SSC139GS6

P-Channel Enhancement Mode MOSFET

➢ Features

VDS	VGS	RDSON Typ.	ID
-50V	±20V	1.8Ω@-10V	-0.4A
		2.0Ω@-4V5	

➢ Description

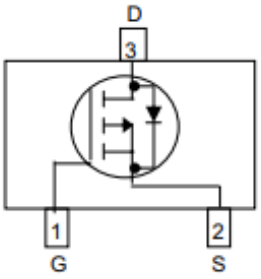
This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits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

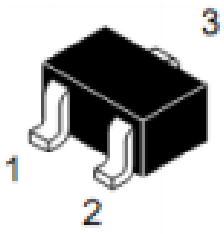
➢ Applications

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

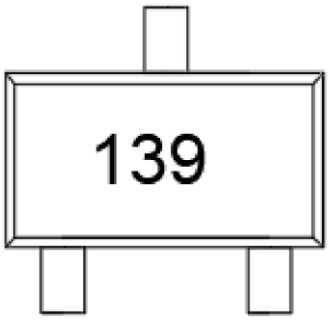
➢ Pin configuration

Top view





SOT-23



Marking

➢ Ordering Information

Device	Package	Shipping
SSC139GS6	SOT-23	3000/Reel

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

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	-50	V
V_{GSS}	Gate-to-Source Voltage	±20	V
I_D	Continuous Drain Current [a]	-400	mA
I_{DM}	Pulsed Drain Current [b]	-1.0	A
P_D	Power Dissipation [a]	0.8	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	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	144.3	℃/W

Note:

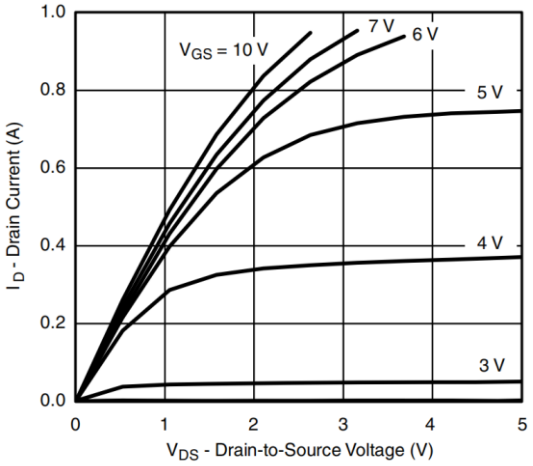
a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper,in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The current rating is based on the t≤ 10s thermal resistance rating.

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

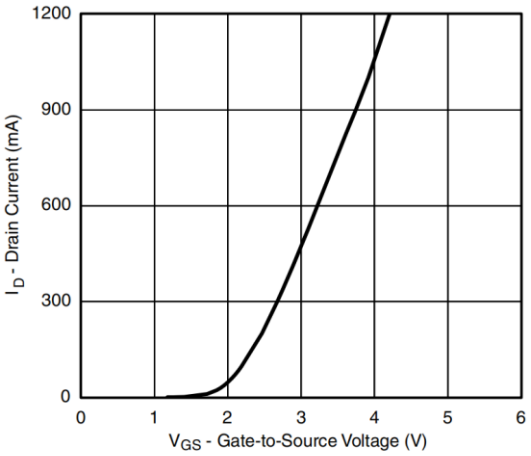
➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V,ID=-250uA	-50			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS,ID=-250uA	-1.0	-1.4	-2.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=-10V,ID=-0.1A		1.8	5	Ω
		VGS=-5V,ID=-0.1A		2	6	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-50V,VGS=0V			-1.5	uA
I_{GSS}	Gate-Source leak current	VGS=±20V,VDS=0V			±100	nA
V_{SD}	Forward Voltage	VGS=0V,IS=-0.13A		-0.8	-1.3	V
Ciss	Input Capacitance	VDS=-25V, VGS=0V, F=1MHZ		65		pF
Coss	Output Capacitance			23		
Crss	Reverse Transfer Capacitance			16		
$T_{D(ON)}$	Turn-on delay time	VGS=-5V, VDS=-25V, ID=-0.5A, RG=3Ω		12		ns
Tr	Rise time			6.8		
$T_{D(OFF)}$	Turn-off delay time			11.6		
Tf	Fall time			5.6		
Q_G	Total Gate Charge	VGS=-5V, VDS=-25V ID=-0.5A		0.8		nC
Q_{GS}	Gate to Source Charge			0.2		
Q_{GD}	Gate to Drain Charge			0.3		
Trr	Diode Recovery Time	IF=-1A, di/dt=100A/us, VR=30V		16.2		ns
Qrr	Diode Recovery Charge	IF=-1A, di/dt=100A/us, VR=30V		8		nC

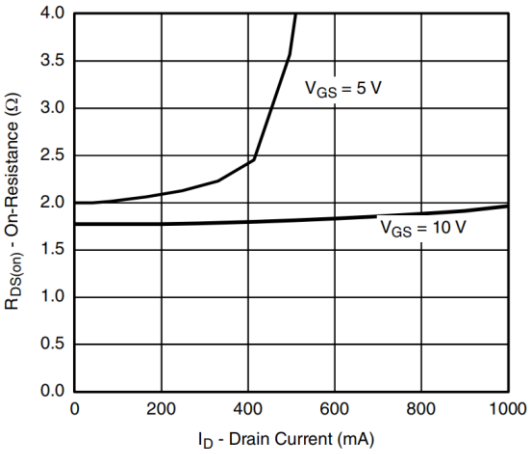
➢ Typical Characteristics(T_A=25℃ unless otherwise noted)



