



SSCV3N500GT8

N-Channel Enhancement Mode Power MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
500V	$\pm 30V$	2.4 Ω @10V	1.5A

➤ Description

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

100% UIS + ΔV_{DS} + R_g Tested!

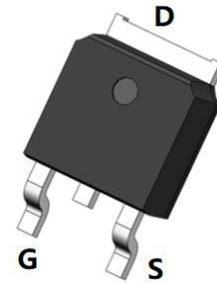
➤ Applications

- Switch Mode Power Supply
- Uninterruptible Power Supply (UPS)
- TV Power

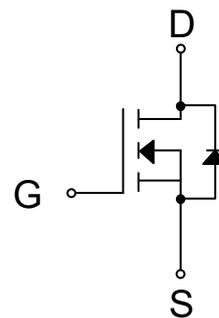
➤ Ordering Information

Device	Package	Shipping
SSCV3N500GT8	TO-252	2500/Reel

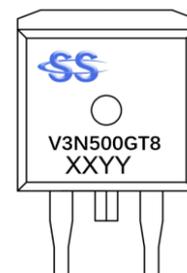
➤ Pin Configuration



TO-252 (Top View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)



➤ **Absolute Maximum Ratings (T_J=25°C unless otherwise noted)**

Symbol	Parameter	Ratings	Unit	
V _{DSS}	Drain-to-Source Voltage	500	V	
V _{GSS}	Gate-to-Source Voltage	±30	V	
I _D	Continuous Drain Current	T _J =25°C	3	A
		T _J =100°C	1.8	
I _{DM}	Pulsed Drain Current ^a	12	A	
E _{AS}	Single Pulsed Avalanche Energy	61	mJ	
P _D	Power Dissipation, T _J =25°C	17.6	W	
T _{STG} /T _J	Junction & Storage Temperature Range	-55 to 150	°C	

➤ **Thermal Resistance Ratings (T_J=25°C unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
R _{θJA}	Thermal Resistance, Junction to Ambient ^b	62	°C/W
R _{θJC}	Thermal Resistance, Junction to Case	7.1	

Note:

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

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



➤ **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		4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 1.5A		2.4	3	Ω
Input Capacitance	C _{ISS}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		230		pF
Output Capacitance	C _{OSS}			33		
Reverse Transfer Capacitance	C _{RSS}			1.8		
Total Gate Charge	Q _G	V _{GS} = 0 to 10V, V _{DS} = 400V, I _D = 3A		10.1		nC
Gate to Source Charge	Q _{GS}			3.5		
Gate to Drain Charge	Q _{GD}			2.1		
Turn-on Delay Time	T _{D(ON)}	V _{DS} = 250V, I _D = 3A, R _G = 25Ω		11.8		ns
Rise Time	T _r			14		
Turn-off Delay Time	T _{D(OFF)}			31		
Fall Time	T _f			17		
Maximum Continuous Drain to Source Diode Forward Current	I _S				3	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 3A			1.2	V
Body Diode Reverse Recovery Time	T _{rr}	I _F = 3A, di/dt = 100A/us V _R = 300V		189		ns
Body Diode Reverse Recovery Charge	Q _{rr}				0.4	



