

## N-Channel Enhancement Mode MOSFET

- **Features**

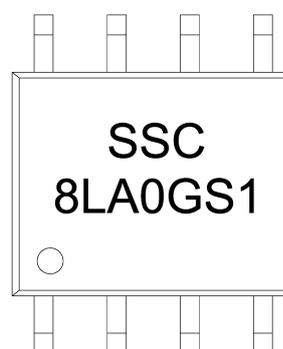
VDS	VGS	RDSon TYP	ID
100V	±20V	9.5mR@10V	14A
		13.5mR@4V5	

- **Applications**

- Load Switch
- Industrial and Motor Drive applications
- DC/DC conversion and AC/DC Converters

- **Pin Configuration**

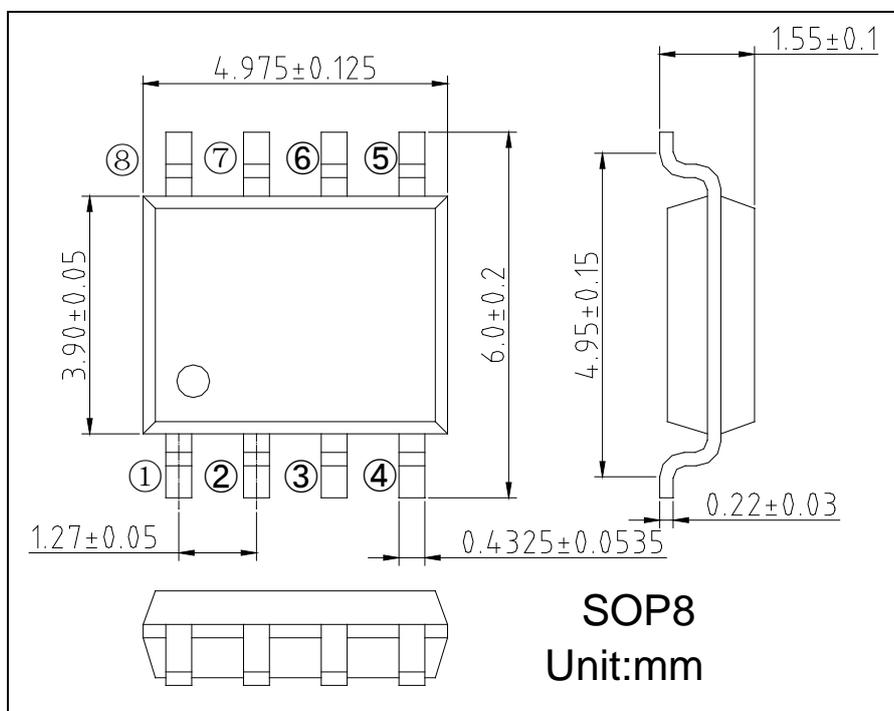
Top View



- **General Description**

This device uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications.

- **Package Information**





# SSC8LA0GS1

## Absolute Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	N-channel	Unit
Drain-Source Voltage	$V_{DSS}$	100	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current (Note 1)	$I_D$	14	A
Plused Drain Current (Note 2)	$I_{DM}$	100	A
Total Power Dissipation (Note 1)	$P_D$	2.0	W
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

## ● Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	100	--	--	V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.0	1.7	2.2	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12\text{ V}, V_{DS} = 0\text{ V}$	--	--	$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 100\text{ V}, V_{GS} = 0\text{ V}$	--	--	1	$\mu\text{A}$
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 11.5\text{ A}$	--	9.5	12	mR
		$V_{GS} = 4.5\text{ V}, I_D = 10\text{ A}$	--	13.5	15	
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0\text{ V}, I_S = 6\text{ A}$	--	--	1.5	V
Input Capacitance	$C_{ISS}$	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$	--	2400	--	pF
Output Capacitance	$C_{OSS}$		--	186	--	
Reverse Transfer Capacitance	$C_{RSS}$		--	15	--	
Turn-On Delay Time	$T_{D(ON)}$	$V_{DS} = 30\text{ V}, R_L = 30\text{ R},$ $V_{GS} = 10\text{ V}, V_{GEN} = 10\text{ V}$	--	20	--	ns
Turn-Off Delay Tim	$T_{D(OFF)}$		--	30	--	

Note :

1. DUT is mounted on a  $1\text{ in}^2$  FR-4 board with 2oz. Copper in a still air environment at  $25^\circ\text{C}$ , the current rating is based on the DC (continuous) test conditions.
2. Repetitive rating, pulse width limited by junction temperature.

