



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

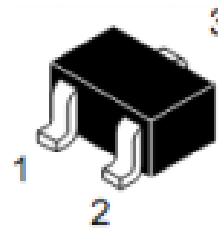
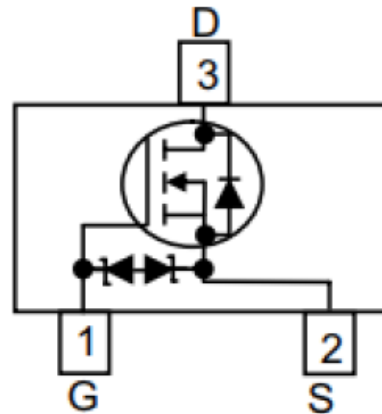
- Replace Digital Transistor
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching cell Phones

➤ Ordering Information

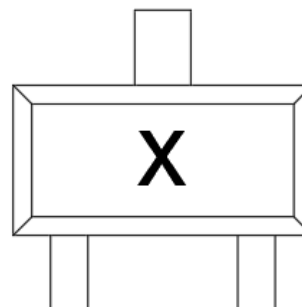
Device	Package	Shipping
SSC8120GS8	SOT523	3000/Reel

➤ 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	± 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	

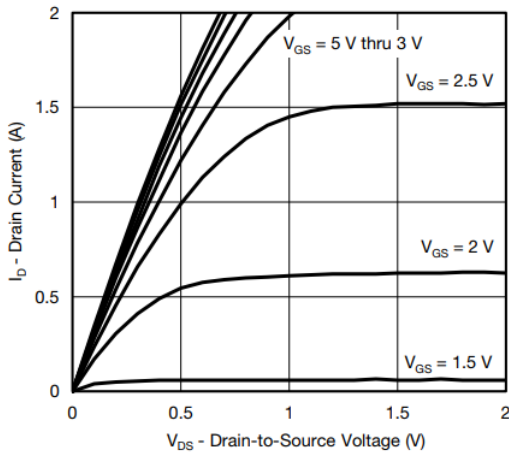


Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 12V, V_{DS}=0V$			± 10	μA
G_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=0.5A$		11		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=0.15A$	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

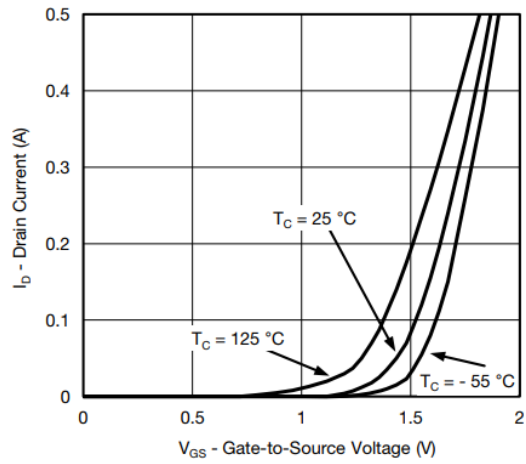
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
C_{iss}	Input Capacitance	$V_{DS}=10V, V_{GS}=0V,$ $F=200KHZ$		110		pF
C_{oss}	Output Capacitance			15		
C_{rss}	Reverse Transfer Capacitance			12		
$T_{D(ON)}$	Turn-on delay time	$V_{GEN}=4.5V,$ $V_{DS}=6V, R_G=6R,$ $R_L=6R, I_D=1A$		5		ns
$T_{D(OFF)}$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



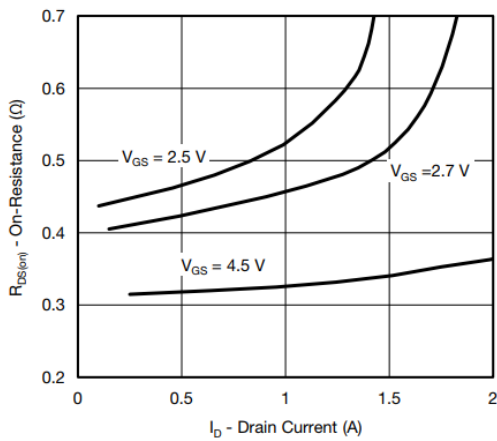
➤ Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



