SSC8120GS9

N-Channel Enhancement Mode MOSFET

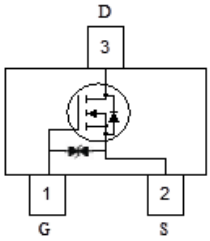
- **Features**

V_{DS}	V_{GS}	R_{DSon} TYP	I_D	ESD
20V	±12V	300mR@4V5	0.75A	1.2K
		440mR@2V5		
		800mR@1V8		

- **Applications**
  - Replace Digital Transistor
  - Battery Operated Systems
  - Power Supply Converter Circuits
  - Load/Power Switching Cell Phones, Pagers

- **Pin Configuration**

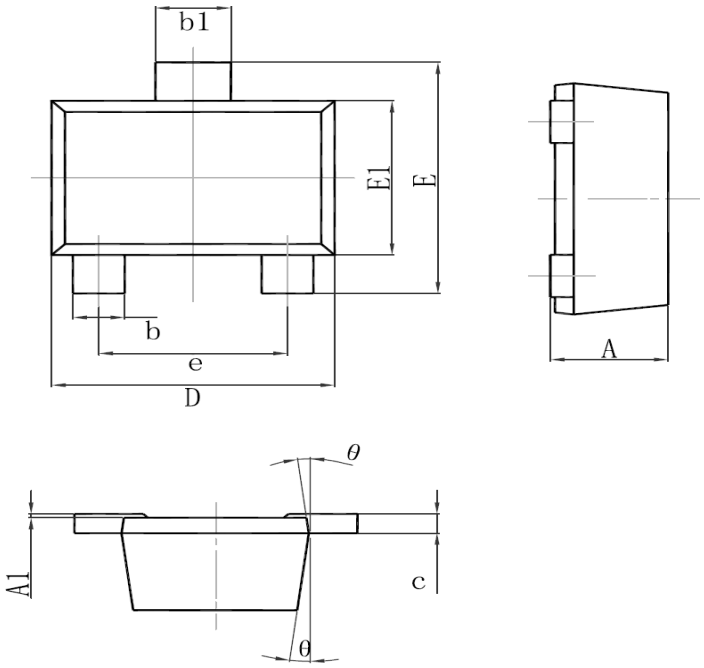
Top View



- **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.

- **Package Information**



Package:SOT723			
Unit:mm			
Dim	Min	Typ	Max
A	0.430	--	0.500
A1	0.000	--	0.050
b	0.170	--	0.270
b1	0.270	--	0.370
c	0.080	--	0.150
D	1.150	--	1.250
E	1.150	--	1.250
E1	0.750	--	0.850
e	0.800TYP		
θ	7° REF.		

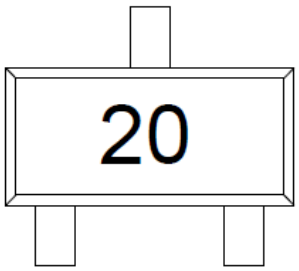
- **Absolute Maximum Ratings @ TA = 25°C unless otherwise specified**

Parameter	Symbol	Max	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current [a] V_{GS}@4.5V T_A = 25°C	I_D	0.75	A
Continuous Drain Current [a] V_{GS}@4.5V T_A = 70°C		0.5	A
Plused Drain Current [b]	I_{DM}	2	A
Power Dissipation [a] T_C = 25°C	P_D	0.15	W
Power Dissipation [a] T_C = 70°C		0.1	W
Storage and Junction Temperature Range	T_J, T_{STG}	-55 to +150	°C
Lead Temperature for Soldering Purposes (1/8" from case for 10 s)	T_L	260	°C

- **Thermal Characteristics**

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient [a]	t≤10S	$R_{\theta JA}$	--	632	°C/W
	Steady-State		--	833	°C/W
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	--	670	°C/W

- **Order information**

Device	Package	Marking
SSC8120GS9	SOT723	

- **Electrical Characteristics @ TA = 25°C unless otherwise specified**

Parameter (Note 2)	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250μA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V	--	--	1	uA
Gate-Body Leakage	I_{GSS}	V_{GS} = ±12V, V_{DS} = 0V	--	--	±10	uA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 250uA	0.35	0.6	1	V
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	I_D = 600mA,V_{GS} = 4.5V	--	300	450	mR
		I_D = 500mA,V_{GS} = 2.5V	--	440	765	
		I_D = 350mA,V_{GS} = 1.8V	--	800	1300	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -6V, R_L = 6R, I_D = −1A,	--	5	--	ns
Turn-Off Delay Time	$t_{d(off)}$	V_{GEN} = -4.5V, R_G = 6R	--	26	--	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	V_{DS} = -16V, V_{GS} = 0V, f = 200KHz	--	110	--	pF
Output Capacitance	C_{OSS}		--	15	--	
Reverse Transfer Capacitance	C_{RSS}		--	12	--	
BODY DIODE CHARACTERISTICS						
Diode Forward Voltage(1)	V_{SD}	V_{GS} = 0 V, I_S = 150mA	--	0.7	1.3	V

a: Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper

b: Pulse width<380μs, Duty Cycle<2%

c: Maximum junction temperature T_J=150°C.

