SSC8LA14GTL

N-Channel Enhancement Mode MOSFET

Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
100V	±20V	1.2mΩ@10V	403A

Description

The SSC8LA14GTL is N-Channel enhancement mode 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!

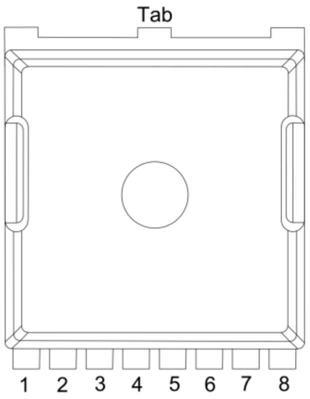
Applications

- Inverter
- DC-DC Converter
- Half and Full Bridge Topology
- Motor Drive Control

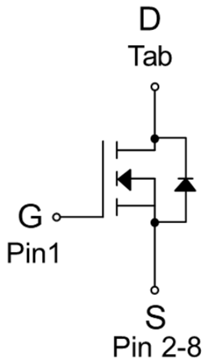
Ordering Information

Device	Package	Shipping
SSC8LA14GTL	TOLL	2000/Reel

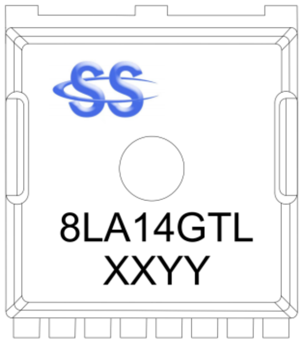
Pin configuration



TOLL (Top View)



Pin Configuration



Marking

(XXYY: 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 [b]	T_C = 25℃	403	A
		T_C = 100℃	224	A
I_{DM}	Pulsed Drain Current [b]		1613	A
I_{DSM}	Continuous Drain Current [a]	T_A = 25℃	36	A
		T_A = 70℃	26	A
P_D	Power Dissipation [c]	T_C = 25℃	313	W
		T_C = 100℃	125	W
P_{DSM}	Power Dissipation [a]	T_A = 25℃	2.5	W
		T_A = 70℃	1.6	W
I_{AS}	Avalanche Current [b] L = 0.5mH		72	A
E_{AS}	Avalanche Energy [b] L = 0.5mH		1296	mJ
T_J	Operation junction temperature		-55 to 150	℃
T_{STG}	Storage temperature range		-55 to 150	℃

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

Symbol	Parameter	Ratings	Unit
$R_{θJA}$	Junction-to-Ambient Thermal Resistance [a]	50	℃/W
$R_{θJC}$	Junction-to-Case Thermal Resistance	0.4	

Note:

a. The value of $R_{θJA}$ 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 current rating is based on the t≤10s thermal resistance rating.

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

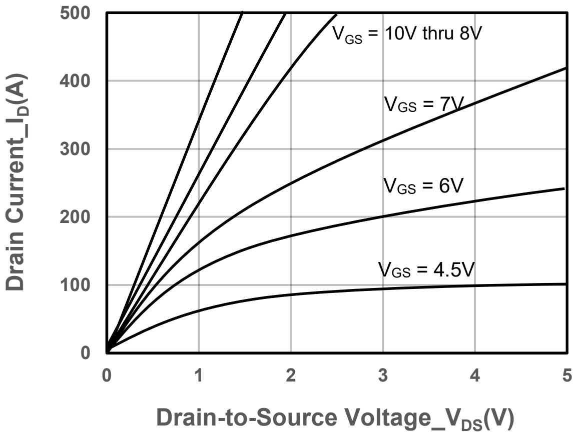
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

