SSC8120GN1

N-Channel Enhancement Mode MOSFET

- **Features**

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

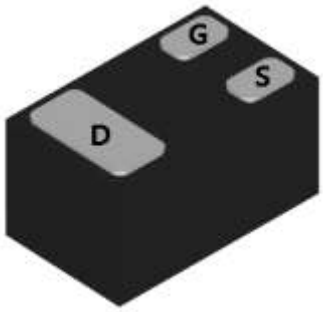
- **General Description**

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.

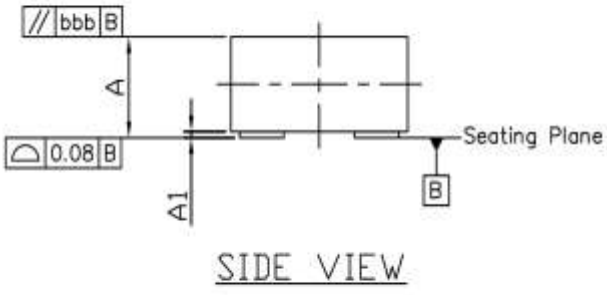
- **Applications**
  - Load Switch
  - Portable Devices
  - DCDC Conversion

- **Pin configuration**

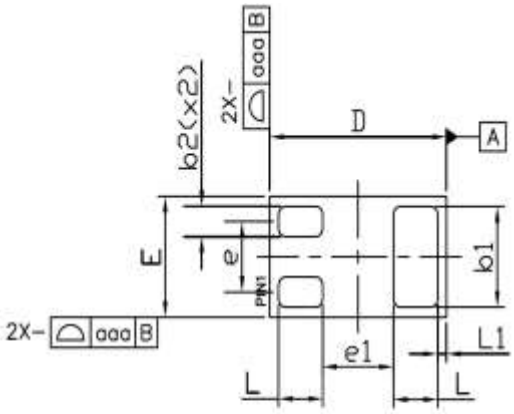
bottom View



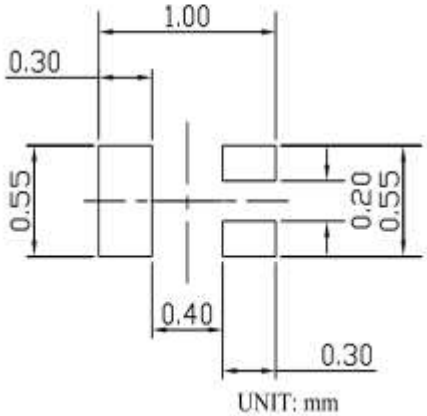
- **Package Information**



SIDE VIEW



BOTTOM VIEW



SYMBOLS	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.52	0.55
A1	0.00	0.03	0.05
b1	0.45	0.50	0.55
b2	0.10	0.15	0.20
D	0.95	1.00	1.075
E	0.55	0.60	0.675
e	---	0.35	---
e1	---	0.40	---
L	0.20	0.25	0.30
L1	---	0.05	---
aaa	0.15		
bbb	0.05		

DFN1006

- **Order information**

Device	Package	Marking	Shipping
SSC8120GN1	DFN1006	X	10000/Tape&Reel

- **Absolute Maximum Ratings** @ T_A = 25°C unless otherwise noted

Parameter	Symbol	Max	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current [a] V_{GS}@4.5V T_A = 25°C	I_D	0.7	A
Continuous Drain Current [a] V_{GS}@4.5V T_A = 70°C		0.5	A
Plused Drain Current [b]	I_{DM}	2.8	A
Power Dissipation [a] T_C = 25°C	P_D	0.9	W
Power Dissipation [a] T_C = 70°C		0.5	W
Storage and Junction Temperature Range	T_J, T_{STG}	-55 to +150	°C

- **Thermal Characteristics**

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient [a]	t≤10S	$R_{\theta JA}$	83	105	°C/W
	Steady-State		115	143	°C/W
Maximum Junction-to- Ambient [C]	t≤10S	$R_{\theta JA}$	201	250	°C/W
	Steady-State		280	340	°C/W

- **Electrical Characteristics** @ T_A = 25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250uA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16 V, V_{GS} = 0 V	--	--	1	uA
Gate–Body Leakage	I_{GSS}	V_{GS} = ±12 V, V_{DS} = 0 V	--	--	±10	uA
ON CHARACTERISTICS[(2)]						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 50uA	0.35	0.6	1	V
Static Drain–Source On-Resistance	$R_{DS(ON)}$	V_{GS} = 4.5 V, I_D = 0.6 A	--	310	450	mR

