



SSC8V3N50GT8

N-Channel Enhancement Mode Power MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
500V	$\pm 30V$	$3.0\Omega @ 10V$	3A

➤ Description

- This device is N-Channel enhancement MOSFET.
- Fast Switching.
- Improved dv/dt Capability.

100% UIS + ΔV_{DS} + R_g Tested!

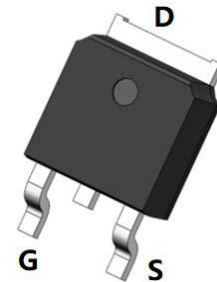
➤ Applications

- Load Switch
- PWM Application
- Power Management

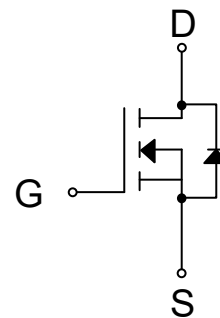
➤ Ordering Information

Device	Package	Shipping
SSC8V3N50GT8	TO252	2500/Reel

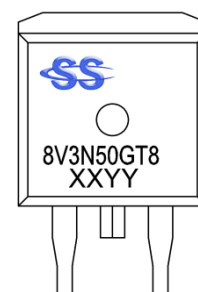
➤ Pin Configuration



TO252 (Top View)



Pin Configuration



Marking

(XYYY: Internal Traceability Code)



➤ **Absolute Maximum Ratings ($T_J=25^{\circ}\text{C}$ unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
V_{DS}	Drain-to-Source Voltage	500	V
V_{GS}	Gate-to-Source Voltage	± 30	V
I_D	Continuous Drain Current	$T_J=25^{\circ}\text{C}$	A
		$T_J=100^{\circ}\text{C}$	
I_{DM}	Pulsed Drain Current ^a	12	A
E_{AS}	Single Pulsed Avalanche Energy	58	mJ
P_D	Power Dissipation, $T_J=25^{\circ}\text{C}$	76	W
T_{STG} / T_J	Junction & Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$

➤ **Thermal Resistance Ratings ($T_J=25^{\circ}\text{C}$ unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient ^b	42	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.65	

Note:

a. Repetitive Rating: Pulsed width limited by maximum junction temperature.

b. $R_{\theta JA}$ is measured with the device mounted on a minimum recommended pad of 2oz copper FR4 PCB.



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➤ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	500			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 500V, V _{GS} = 0V			1.0	μA
Gate-Source Leak Current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3.1	4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 1.5A		3.0	3.6	Ω
Input Capacitance	C _{ISS}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		282		pF
Output Capacitance	C _{OSS}			28		
Reverse Transfer Capacitance	C _{RSS}			1.8		
Total Gate Charge	Q _G	V _{GS} = 0 to 10V, V _{DS} = 250V, I _D = 3A		5.9		nC
Gate to Source Charge	Q _{GS}			3.2		
Gate to Drain Charge	Q _{GD}			0.9		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 240V, I _D = 3A, R _G = 24Ω		8		ns
Rise Time	T _r			11		
Turn-off Delay Time	T _{D(OFF)}			14		
Fall Time	T _f			84		
Maximum Continuous Drain to Source Diode Forward Current	I _S				3	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}				12	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 3A		0.85	1.2	V
Body Diode Reverse Recovery Time	T _{rr}	I _F = 3A, di/dt = 100A/us		261		ns
Body Diode Reverse Recovery Charge	Q _{rr}			0.90		μC