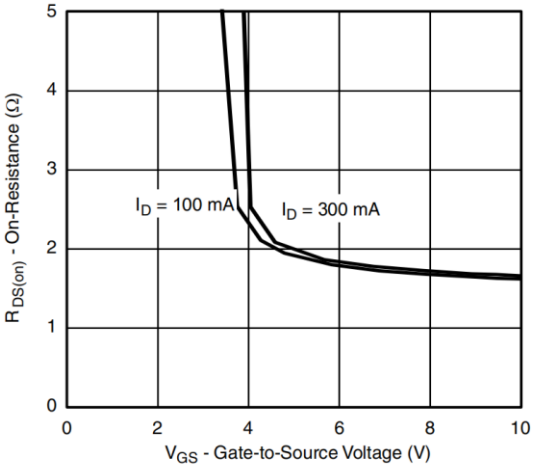
Output Characteristics



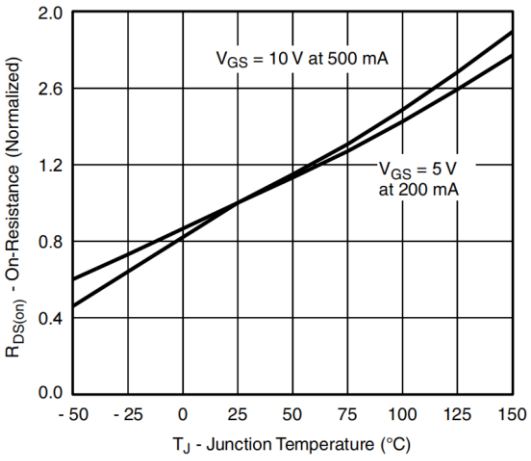
Transfer Characteristics



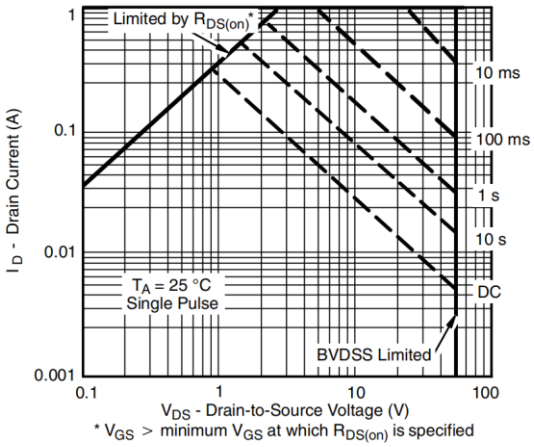
On-Resistance vs. Drain Current



On-Resistance vs. Gate-Source Voltage

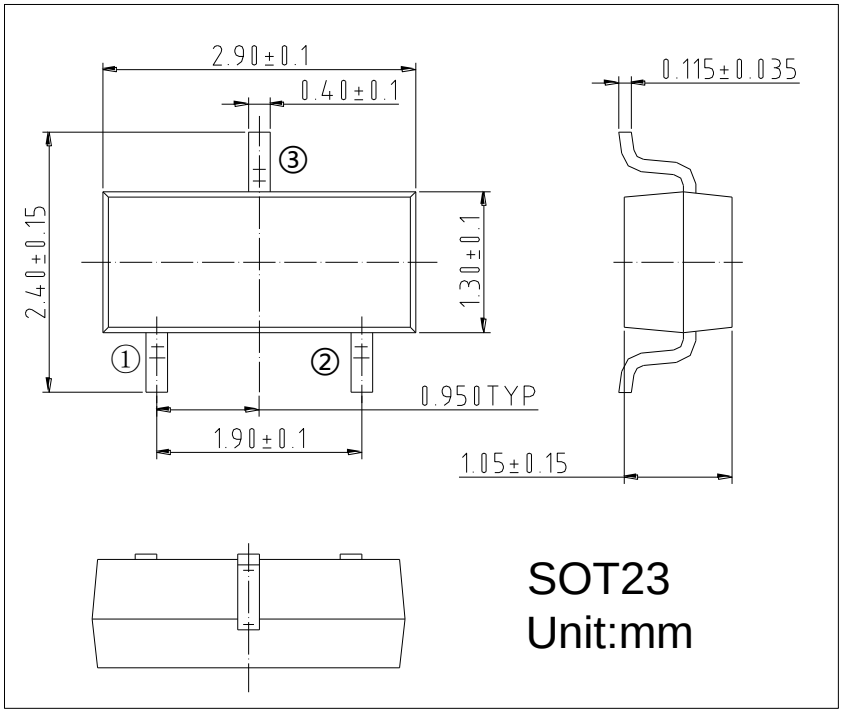


On-Resistance vs. Junction Temperature



Safe Operating Area

➢ Package Information



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