



# SSC139GN1

## P-Channel Enhancement Mode MOSFET

### ➤ Features

VDS	VGS	RDS(on) Typ.	ID
-50V	±20V	1.8Ω@-10V	-0.4A
		2.0Ω@-4V5	

### ➤ Description

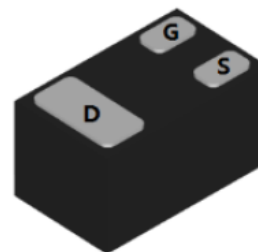
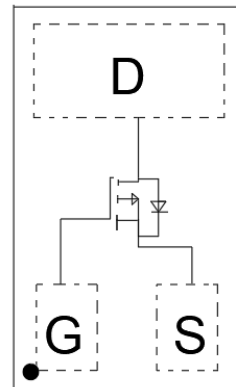
This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits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

### ➤ Applications

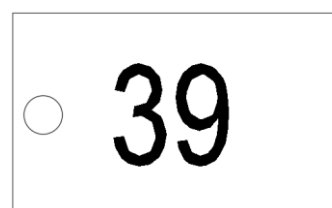
- TFT panel power switch
- High side DC/DC Converter
- High side driver for brushless DC motor
- Portable DVD, DPF

### ➤ Pin configuration

Top view



DFN1006-3L



Marking

### ➤ Ordering Information

Device	Package	Shipping
SSC139GN1	DFN1006-3L	10K/Reel



➤ **Absolute Maximum Ratings**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$V_{DSS}$	Drain-to-Source Voltage	-50	V
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current <sup>a</sup>	-400	mA
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	-1.0	A
$P_D$	Power Dissipation <sup>a</sup>	0.8	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	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	144.3	$^{\circ}\text{C}/\text{W}$

Note:

- The value of  $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> FR-4 board with 2oz.copper,in a still air environment with  $T_A=25^{\circ}\text{C}$ .The value in any given application depends on the user is specific board design. The current rating is based on the  $t \leq 10\text{s}$  thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.



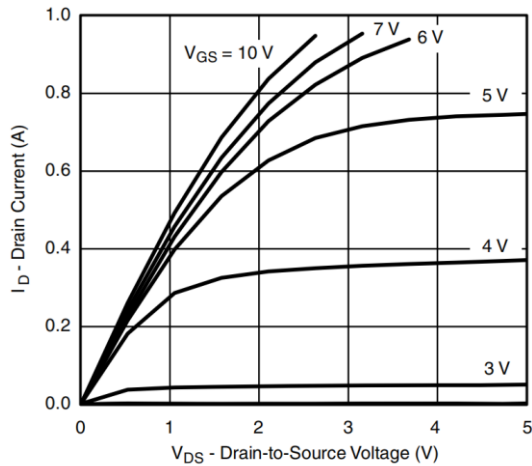
## SSC139GN1

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

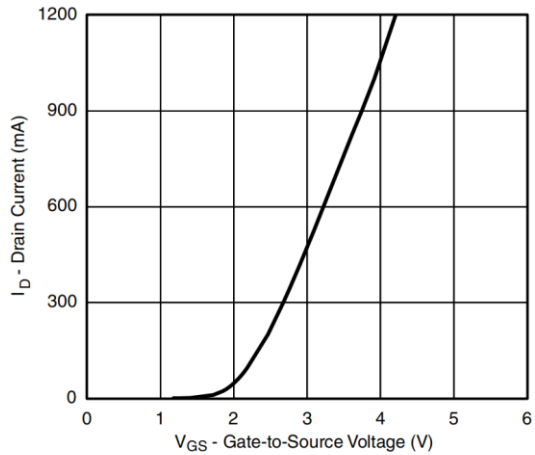
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-50			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.4	-2.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-0.1A$		1.8	5	$\Omega$
		$V_{GS}=-5V, I_D=-0.1A$		2	6	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=-50V, V_{GS}=0V$			-1.5	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=-0.13A$		-0.8	-1.3	V
$C_{iss}$	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, F=1MHz$		65		pF
$C_{oss}$	Output Capacitance			23		
$C_{rss}$	Reverse Transfer Capacitance			16		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=-5V, V_{DS}=-25V, I_D=-0.5A, R_G=3\Omega$		12		ns
$T_r$	Rise time			6.8		
$T_{D(OFF)}$	Turn-off delay time			11.6		
$T_f$	Fall time			5.6		
$Q_G$	Total Gate Charge	$V_{GS}=-5V, V_{DS}=-25V, I_D=-0.5A$		0.8		nC
$Q_{GS}$	Gate to Source Charge			0.2		
$Q_{GD}$	Gate to Drain Charge			0.3		
$T_{rr}$	Diode Recovery Time	$I_F=-1A, di/dt=100A/\mu s, V_R=30V$		16.2		ns
$Q_{rr}$	Diode Recovery Charge	$I_F=-1A, di/dt=100A/\mu s, V_R=30V$		8		nC



