



## SSCL095N100GT4

### N-Channel Enhancement Mode MOSFET

#### ➤ Features

$V_{DS}$	$V_{GS}$	$R_{DS(ON)}$ Typ.	$I_D$
100V	$\pm 20V$	$9.5m\Omega@10V$	90A

#### ➤ Description

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent  $R_{DS(ON)}$  with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

**100% UIS +  $\Delta V_{DS}$  +  $R_g$  Tested!**

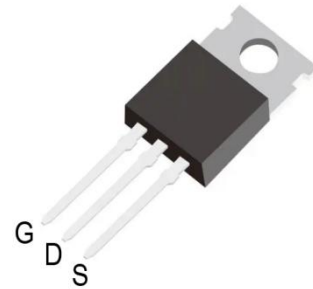
#### ➤ Applications

- Load Switch
- PWM Application
- Power Management
- DC-DC Conversion

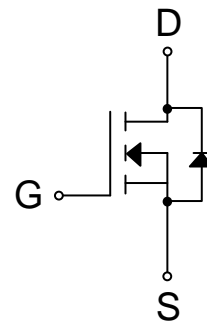
#### ➤ Ordering Information

Device	Package	Shipping
SSCL095N100GT4	TO-220-3L	50/Tube

#### ➤ Pin configuration



**TO-220-3L (Top View)**



**Pin Configuration**



**Marking**

(XXYY: Internal Traceability Code)

**➤ Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)**

Symbol	Parameter		Ratings	Unit
V <sub>DSS</sub>	Drain-to-Source Voltage		100	V
V <sub>GSS</sub>	Gate-to-Source Voltage		±20	V
I <sub>D</sub>	Continuous Drain Current <sup>d</sup>	T <sub>C</sub> =25°C	90	A
		T <sub>C</sub> =100°C	50	
I <sub>DSM</sub>	Continuous Drain Current <sup>a</sup>	T <sub>A</sub> =25°C	12	A
		T <sub>A</sub> =70°C	9	
I <sub>DM</sub>	Pulsed Drain Current <sup>b</sup>		360	A
P <sub>D</sub>	Power Dissipation <sup>c</sup>	T <sub>C</sub> =25°C	125	W
		T <sub>C</sub> =100°C	50	
P <sub>DSM</sub>	Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	2.5	W
		T <sub>A</sub> =70°C	1.6	
I <sub>AS</sub>	Avalanche Current <sup>b</sup> L=0.5mH Single Pulse		22	A
E <sub>AS</sub>	Avalanche Energy <sup>b</sup> L=0.5mH Single Pulse		121	mJ
T <sub>J</sub>	Operation junction temperature		-55~150	°C
T <sub>STG</sub>	Storage temperature range		-55~150	

**➤ Thermal Resistance Ratings (T<sub>A</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
R <sub>θJA</sub>	Junction-to-Ambient Thermal Resistance <sup>a</sup>	50	°C/W
R <sub>θJC</sub>	Junction-to-Case Thermal Resistance	1.0	

Note:

- The value of R<sub>θJA</sub> 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<sub>A</sub>=25°C. 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.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P<sub>D</sub> is based on T<sub>J(MAX)</sub>=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.
- The maximum current rating is package limited.



