SSC8121GN5

P-Channel Enhancement Mode MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
-20V	±8V	140mR@-4V5	-3A
		190mR@-2V5	
		280mR@-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 ther battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package.

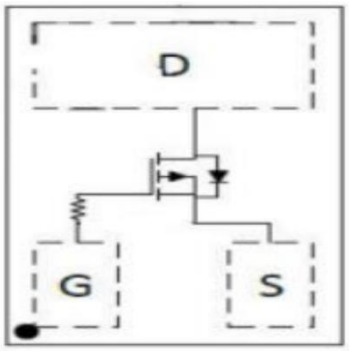
➢ Applications

- Load Switch
- Portable Devices
- DCDC conversion

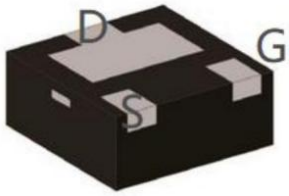
➢ Ordering Information

Device	Package	Shipping
SSC8121GN5	DFN1616	3000/Reel

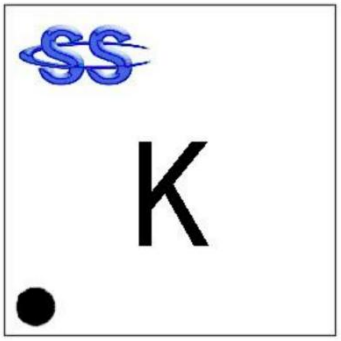
➢ Pin configuration



Top view



DFN1616



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]	-3	A
I_{DM}	Pulsed Drain Current [b]	-12	A
P_D	Power Dissipation [c]	2	W
T_J	Operation junction temperature	-55 to 150	℃
T_{STG}	Storage temperature range	-55 to 150	℃

➢ Thermal Resistance Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	58	℃/W

Note:

a. The value of RθJA is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with TA=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.

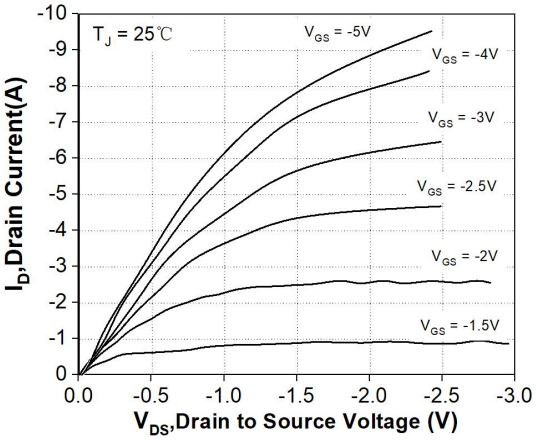
b. Repetitive rating, pulse width limited by junction temperature.

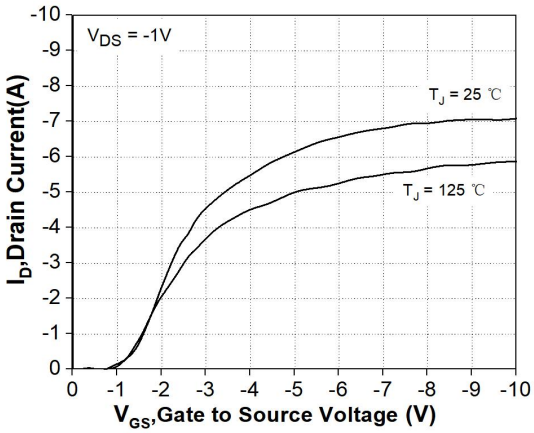
c. The power dissipation PD is based on TJ(MAX)=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

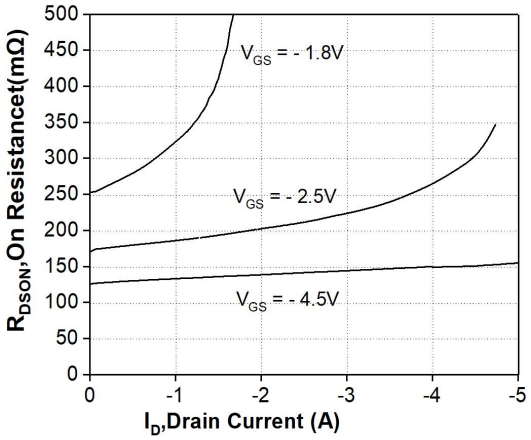
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

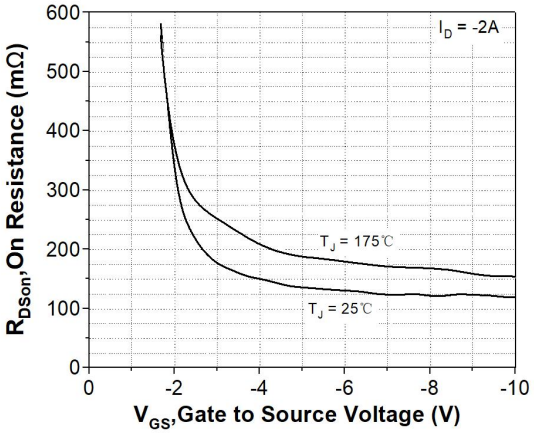
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V , ID=-250uA	-20			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS , ID=-250uA	-0.45	-0.7	-1.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=-4.5V , ID=-0.45A		140	350	mR
		VGS=-2.5V , ID=-0.35A		190	450	
		VGS=-1.8V , ID=-0.25A		280	700	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-20V , VGS=0V			-1	uA
I_{GSS}	Gate-Source leak current	VGS=±8V , VDS=0V			±100	nA
G_{FS}	Transconductance	VDS=5V , ID=-2A		6.5		S
V_{SD}	Forward Voltage	VGS=0V , IS=-1A		-0.8	-1.3	V
Ciss	Input Capacitance	VDS=-10V , VGS=0V, f=1MHz		214		pF
Coss	Output Capacitance			112		
Crss	Reverse Capacitance			38		
$T_{D(ON)}$	Turn-on delay time	VGS=-4.5V, VDS=-10V, RL=5R RG=3R		12		ns
Tr	Rise time			6		
$T_{D(OFF)}$	Turn-off delay time			25		
Tf	Fall time			10		
Q_g	Total Gate charge	VGS=-4.5V, VDS=-10V ID=-2A		3.5		nC
Q_{gs}	Gate Source charge			0.5		
Q_{gd}	Gate Drain charge			1.2		

