



## SSC8LA4GS6A

### N-Channel Enhancement Mode MOSFET

#### ➤ Features

$V_{DS}$	$V_{GS}$	$R_{DS(ON)}$ Typ.	$I_D$
100V	$\pm 20V$	110m $\Omega$ @10V	3A
		145m $\Omega$ @4V5	

#### ➤ Description

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent RDSON with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

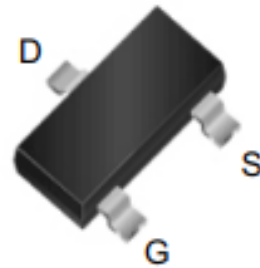
#### ➤ Applications

- Load Switch
- Portable Devices
- DCDC Conversion

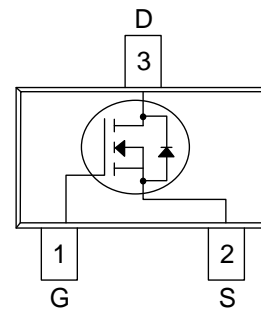
#### ➤ Ordering Information

Device	Package	Shipping
SSC8LA4GS6A	SOT-23-3L	3000/Reel

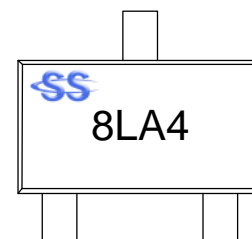
#### ➤ Pin configuration



**SOT-23-3L**



**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	100	V
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current <sup>a</sup>	3	A
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	12	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	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	78	$^\circ\text{C}/\text{W}$

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  $T_{J(\text{MAX})}=150^\circ\text{C}$ , using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

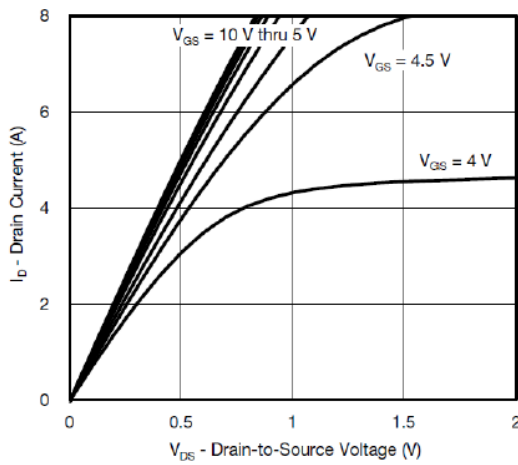


➤ **Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

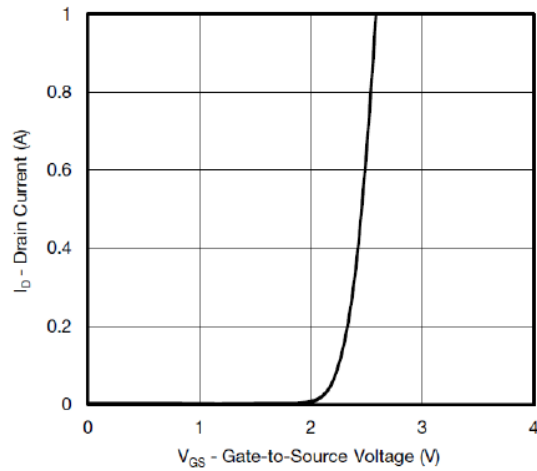
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	1.2	1.6	2.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 3A		110	140	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 2A		145	200	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 100V, V <sub>GS</sub> = 0V			1	μA
Gate-Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Transconductance	G <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 3A		5		s
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 2A		0.8	1.3	V
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> = 0V, f = 1MHz		9		Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 50V, V <sub>GS</sub> = 0V, f = 1MHz		160		pF
Output Capacitance	C <sub>OSS</sub>			96		
Reverse Transfer Capacitance	C <sub>RSS</sub>			4.4		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GEN</sub> = 10V, R <sub>L</sub> = 16.6Ω V <sub>DS</sub> = 50V, R <sub>G</sub> = 3Ω		4		ns
Rise Time	T <sub>r</sub>			3		
Turn-off Delay Time	T <sub>D(OFF)</sub>			14		
Fall Time	T <sub>f</sub>			9		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 3A		3.5		nC
Gate to Source Charge	Q <sub>GS</sub>			1.2		
Gate to Drain Charge	Q <sub>GD</sub>			0.8		
Diode Recovery Time	T <sub>RR</sub>	I <sub>F</sub> = 3A, di/dt = 100A/us		15		ns
Diode Recovery Charge	Q <sub>RR</sub>	I <sub>F</sub> = 3A, di/dt = 100A/us		22		nC



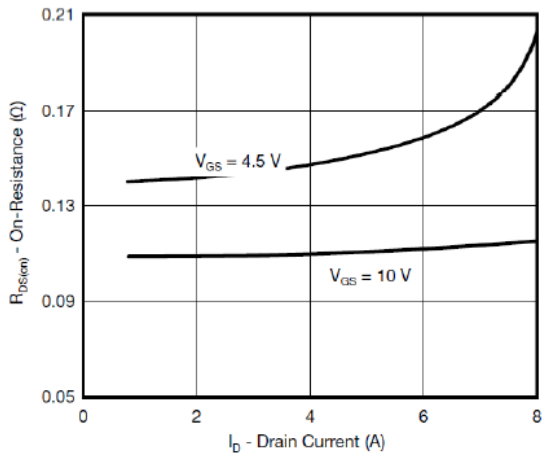
➤ **Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**



