SSC8LA14GT6

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$	I_D
100V	±20V	1.6mΩ@10V	300A
		2mΩ@6V0	

➢ 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.

100% UIS + ΔVDS + Rg Tested!

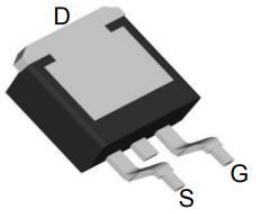
➢ Applications

- Motor Drive Control
- Portable Devices
- DCDC Conversion
- Power Supplies
- Synchronous Rectification

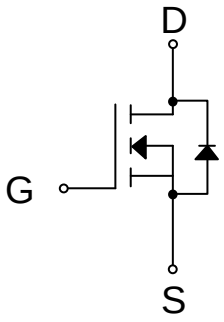
➢ Ordering Information

Device	Package	Shipping
SSC8LA14GT6	TO-263-3L	1000/Box

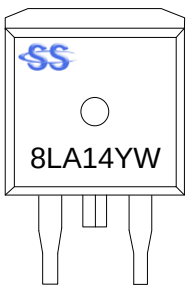
➢ Pin Configuration



TO-263-3L (Bottom View)



Pin Configuration



Marking

(YW: Internal Traceability Code)

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

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-to-Source Voltage		100	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [d]	T_C=25℃	300	A
		T_C=100℃	180	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	57	A
		T_A=70℃	40	
I_{DM}	Pulsed Drain Current [b]		1200	A
P_D	Power Dissipation [c]	T_C=25℃	300	W
		T_C=100℃	120	
P_{DSM}	Power Dissipation [a]	T_A=25℃	8	W
		T_A=70℃	5	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		80	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		1600	mJ
T_J	Operation junction temperature		-55~150	℃
T_{STG}	Storage temperature range		-55~150	

➢ Thermal Resistance Ratings (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	15	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	0.41	

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 power dissipation is based on the t≤10s thermal resistance rating.

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

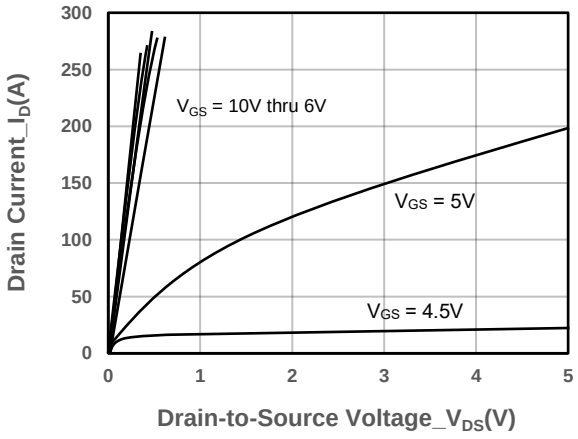
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

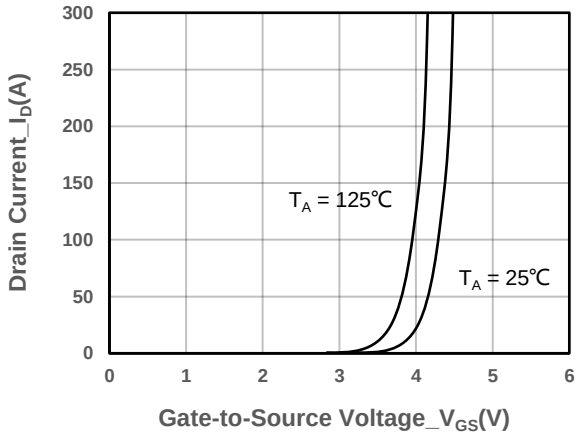
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	2	3	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 80A		1.6	1.9	mΩ
		V_{GS} = 6V, I_D = 50A		2	2.5	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 100V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Gate Resistance	R_G	V_{DS} = 0V, f = 1MHz		2.6		mΩ
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 100A		0.87	1.3	V
Input Capacitance	C_{ISS}	V_{DS} = 50V, V_{GS} = 0V, f = 1MHz		14600		pF
Output Capacitance	C_{OSS}			1800		
Reverse Transfer Capacitance	C_{RSS}			28		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 50V, I_D = 100A		206		nC
Gate to Source Charge	Q_{GS}			77		
Gate to Drain Charge	Q_{GD}			42		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 50V, R_L = 0.5Ω, R_G = 10Ω		87		ns
Rise Time	T_r			110		
Turn-off Delay Time	$T_{D(OFF)}$			212		
Fall Time	T_f			159		
Diode Recovery Time	T_{rr}	I_F=100A, di/dt=100A/us		96		ns
Diode Recovery Charge	Q_{rr}	I_F=100A, di/dt=100A/us		240		nC

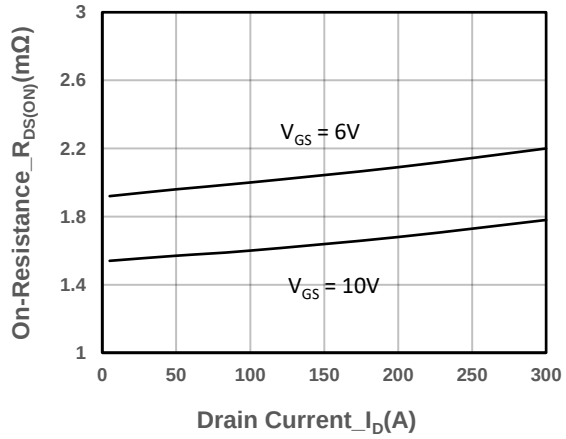
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