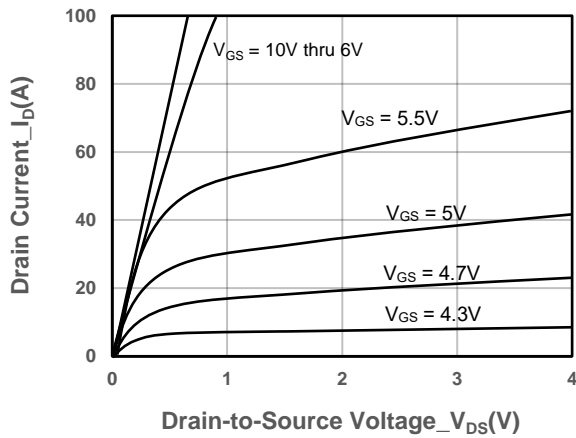
# SSCL095N100GT4

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

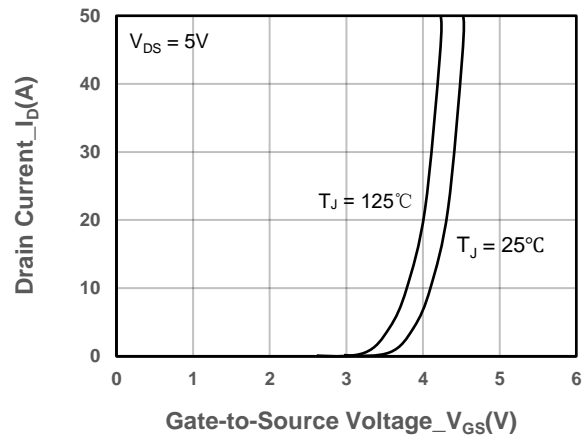
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	2	2.8	4	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 20A		9.5	12.5	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
Transconductance	G <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 15A		20		S
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 20A		0.85	1.3	V
Gate Resistance	R <sub>G</sub>	V <sub>DS</sub> = 0V, f = 1MHz		1.5		Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 50V, V <sub>GS</sub> = 0V, f = 1MHz		1285		pF
Output Capacitance	C <sub>OSS</sub>			475		
Reverse Transfer Capacitance	C <sub>RSS</sub>			15		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 20A		20		nC
Gate to Source Charge	Q <sub>GS</sub>			6		
Gate to Drain Charge	Q <sub>GD</sub>			7.2		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 20A, R <sub>G</sub> = 6Ω,		12.5		ns
Rise Time	T <sub>r</sub>			34.5		
Turn-off Delay Time	T <sub>D(OFF)</sub>			22		
Fall Time	T <sub>f</sub>			7.2		



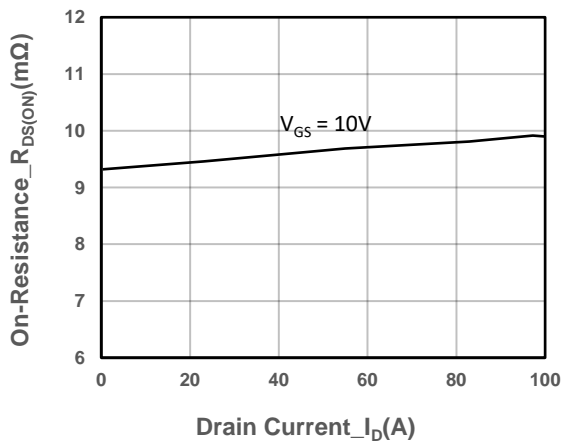
## ➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)



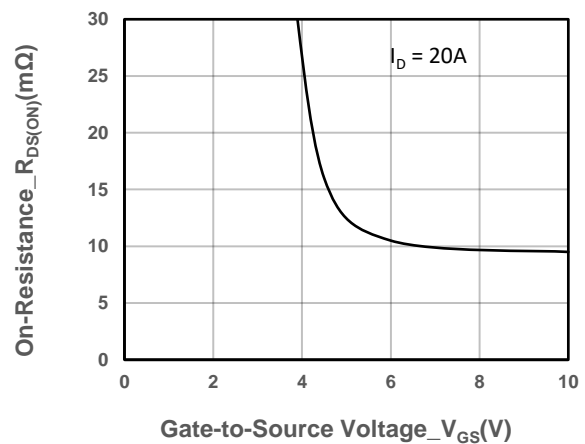
Output Characteristics



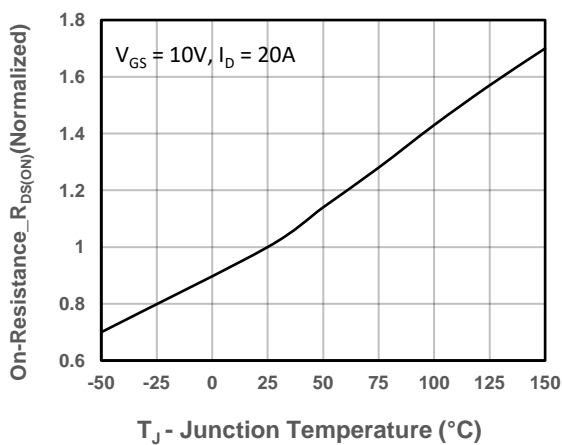
Transfer Characteristics



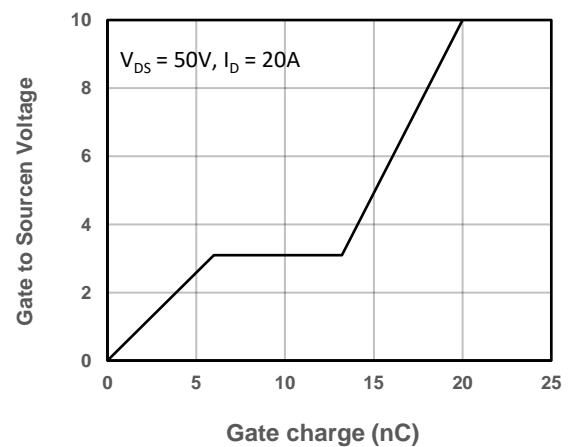
On-Resistance vs. Drain Current and Gate Voltg



