

SSC8120GN1

N-Channel Enhancement Mode MOSFET with ESD protection

➤ Features

VDS	VGS	RDSON Typ.	ID	ESD
20V	±12V	310mR@4V5	0.7A	1.2K
		490mR@2V5		
		850mR@1V8		

➤ Description

This device is a N-Channel enhancement mode MOSFET which is produced with high cell density and DMOS trench technology. This device particularly suits low voltage applications, especially for battery powered circuits, the tiny and thin outline saves PCB consumption.

➤ Applications

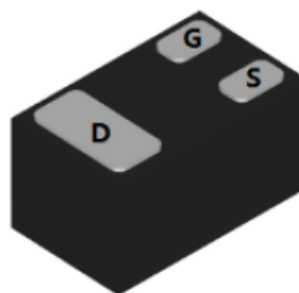
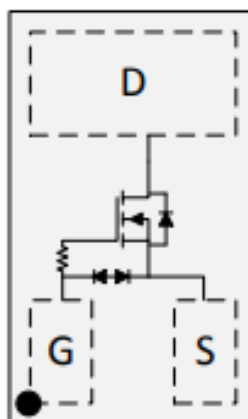
- Load Switch
- Portable Devices
- DCDC conversion

➤ Ordering Information

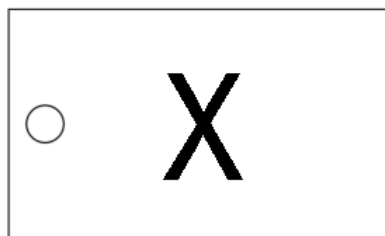
Device	Package	Shipping
SSC8120GN1	DFN1006	10K/Reel

➤ Pin configuration

Top view



Bottom View



Marking

➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	20	V
V_{GSS}	Gate-to-Source Voltage	± 12	V
I_D	Continuous Drain Current	0.7	A
I_{DM}	Pulsed Drain Current	2.8	A
P_D	Power Dissipation	0.9	W
T_J	Operation junction temperature	-55 to 150	$^{\circ}\text{C}$
T_{STG}	Storage temperature range	-55 to 150	$^{\circ}\text{C}$

➤ **Thermal Resistance Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance		139	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		83	

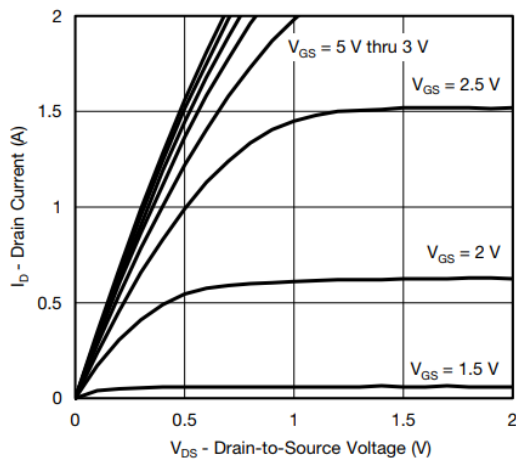
➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu\text{A}$	20			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.35	0.6	1	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=4.5V, I_D=0.6A$		310	450	mR
		$V_{GS}=2.5V, I_D=0.5A$		490	765	
		$V_{GS}=1.8V, I_D=0.35A$		850	1300	

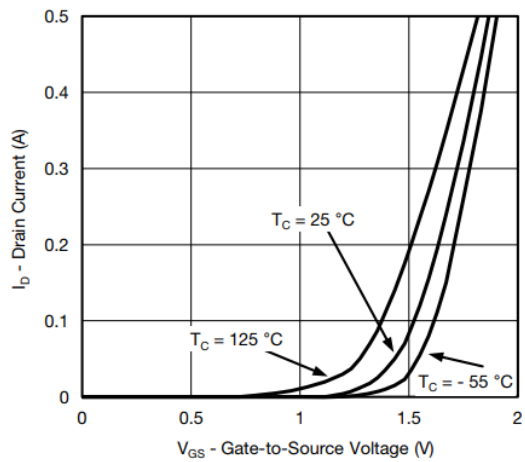
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 12V, V_{DS}=0V$			± 10	μA
G_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=1.4A$		7.5		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=0.11A$		0.7	1.3	V

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
C_{iss}	Input Capacitance	$V_{DS}=10V, V_{GS}=0V,$ $F=1MHz$		100		pF
C_{oss}	Output Capacitance			17		
C_{rss}	Reverse Transfer Capacitance			11		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=4.5V,$ $V_{DS}=5V, R_G=6R, I_D=0.3A$			5	ns
$T_{D(OFF)}$	Turn-off delay time				26	

