SSCL70N100GS6A

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
100V	±20V	70mΩ@10V	3.2 A
		85mΩ@4V5	

➢ Description

The SSCL70N100GS6A 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.

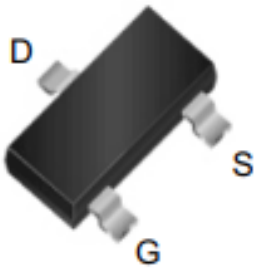
➢ Applications

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

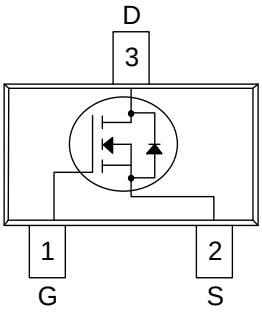
➢ Ordering Information

Device	Package	Shipping
SSCL70N100GS6A	SOT-23-3L	3000/Reel

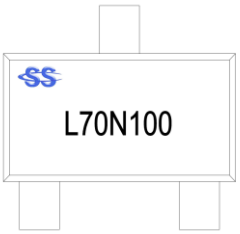
➢ Pin configuration



SOT-23-3L



Pin Configuration (Top View)



Marking

➢ 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 [a]	3.2	A
I_{DM}	Pulsed Drain Current [b]	12.8	A
P_D	Power Dissipation [c]	1.4	W
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	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	80	℃/W

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.

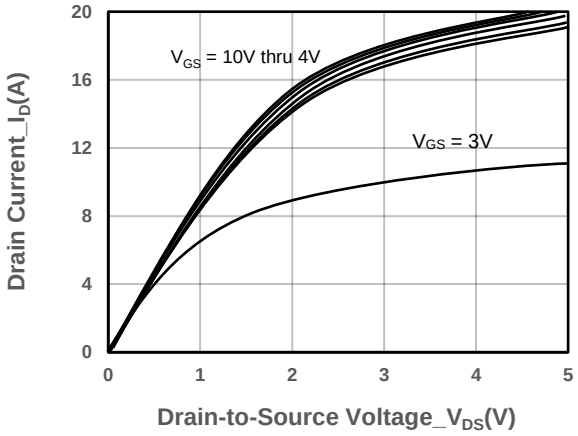
b. Repetitive rating, pulse width limited by junction temperature.

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.

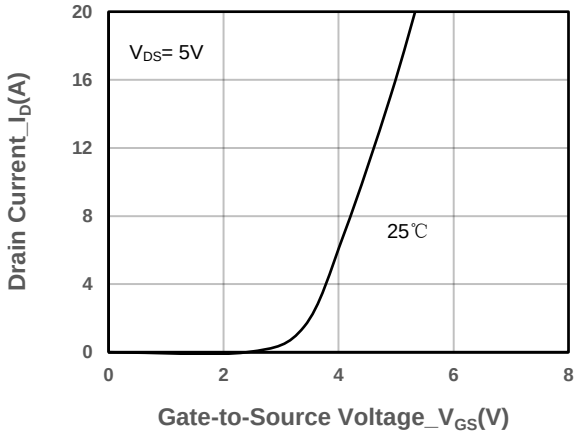
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

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	1.0	1.8	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 3A		70	95	mΩ
		V_{GS} = 4.5V, I_D = 2A		85	110	
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
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 3A		0.7	1.3	V
Gate Resistance	R_G	V_{GS} = 0V, f = 1MHz		9.0		Ω
Input Capacitance	C_{ISS}	VDS = 50V, VGS = 0V, f = 1MHz		171		pF
Output Capacitance	C_{OSS}			58		
Reverse Transfer Capacitance	C_{RSS}			2.0		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, I_D = 3A V_{DS} = 50V, R_G = 3Ω		7.0		ns
Rise Time	T_r			15		
Turn-off Delay Time	$T_{D(OFF)}$			17		
Fall Time	T_f			14		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 50V, I_D = 3A		3.8		nC
Gate to Source Charge	Q_{GS}			0.9		
Gate to Drain Charge	Q_{GD}			1.0		
Diode Recovery Time	T_{rr}	I_F=3A, di/dt=100A/us		11		ns
Diode Recovery Charge	Q_{rr}	I_F=3A, di/dt=100A/us		20		nC

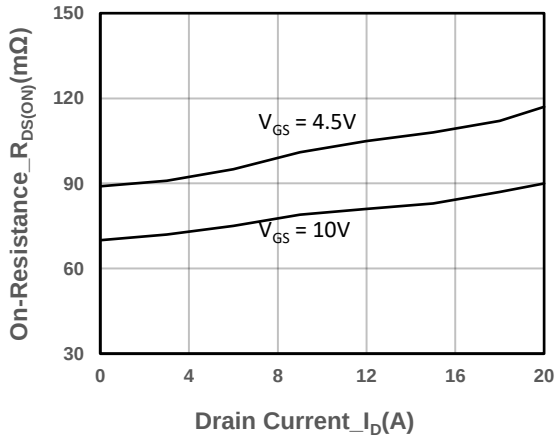
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