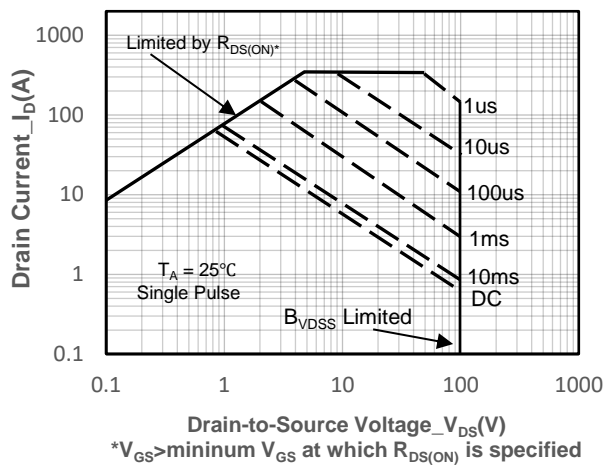
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature



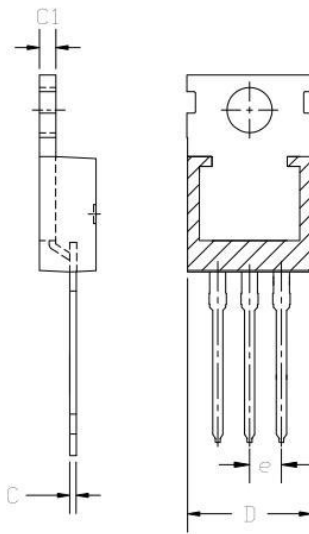
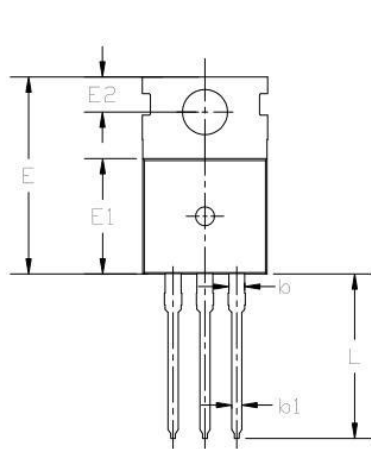
Gate-Source Voltage vs. Gate charge



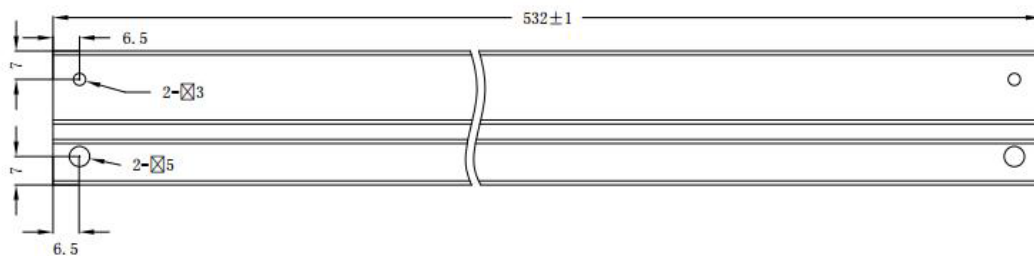
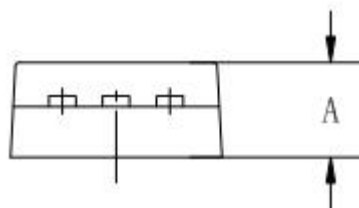
Safe Operating Area vs. Junction-to-Ambient



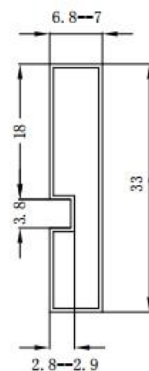
## ➤ Package Information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.40	--	4.60
b	1.20	--	1.36
b1	0.70	--	0.90
C	0.48	--	0.53
C1	1.28	--	1.32
D	9.80	10.00	10.20
E	15.20	15.45	15.75
E1	9.00	9.20	9.40
E2	2.60	--	2.90
e	--	2.54	--
L	13.00	--	13.40



T=0.5 ±0.1



### 技术要求:

1. 材料: 透明PVC
2. 表面电阻:  $10E5 \sim 10E10$  OHMS/SQ
3. 未注尺寸公差 $\pm 0.3$
4. 黑色钉子由厂家出货时塞于左端



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