



## SSC8120GS8

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

#### ➤ Features

VDS	VGS	RDSON Typ.	ID	ESD
20V	±12V	310mR@4V5	0.8A	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

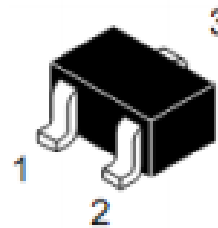
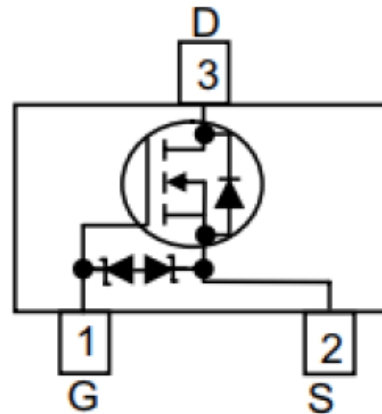
- Replace Digital Transistor
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching cell Phones

#### ➤ Ordering Information

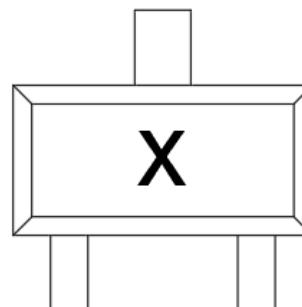
Device	Package	Shipping
SSC8120GS8	SOT523	3000/Reel

#### ➤ Pin configuration

Top view



SOT523



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	0.8	A
$I_{DM}$	Pulsed Drain Current	3	A
$P_D$	Power Dissipation	0.25	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		500	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		300	

➤ **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	

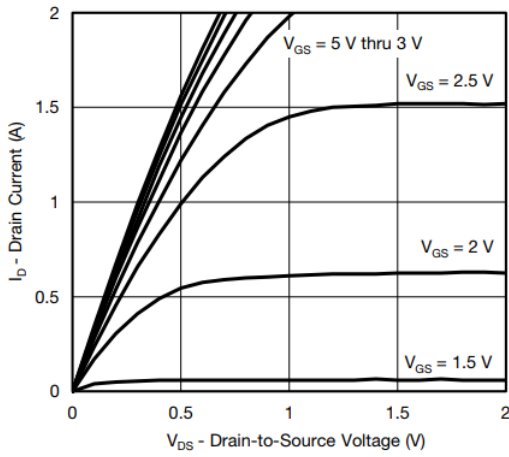


Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 12V, V_{DS}=0V$			$\pm 10$	$\mu A$
$G_{FS}$	Forward Transconductance	$V_{DS}=5V, I_D=0.5A$		11		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V,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

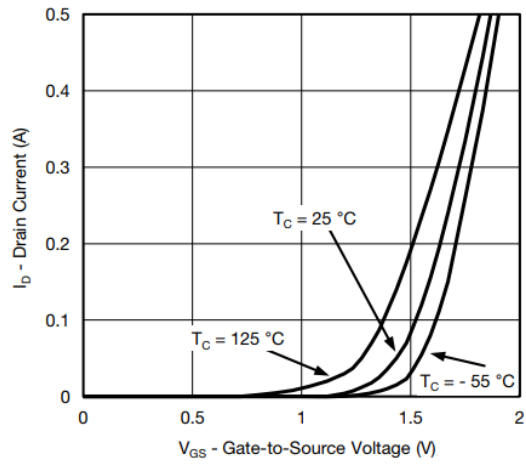
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$C_{iss}$	Input Capacitance	$V_{DS}=10V, V_{GS}=0V,$ $F=200KHZ$		110		$\mu F$
$C_{oss}$	Output Capacitance			15		
$C_{rss}$	Reverse Transfer Capacitance			12		
$T_{D(ON)}$	Turn-on delay time	$V_{GEN}=4.5V,$ $V_{DS}=6V, R_G=6R,$ $R_L=6R, I_D=1A$		5		ns
$T_{D(OFF)}$	Turn-off delay time			26		



