



# SSCV5N500AGT8

## SSCV5N500AGT8

### N-Channel Enhancement Mode Power MOSFET

#### ➤ Features

V <sub>DS</sub>	V <sub>GS</sub>	R <sub>DS(ON)</sub> Typ.	I <sub>D</sub>
500V	±30V	1.2Ω@10V	2.5A

#### ➤ Description

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

**100% UIS + ΔVDS + Rg Tested!**

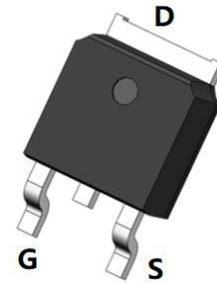
#### ➤ Applications

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

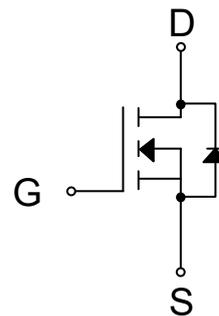
#### ➤ Ordering Information

Device	Package	Shipping
SSCV5N500AGT8	TO-252	2500/Reel

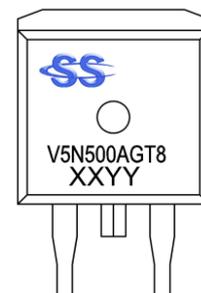
#### ➤ Pin Configuration



**TO-252 (Top View)**



**Pin Configuration**



**Marking**

(XXYY: Internal Traceability Code)



# SSCV5N500AGT8

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

Symbol	Parameter	Ratings	Unit	
$V_{DSS}$	Drain-to-Source Voltage	500	V	
$V_{GSS}$	Gate-to-Source Voltage	$\pm 30$	V	
$I_D$	Continuous Drain Current	$T_J=25^\circ\text{C}$	5	A
		$T_J=100^\circ\text{C}$	3	
$I_{DM}$	Pulsed Drain Current <sup>a</sup>	20	A	
$E_{AS}$	Single Pulsed Avalanche Energy	180	mJ	
$P_D$	Power Dissipation, $T_J=25^\circ\text{C}$	48.3	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 <sup>b</sup>	62	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	2.59	

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.



# SSCV5N500AGT8

## ➤ Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	500			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 500V, V <sub>GS</sub> = 0V			1.0	μA
Gate-Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> = 0V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2		4	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 2.5A		1.2	1.5	Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f = 1MHz		488		pF
Output Capacitance	C <sub>OSS</sub>			60		
Reverse Transfer Capacitance	C <sub>RSS</sub>			7.2		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = 0 to 10V, V <sub>DS</sub> = 400V, I <sub>D</sub> = 5A		16.5		nC
Gate to Source Charge	Q <sub>GS</sub>			3.8		
Gate to Drain Charge	Q <sub>GD</sub>			5.6		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>DS</sub> = 250V, I <sub>D</sub> = 5A, R <sub>G</sub> = 25Ω		14		ns
Rise Time	T <sub>r</sub>			18		
Turn-off Delay Time	T <sub>D(OFF)</sub>			32		
Fall Time	T <sub>f</sub>			11		
Maximum Continuous Drain to Source Diode Forward Current	I <sub>S</sub>				5	A
Drain to Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 5A			1.2	V
Body Diode Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> = 5A, di/dt = 100A/us V <sub>R</sub> = 400V		328		ns
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>				1.6	