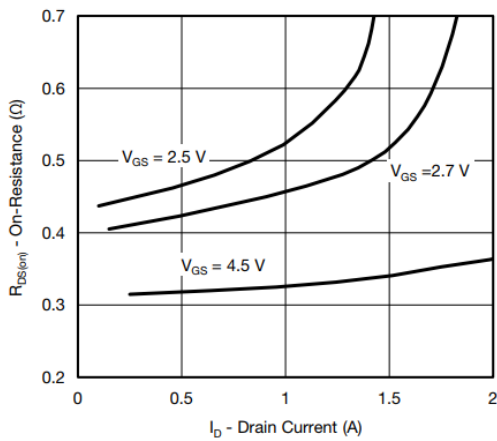
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



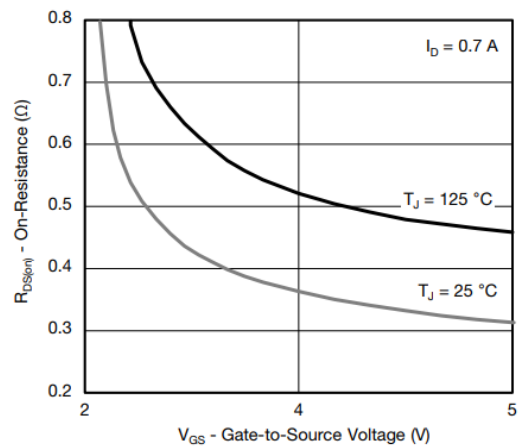
Output Characteristics



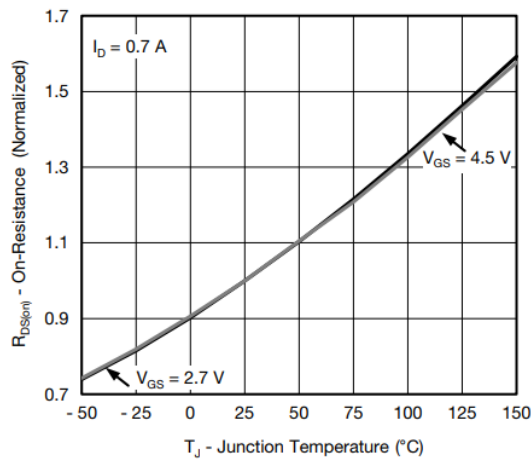
Transfer Characteristics



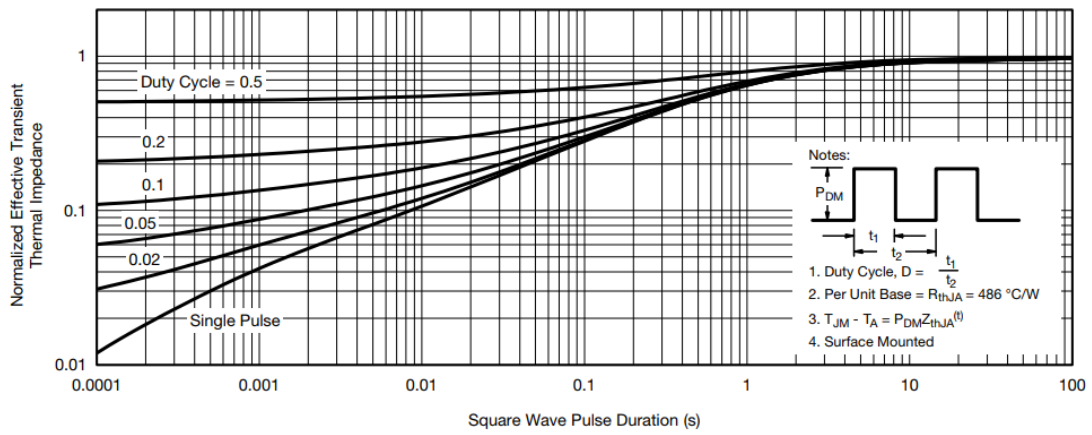
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

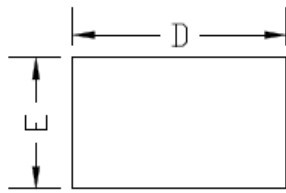


On-Resistance vs. Junction Temperature

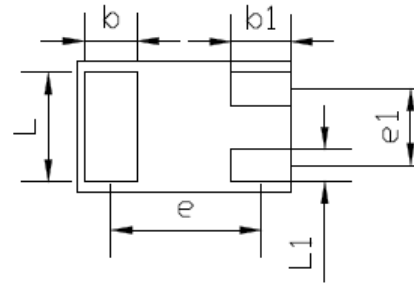


Normalized Thermal Transient Impedance, Junction-to-Ambient

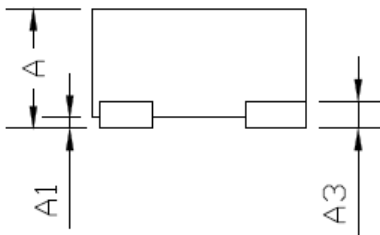
➤ Package Information



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		

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.