SSCL085N200GTL

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
200V	±20V	8.5mΩ@10V	117A

➢ 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.

100% UIS + ΔVDS + Rg Tested!

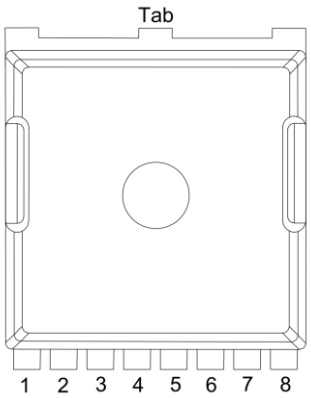
➢ Applications

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

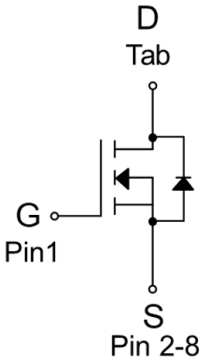
➢ Ordering Information

Device	Package	Shipping
SSCL085N200GTL	TOLL	2000/Reel

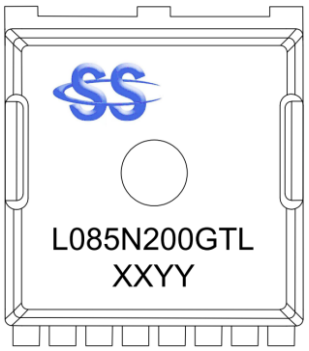
➢ Pin configuration



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		200	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [b]	T_C = 25℃	117	A
		T_C = 100℃	74	A
I_{DSM}	Continuous Drain Current [a]	T_A = 25℃	11	A
		T_A = 70℃	9	A
I_{DM}	Pulsed Drain Current [b]		468	A
P_D	Power Dissipation [c]	T_C = 25℃	250	W
		T_C = 100℃	100	W
P_{DSM}	Power Dissipation [a]	T_A = 25℃	2.3	W
		T_A = 70℃	1.5	W
I_{AS}	Avalanche Current [b] L = 0.5mH		67	A
E_{AS}	Avalanche Energy [b] L = 0.5mH		1122	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	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	55	70	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	0.5	0.7	

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

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

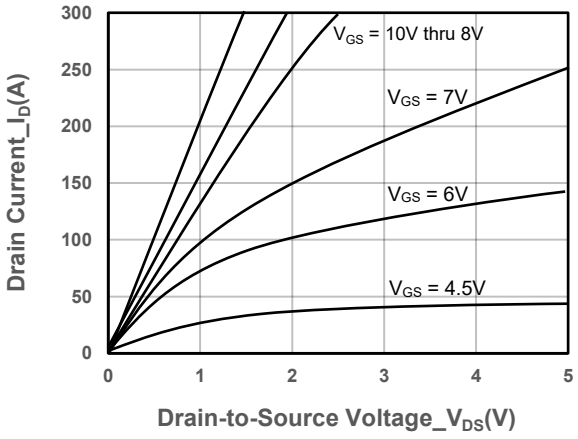
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

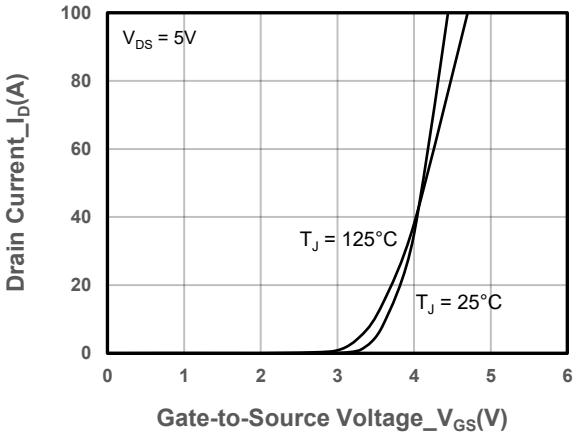
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	200			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		8.5	11.5	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 200V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Transconductance	G_{FS}	V_{DS} = 5V, I_D = 20A		100		S
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 20A		0.8	1.4	V
Gate Resistance	R_G	V_{DS} = 0V, f = 1MHz		3.5		Ω
Input Capacitance	C_{ISS}	V_{DS} = 100V, V_{GS} = 0V, f = 1MHz		4885		pF
Output Capacitance	C_{OSS}			425		
Reverse Transfer Capacitance	C_{RSS}			25		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 100V, I_D = 20A		78		nC
Gate to Source Charge	Q_{GS}			28		
Gate to Drain Charge	Q_{GD}			18		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 100V, I_D = 20A, R_G = 3Ω		24		ns
Rise Time	T_r			45		
Turn-off Delay Time	$T_{D(OFF)}$			61		
Fall Time	T_f			20		
Diode Recovery Time	T_{rr}	I_F=20A, di/dt=100A/us		132		ns
Diode Recovery Charge	Q_{rr}	I_F=20A, di/dt=100A/us		660		nC

