SSC8L410GN4

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
40V	±20V	6mΩ@10V	47A
		7mΩ@4V5	

➢ Description

This device is N-Channel enhancement mode 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.

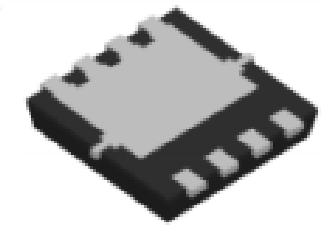
➢ Applications

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

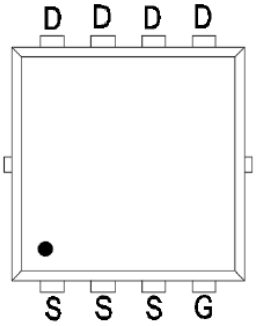
➢ Ordering Information

Device	Package	Shipping
SSC8L410GN4	PDFN3.3X3.3-8L	5000/Reel

➢ Pin configuration



PDFN3.3X3.3-8L (Bottom View)



Pin Configuration

Marking (Top View)

(YW: Internal Traceability Code)

➢ Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-to-Source Voltage		40	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [d]	T_C=25℃	47	A
		T_C=100℃	25	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	18	A
		T_A=70℃	13	
I_{DM}	Pulsed Drain Current [b]		188	A
P_D	Power Dissipation [c]	T_C=25℃	25	W
		T_C=100℃	10	
P_{DSM}	Power Dissipation [a]	T_A=25℃	3.6	W
		T_A=70℃	2.3	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		23	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		132	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]	105	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	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.

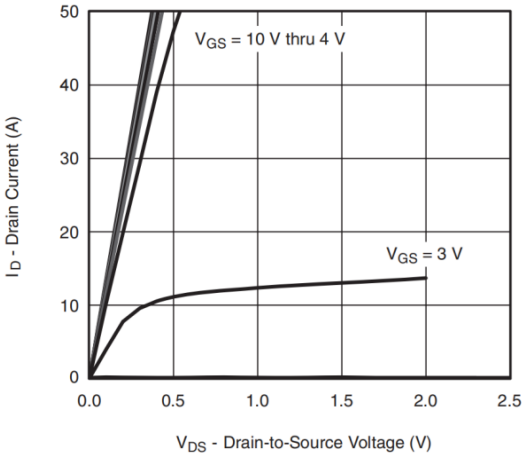
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

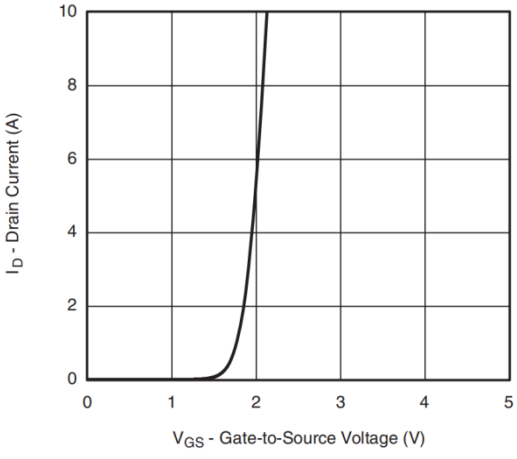
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	40			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	1	1.5	2	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 10A		6	8	mΩ
		V_{GS} = 4.5V, I_D = 6A		7	10	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 40V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±150	nA
Transconductance	G_{FS}	V_{DS} = 5V, I_D = 10A		16		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 5A		0.8	1.3	V
Gate Resistance	R_G	V_{DS} = 0V, f = 1MHz		1.3		Ω
Input Capacitance	C_{ISS}	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		1400		pF
Output Capacitance	C_{OSS}			305		
Reverse Transfer Capacitance	C_{RSS}			31		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 20V, I_D = 20A		27.3		nC
Gate to Source Charge	Q_{GS}			4		
Gate to Drain Charge	Q_{GD}			5.8		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 20V, R_L = 1Ω, R_G = 3Ω,		10		ns
Rise Time	T_r			4		
Turn-off Delay Time	$T_{D(OFF)}$			25		
Fall Time	T_f			5		
Diode Recovery Time	T_{rr}	I_F=20A, di/dt=500A/us		14		ns
Diode Recovery Charge	Q_{rr}	I_F=20A, di/dt=500A/us		25		nC