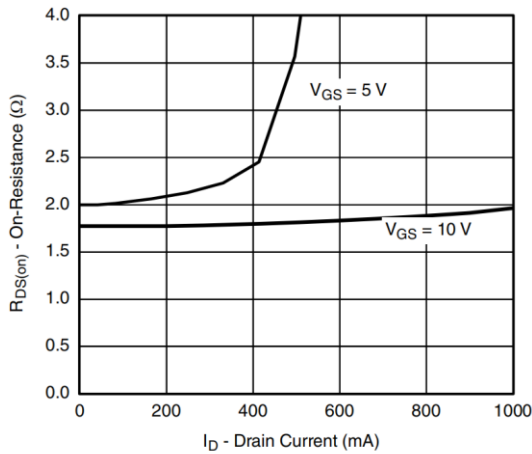
➤ **Typical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)



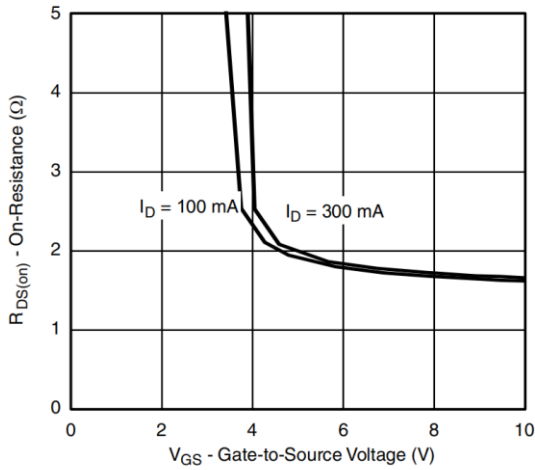
**Output Characteristics**



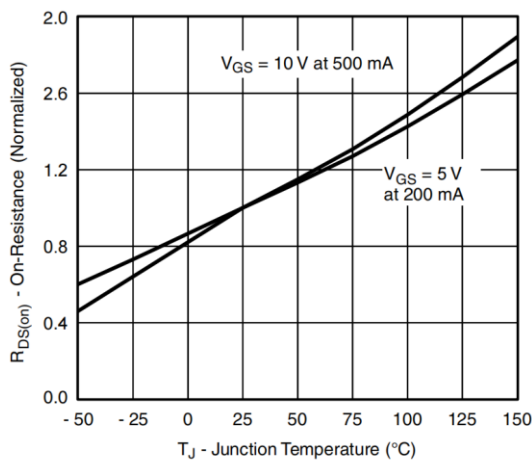
**Transfer Characteristics**



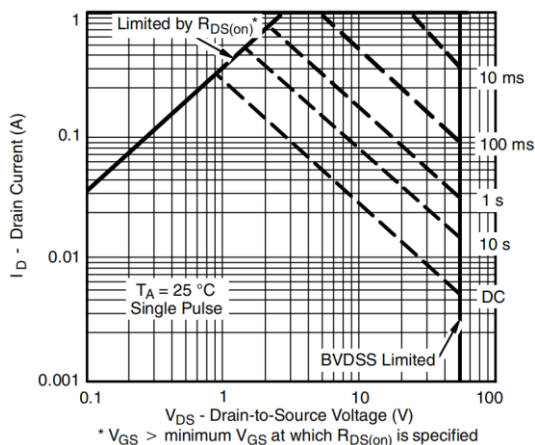
**On-Resistance vs. Drain Current**



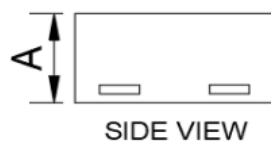
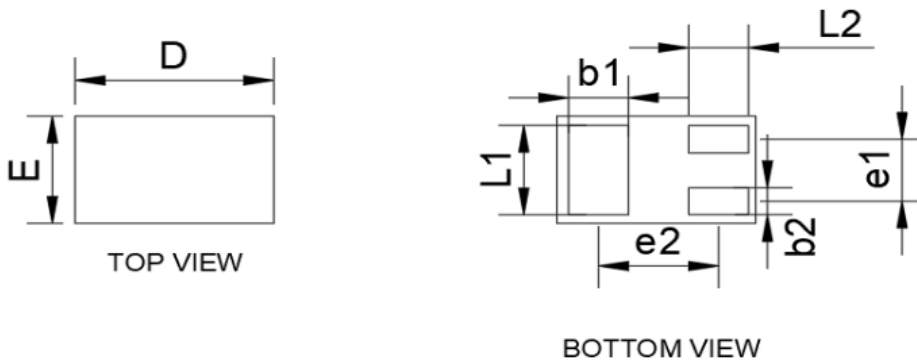
**On-Resistance vs. Gate-Source Voltage**