### 3. Typical Performance Characteristics

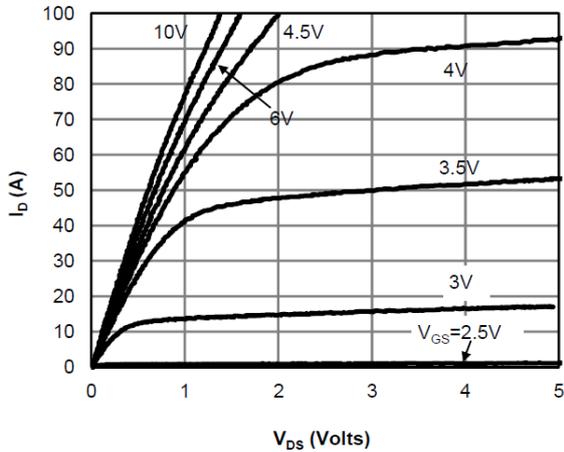


Figure 1: On-Region Characteristics (Note E)

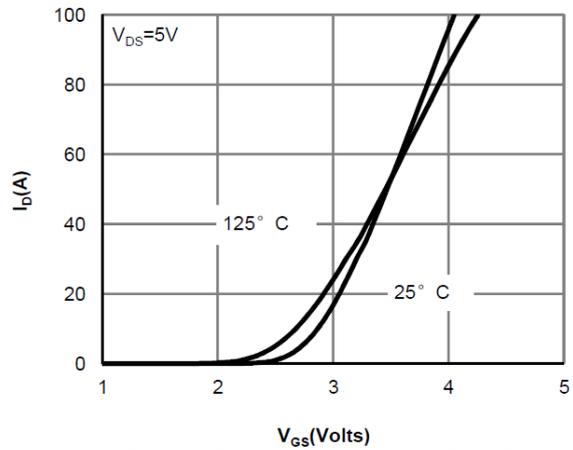


Figure 2: Transfer Characteristics (Note E)

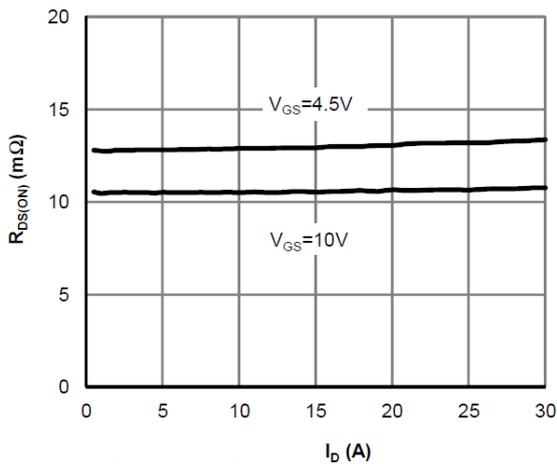


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

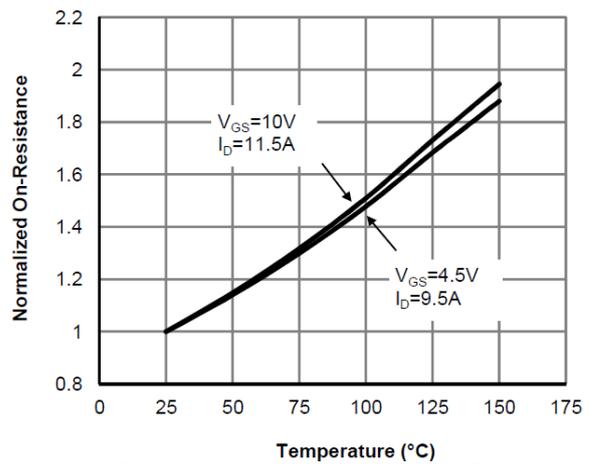


Figure 4: On-Resistance vs. Junction Temperature (Note E)