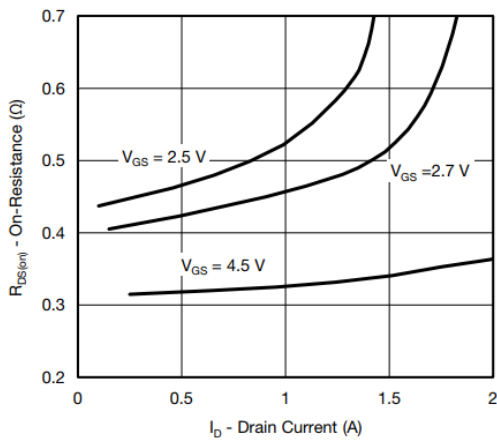
➤ **Typical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)



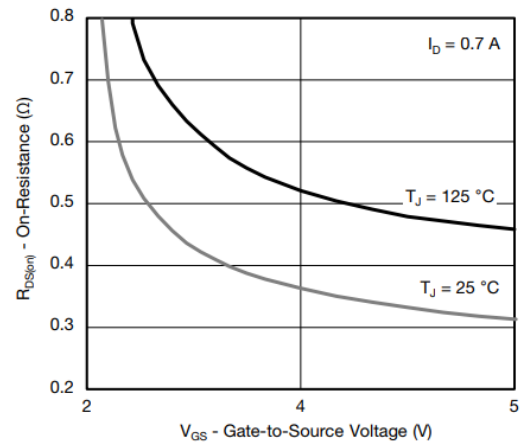
**Output Characteristics**



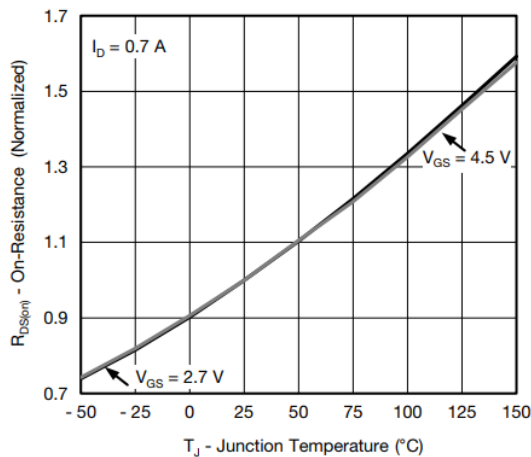
**Transfer Characteristics**



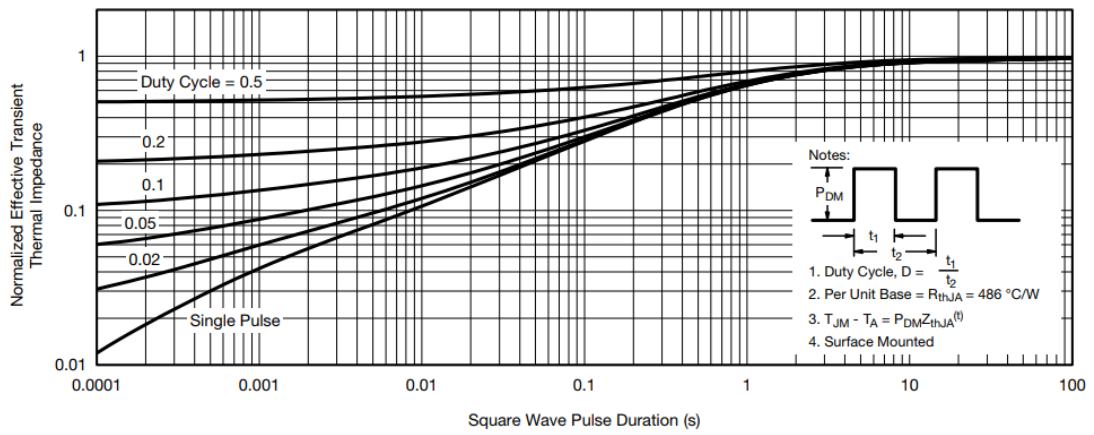
**On-Resistance vs. Drain Current and Gate Voltage**



