SSC80314LN4

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
30V	±20V	4.7mΩ@10V	70A
		6.9mΩ@4.5V	

➢ Description

This device uses advanced trench technology to provide excellent RDSON and low gate charge. The complementary MOSFETS may be used to form a level shifted high side switch, and for a host of other applications.

100% UIS + ΔVDS + Rg Tested!

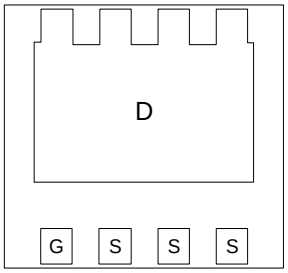
➢ Applications

- Load Switch
- NB/PC
- DCDC Conversion
- Motor Drive

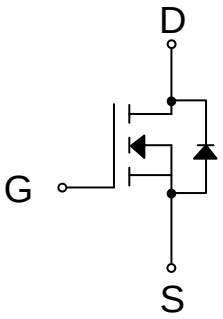
➢ Ordering Information

Device	Package	Shipping
SSC80314LN4	DFN3.3X3.3-8L	5000/Reel

➢ Pin Configuration



DFN3.3X3.3-8L (Bottom 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		30	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [d]	T_C=25℃	70	A
		T_C=100℃	36	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	18	A
		T_A=70℃	13	
I_{DM}	Pulsed Drain Current [b]		250	A
P_D	Power Dissipation [c]	T_C=25℃	37.9	W
		T_C=100℃	15.2	
P_{DSM}	Power Dissipation [a]	T_A=25℃	2.8	W
		T_A=70℃	1.8	
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		42	mJ
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]	45	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	3.3	

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.

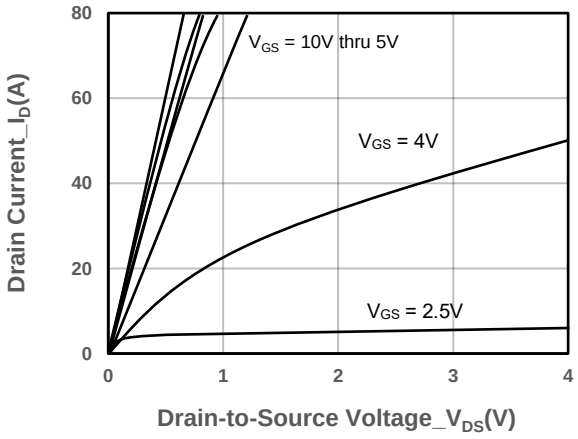
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

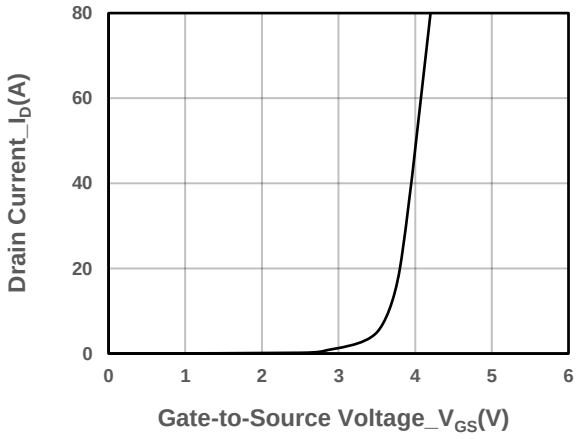
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	1.5	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A		4.7	6.1	mΩ
		V_{GS} = 4.5V, I_D = 10A		6.9	9.2	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 30V, 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 = 10A		0.7	1.3	V
Gate Resistance	Rg	V_{DS} = 0V, f = 1MHz		4		Ω
Input Capacitance	C_{ISS}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		1950		pF
Output Capacitance	C_{OSS}			180		
Reverse Transfer Capacitance	C_{RSS}			160		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 15V, I_D =10A		18		nC
Gate to Source Charge	Q_{GS}			3.2		
Gate to Drain Charge	Q_{GD}			3		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 15V, R_L = 15Ω, R_G = 3Ω, I_D =1A		8		ns
Rise Time	T_r			2.8		
Turn-off Delay Time	$T_{D(OFF)}$			21		
Fall Time	T_f			5.4		
Diode Recovery Time	T_{rr}	I_F=20A, di/dt=100A/us		15		ns
Diode Recovery Charge	Q_{rr}	I_F=20A, di/dt=100A/us		8		nC

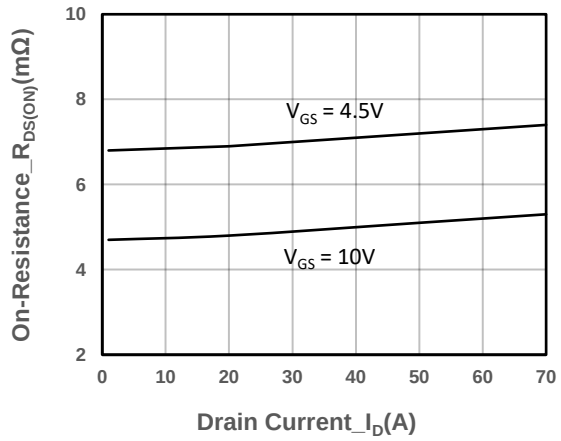
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