➤ Typical Performance Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

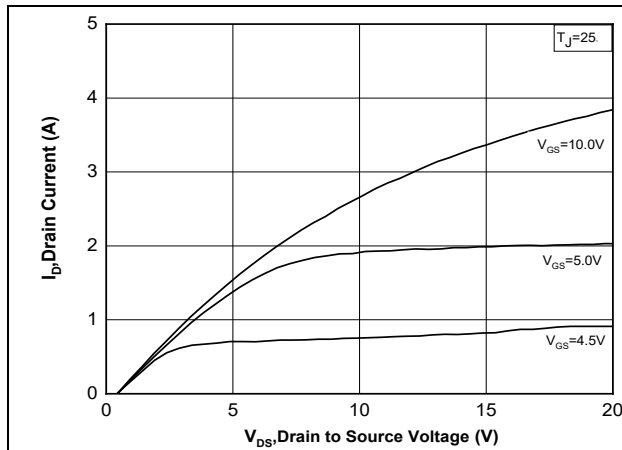


Figure 1: Output Characteristics

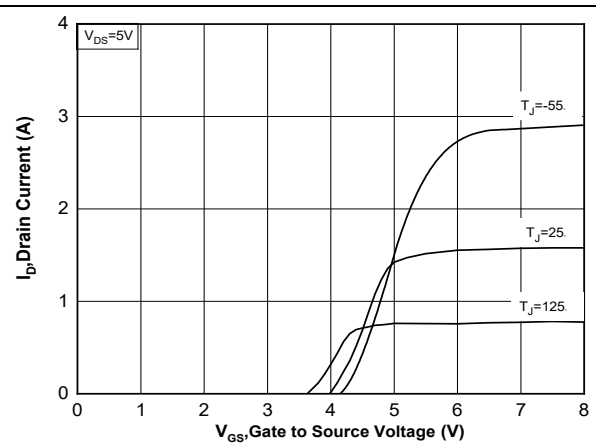


Figure 2: Typical Transfer Characteristics

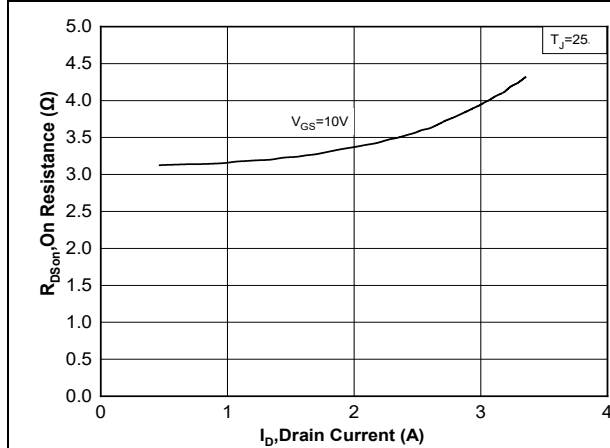


Figure 3: On-resistance vs. Drain Current

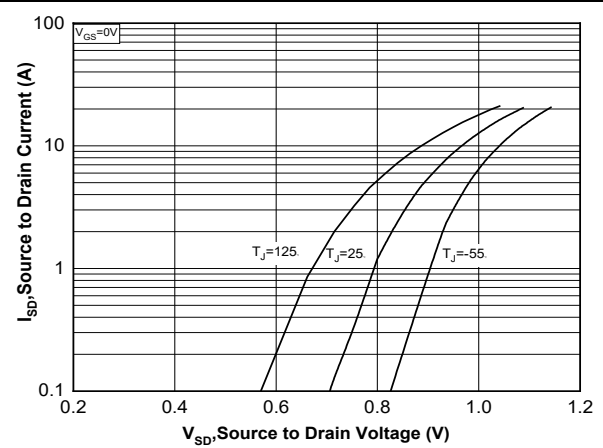


Figure 4: Body Diode Characteristics

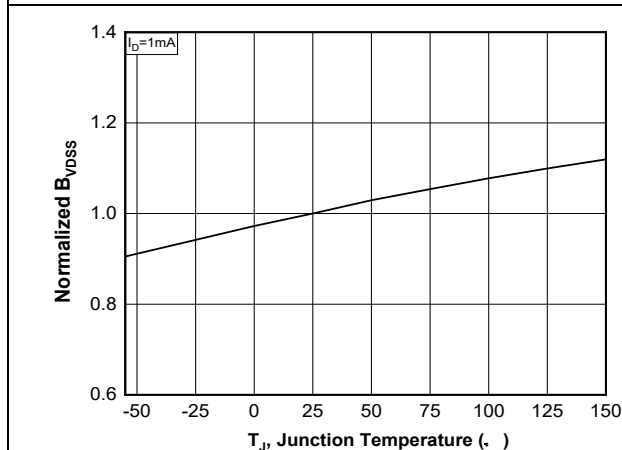


Figure 5: Normalized Breakdown voltage vs. Junction Temperature

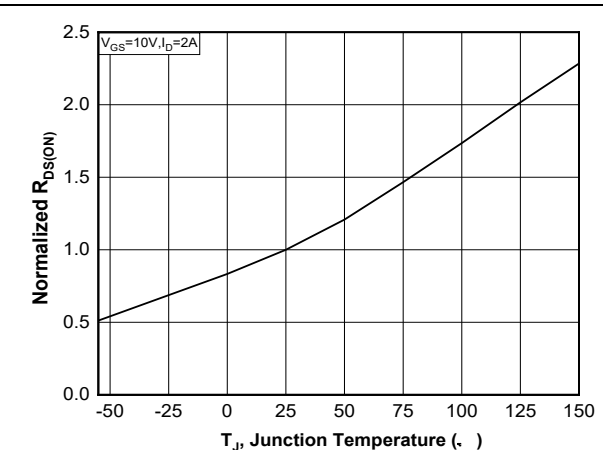