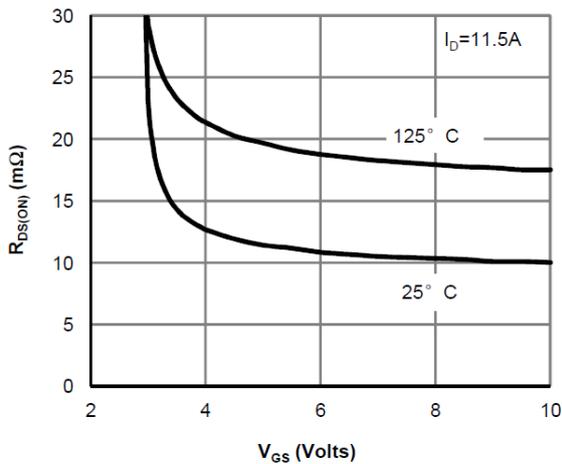


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

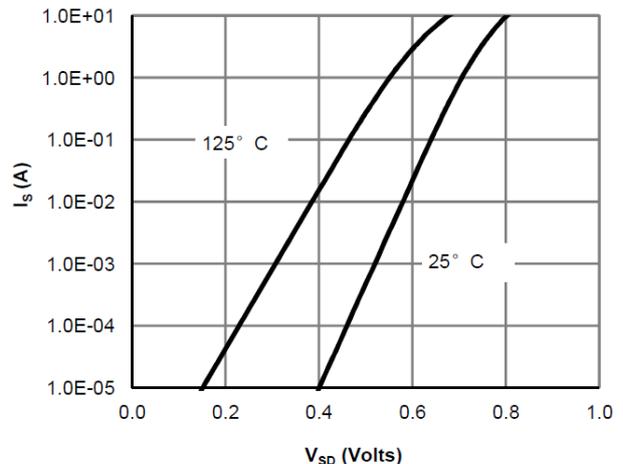


Figure 6: Body-Diode Characteristics (Note E)

