SSC8L3316JN4

Dual N-Channel Enhancement MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
30V	±20V	5.2mΩ@10V	45A
		7.7mΩ@4V5	

➢ Description

The SSC8L3316JN4 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!

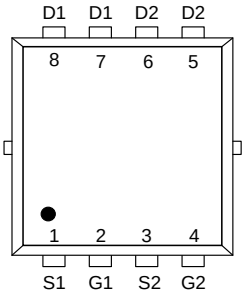
➢ Applications

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

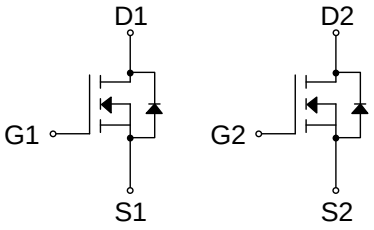
➢ Ordering Information

Device	Package	Shipping
SSC8L3316JN4	PDFN3.3X3.3-8L	5000/Reel

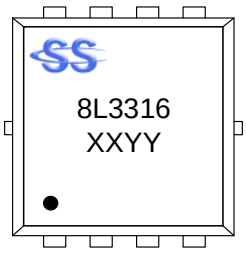
➢ Pin configuration



PDFN3.3x3.3-8L (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		30	V
V_{GSS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current [b]	T_C = 25℃	45	A
		T_C = 100℃	24	A
I_{DM}	Pulsed Drain Current [b]		180	A
I_{DSM}	Continuous Drain Current [a]	T_A = 25℃	15	A
		T_A = 70℃	10	A
P_D	Power Dissipation [c]	T_C = 25℃	20	W
		T_C = 100℃	8	W
P_{DSM}	Power Dissipation [a]	T_A = 25℃	2.3	W
		T_A = 70℃	1.45	W
I_{AS}	Avalanche Current [b] L = 0.5mH		16	A
E_{AS}	Avalanche Energy [b] L = 0.5mH		64	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	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	55	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	6	

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.

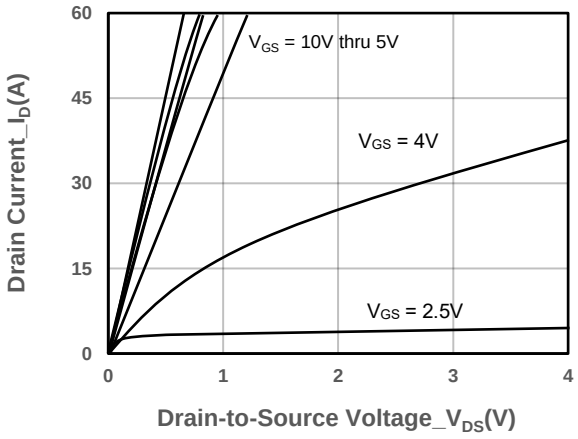
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

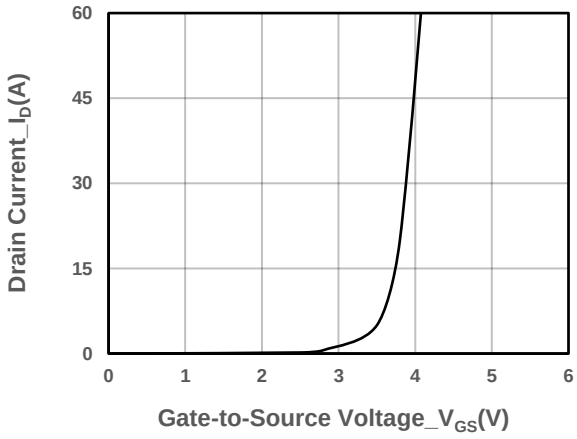
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	1	1.6	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 15A		5.2	6.8	mΩ
		V_{GS} = 4.5V, I_D = 10A		7.7	10	
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
Gate Resistance	R_G	f = 1MHz		4		Ω
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 20A		0.88	1.3	V
Input Capacitance	C_{ISS}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		780		pF
Output Capacitance	C_{OSS}			140		
Reverse Transfer Capacitance	C_{RSS}			8.5		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 15V, I_D = 20A		14		nC
Gate to Source Charge	Q_{GS}			2.2		
Gate to Drain Charge	Q_{GD}			1.5		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 15V, I_D = 20A, R_{GEN} = 4.5Ω		4.8		ns
Rise Time	T_r			21		
Turn-off Delay Time	$T_{D(OFF)}$			12.5		
Fall Time	T_f			11.5		

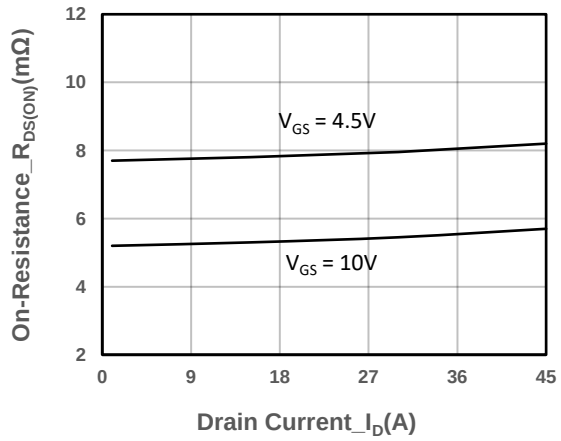
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