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

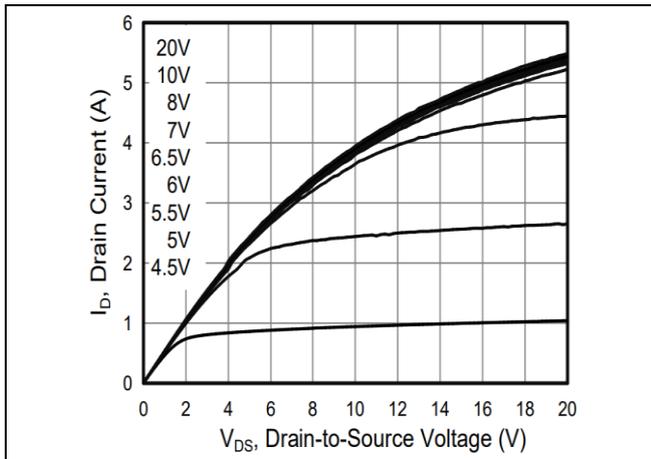


Figure 1: Output Characteristics

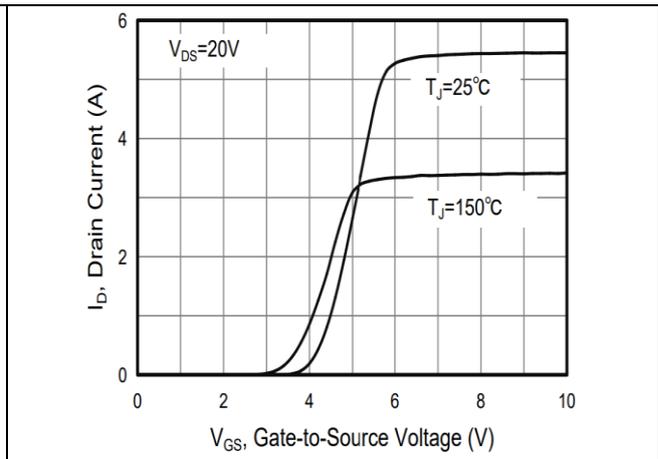


Figure 2: Typical Transfer Characteristics

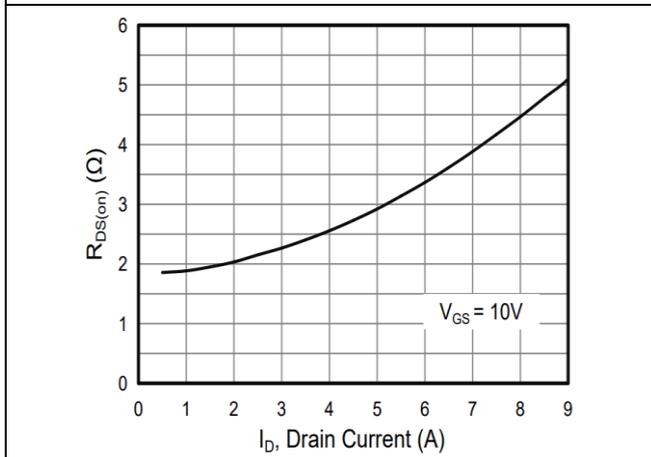


Figure 3: On-resistance vs. Drain Current

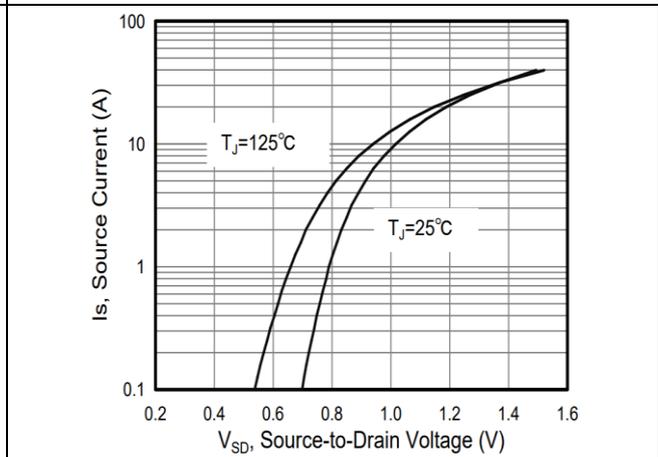


Figure 4: Body Diode Characteristics

