



## SSC8120GS9

### N-Channel Enhancement Mode MOSFET with ESD Protection

#### ➤ Features

VDS	VGS	RDSON Typ	ID	ESD
20V	±12V	300mR@4V5	0.75A	1.2K
		440mR@2V5		
		800mR@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

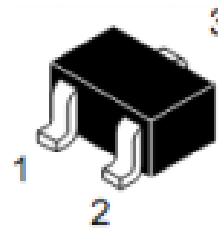
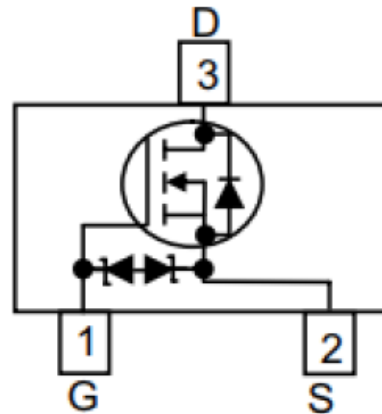
- Replace Digital Transistor
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching cell Phones

#### ➤ Ordering Information

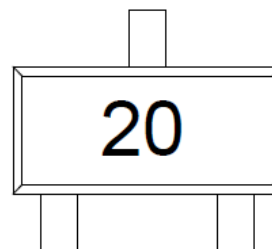
Device	Package	Shipping
SSC8120GS9	SOT723	8000/Reel

#### ➤ Pin configuration

Top view



SOT723



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	$\pm 12$	V
$I_D$	Continuous Drain Current	0.75	A
$I_{DM}$	Pulsed Drain Current	2	A
$P_D$	Power Dissipation	0.3	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		416	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		266	

➤ **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	$V_{GS}=4.5V, I_D=0.6A$		300	450	mR
		$V_{GS}=2.5V, I_D=0.5A$		440	765	
		$V_{GS}=1.8V, I_D=0.35A$		800	1300	

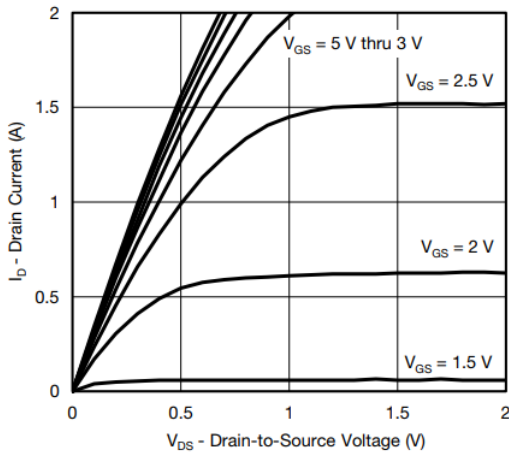


Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 12V, V_{DS}=0V$			$\pm 10$	$\mu A$
$G_{FS}$	Forward Transconductance	$V_{DS}=5V, I_D=0.5A$		11		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=0.15A$		0.7	1.3	V

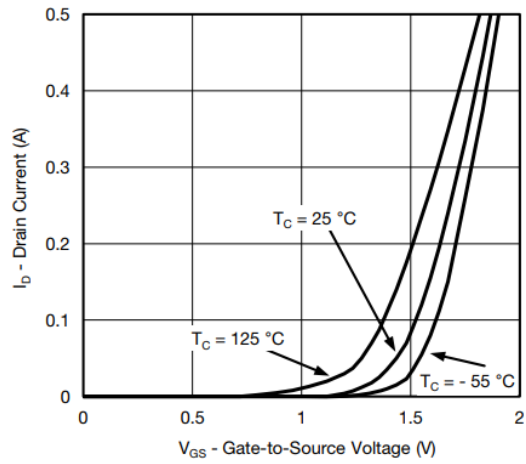
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$C_{iss}$	Input Capacitance	$V_{DS}=16V, V_{GS}=0V,$ $F=200KHZ$		110		pF
$C_{oss}$	Output Capacitance			15		
$C_{rss}$	Reverse Transfer Capacitance			12		
$T_{D(ON)}$	Turn-on delay time	$V_{GEN}=4.5V,$ $V_{DS}=6V, R_G=6R,$ $R_L=6R, I_D=1A$			5	ns
$T_{D(OFF)}$	Turn-off delay time				26	



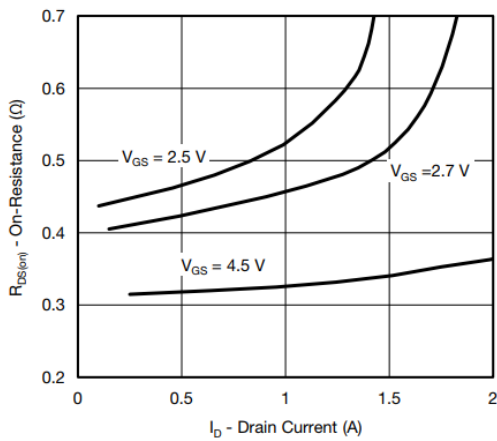
➤ Typical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