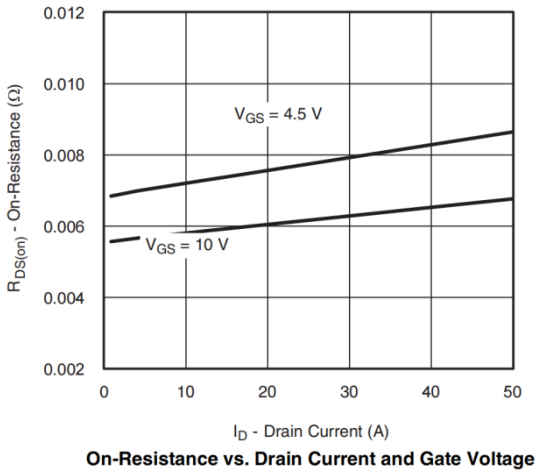
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



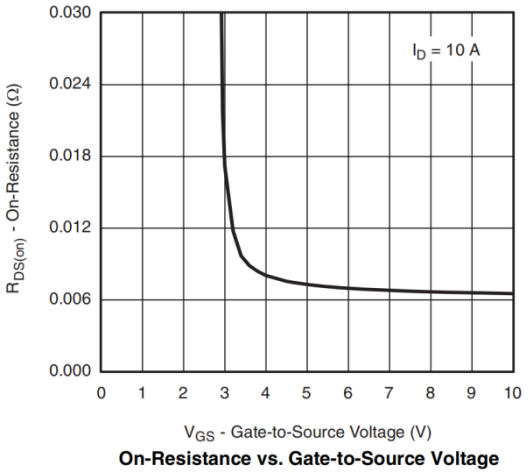
Output Characteristics



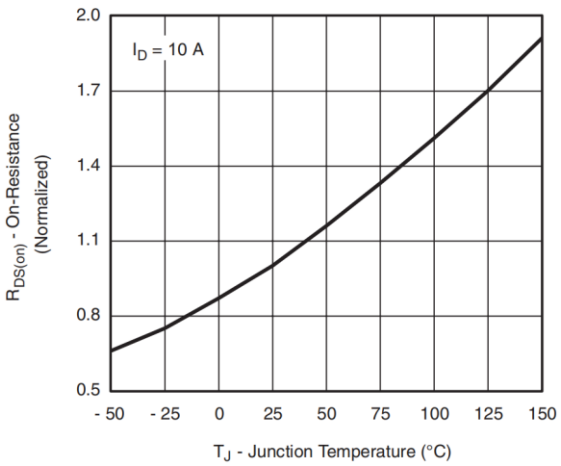
Transfer Characteristics



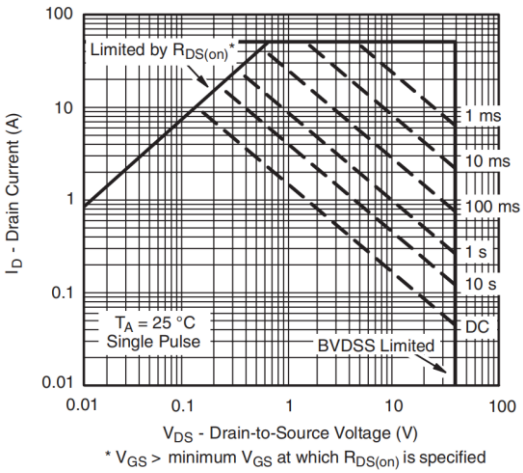
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

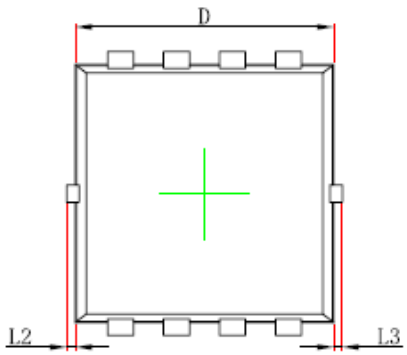


On-Resistance vs. Junction Temperature

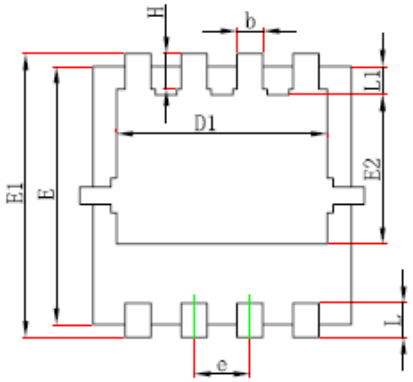


Safe Operating Area, Junction-to-Ambient

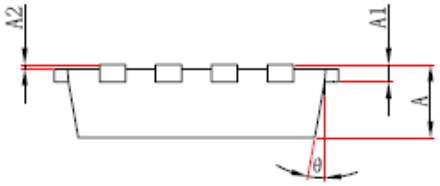
➢ Package Information



Top View
[顶视图]



