SSC80314GT8

N-Channel Enhancement Mode MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$	I_D
30V	±20V	3.6mΩ@10V	100A
		5.9mΩ@4V5	

➢ Description

This device is N-Channel enhancement MOSFET. Uses Trench 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!

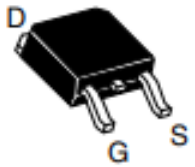
➢ Applications

- Motor Drive Control
- Portable Devices
- DCDC Conversion
- Power Supplies
- Synchronous Rectification

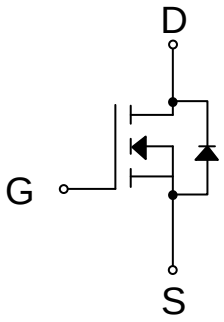
➢ Ordering Information

Device	Package	Shipping
SSC80314GT8	TO-252	2500/Reel

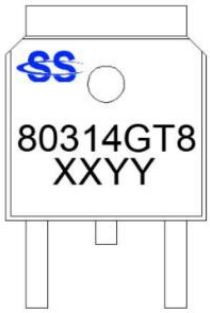
➢ Pin Configuration



TO-252 (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 [d]	T_C=25℃	100	A
		T_C=100℃	55	
I_{DSM}	Continuous Drain Current [a]	T_A=25℃	28	A
		T_A=70℃	21	
I_{DM}	Pulsed Drain Current [b]		400	A
P_D	Power Dissipation [c]	T_C=25℃	57	W
		T_C=100℃	22.7	
P_{DSM}	Power Dissipation [a]	T_A=25℃	4.6	W
		T_A=70℃	3	
I_{AS}	Avalanche Current [b] L=0.5mH Single Pulse		19	A
E_{AS}	Avalanche Energy [b] L=0.5mH Single Pulse		90	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	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	27	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	2.3	

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.

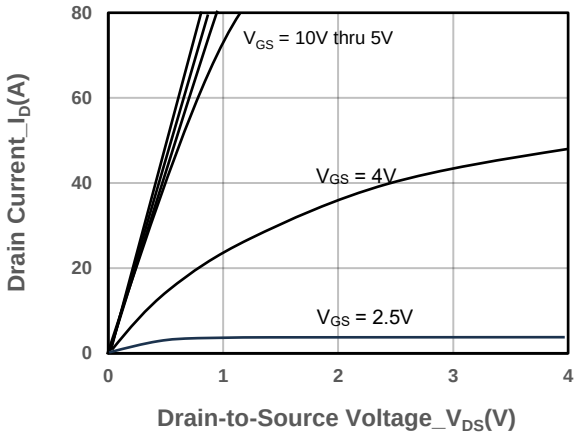
c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

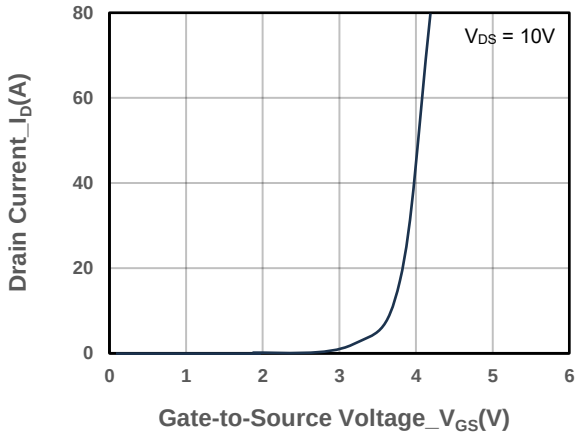
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	1	1.5	2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A		3.6	6	mΩ
		V_{GS} = 4.5V, I_D = 10A		5.9	10	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 30V, V_{GS} = 0V			1	uA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Transconductance	G_{FS}	V_{DS} = 5V, I_D = 10A		26		s
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 10A		0.8	1.3	V
Gate Resistance	R_g	f=1MHz		2.5		Ω
Input Capacitance	C_{ISS}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		1981		pF
Output Capacitance	C_{OSS}			223		
Reverse Transfer Capacitance	C_{RSS}			190		
Total Gate Charge	Q_G	V_{GS} = 10V, V_{DS} = 15V, I_D =10A		18.2		nC
Gate to Source Charge	Q_{GS}			3.3		
Gate to Drain Charge	Q_{GD}			3.2		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 15V, I_D =1A, R_G = 3Ω		8		ns
Rise Time	T_r			3		
Turn-off Delay Time	$T_{D(OFF)}$			19		
Fall Time	T_f			5.5		
Diode Recovery Time	T_{rr}	I_F=20A, di/dt=100A/us		14		ns
Diode Recovery Charge	Q_{rr}	I_F=20A, di/dt=100A/us		8		nC

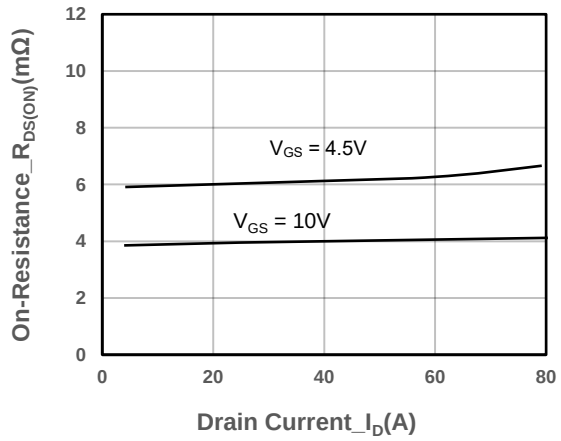
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