Typical Performance Characteristics

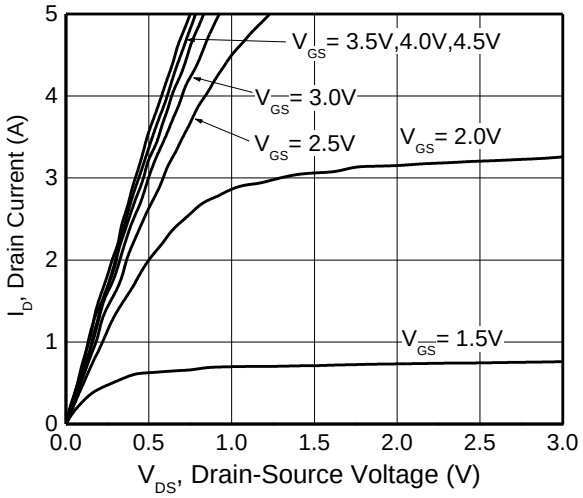


Figure 1. Output Characteristics

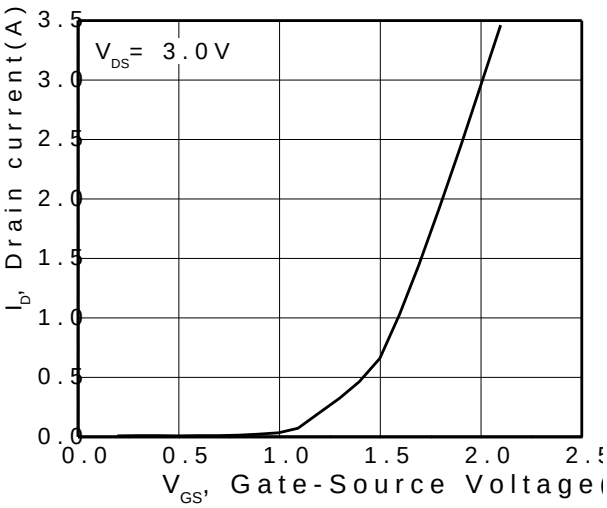


Figure 2. Transfer Charact

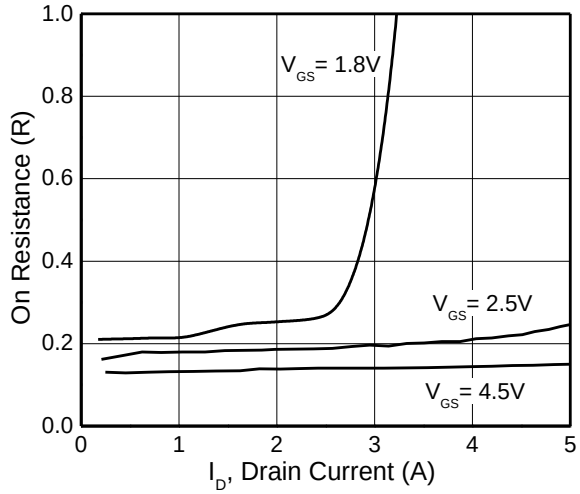


Figure 3. On Resistance vs. Drain Current

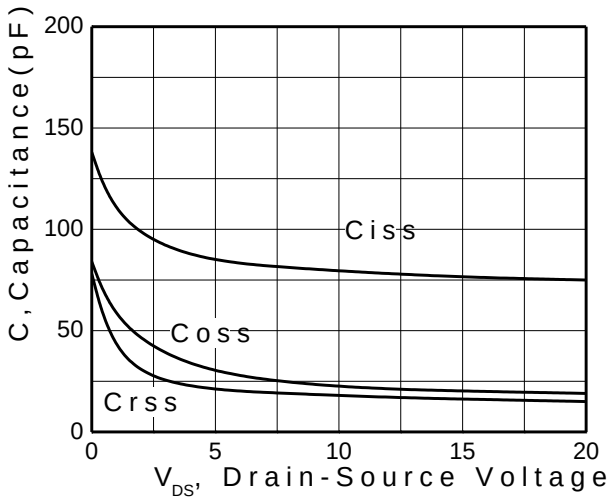


Figure 4. Capacitance

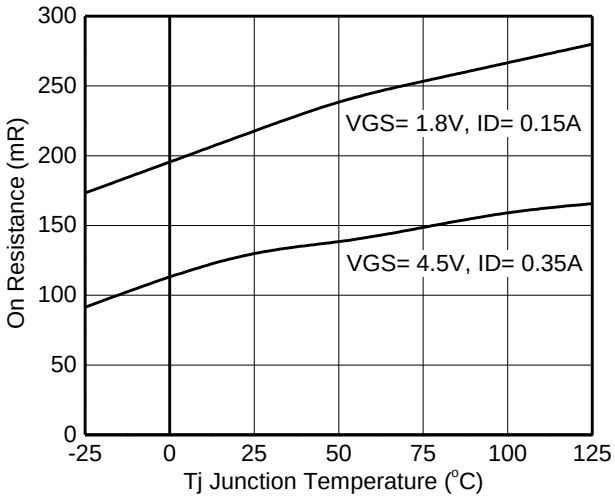


