SSC8121GN1

P-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
-20V	±8V	150mΩ@-4V5	-1A
		190mΩ@-2V5	
		255mΩ@-1V8	

➢ Description

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package.

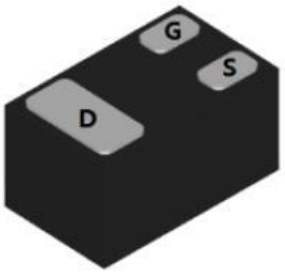
➢ Applications

- Load Switch
- Portable Devices
- DCDC conversion

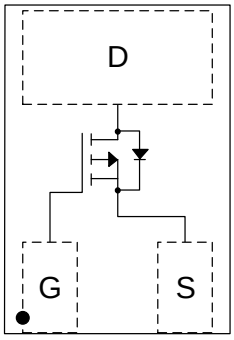
➢ Ordering Information

Device	Package	Shipping
SSC8121GN1	DFN1006-3L	10000/Reel

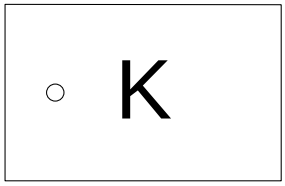
➢ Pin configuration



DFN1006-3L (Bottom View)



Pin Configuration (Top View)



Marking

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

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-20	V
V_{GSS}	Gate-to-Source Voltage	±8	V
I_D	Continuous Drain Current [a]	-1	A
I_{DM}	Pulsed Drain Current [b]	-5	A
P_D	Power Dissipation [c]	0.45	W
P_{DSM}	Power Dissipation [a]	0.3	W
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	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	416	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	266	

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.

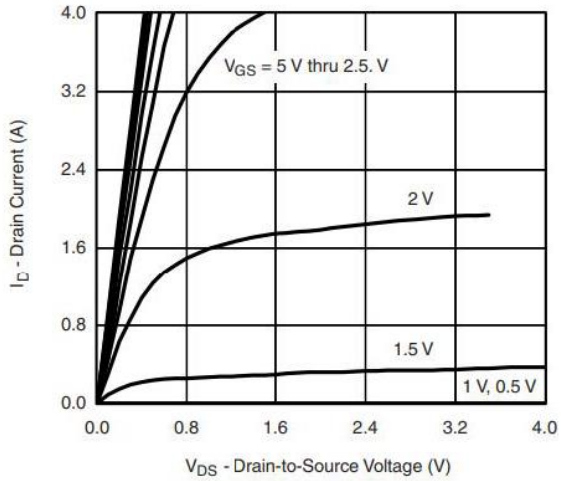
b. Repetitive rating, pulse width limited by junction temperature.

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.

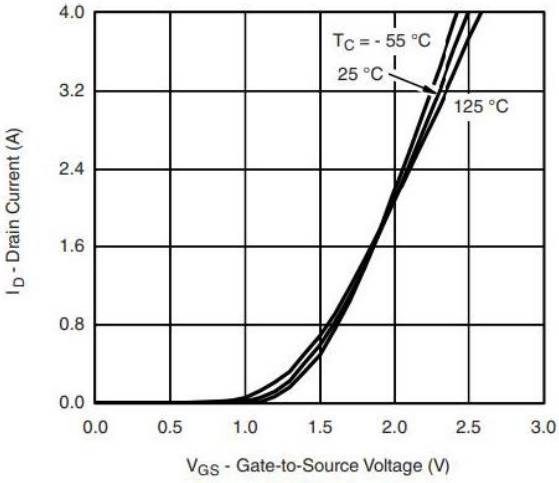
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250uA	-0.45	-0.75	-1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -0.45A		150	350	mΩ
		V_{GS} = -2.5V, I_D = -0.35A		190	450	
		V_{GS} = -1.8V, I_D = -0.25A		255	700	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -20V, V_{GS} = 0V			-1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±8V, V_{DS} = 0V			±100	nA
Transconductance	G_{FS}	V_{DS} = -5V, I_D = -1.4A		6.5		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = -1A	-0.5	-0.7	-1.2	V
Input Capacitance	C_{ISS}	V_{DS} = -6V, V_{GS} = 0V, f = 1MHz		376	420	pF
Output Capacitance	C_{OSS}			187	205	
Reverse Transfer Capacitance	C_{RSS}			78	90	
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = -6V, V_{GEN} = -4.5V, R_L = 6Ω, R_G = 6Ω, I_D = -1A		13		ns
Rise Time	T_r			8		
Turn-off Delay Time	$T_{D(OFF)}$			42		
Fall Time	T_f			10		