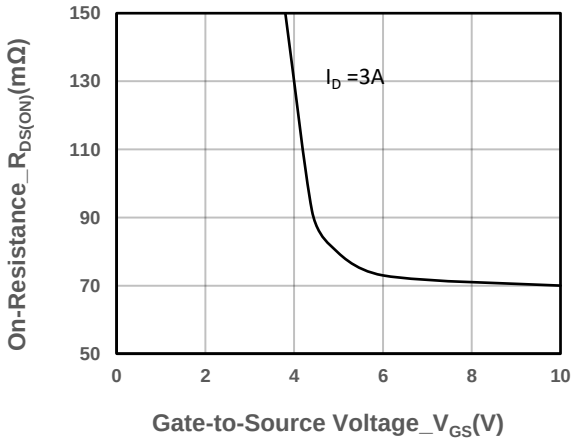
Output Characteristics



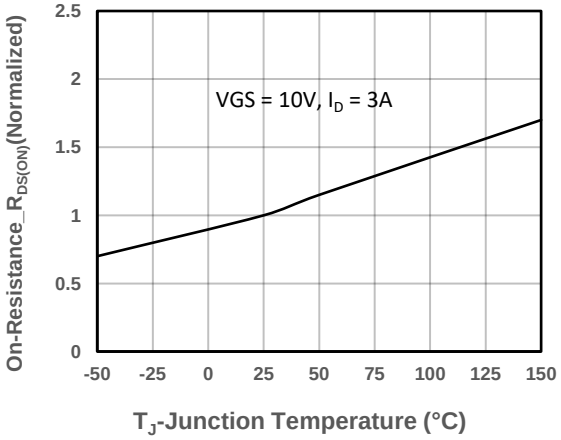
Transfer Characteristics



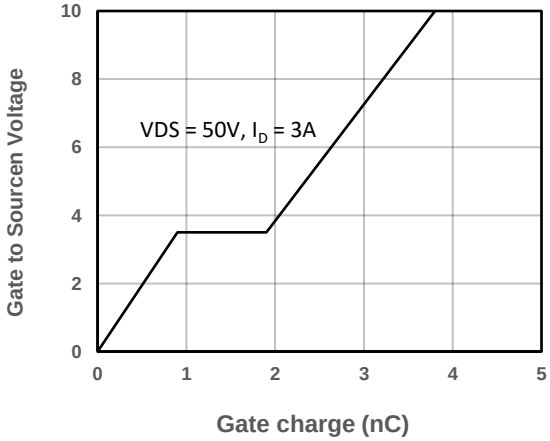
On-Resistance vs. Drain Current and Gate Voltag



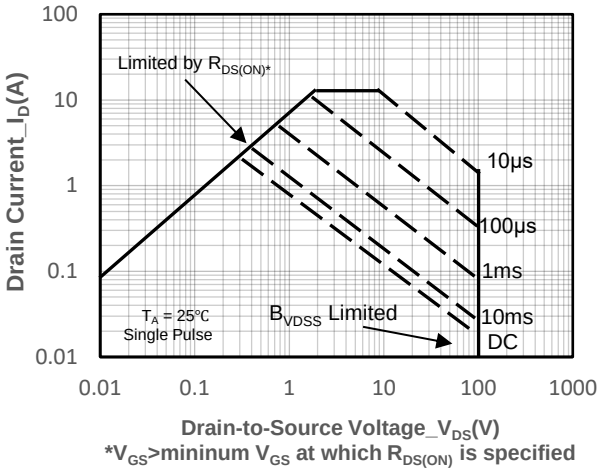
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

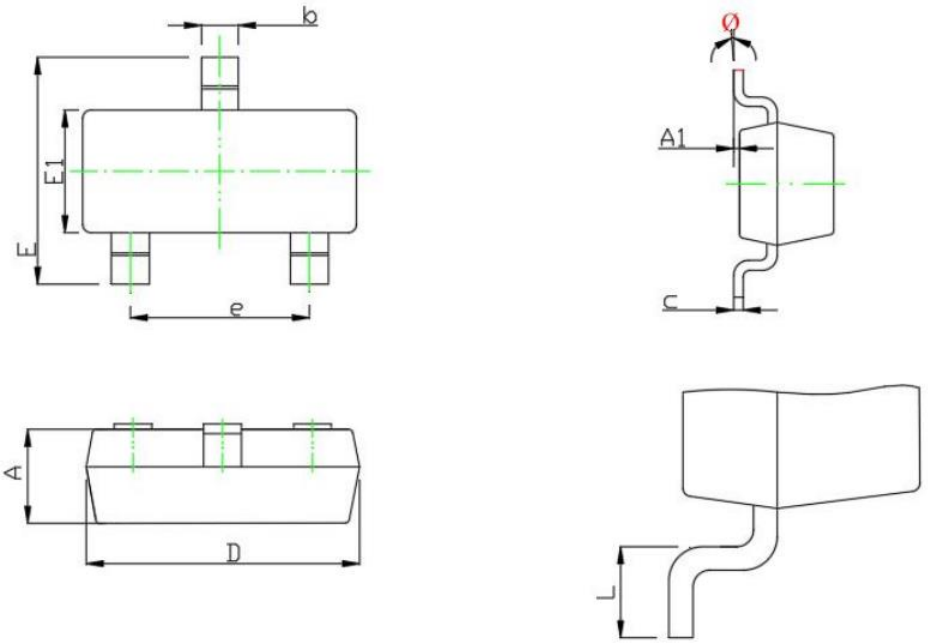


Gate-Source Voltage vs. Gate charge



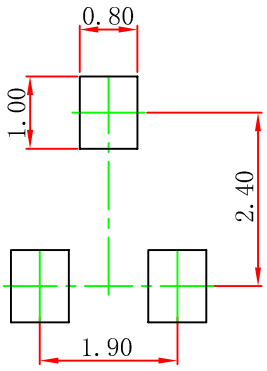
Safe Operating Area vs. Junction-to-Ambient

➢ 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	0.4	0.5
θ	0°	/	8°

➢ Recommended Pad outline (Unit: mm)



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