Bottom View
[背视图]

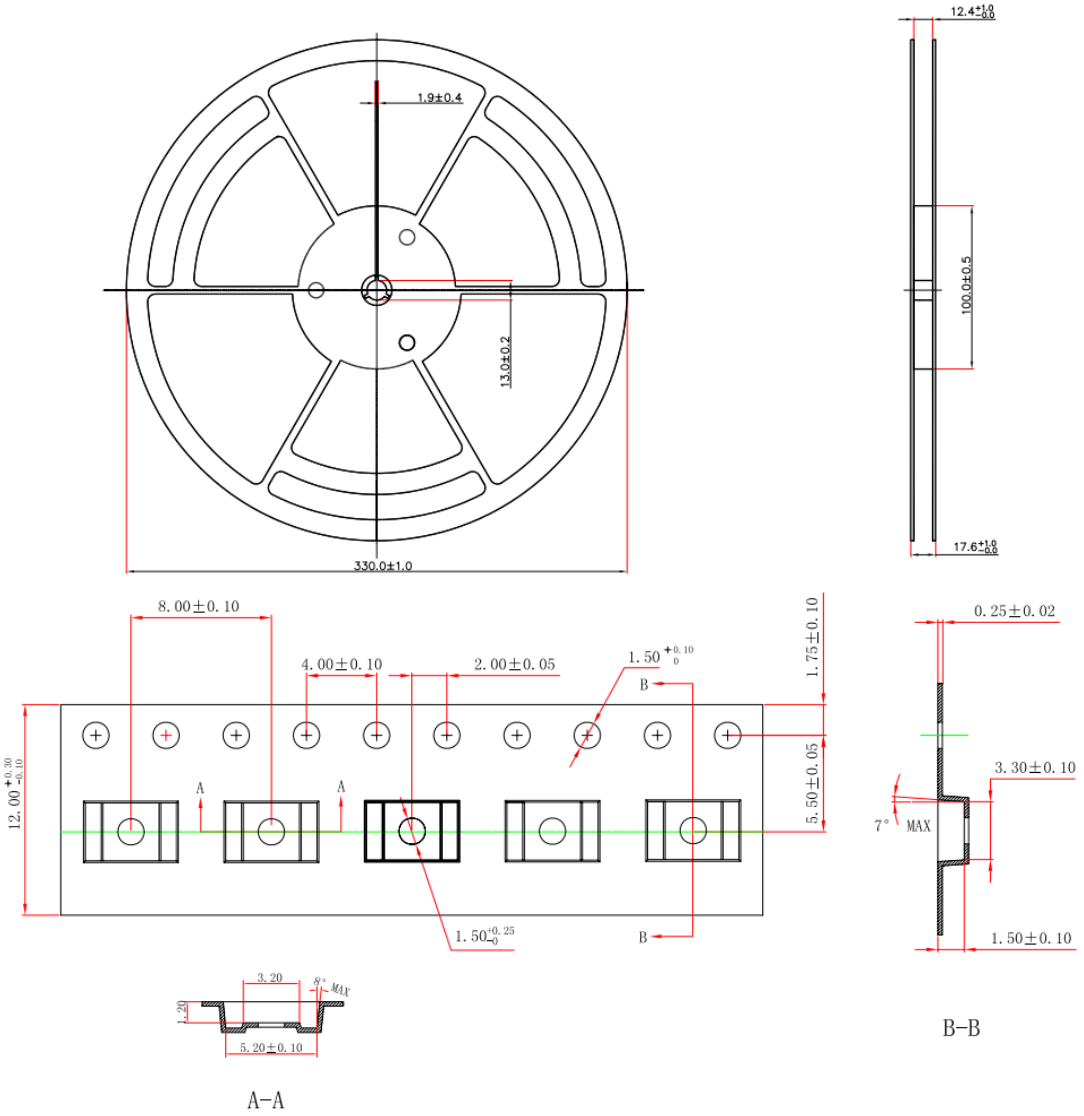


Side View
[侧视图]

Package：PDNF3.3X3.3-8L

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

➢ Tape and Reel



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