SSC8167GS6A

P-Channel Enhancement Mode MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
-60V	±20V	63mΩ@-10V	-5A
		70mΩ@-4V5	

➢ Description

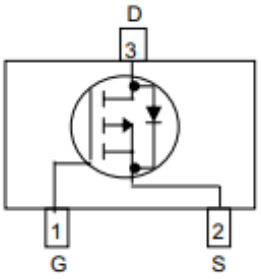
This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits and low in-line power loss are needed in a very small outline surface mount package.

➢ Applications

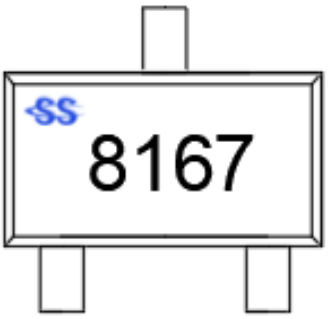
- TFT panel power switch
- High side DC/DC Converter
- High side driver for brushless DC motor
- Portable DVD, DPF

➢ Pin configuration

Top view



SOT23-3L



Marking

➢ Ordering Information

Device	Package	Shipping
SSC8167GS6A	SOT23-3L	3000/Reel

➢ Absolute Maximum Ratings(T_A=25℃ unless otherwise noted)

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-to-Source Voltage		-60	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current	TC=25℃	-5	A
		TC=100℃	-3	
I_{DSM}	Continuous Drain Current [a]	TA=25℃	-3.5	A
		TA=70℃	-2.4	
I_{DM}	Pulsed Drain Current [b]		-20	A
P_D	Power Dissipation [c]	TC=25℃	5	W
		TC=100℃	2	W
P_{DSM}	Power Dissipation [a]	TA=25℃	1.25	W
		TA=70℃	0.8	W
T_J T_{STG}	Storage and Operation junction temperature		-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 [a]		100	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		24	

Note:

a. The value of RθJA is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with TA=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.

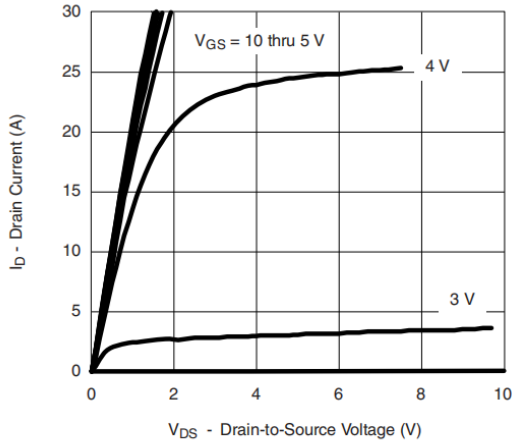
b. Repetitive rating, pulse width limited by junction temperature.

c. The power dissipation PD is based on TJ(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.

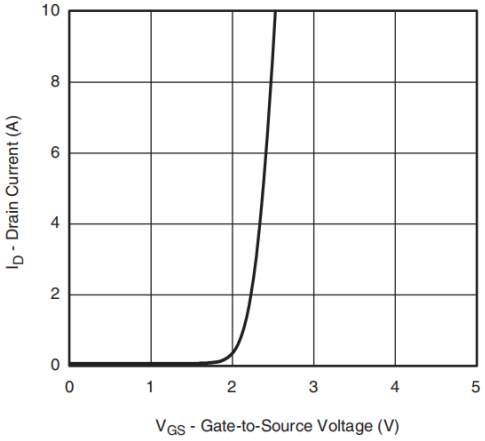
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V,ID=-250uA	-60			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS,ID=-250uA	-1.0	-1.6	-2.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=-10V,ID=-4A		63	78	mΩ
		VGS=-4.5V,ID=-2A		70	90	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-60V,VGS=0V			-1	uA
I_{GSS}	Gate-Source leak current	VGS=±20V,VDS=0V			±100	nA
V_{SD}	Forward Voltage	VGS=0V,IS=-3A		-0.8	-1.3	V
Ciss	Input Capacitance	VDS=-30V, VGS=0V, F=1MHZ		1592		pF
Coss	Output Capacitance			63		
Crss	Reverse Transfer Capacitance			47		
$T_{D(ON)}$	Turn-on delay time	VGS=-10V, VDS=-30V, RL=7.5Ω, RG=3Ω		6.4		ns
Tr	Rise time			8.8		
$T_{D(OFF)}$	Turn-off delay time			95		
Tf	Fall time			34		
Q_G	Total Gate Charge	VGS=-10V, VDS=-30V ID=-4A		27		nC
Q_{GS}	Gate to Source Charge			4.4		
Q_{GD}	Gate to Drain Charge			3.2		
Trr	Diode Recovery Time	IF=-4A , di/dt=100A/us		22		ns
Qrr	Diode Recovery Charge	IF=-4A , di/dt=100A/us		14		nC

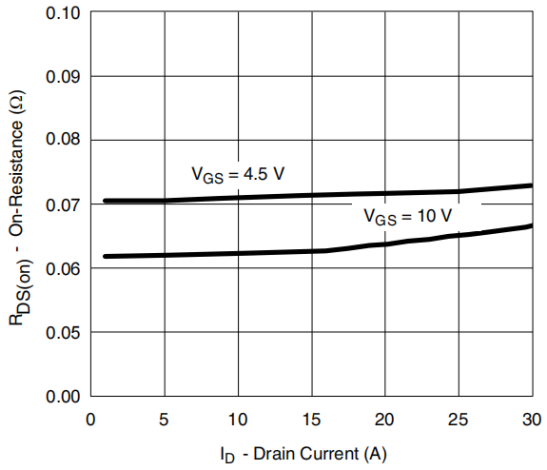
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