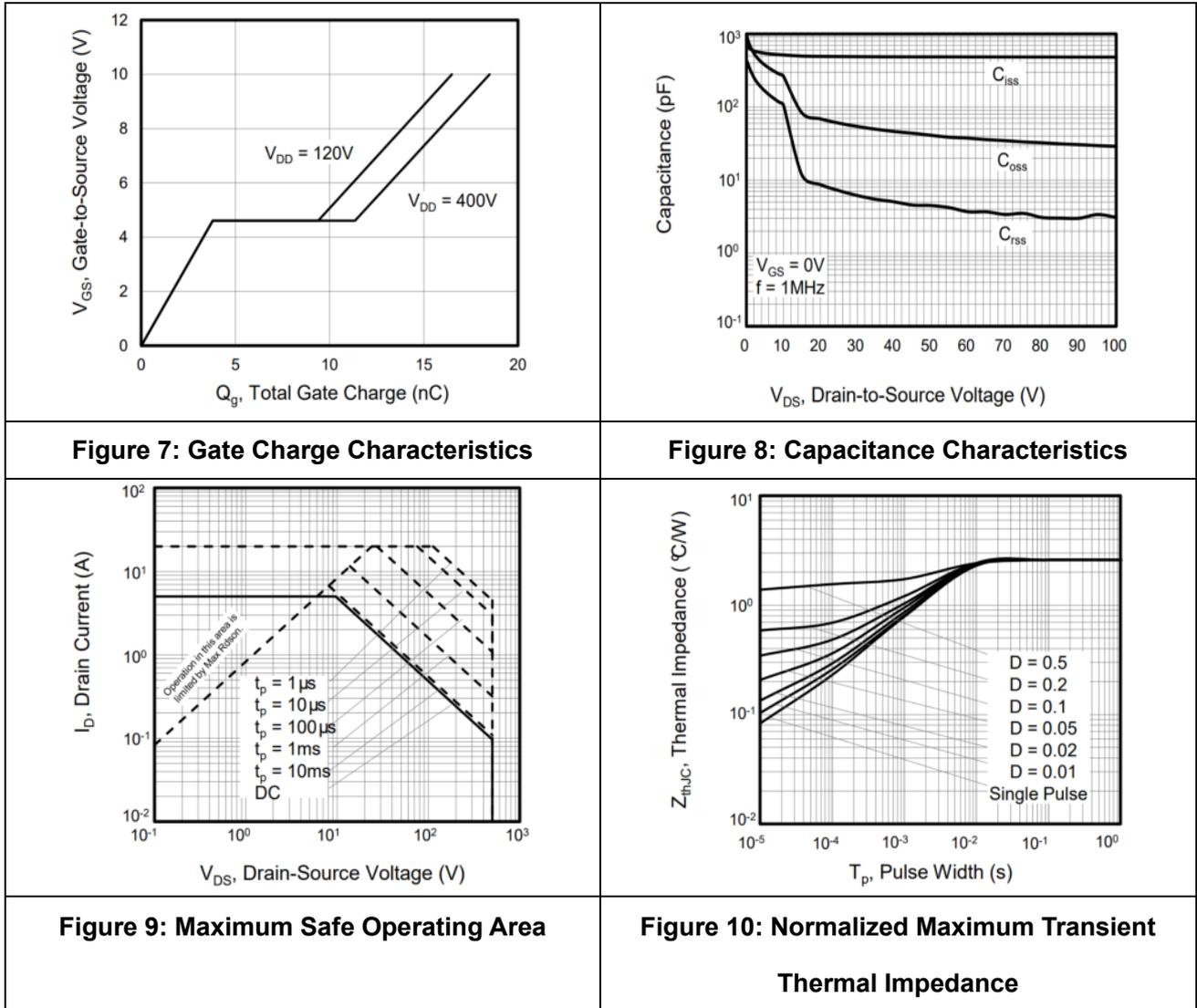


➤ **Typical Performance Characteristics ( $T_J=25^\circ\text{C}$  unless otherwise noted)**

<p align="center"><b>Figure 1: Output Characteristics</b></p>	<p align="center"><b>Figure 2: Typical Transfer Characteristics</b></p>
<p align="center"><b>Figure 3: On-resistance vs. Drain Current</b></p>	<p align="center"><b>Figure 4: Body Diode Characteristics</b></p>
<p align="center"><b>Figure 5: Normalized Breakdown voltage vs. Junction Temperature</b></p>	<p align="center"><b>Figure 6: Normalized on Resistance vs. Junction Temperature</b></p>



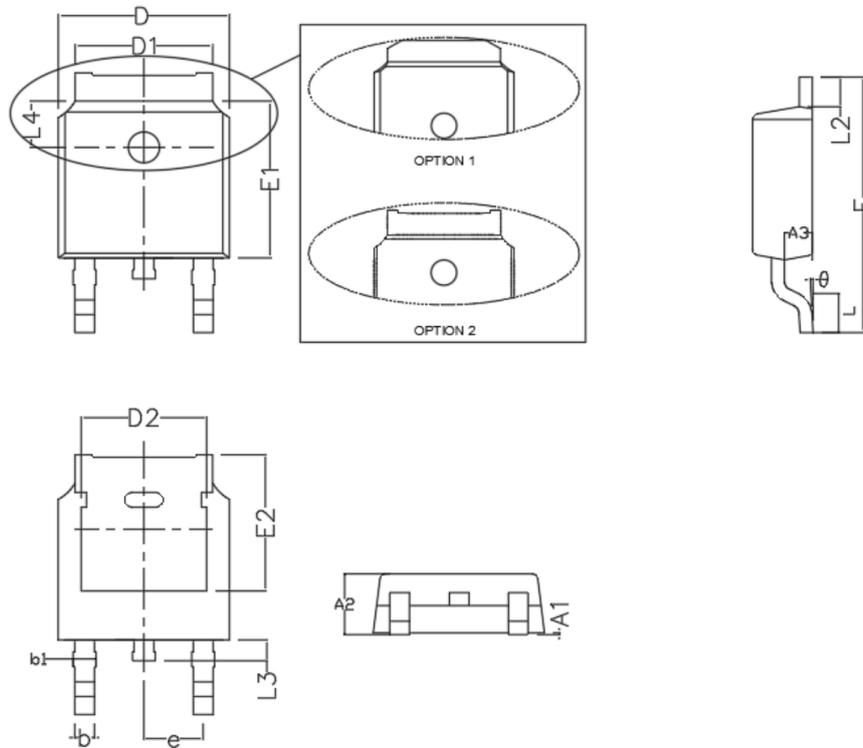
➤ Typical Performance Characteristics ( $T_J=25^\circ\text{C}$  unless otherwise noted)





## ➤ 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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