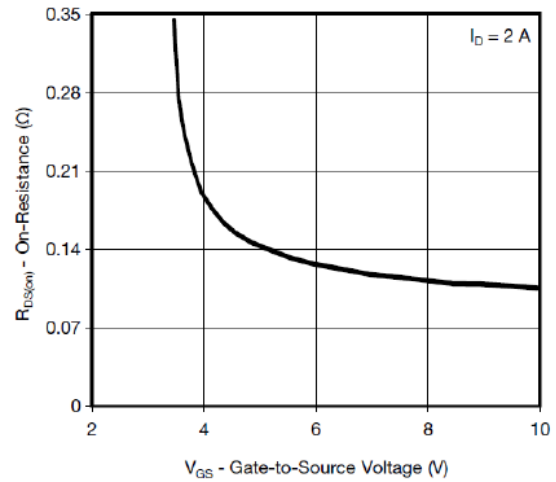
**Output Characteristics**



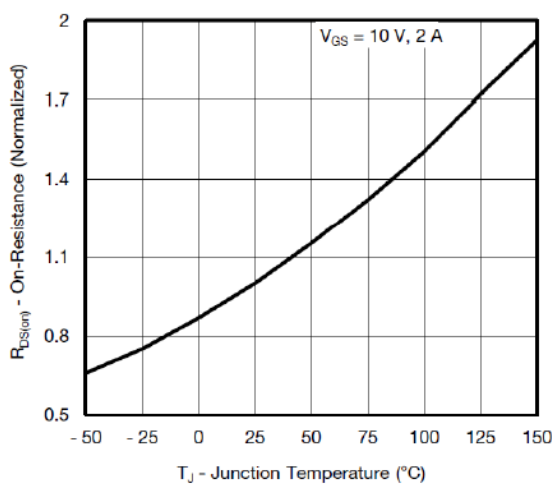
**Transfer Characteristics**



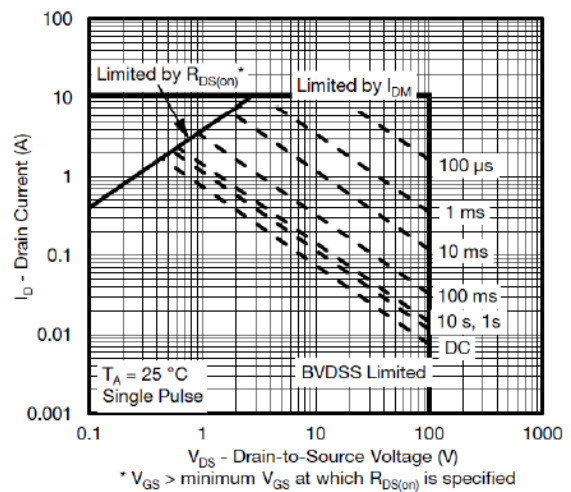
**On-Resistance vs. Drain Current and Gate Voltage**



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

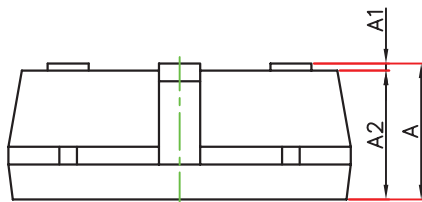
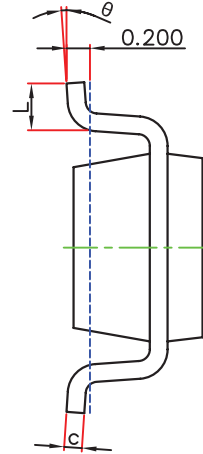
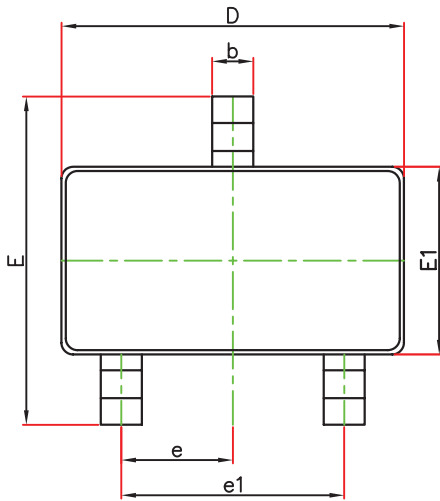


**On-Resistance vs. Junction Temperature**



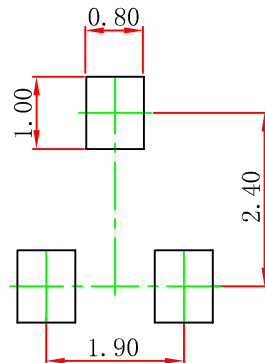
**Safe Operating Area**

## ➤ Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

## ➤ Recommended Pad outline (Unit: mm)





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