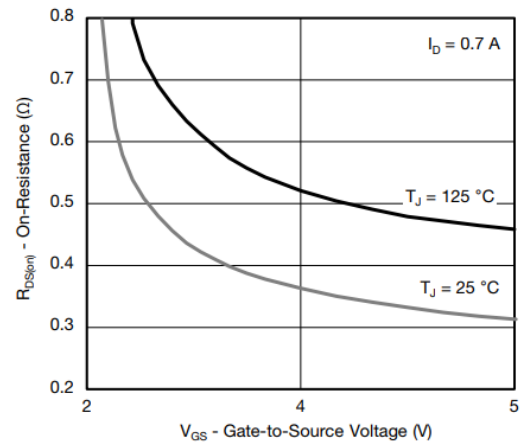
Output Characteristics



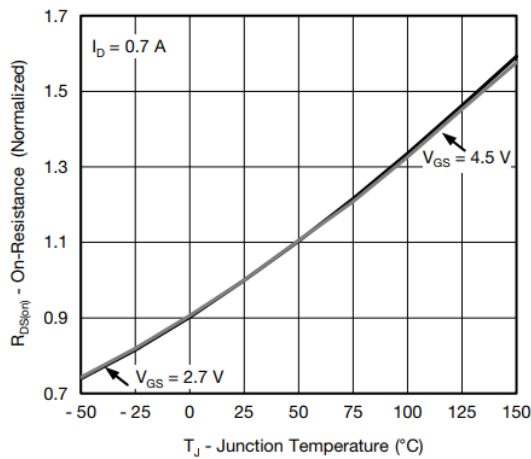
Transfer Characteristics



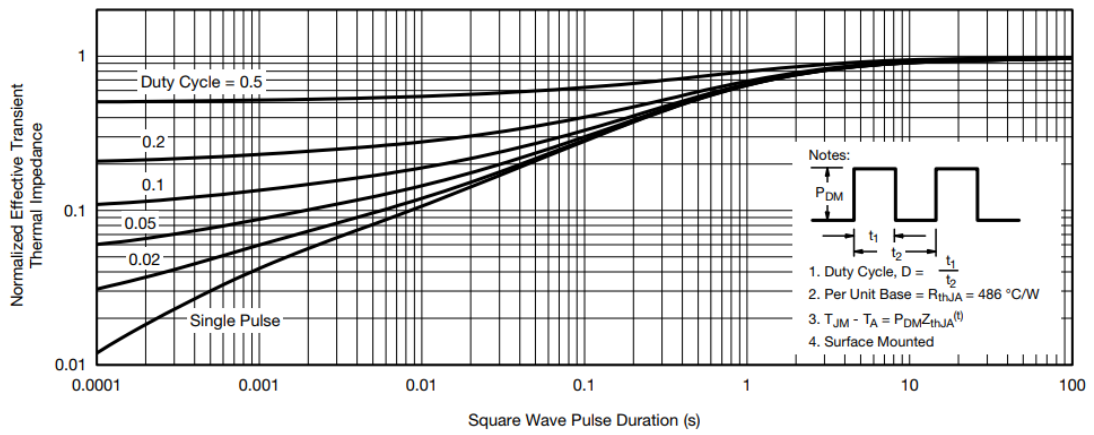
On-Resistance vs. Drain Current and Gate Voltage



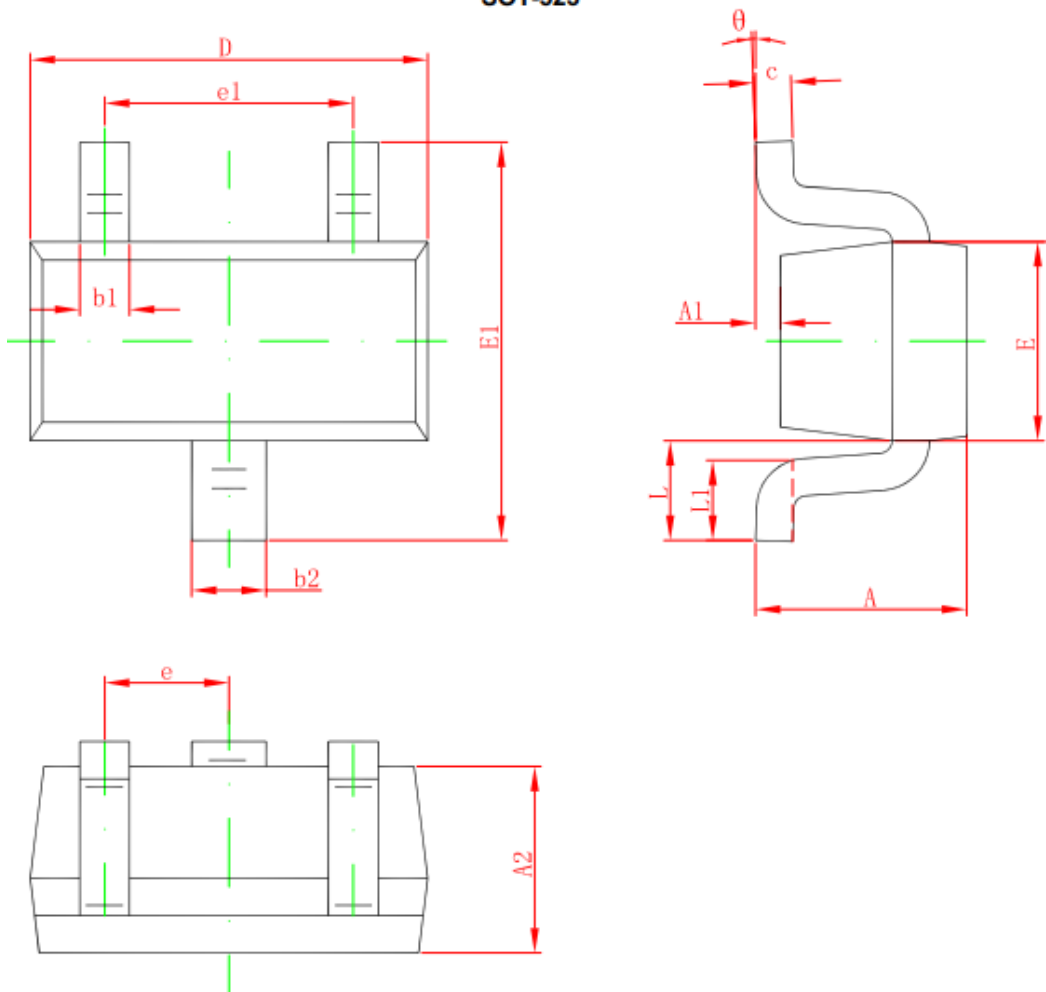
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



Normalized Thermal Transient Impedance, Junction-to-Ambient

➤ Package Information
SOT-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
θ	0°	8°



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