SSC8021GS8

P-Channel Enhancement Mode MOSFET with ESD Protection

➢ Features

VDS	VGS	RDSON Typ.	ID	ESD
-20V	±12V	0.6R@-4V5	-1A	2kV
		0.8R@-2V5		

➢ Description

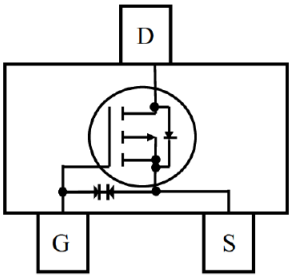
This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package. The product does not contain Rohs substances such as lead and halogen.

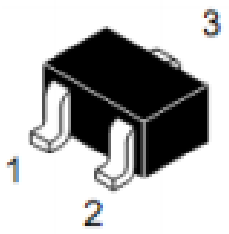
➢ Applications

- Load Switch
- Portable Devices
- DCDC conversion

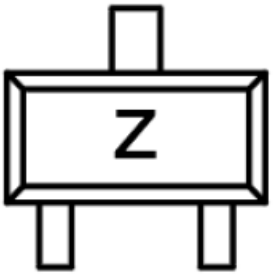
➢ Pin configuration

Top view





SOT523



Marking

➢ Ordering Information

Device	Package	Shipping
SSC8021GS8	SOT523	3000/Reel

➢ Absolute Maximum Ratings(T_A=25℃ 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 [a]	-1	A
I_{DM}	Pulsed Drain Current [b]	-2.7	A
P_D	Power Dissipation [c]	0.36	W
P_{DSM}	Power Dissipation [a]	0.22	W
T_J	Operation junction temperature	-55 to 150	℃
T_{STG}	Storage temperature range	-55 to 150	℃

➢ Thermal Resistance Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance		568	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		347	

Note:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The current rating is based on the t≤ 10s thermal resistance rating.

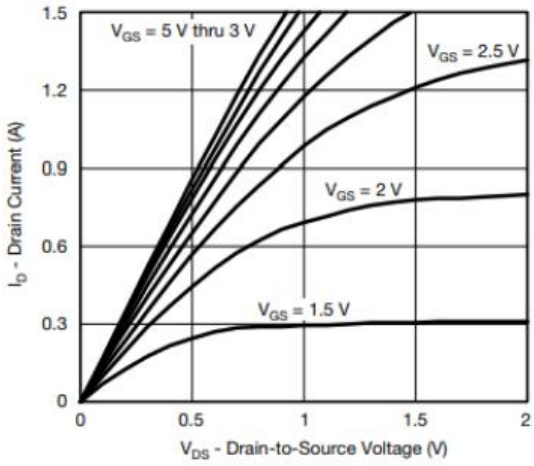
b. Repetitive rating, pulse width limited by junction temperature.

c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

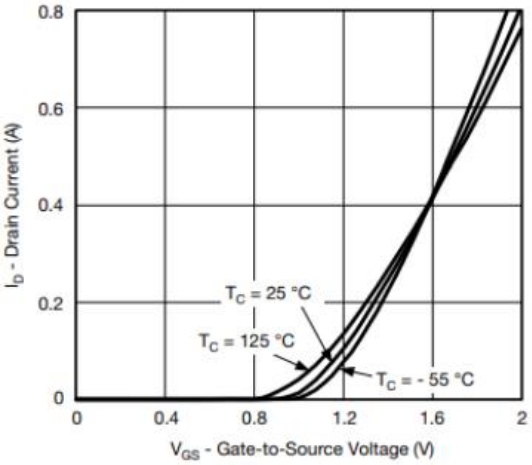
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V,ID=-250uA	-20			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS,ID=-250uA	-0.5	-0.7	-1	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=-4.5V,ID=-0.5A		600	750	mR
		VGS=-2.5V,ID=-0.5A		800	1000	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-16V,VGS=0V			-1	uA
I_{GSS}	Gate-Source leak current	VGS=±12V,VDS=0V			±10	uA
G_{FS}	Transconductance	VDS=-5V,ID=-0.45A		1.5		S
V_{SD}	Forward Voltage	VGS=0V,IS=-0.15A			-1.2	V
Ciss	Input Capacitance	VDS=10V, VGS=0V, F=200KHZ		105		pF
Coss	Output Capacitance			22		
Crss	Reverse Transfer Capacitance			18		
$T_{D(ON)}$	Turn-on delay time	VGS=6V, VGEN=4.5V, RL=6R, RG=6R,ID=0.5A		54		ns
Tr	Rise time			85		
$T_{D(OFF)}$	Turn-off delay time			890		
Tf	Fall time			176		

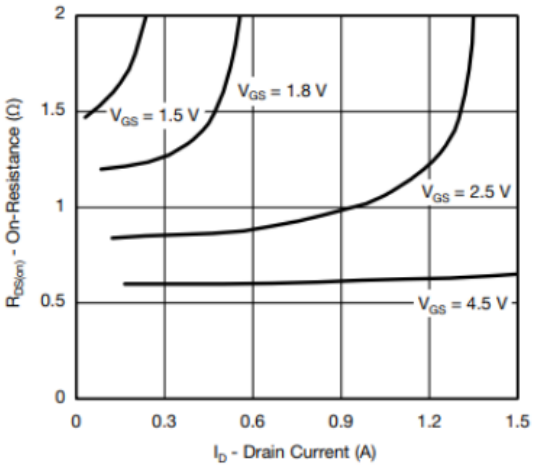
➢ **Typical Characteristics**(T_A=25℃ unless otherwise noted)