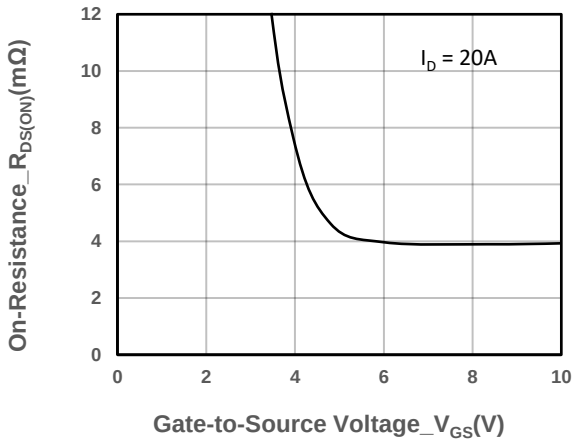
Output Characteristics



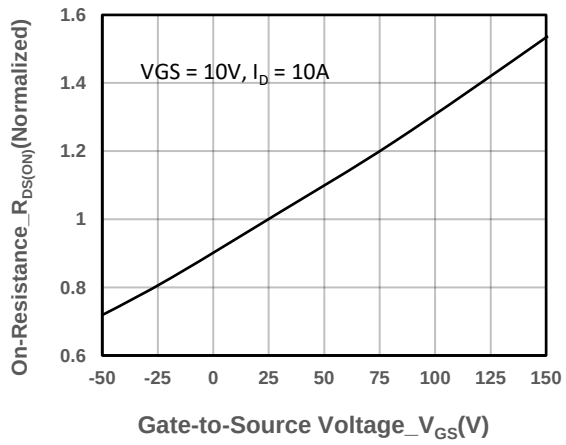
Transfer Characteristics



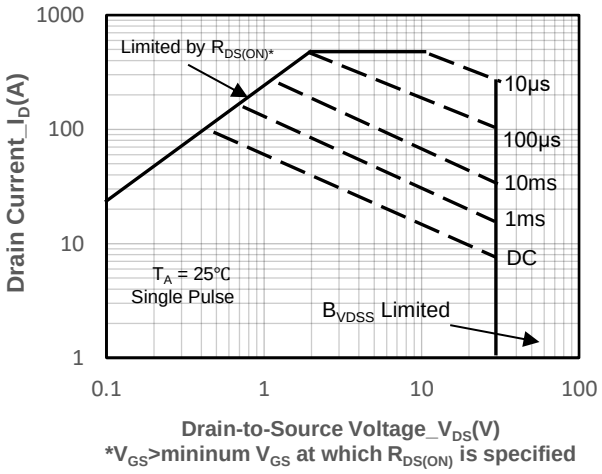
On-Resistance vs. Drain Current and Gate Voltag



On-Resistance vs. Gate-to-Source Voltage

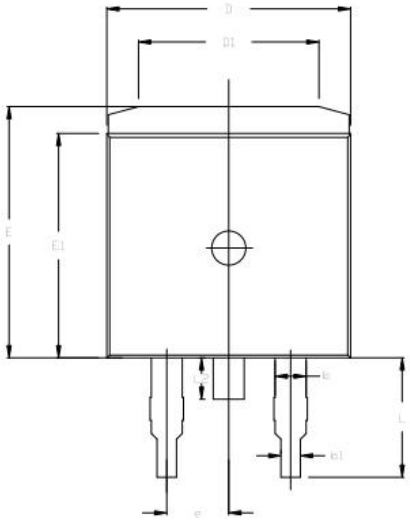


On-Resistance vs. Junction Temperature

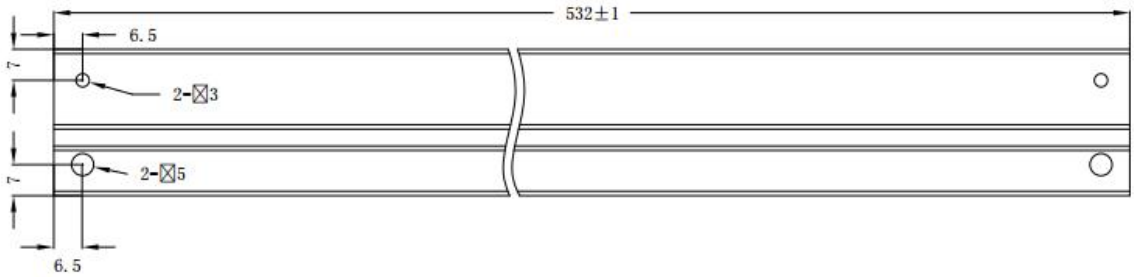


Safe Operating Area vs. Junction-to-Ambient

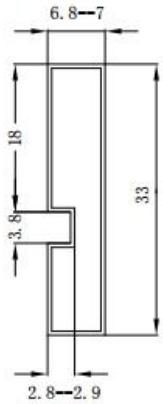
➢ Package Information



SYMBOL	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
C2	0.04	0.12	0.20
D	9.80	10.00	10.20
D1	7.25	7.40	7.55
E	10.20	10.30	10.40
E1	9.10	9.20	9.30
e	--	2.54	--
L	4.70	4.90	5.10
L1	2.40	2.60	2.80
L2	1.50	1.70	1.90



T=0.5 ±0.1



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

DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.