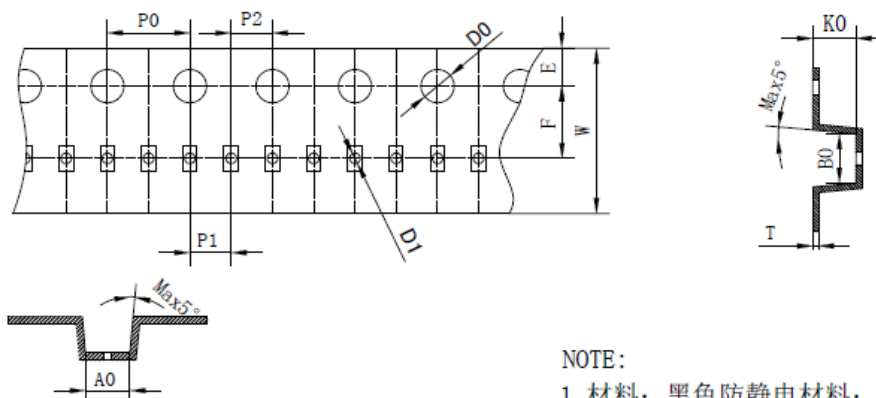
**On-Resistance vs. Junction Temperature**



**Safe Operating Area**

**➤ Package Information**
**● Mechanical Data**
**DFN1006-3L**


COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NDM.	MAX
A	0.40	0.50	0.55
D	0.90	1.00	1.05
E	0.50	0.60	0.65
b1	0.20	0.25	0.30
b2	0.10	0.15	0.20
L1	0.45	0.50	0.55
L2	0.25	0.30	0.35
e1	0.350 BSC		
e2	0.675 BSC		

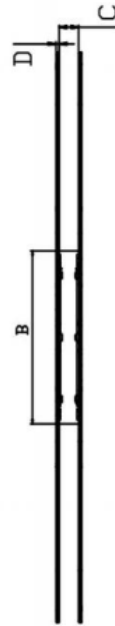
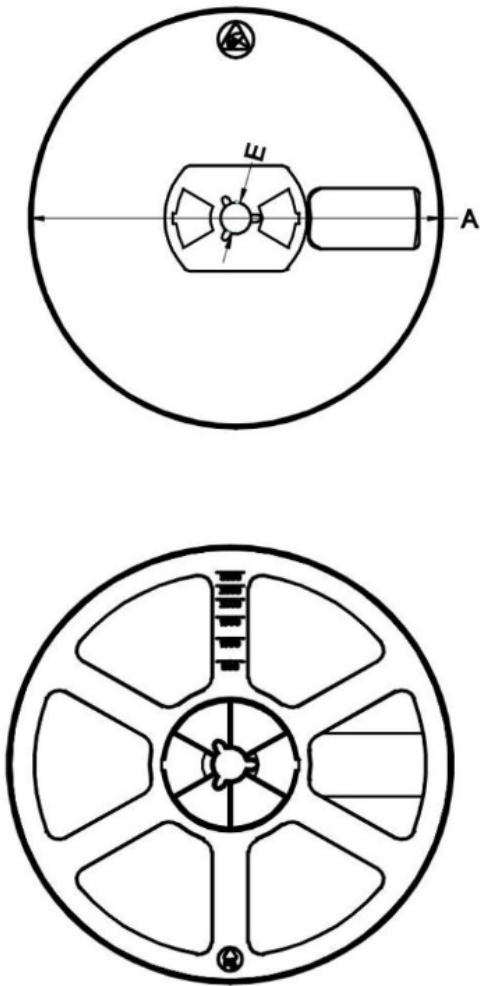
**● Tape Data**

**NOTE:**

1. 材料：黑色防静电材料；
2. 10个链孔的累积公差不能超过±0.2
3. 尺寸符合EIA-481-E的要求。

SYMBOL	A0	B0	KO	P0	P1	P2
SPEC	0.69±0.05	1.15±0.05	0.60±0.05	4.00±0.10	2.00±0.05	2.00±0.05
SYMBOL	T	E	F	D0	D1	W
SPEC	0.18±0.03	1.75±0.10	3.50±0.05	1.55±0.05	0.50±0.05	8.00 <sup>+0.5</sup> <sub>-0.1</sub>



● Reel Data



MLLMETERS		
DCM	MIN	MAX
A	178.00	179.00
B	51.00	52.00
C		
D	1.10	1.50
E	13.20	13.70

	C		
DCM	8轴心	12轴心	16轴心
MIN	9.2	12.5	16.5
MAX	10.2	13.5	17.5



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