



## SSCL95N100GS6

### N-Channel Enhancement Mode MOSFET

#### ➤ Features

V <sub>DS</sub>	V <sub>GS</sub>	R <sub>DS(ON)</sub> Typ.	I <sub>D</sub>
100V	±20V	95mΩ@10V	3.5A
		135mΩ@4.5V	

#### ➤ Description

The device 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.

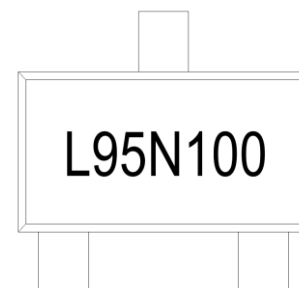
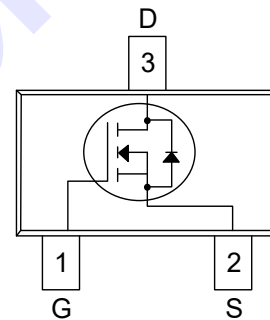
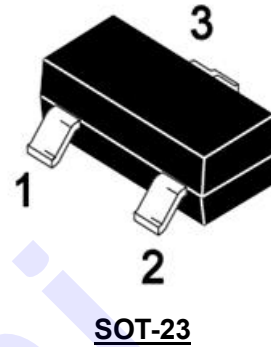
#### ➤ Applications

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

#### ➤ Ordering Information

Device	Package	Shipping
SSCL95N100GS6	SOT-23	3000/Reel

#### ➤ Pin configuration





➤ **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>	3.5	A
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	14	A
$P_D$	Power Dissipation <sup>c</sup>	2.5	W
$P_{DSM}$	Power Dissipation <sup>a</sup>	2.5	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	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	50	$^{\circ}\text{C}/\text{W}$

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.



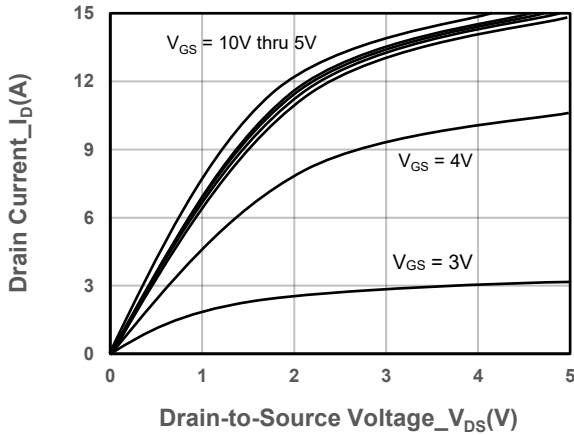
# SSCL95N100GS6

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

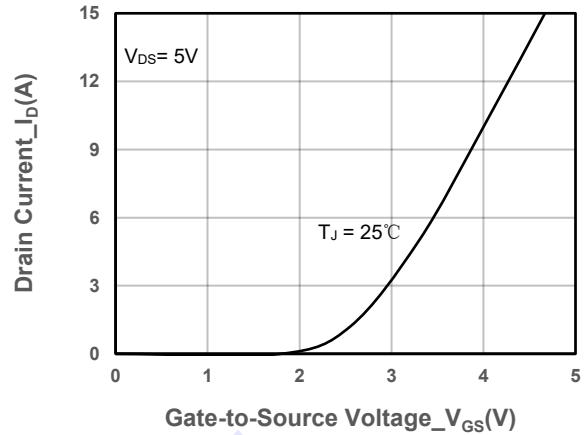
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	1.0	1.7	2.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 3A		95	130	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 2A		135	190	mΩ
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
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 3A		0.8	1.3	V
Gate Resistance	R <sub>G</sub>	V <sub>GS</sub> = 0V, f = 1MHz		5.5		Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 50V, V <sub>GS</sub> = 0V, f = 1MHz		150		pF
Output Capacitance	C <sub>OSS</sub>			20		
Reverse Transfer Capacitance	C <sub>RSS</sub>			3.8		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 3A		3.6		nC
Gate to Source Charge	Q <sub>GS</sub>			0.9		
Gate to Drain Charge	Q <sub>GD</sub>			0.9		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 3A, R <sub>G</sub> = 3Ω		12		ns
Rise Time	T <sub>r</sub>			17		
Turn-off Delay Time	T <sub>D(OFF)</sub>			18		
Fall Time	T <sub>f</sub>			25		
Diode Recovery Time	T <sub>rr</sub>	I <sub>F</sub> =3A, di/dt=100A/us		17		ns
Diode Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =3A, di/dt=100A/us		8		nC



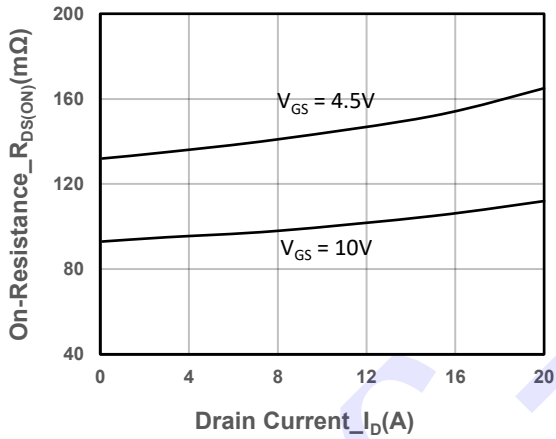
## ➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)