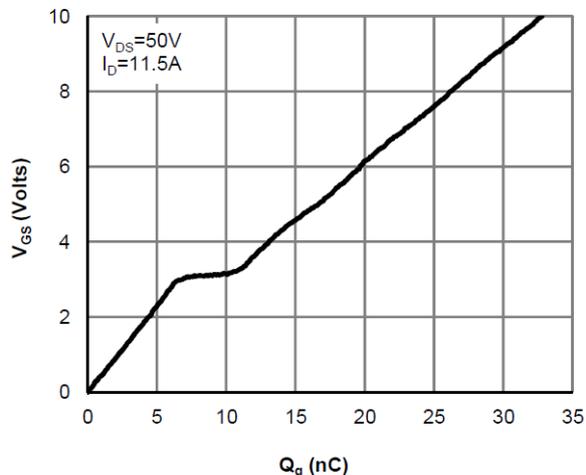


Figure 7: Gate-Charge Characteristics

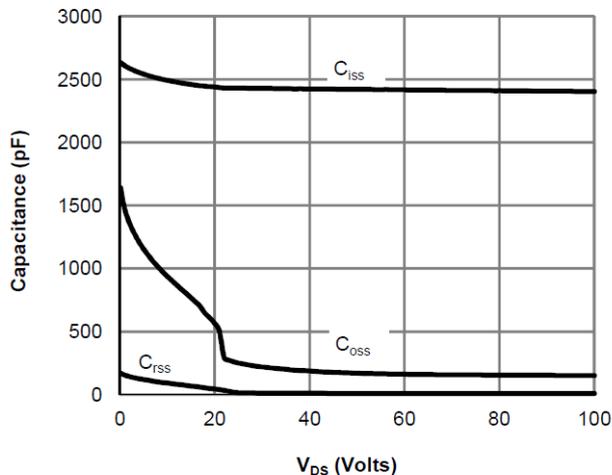


Figure 8: Capacitance Characteristics

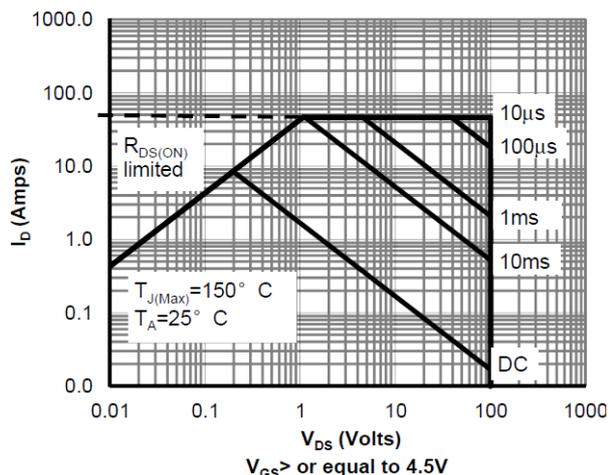


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

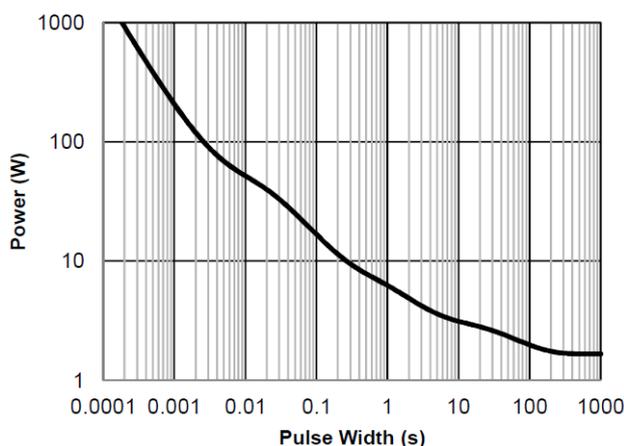


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

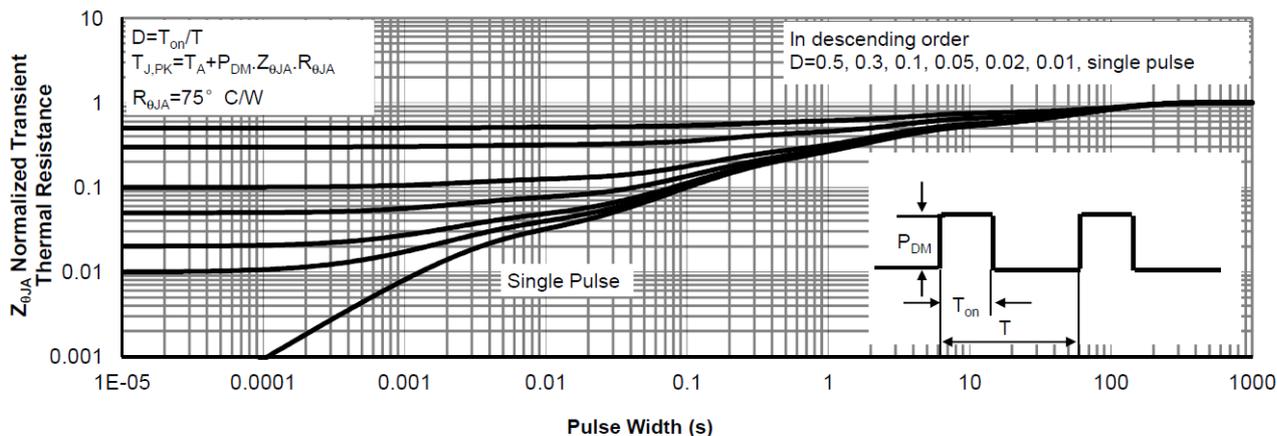


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



# SSC8LA0GS1

---

## DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE ) AND THEREFORE OUTSIDE THE WARRANTED RANGE.