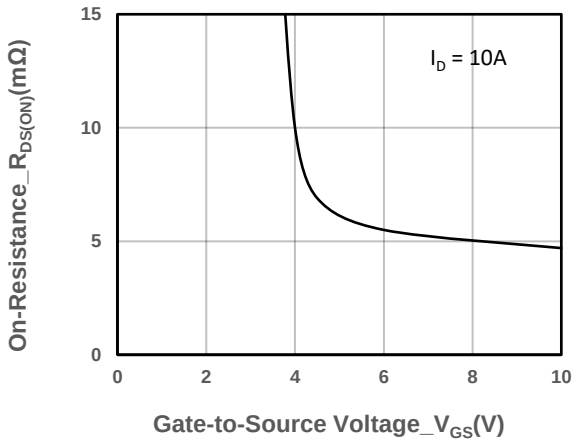
Output Characteristics



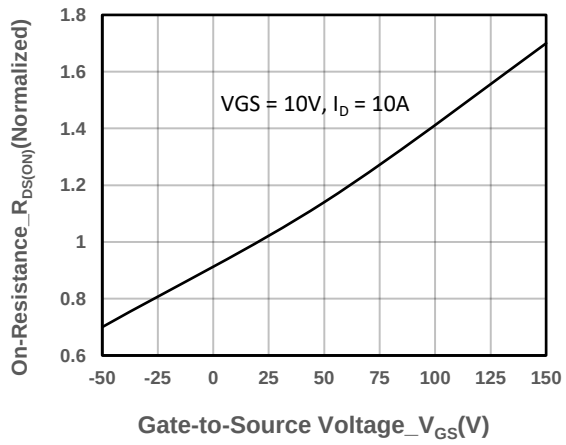
Transfer Characteristics



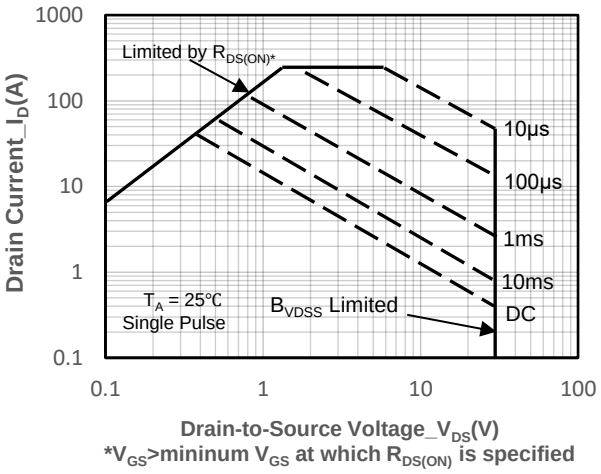
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

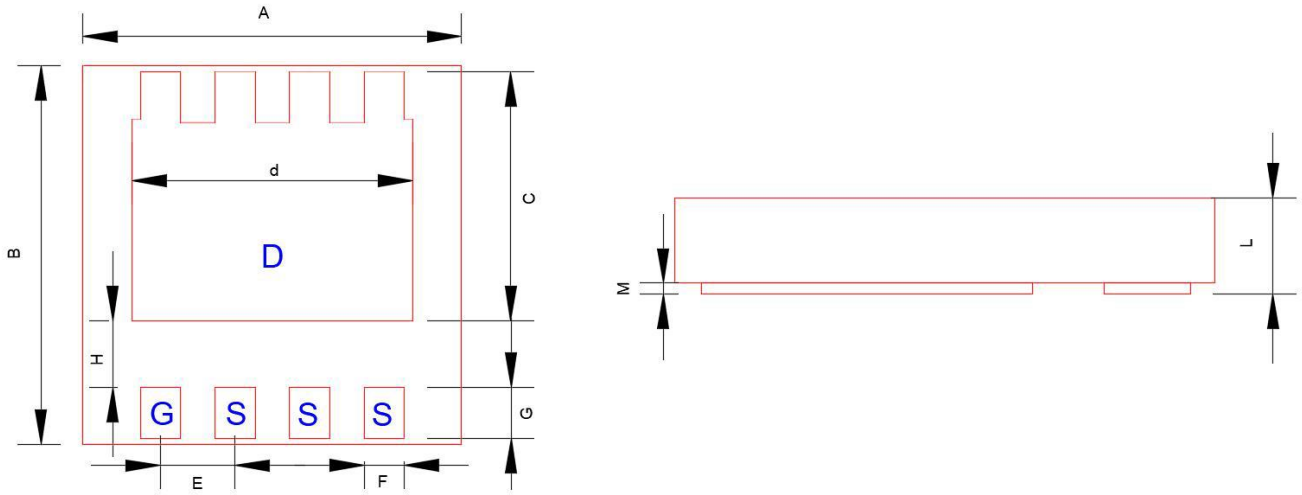


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➢ Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	3.20	3.30	3.40
B	3.20	3.30	3.40
C	2.05	2.17	2.30
d	2.35	2.45	2.55
E	0.55	0.65	0.75
F	0.30	0.35	0.40
G	0.35	0.45	0.55
H	0.50	0.58	0.65
L	0.55	0.65	0.75
M	0.03	0.04	0.06

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