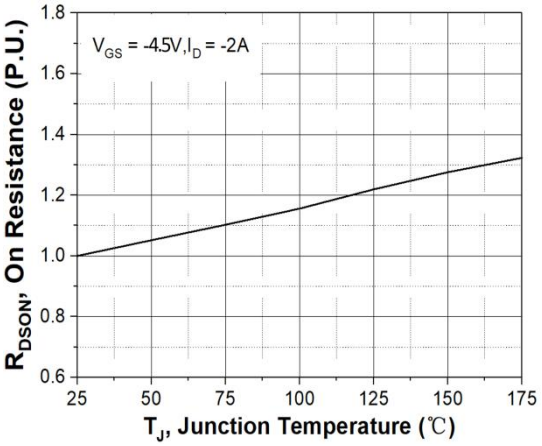
➢ Typical Characteristics(T_A=25℃ unless otherwise noted

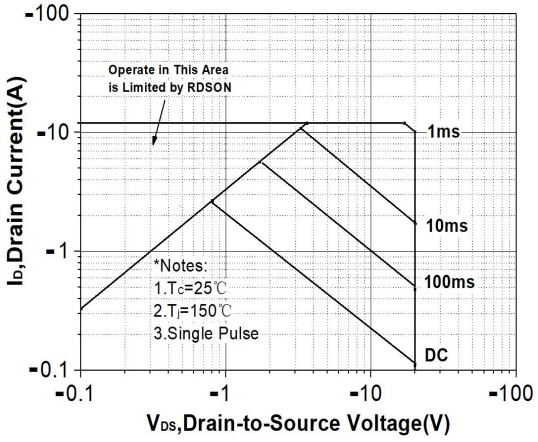


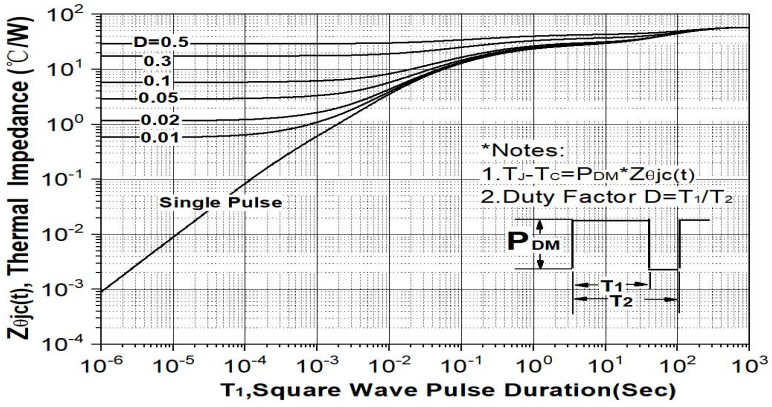




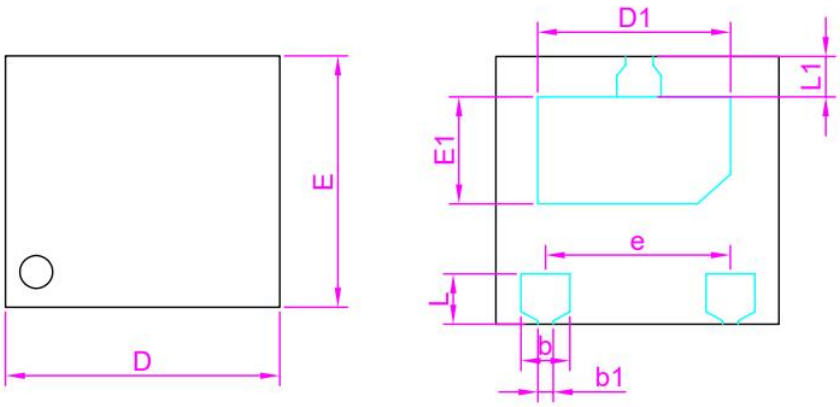


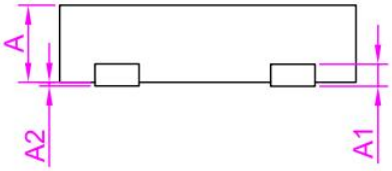






➢ Package Information





COMMON DIMENSION (MM)			
PKG	DFN1616-3L		
REF.	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
D	1.55	1.60	1.65
E	1.55	1.60	1.65
b	0.35	0.40	0.45
L	0.35	0.40	0.45
e		1.00BSC	
D1	1.15	1.20	1.25
E1	0.50	0.55	0.65
b1	0.15	0.20	0.25
L1	0.20	0.25	0.30
A1		0.15BSC	
A2	0.00	0.025	0.05

DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.