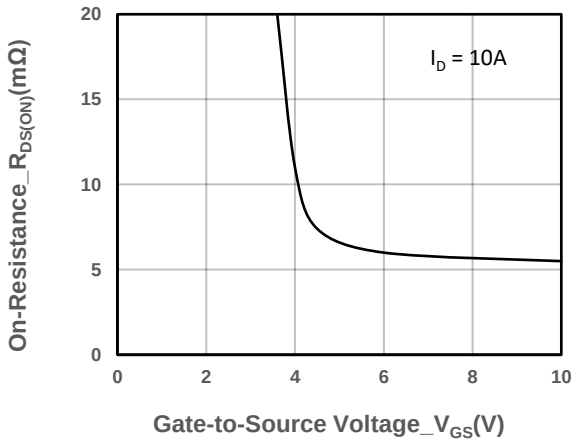
Output Characteristics



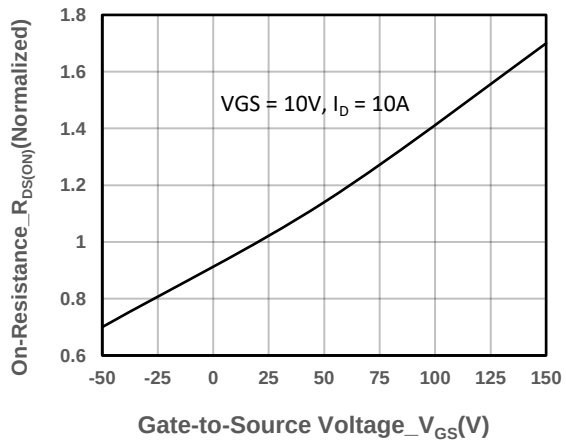
Transfer Characteristics



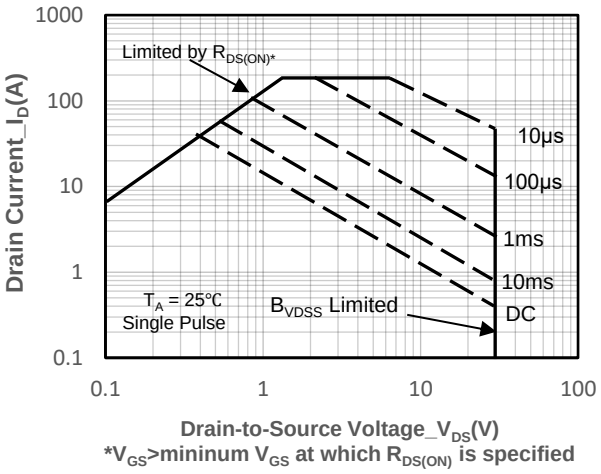
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

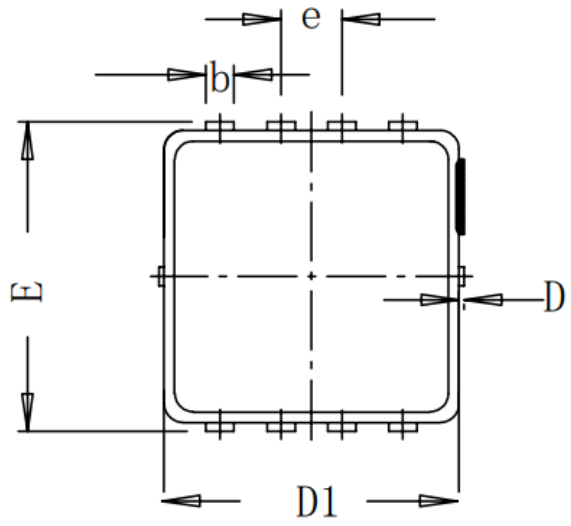


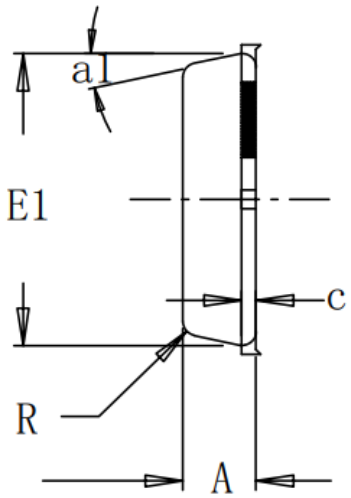
On-Resistance vs. Junction Temperature

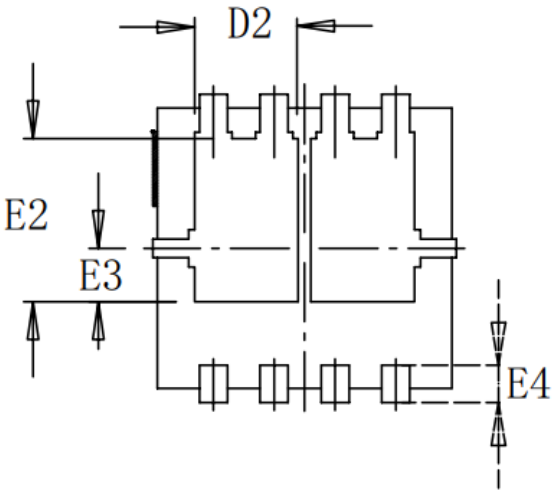


Safe Operating Area vs. Junction-to-Ambient

➢ Package Information







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SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.75	0.78	0.81
b	0.297	0.3	0.35
c	—	0.152	—
D	0.00	0.05	0.1
D1	3.12	3.15	3.18
D2	—	1.05	—
E	3.2	3.3	3.4
E1	3.09	3.12	3.15
E2	—	1.75	—
E3	—	0.575	—
E4	—	0. 4	—
R	—	0.15	—
e	0.65BSC		
a1°	—	12°	—

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