Figure 6: Normalized on Resistance vs. Junction Temperature



➤ Typical Performance Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

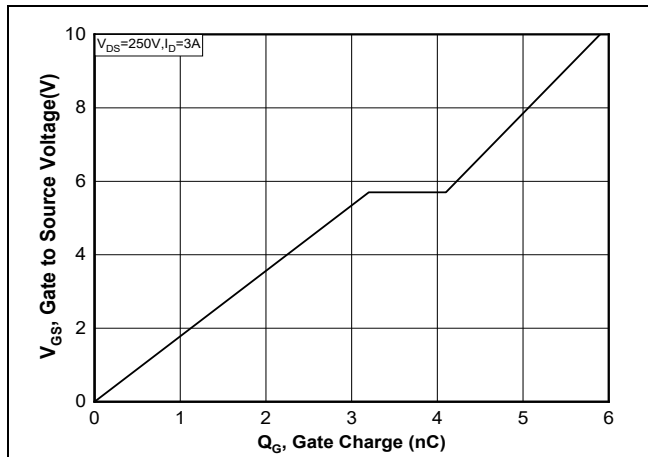


Figure 7: Gate Charge Characteristics

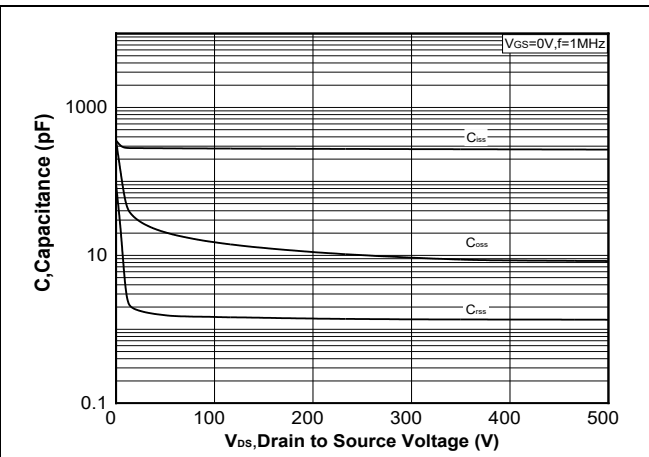


Figure 8: Capacitance Characteristics

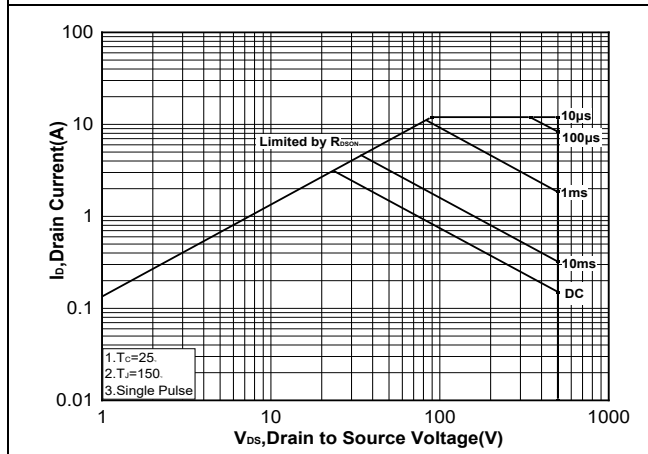


Figure 9: Maximum Safe Operating Area

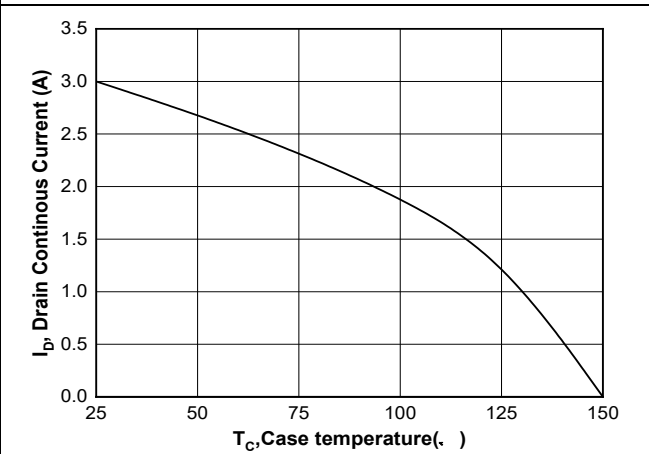


Figure 10: Maximum Continuous I_D vs. Case Temperature

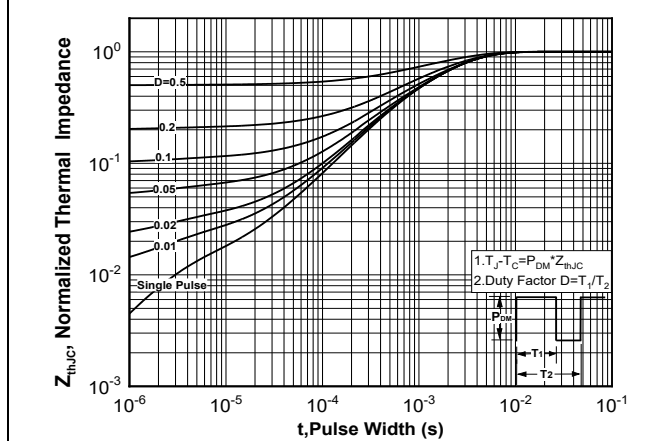


Figure 11: Normalized Maximum Transient Thermal Impedance

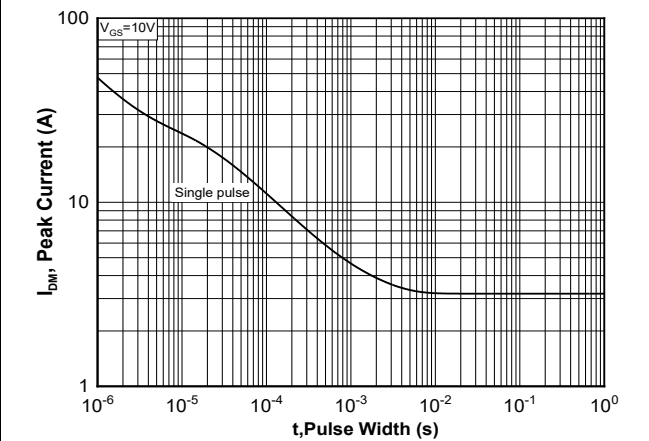