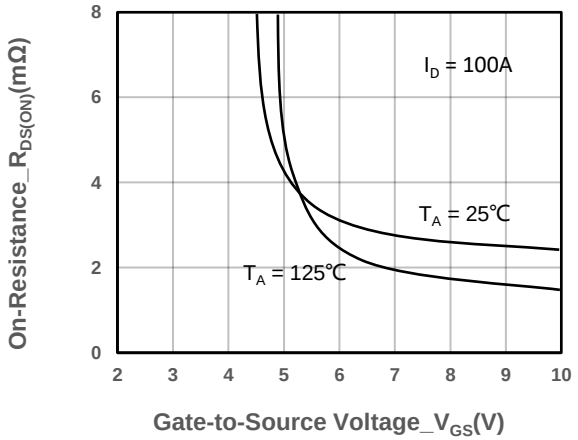
Output Characteristics



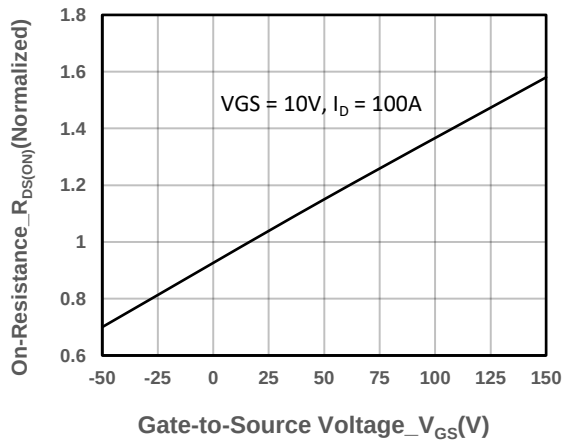
Transfer Characteristics



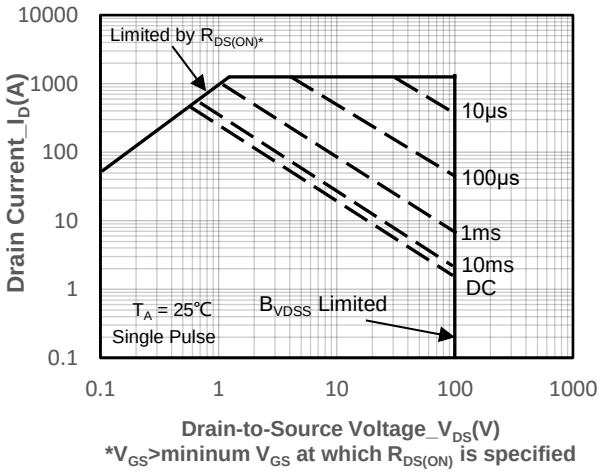
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

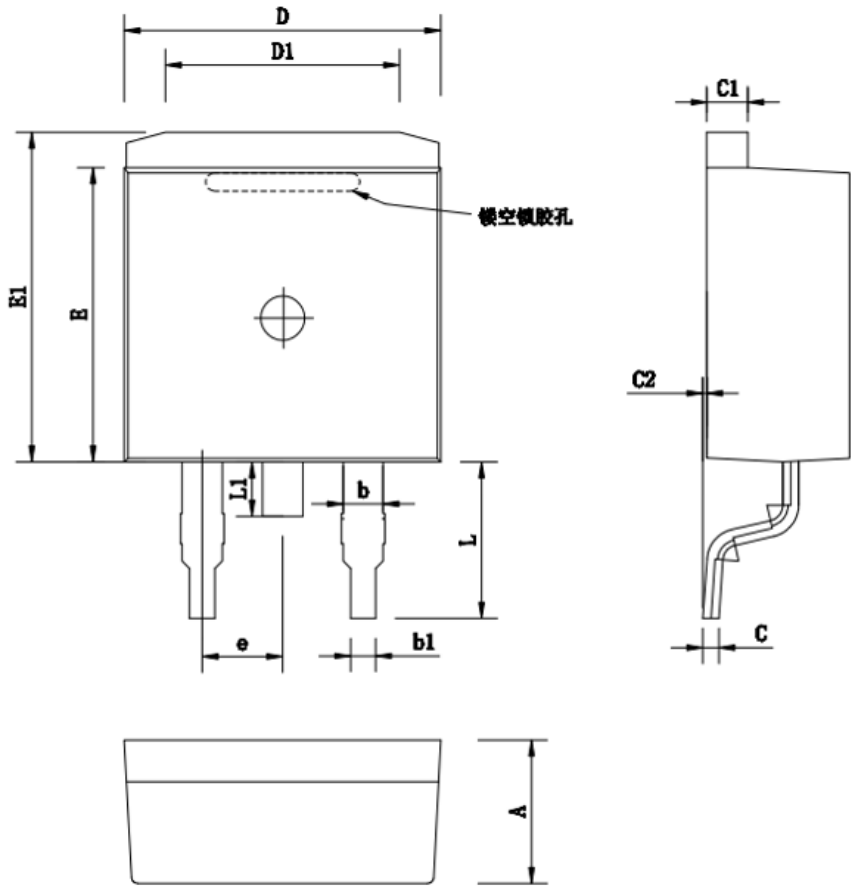


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➢ Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	4.40	4.50	4.60
b	1.20	1.28	1.36
b1	0.70	0.80	0.90
C	0.48	0.50	0.53
C1	1.28	1.30	1.32
D	9.80	10.00	10.20
D1	7.25	7.40	7.55
E	10.10	10.25	10.40
E1	9.10	9.20	9.30
e	-	2.54	-
L	4.70	4.90	5.10
L1	1.50	1.70	1.90

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