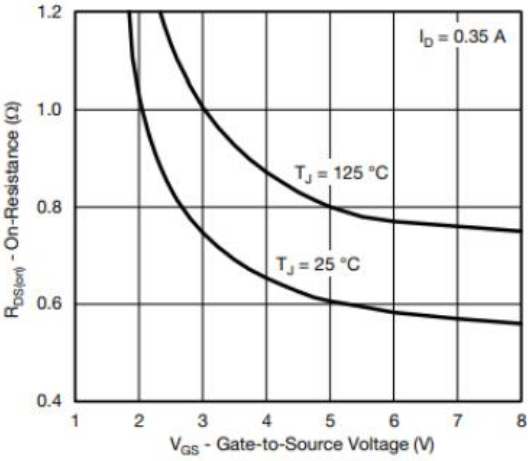
Output Characteristics



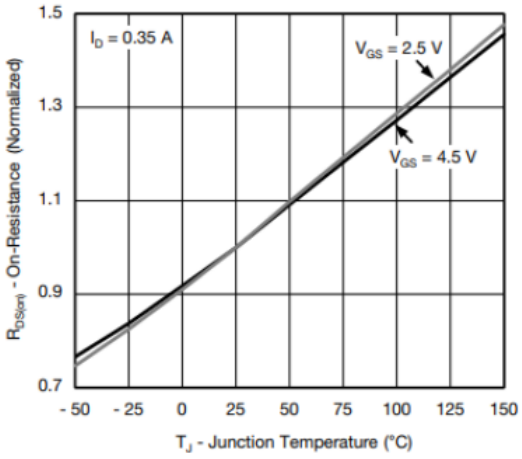
Transfer Characteristics



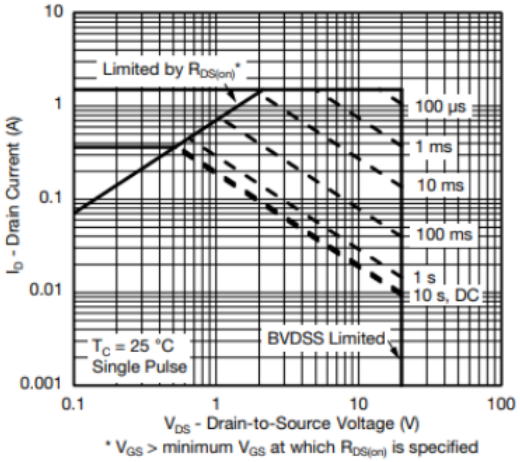
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage



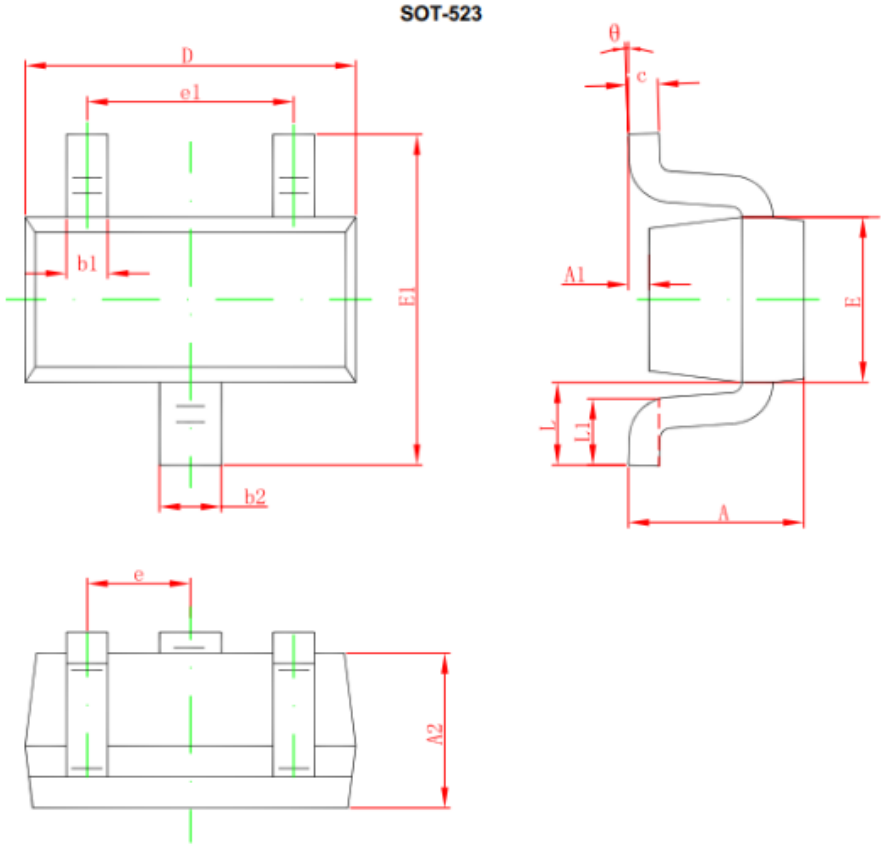
On-Resistance vs. Junction Temperature



Safe Operating Area, 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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