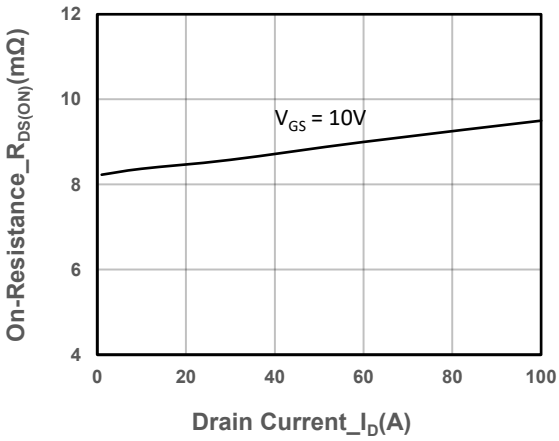
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



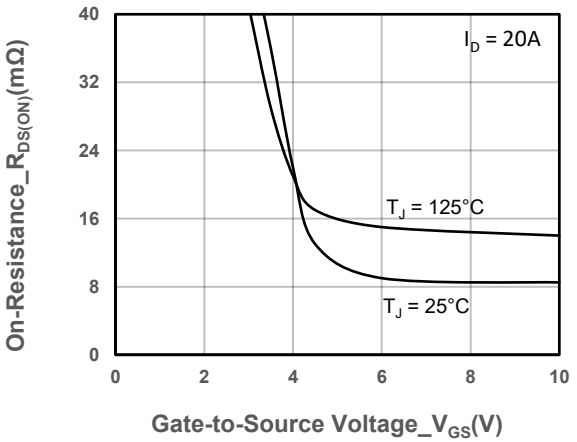
Output Characteristics



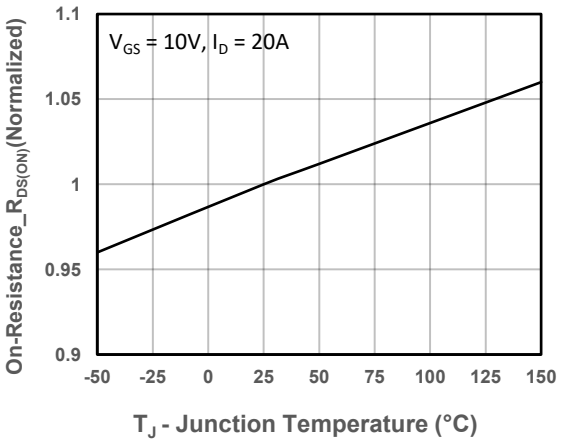
Transfer Characteristics



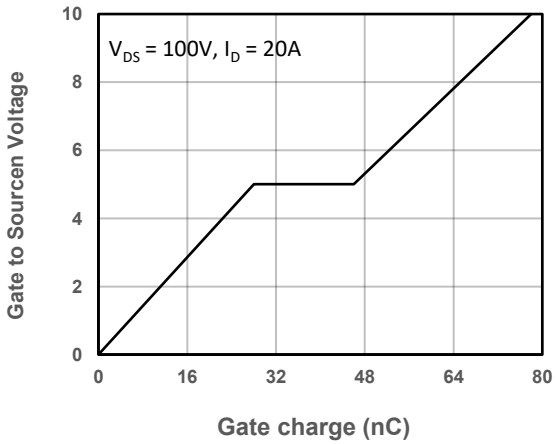
On-Resistance vs. Drain Current and Gate Voltage



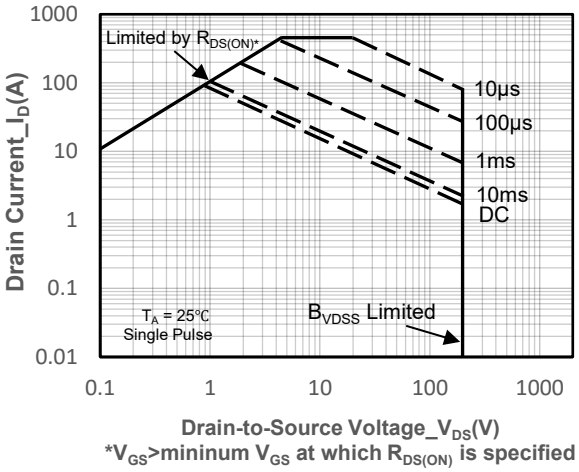
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

