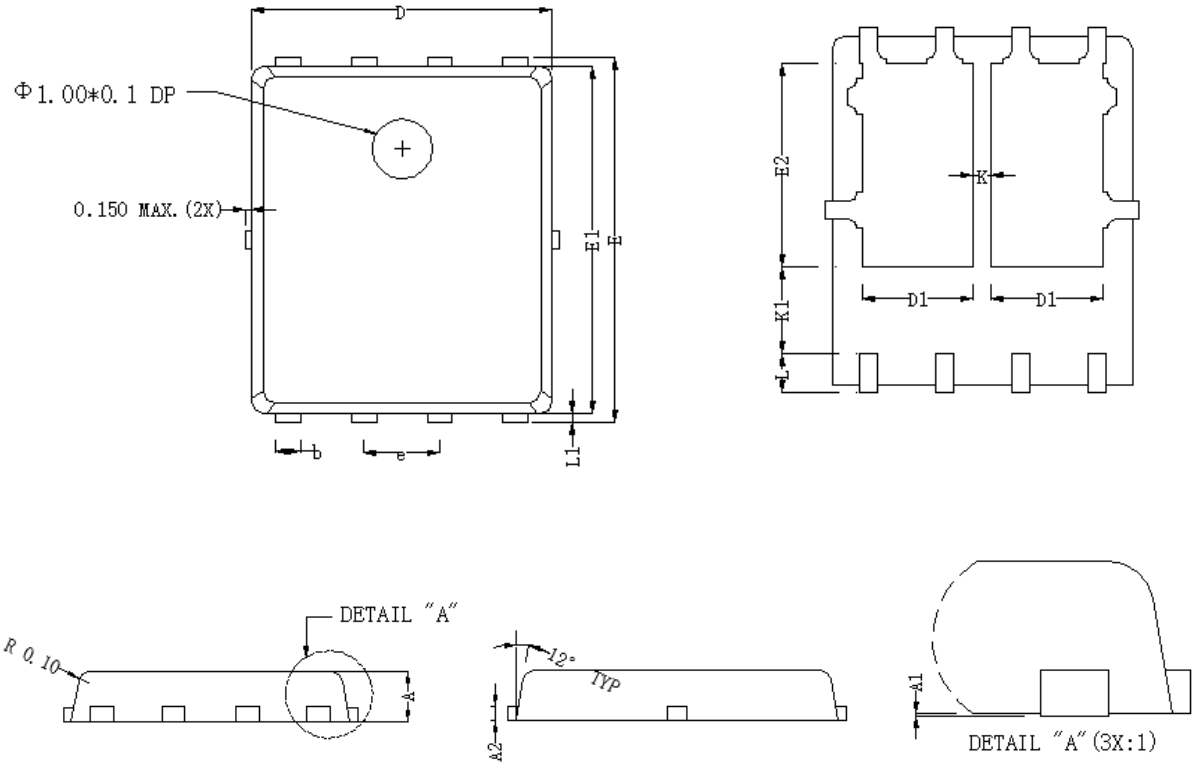
On-Resistance vs. Junction Temperature



Safe Operating Area, Junction-to-Ambient

➢ Package Information

Package：PDNF5X6-8L



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.90	1.00	1.10
A1	0.00	0.03	0.05
A2	0.254 REF		
b	0.25	0.30	0.35
D	4.80	4.90	5.00
D1	1.60	1.70	1.80
E	5.90	6.00	6.10
E1	5.65	5.75	5.85
E2	3.38	3.48	3.58
e	1.27 BSC		
K	0.55	0.60	0.65
K1	1.35 REF		
L	0.55	0.60	0.65
L1	0.10	0.13	0.16

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