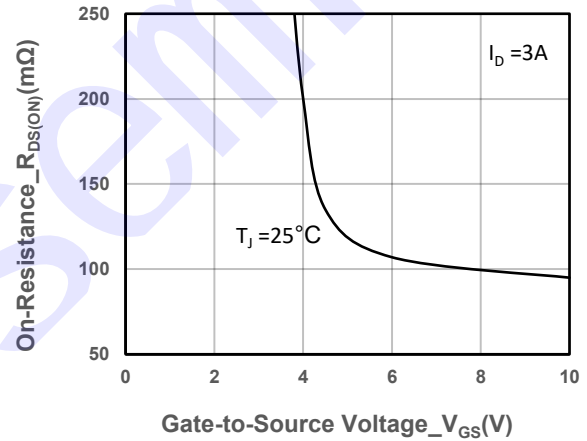
Output Characteristics



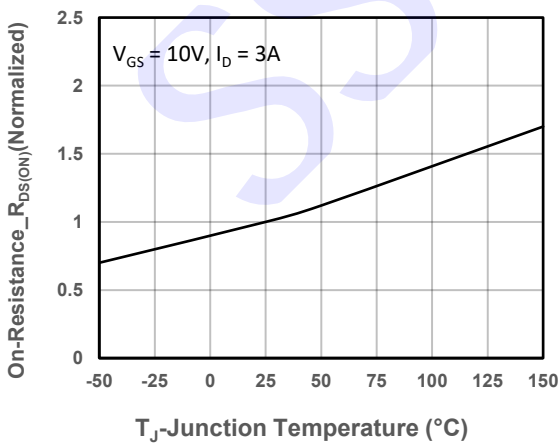
Transfer Characteristics



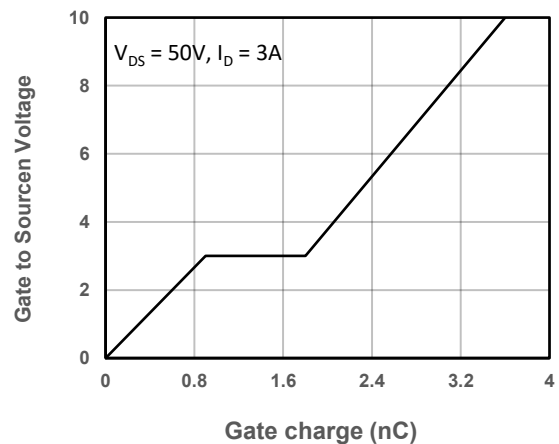
On-Resistance vs. Drain Current and Gate Voltage



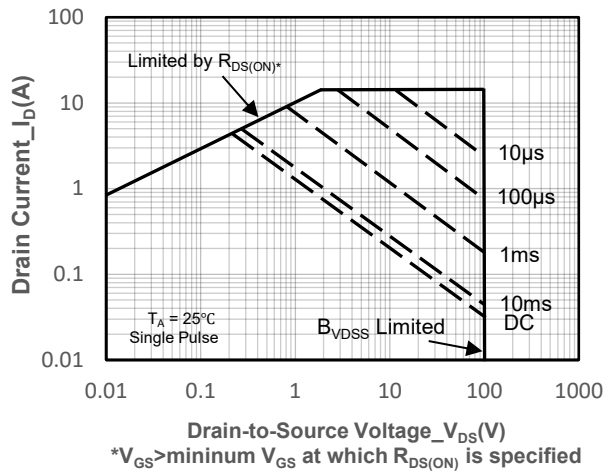
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



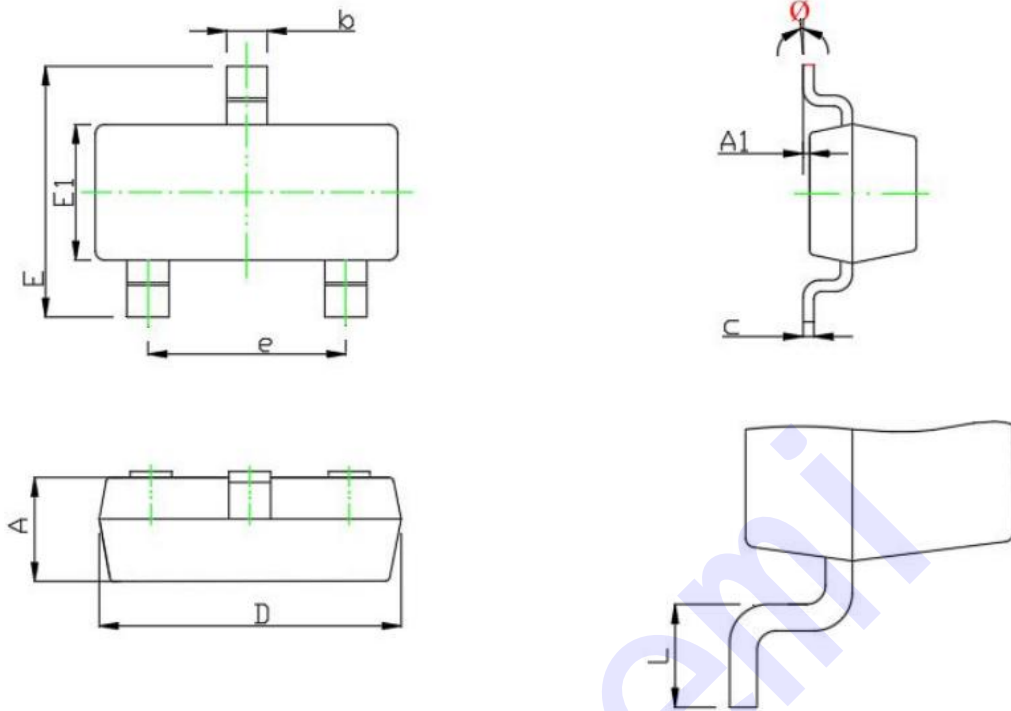
Gate-Source Voltage vs. Gate charge



Safe Operating Area vs. Junction-to-Ambient

SSC-semi

## ➤ 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
θ	0°	/	8°



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