



## SSC8111GS6

### P-Channel Enhancement Mode MOSFET

#### ➤ Features

V <sub>DS</sub>	V <sub>GS</sub>	R <sub>DS(ON)</sub> Typ.	I <sub>D</sub>
-16V	±12V	28mΩ@-4.5V	-6A
		38mΩ@-2.5V	

#### ➤ 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.

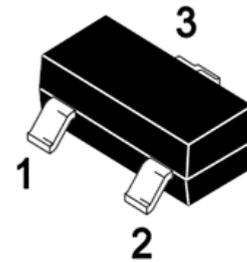
#### ➤ Applications

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

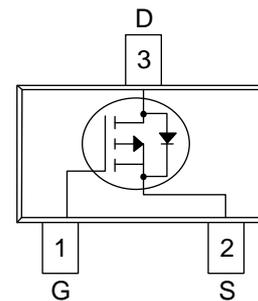
#### ➤ Ordering Information

Device	Package	Shipping
SSC8111GS6	SOT-23	3000/Reel

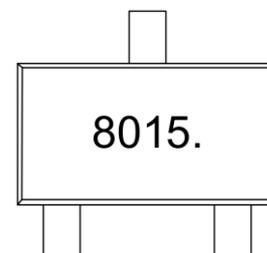
#### ➤ Pin configuration



**SOT-23**



**Pin Configuration (Top View)**



**Marking**



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

Symbol	Parameter	Ratings	Unit
$V_{DSS}$	Drain-to-Source Voltage	-16	V
$V_{GSS}$	Gate-to-Source Voltage	$\pm 12$	V
$I_D$	Continuous Drain Current <sup>a</sup>	-6	A
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	-24	A
$P_D$	Power Dissipation <sup>c</sup>	1.6	W
$T_J$	Operation junction temperature	-55~150	$^\circ\text{C}$
$T_{STG}$	Storage temperature range	-55~150	$^\circ\text{C}$

➤ **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 <sup>a</sup>	76	98	$^\circ\text{C}/\text{W}$

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 power dissipation is based on the  $t \leq 10\text{s}$  thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation  $P_D$  is based on  $T_{J(MAX)}=150^\circ\text{C}$ , using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

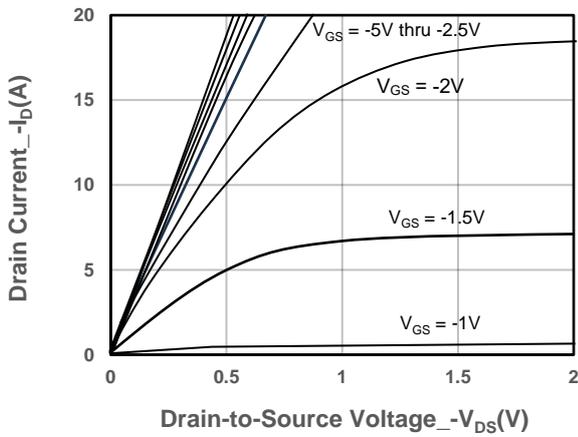


➤ **Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

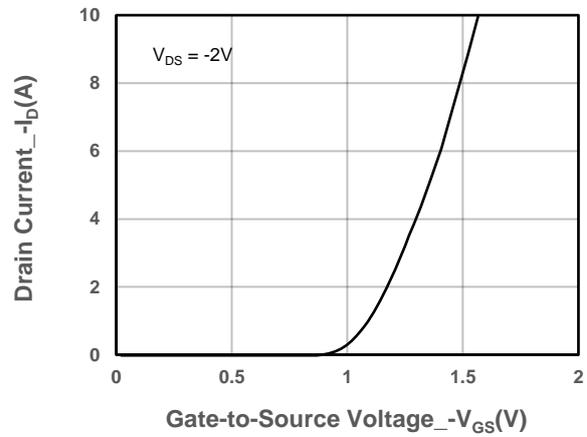
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-16			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4	-0.7	-1.2	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -6A		28	37	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -4A		38	51	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V			-1	μA
Gate-Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1.6A		-0.8	-1.3	V
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = -8V, V <sub>GS</sub> = 0V, f = 1MHz		679		pF
Output Capacitance	C <sub>OSS</sub>			118		
Reverse Transfer Capacitance	C <sub>RSS</sub>			95		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GS</sub> = -4.5V, V <sub>DS</sub> = -8V, R <sub>L</sub> = 2Ω, R <sub>G</sub> = 3Ω		13.2		ns
Rise Time	T <sub>r</sub>			10.5		
Turn-off Delay Time	T <sub>D(OFF)</sub>			36		
Fall Time	T <sub>f</sub>			24.5		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = -4.5V, V <sub>DS</sub> = -8V, I <sub>D</sub> = -2A		12		nC
Gate to Source Charge	Q <sub>GS</sub>			2		
Gate to Drain Charge	Q <sub>GD</sub>			3		