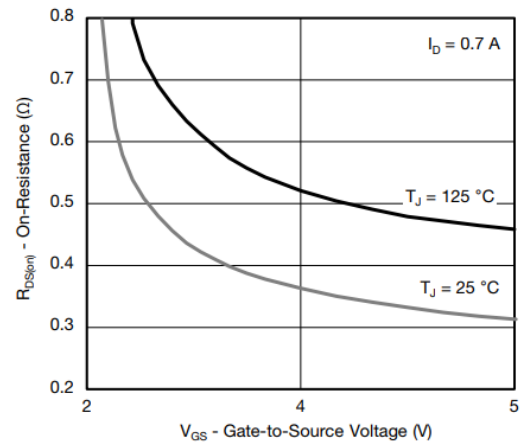
Output Characteristics



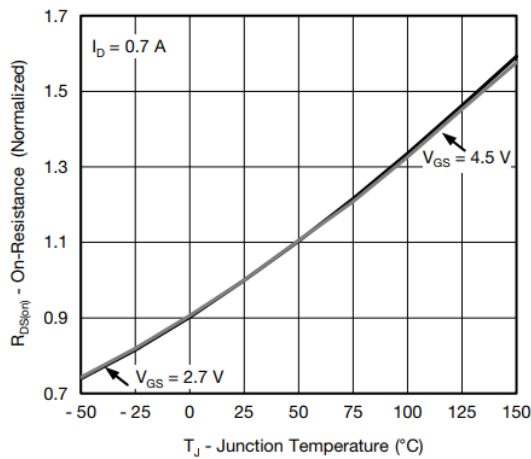
Transfer Characteristics



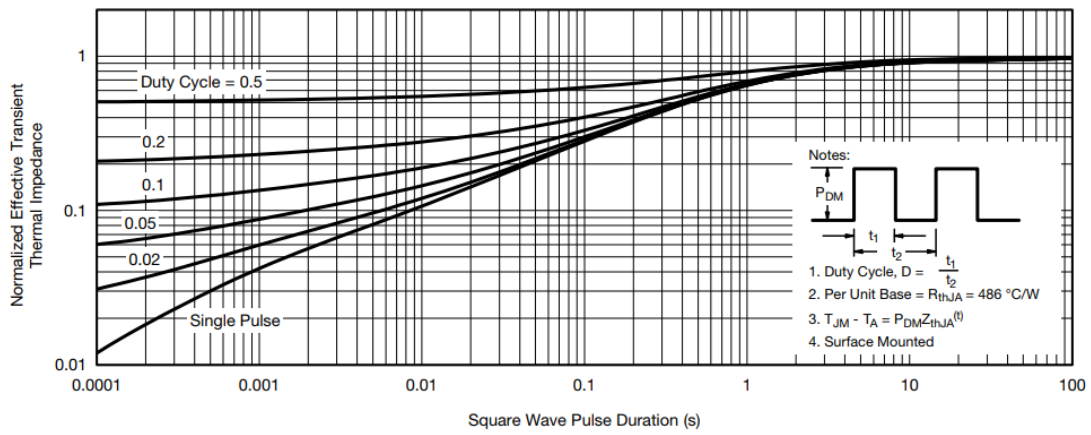
On-Resistance vs. Drain Current and Gate Voltage



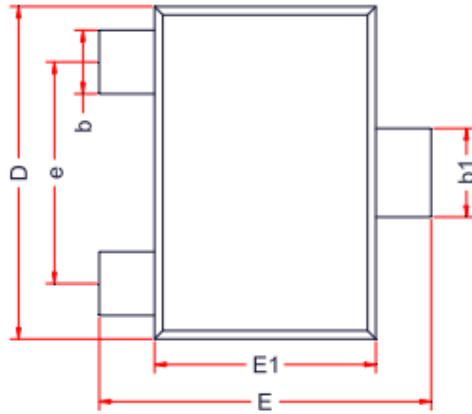
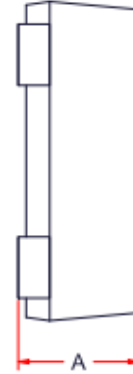
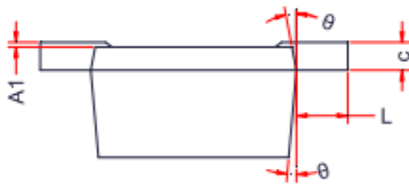
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



Normalized Thermal Transient Impedance, Junction-to-Ambient

**➤ Package Information**
**SOT-723**

**TOP VIEW**

**SIDE VIEW**

**SIDE VIEW**

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.43	-	0.55
A1	0.00	-	0.05
c	0.08	0.13	0.18
b1	0.27	-	0.37
b	0.17	-	0.27
L1	0.15	0.20	0.25
D	1.15	1.20	1.25
E	1.15	1.20	1.25
E1	0.75	0.80	0.85
e	0.80 Ref.		
$\theta$	7 ° Ref.		



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