Figure 5 . On resistance vs. Temperature

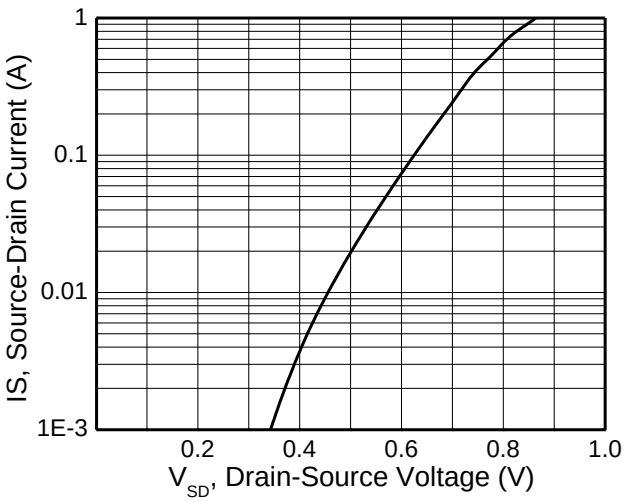


Figure 6. Diode Forward Characteristics

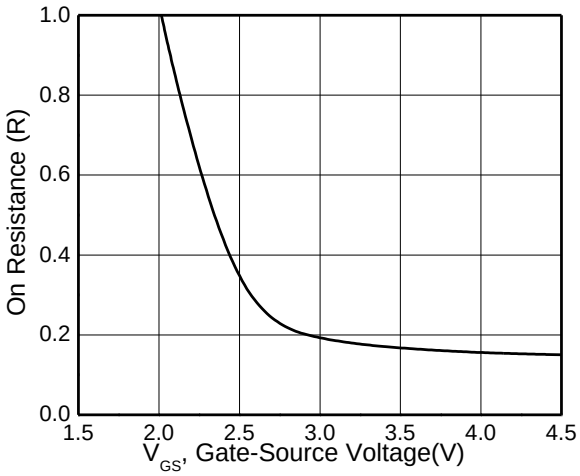


Figure 7. On Resistanc vs. Gate-Source Voltage

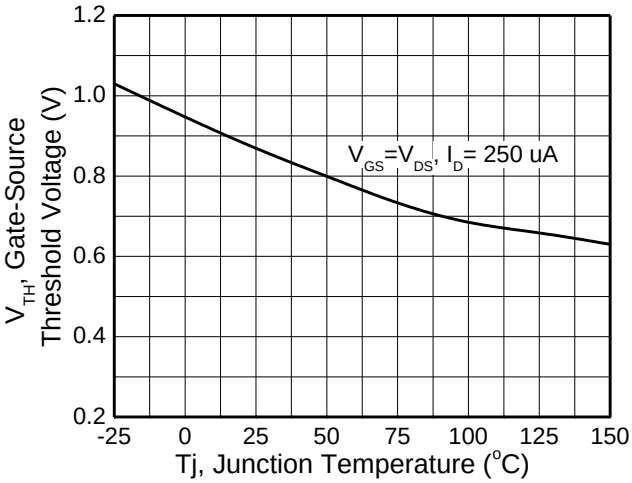


Figure 8. Gate Threshold vs. Temperature

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