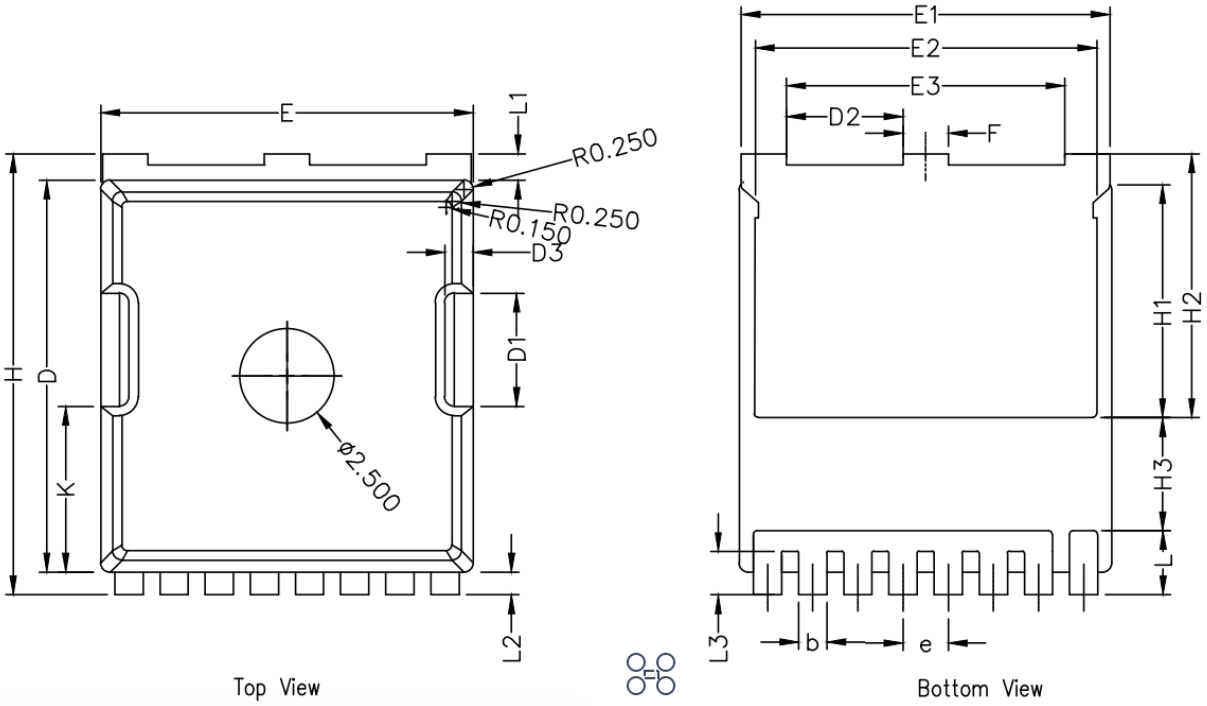


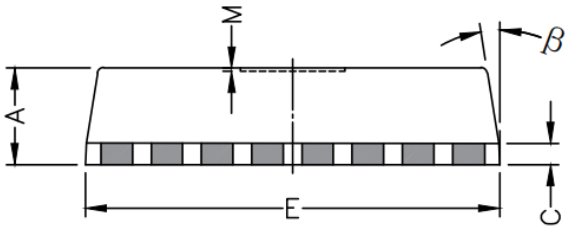
Gate-Source Voltage vs. Gate charge



Safe Operating Area vs. Junction-to-Ambient

Package Information





Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	2.20	2.30	2.40
b	0.65	0.75	0.85
C		0.508 REF	
D	10.25	10.40	10.55
D1	2.85	3.00	3.15
D2	2.95	3.10	3.25
D3		0.75 REF	
E	9.75	9.90	10.05
E1	9.65	9.80	9.95
E2	8.95	9.10	9.25
E3	7.25	7.40	7.55
e		1.20 BSC	
F	1.05	1.20	1.35
H	11.55	11.70	11.85
H1	6.03	6.18	6.33
H2	6.85	7.00	7.15
H3		3.00 BSC	
L	1.55	1.70	1.85
L1	0.55	0.70	0.85
L2	0.45	0.60	0.75
L3	1.00	1.15	1.30
M		0.08 REF	
β	8°	10°	12°
K	4.25	4.40	4.55

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