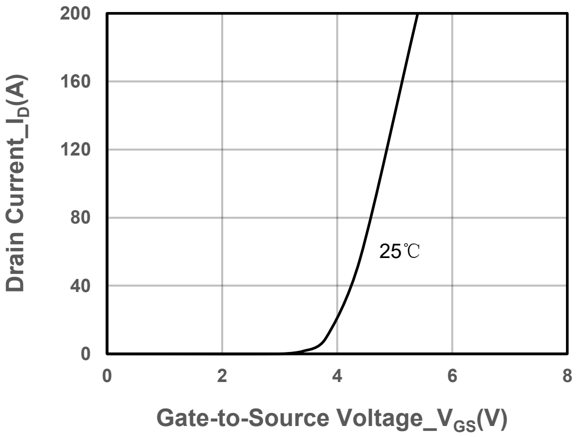
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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	2.0	3.0	4.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A		1.2	1.9	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			±150	nA
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 20A		0.75	1.3	V
Gate Resistance	R_G	V_{DS} = 0V, f = 1MHz		2.1		Ω
Input Capacitance	C_{ISS}	V_{DS} = 50V, V_{GS} = 0V, f = 1MHz		15000		pF
Output Capacitance	C_{OSS}			2500		
Reverse Transfer Capacitance	C_{RSS}			220		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 50V, I_D = 20A		205		nC
Gate to Source Charge	Q_{GS}			60		
Gate to Drain Charge	Q_{GD}			50		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 50V, I_D = 20A, R_G = 3.3Ω		40		ns
Rise Time	T_r			95		
Turn-off Delay Time	$T_{D(OFF)}$			110		
Fall Time	T_f			135		
Diode Recovery Time	T_{rr}	I_F=20A, di/dt=100A/us		100		ns
Diode Recovery Charge	Q_{rr}	I_F=20A, di/dt=100A/us		210		nC

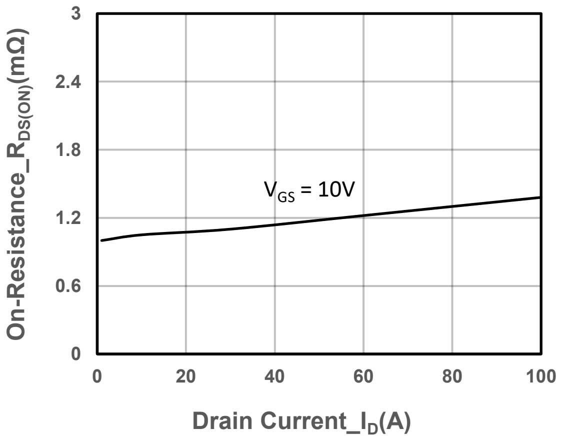
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



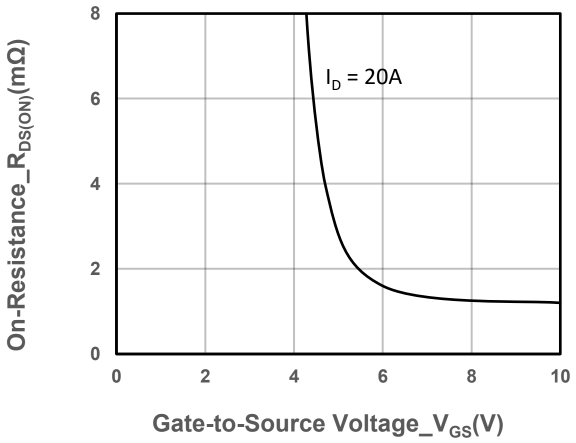
Output Characteristics



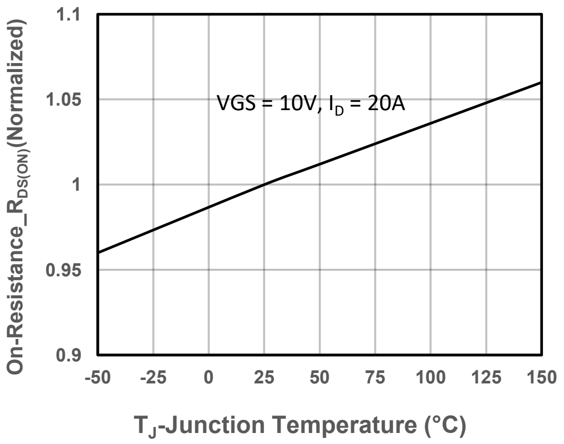
Transfer Characteristics



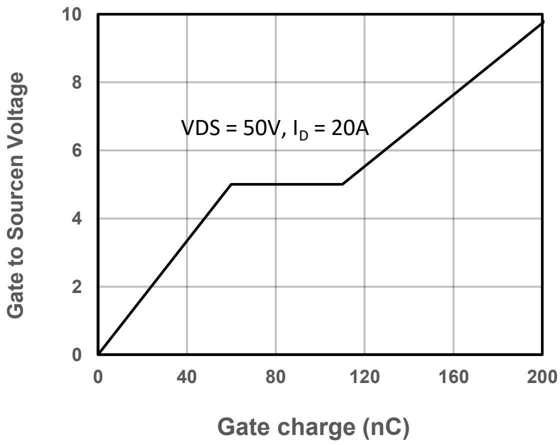
On-Resistance vs. Drain Current and Gate Voltage