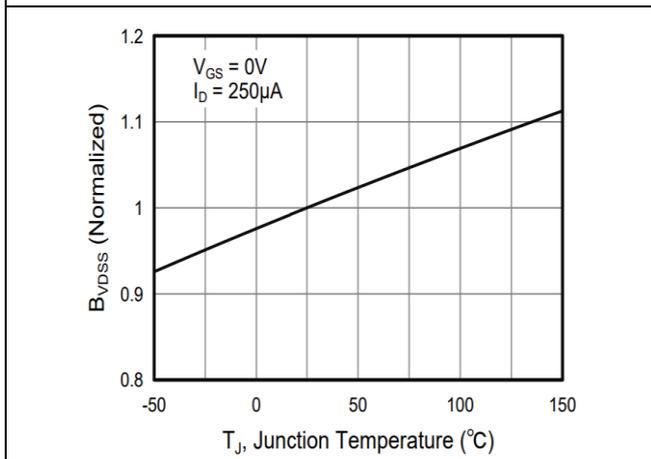


Figure 5: Normalized Breakdown voltage vs. Junction Temperature

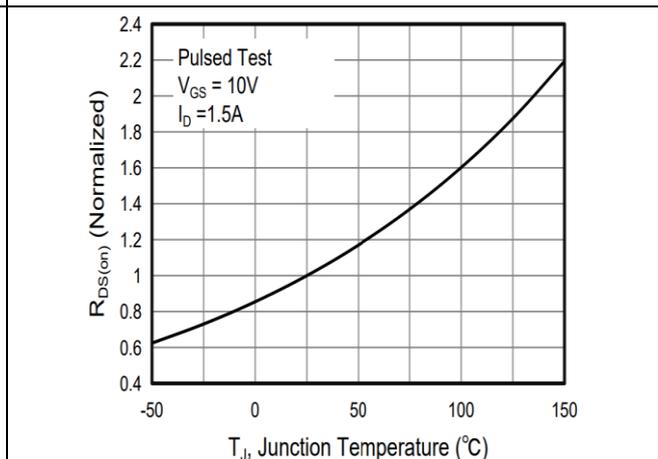


Figure 6: Normalized on Resistance vs. Junction Temperature



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

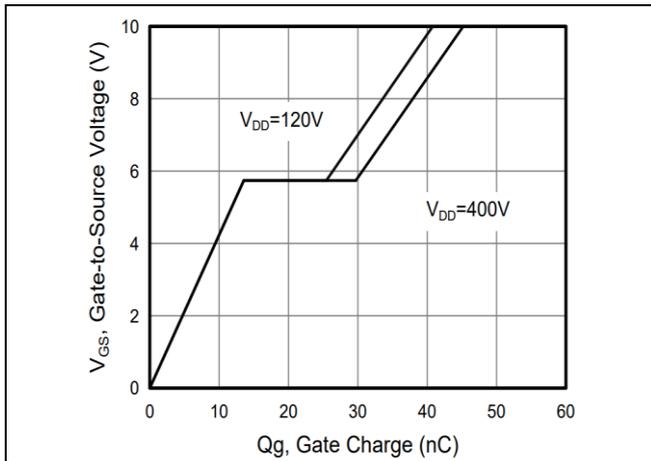


Figure 7: Gate Charge Characteristics

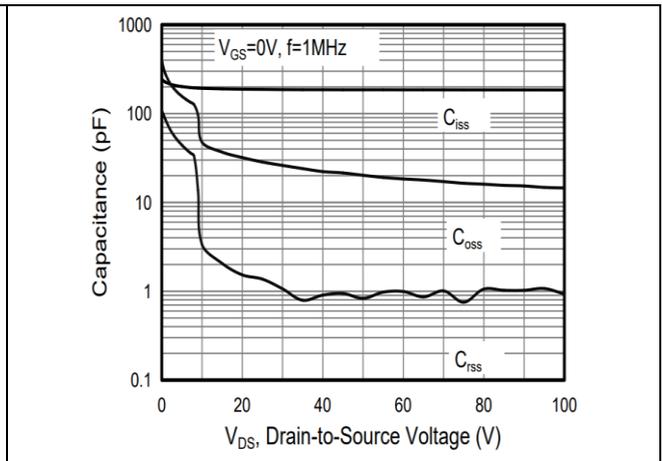