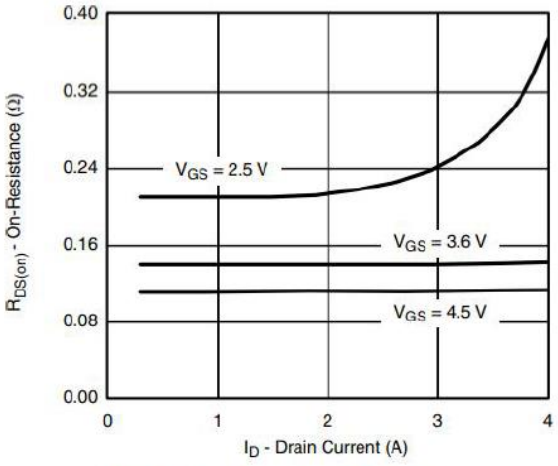
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



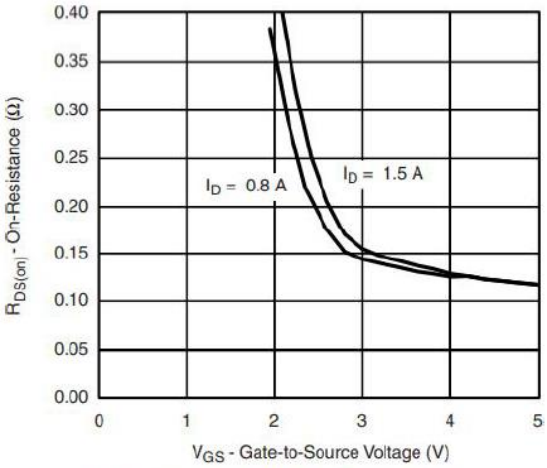
Output Characteristics



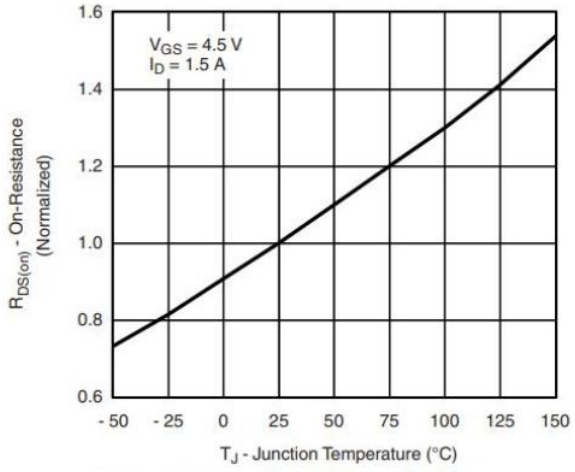
Transfer Characteristics



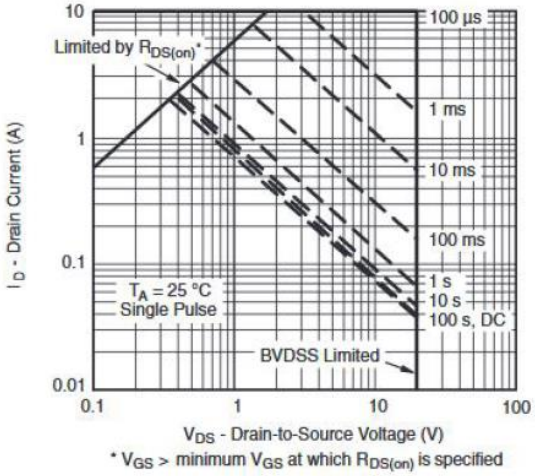
On-Resistance vs. Drain Current



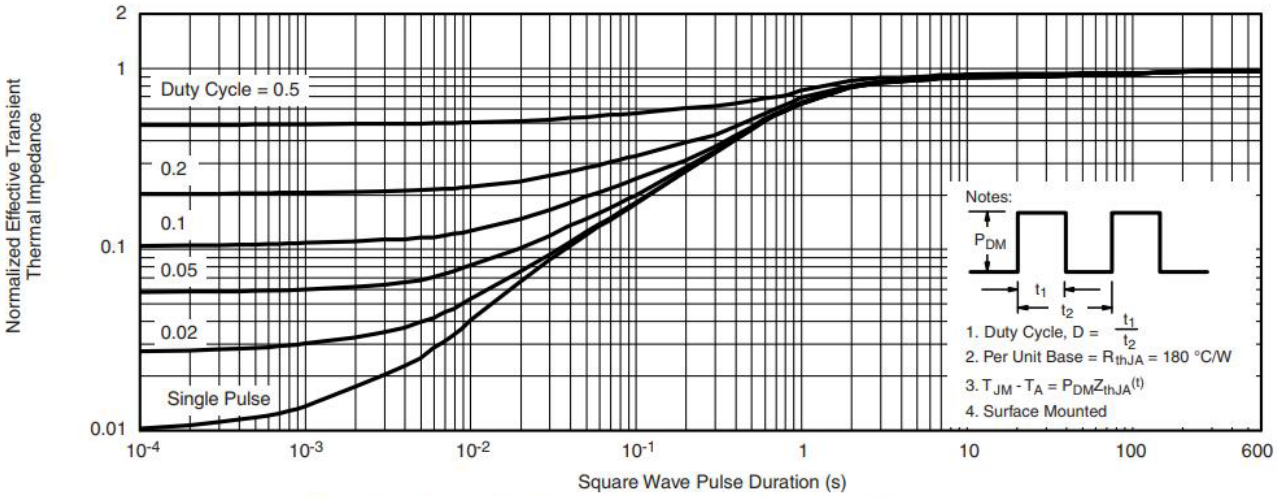
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

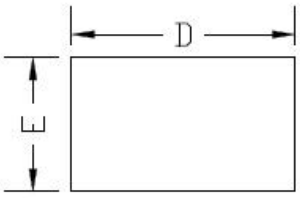


Safe Operating Area

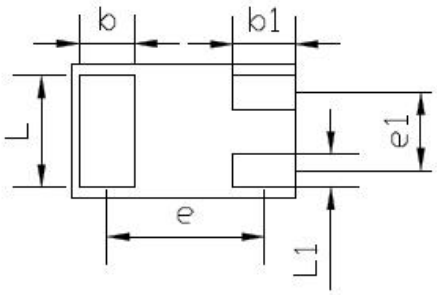


Normalized Thermal Transient Impedance, Junction-to-Ambient

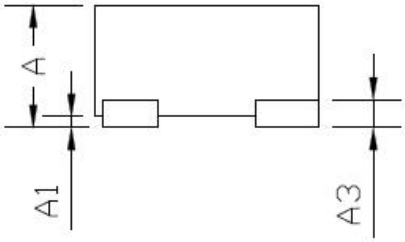
➢ Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX
A	>0.4	–	0.50
A1	0.00	–	0.05
A3	0.125REF.		
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
b1	0.20	0.30	0.40
L	0.45	0.50	0.55
L1	0.10	0.15	0.20
e	0.675		
e1	0.35		

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