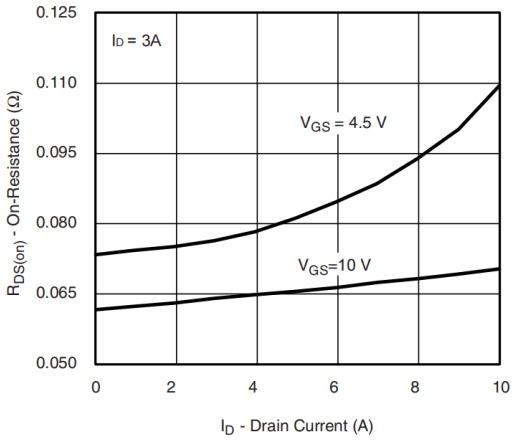
Output Characteristics



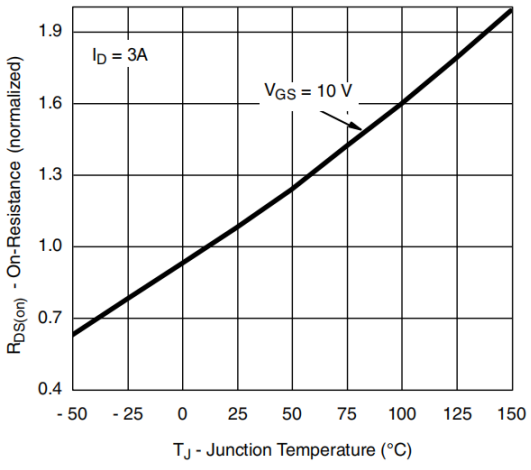
Transfer Characteristics



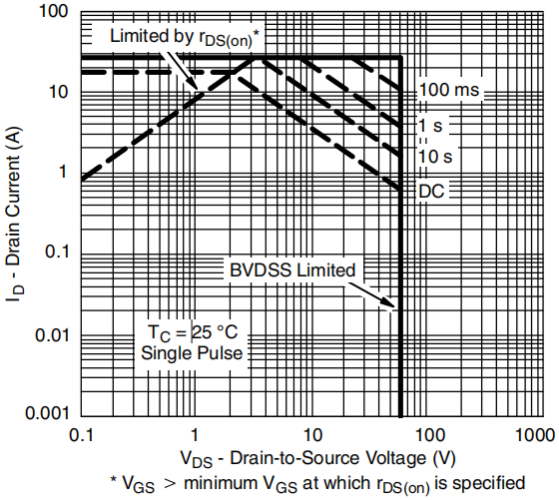
On-Resistance vs. Drain Current



On-Resistance vs. Drain Current and Gate Voltage

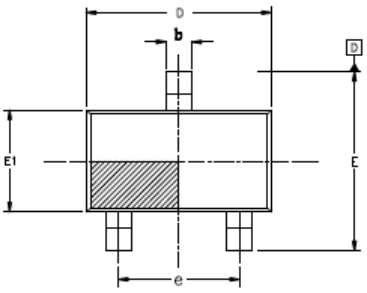


On-Resistance vs. Junction Temperature

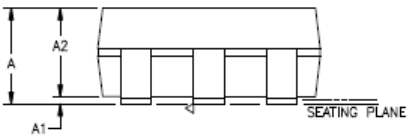


Safe Operating Area

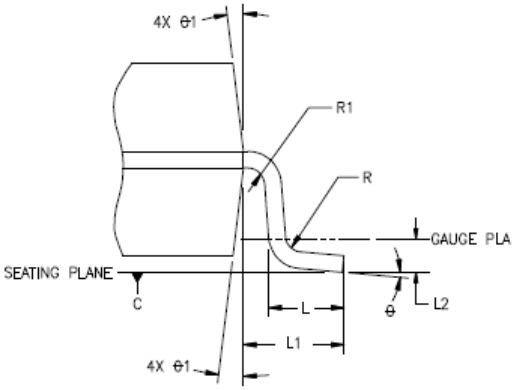
➢ Package Information

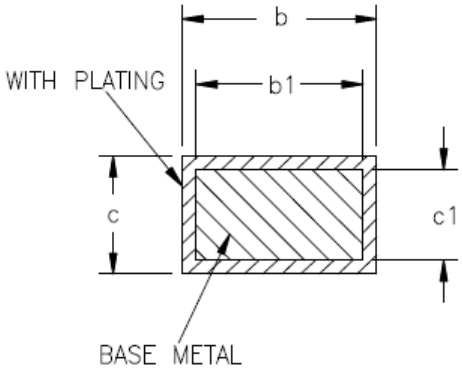


TOP VIEW



SIDE VIEW





SYMBOL	MIN	NOM	MAX
A	--	--	1.35
A1	0	--	0.15
A2	1.0	1.1	1.2
b	0.35	--	0.45
b1	0.32	--	0.38
c	0.14	--	0.20
c1	0.14	0.15	0.16
D	2.82	2.92	3.02
E	2.60	2.80	3.00
E1	1.526	1.626	1.726
e	1.8	1.9	2.0
L	0.35	0.45	0.6
L1	0.6REF		
L2	0.25REF		
R	0.1	--	--
R1	0.1	--	--
θ	0°	4°	8°
θ1	5°	10°	15°

NOTES:
1.All DIMENSIONS REFER TO JEDEC STANDARD MO-178
2.DIMENSION D DOES NOT INCLUDE MOLD FLASH
3.DIMENSION E1 DOSE NOT INCLUDE MOLD FLASH
4.FLASH OR PROTRUSION SHALL NOT EXCEED 0.25mm PER SIDE.

SOT23-3L

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