		V_{GS} = 2.5 V, I_D = 0.5 A	--	490	765	
		V_{GS} = 1.8 V, I_D = 0.35 A	--	850	1300	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	V_{DS} = 10 V, V_{GS} = 0 V, f = 1.0 MHz	--	100	--	pF
Output Capacitance	C_{OSS}		--	17	--	
Reverse Transfer Capacitance	C_{RSS}		--	11	--	
SWITCHING CHARACTERISTICS						
Turn–On Delay Time	$T_{D(ON)}$	V_{DD} = 5 V, I_D = 0.3A, V_{GS} =4.5 V,R_{GEN}=6Ω	--	--	5	nS
Turn–On Rise Time	T_R		--	--	80	
Turn–Off Delay Tim	$T_{D(OFF)}$		--	--	26	
Turn–Off Fall Time	T_F		--	--	25	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage[2]	V_{SD}	V_{GS} = 0 V, I_S = 0.11 A	--	0.7	1.3	V

Notes :

a: mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T A =25°C.

b:Pulse Test: Pulse Width < 300μs, Duty Cycle < 2%

c: mounted on FR-4 minimum pad board, in a still air environment with T A =25°C.

- **Typical Performance Characteristics**

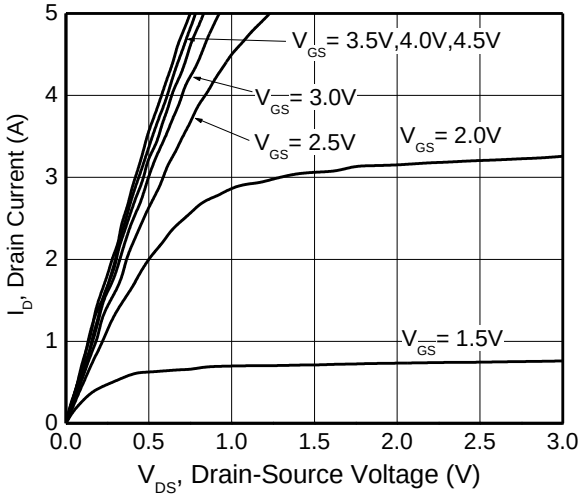


Figure 1. Output Characteristics

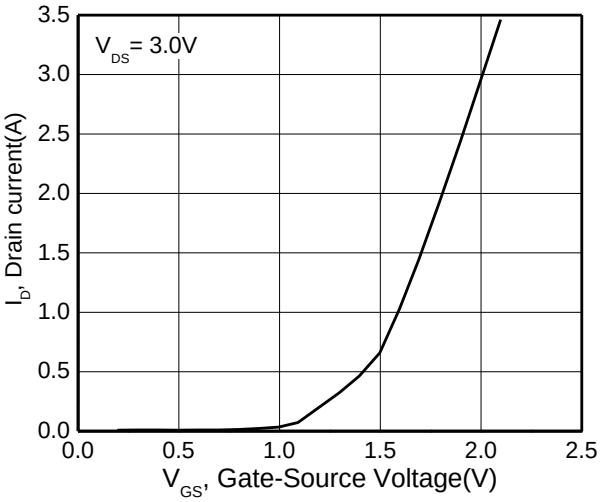


Figure 2. Transfer Characteristics

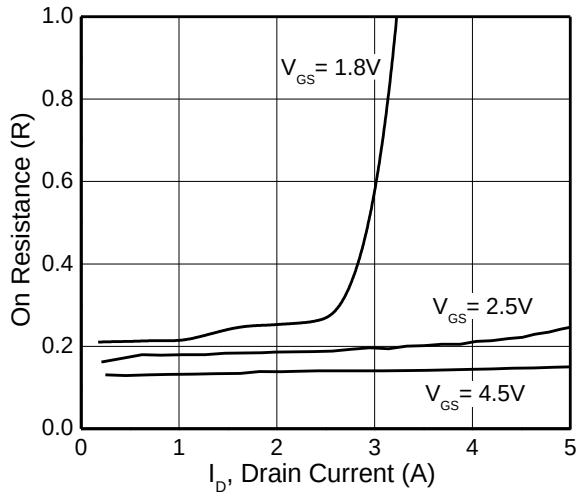


Figure 3. On Resistance vs. Drain Current

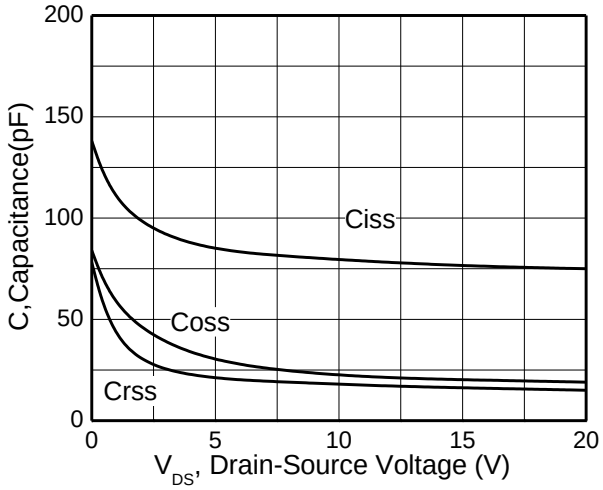


Figure 4. Capacitance

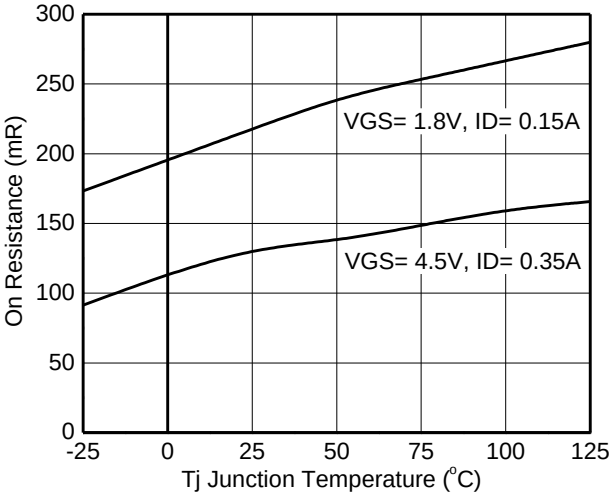


Figure 5 . On resistance vs. Temperature

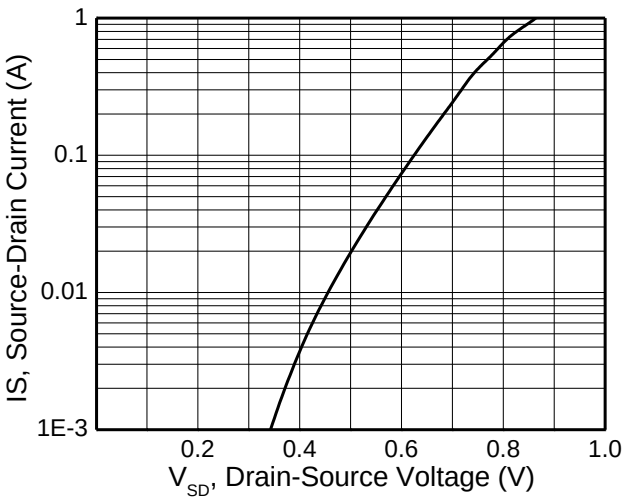


Figure 6. Diode Forward Characteristics

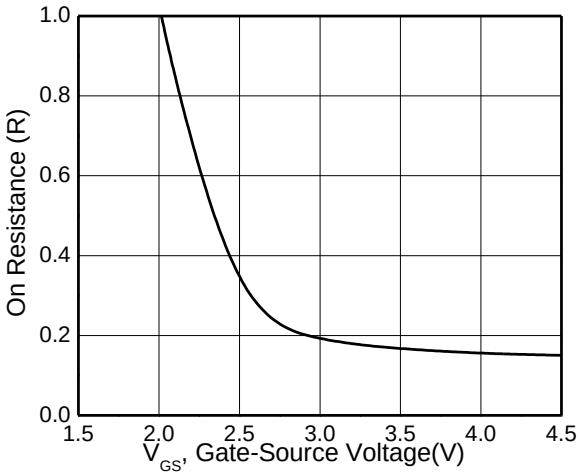


Figure 7. On Resistanc vs. Gate-Source Voltage

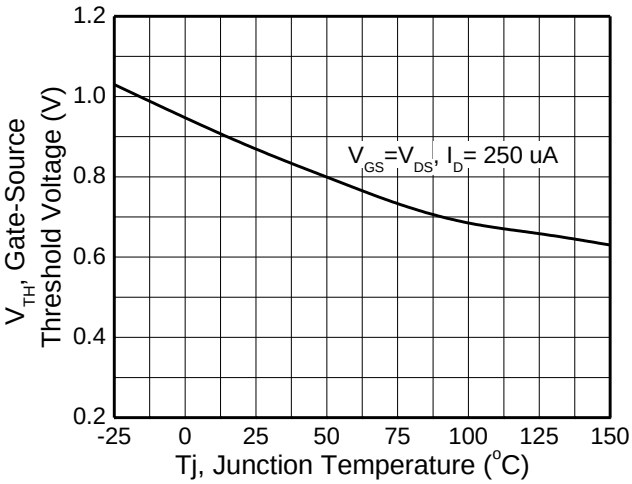


Figure 8. Gate Threshold vs. Temperature

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