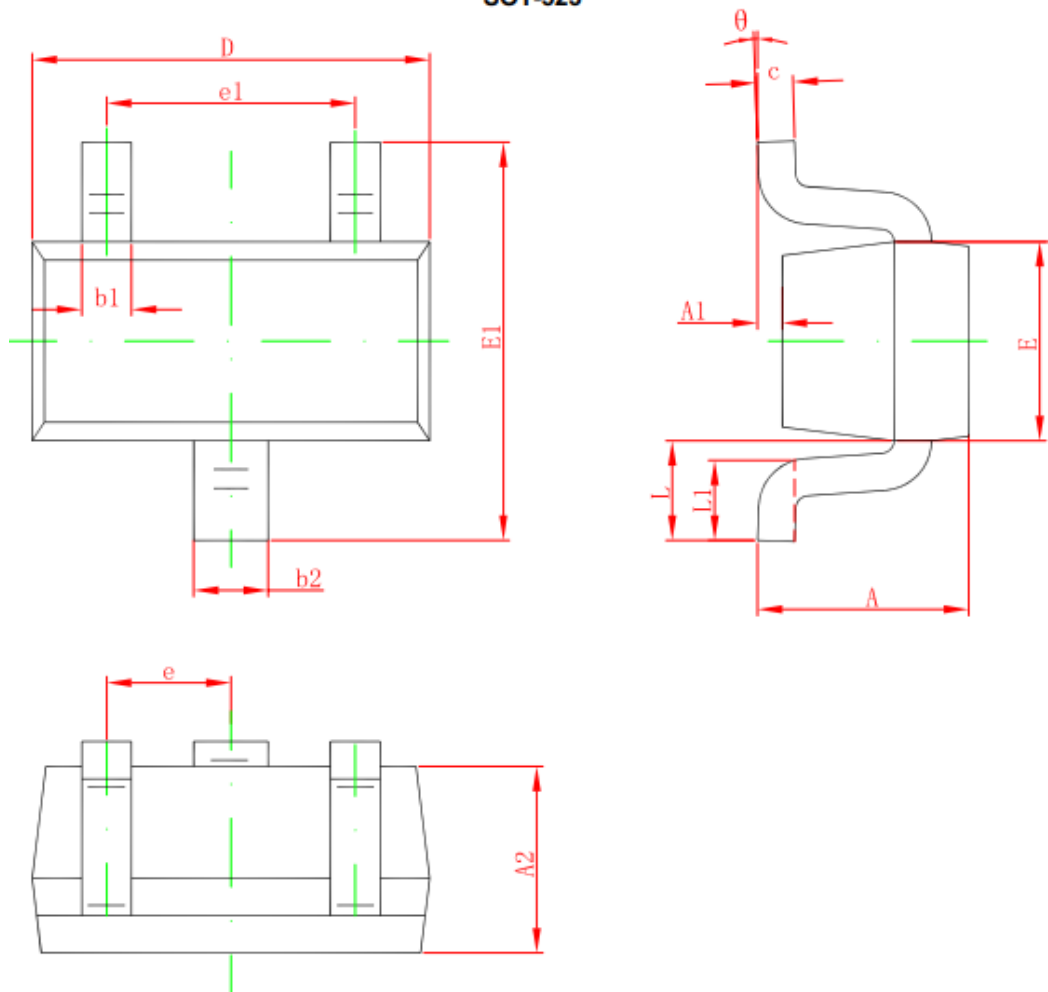
**On-Resistance vs. Gate-to-Source Voltage**



**On-Resistance vs. Junction Temperature**



Normalized Thermal Transient Impedance, Junction-to-Ambient

**➤ Package Information**
**SOT-523**


Symbol	Dimension in Millimeters	
	Min.	Max.
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
c	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 Typ.	
e1	0.900	1.100
L	0.400 Ref.	
L1	0.260	0.460
$\theta$	0°	8°



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