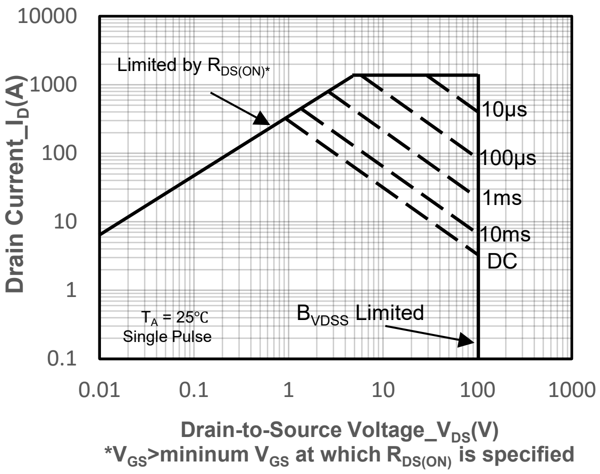
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

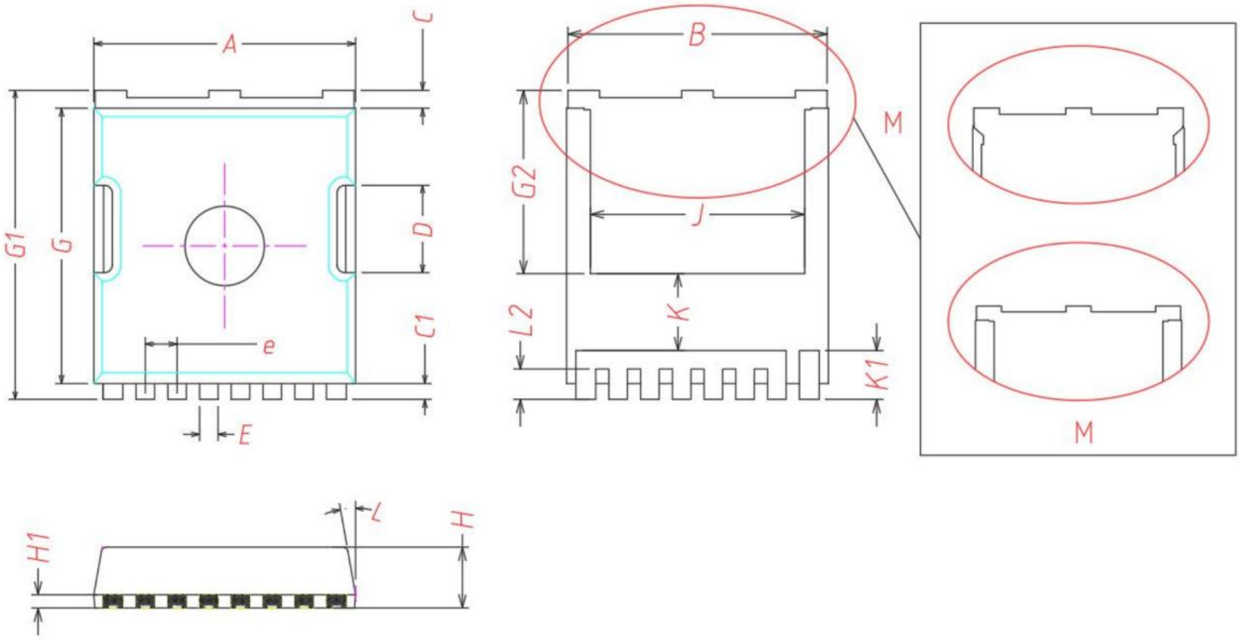


Gate-Source Voltage vs. Gate charge



Safe Operating Area vs. Junction-to-Ambient

Package Information



Symbol	MILL IMETER			Symbol	MILL IMETER		
	Min	Nom	Max		Min	Nom	Max
A	9.70	9.90	10.10	G2	6.80	7.00	7.15
B	9.60	9.80	10.00	H	2.20	2.30	2.40
C	0.55	0.65	0.85	H1	0.40	0.50	0.60
C1	0.45	0.60	0.75	J	8.00	8.50	9.25
D	2.85	3.30	3.45	K	2.80	3.00	3.20
E	0.60	0.85	0.90	L	8°	10°	12°
e	1.2 BSC			K1	1.55	1.80	1.86
G	10.15	10.40	10.60	L2	1.00	1.15	1.30
G1	11.50	11.70	11.85				

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