Figure 8: Capacitance Characteristics

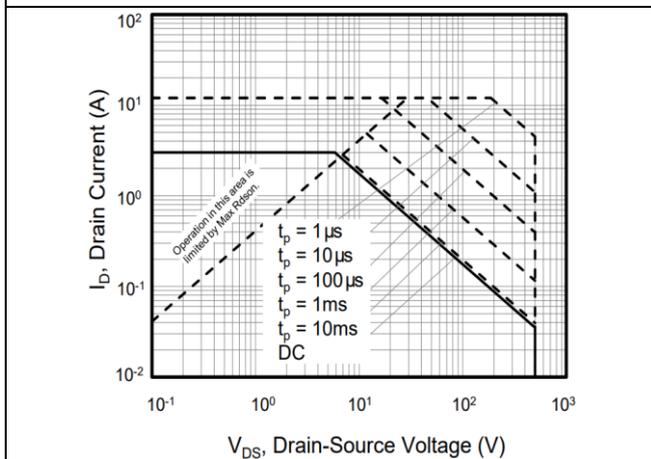


Figure 9: Maximum Safe Operating Area

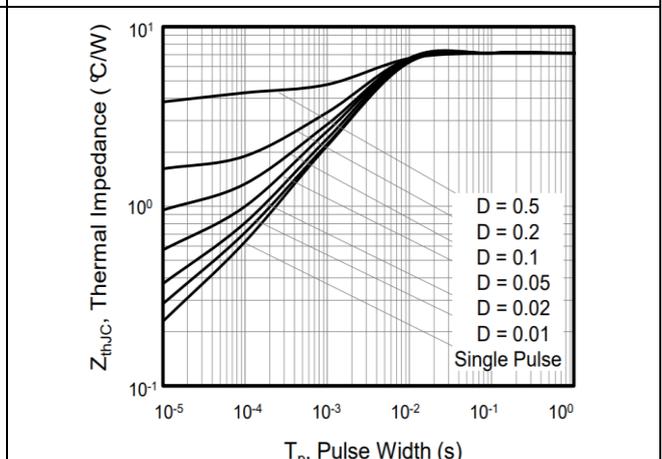
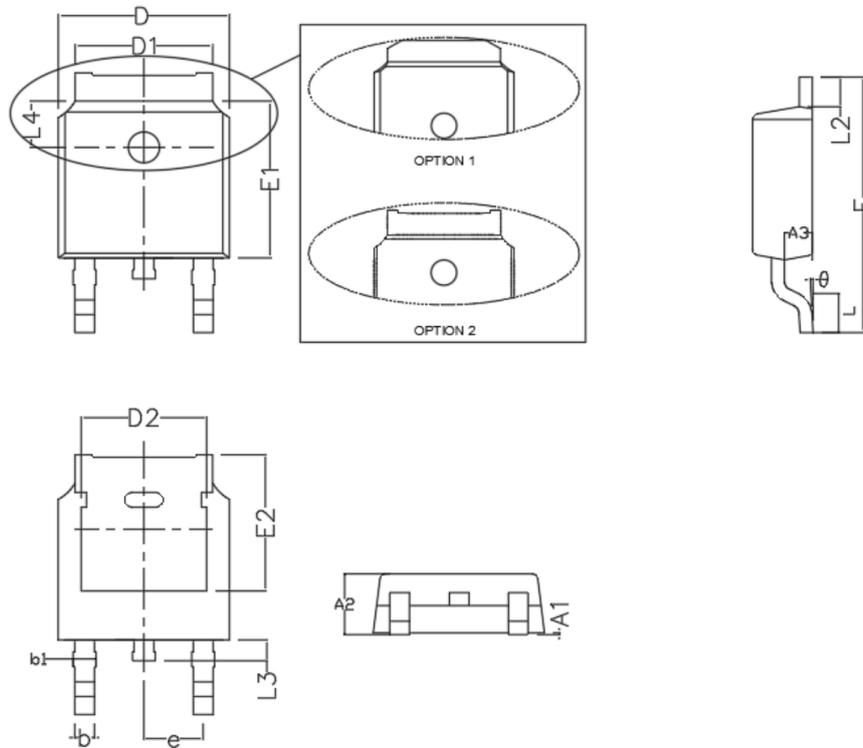


Figure 10: Normalized Maximum Transient Thermal Impedance



➤ 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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