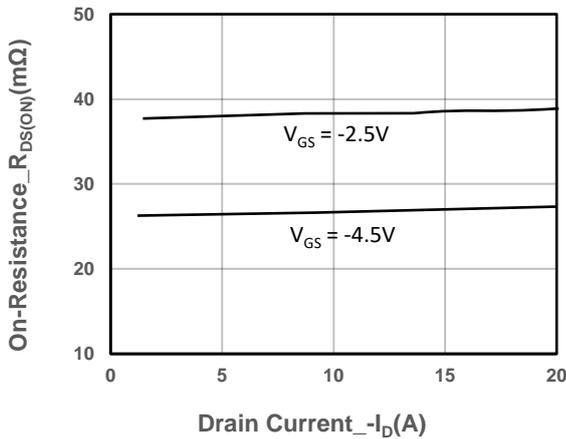
➤ **Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**



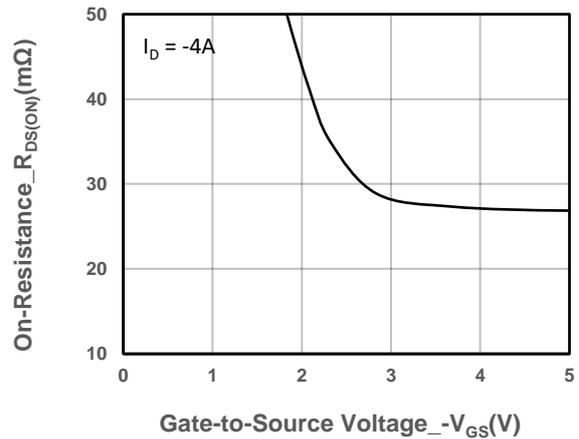
**Output Characteristics**



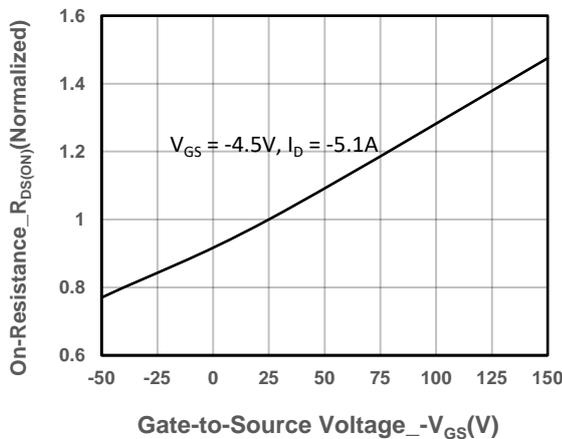
**Transfer Characteristics**



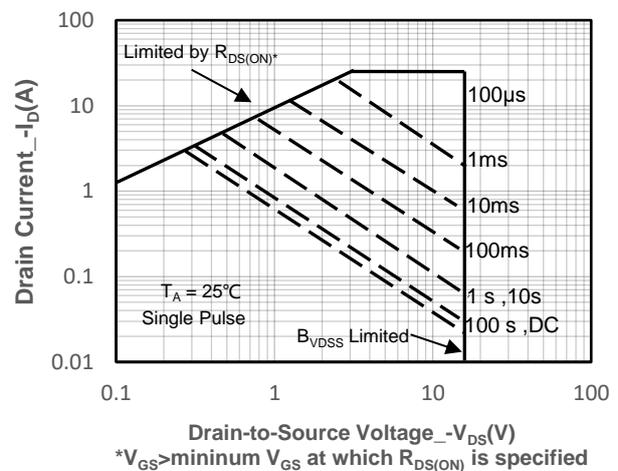
**On-Resistance vs. Drain Current and Gate Voltage**