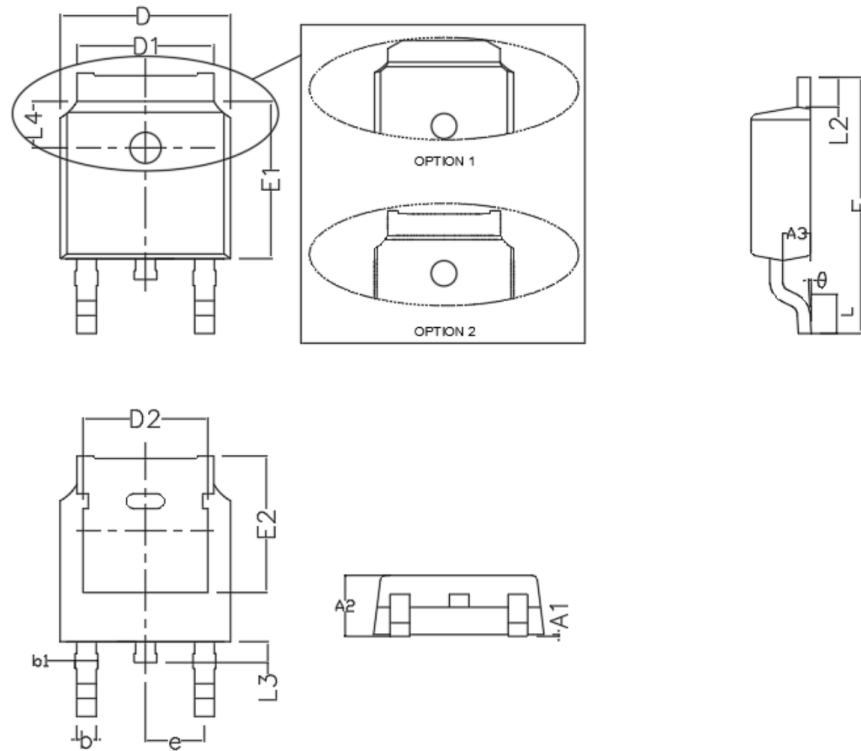


Figure 12: Peak Current Capacity

➤ Package Information

TO252



Symbol	MILL IMETER			Symbol	MILL IMETER		
	Min	Nom	Max		Min	Nom	Max
A1	0.000	/	0.200	E1	5.800	6.100	6.400
A2	2.100	2.300	2.500	E2	5.100	5.450	5.600
A3	0.900	1.040	1.170	e	2.286TYP		
b	0.600	0.762	0.910	L	1.270	1.500	2.032
b1	0.680	0.840	1.145	L2	0.900	1.100	1.270
D	6.300	6.600	6.900	L3	0.600	0.800	1.000
D1	4.950	5.330	5.700	L4	1.600	1.800	2.000
D2	4.315	4.830	5.230	θ	0°	/	10°
E	9.395	10.100	10.700				



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