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

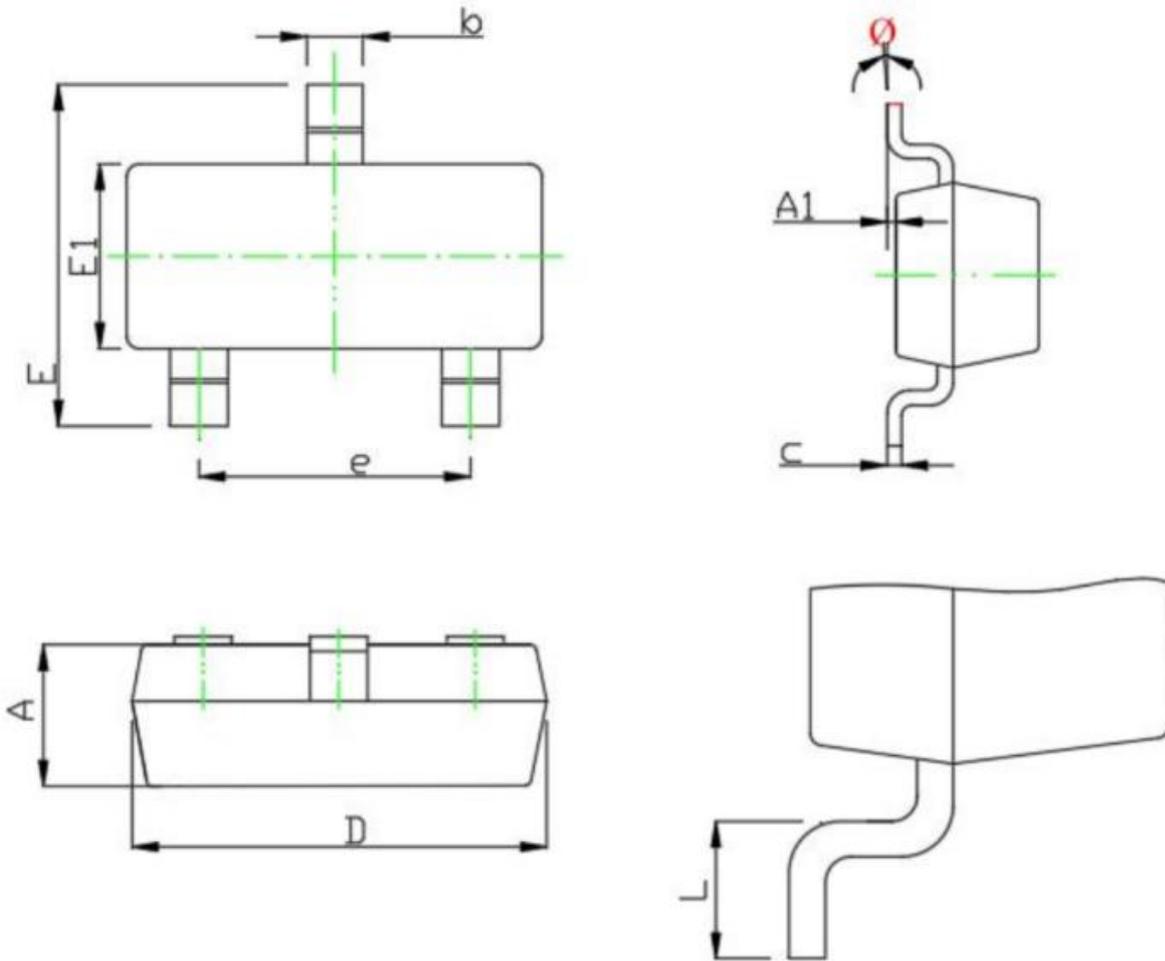


**On-Resistance vs. Junction Temperature**



**Safe Operating Area vs. Junction-to-Ambient**

## ➤ Package Information



Symbol	MILL IMETER		
	Min	Nom	Max
A	0.90	1.00	1.15
A1	0.01	0.05	0.10
b	0.35	0.40	0.45
c	0.08	0.11	0.16
D	2.80	2.90	3.00
E	2.25	2.40	2.55
E1	1.20	1.30	1.40
e	0.80	1.90	2.00
L	0.30	0.40	0.50
$\theta$	0°	/	8°



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