

# STS6601

PRODUCT SUMMARY		
V <sub>DS</sub>	I <sub>D</sub>	R <sub>DS(ON)</sub> (mΩ) Max
-60V	-3.2A	110 @ V <sub>GS</sub> =-10V
		160 @ V <sub>GS</sub> =-4.5V

## FEATURES

- Super high dense cell design for low R<sub>DS(ON)</sub>.
- Rugged and reliable.
- SOT-26 package.



## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Limit	Units
V <sub>DS</sub>	Drain-Source Voltage	-60	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Drain Current-Continuous <sup>a</sup>	T <sub>A</sub> =25°C	-3.2
		T <sub>A</sub> =70°C	-2.6
I <sub>DM</sub>	-Pulsed <sup>b</sup>	-12	A
P <sub>D</sub>	Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	2
		T <sub>A</sub> =70°C	1.28
T <sub>J</sub> , T <sub>STG</sub>	Operating Junction and Storage Temperature Range	-55 to 150	°C

## THERMAL CHARACTERISTICS

R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient <sup>a</sup>	62.5	°C/W
------------------	--	------	------



# STS6601

## ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-60			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-48V, V <sub>GS</sub> =0V			-1	uA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V			±100	nA
<b>ON CHARACTERISTICS</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-1.0	-2.0	-3	V
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-3.2A		88	110	m ohm
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.6A		120	160	m ohm
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =-10V, I <sub>D</sub> =-3.2A		6.3		S
<b>DYNAMIC CHARACTERISTICS <sup>c</sup></b>						
C <sub>ISS</sub>	Input Capacitance	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V f=1.0MHz		745		pF
C <sub>OSS</sub>	Output Capacitance			69		pF
C <sub>RSS</sub>	Reverse Transfer Capacitance			42		pF
<b>SWITCHING CHARACTERISTICS <sup>c</sup></b>						
t <sub>D(ON)</sub>	Turn-On Delay Time	V <sub>DD</sub> =-30V I <sub>D</sub> =-1A V <sub>GS</sub> =-10V R <sub>GEN</sub> =6 ohm		12		ns
t <sub>r</sub>	Rise Time			12		ns
t <sub>D(OFF)</sub>	Turn-Off Delay Time			65.8		ns
t <sub>f</sub>	Fall Time			22		ns
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =-30V, I <sub>D</sub> =-3.2A, V <sub>GS</sub> =-10V		13.5		nC
		V <sub>DS</sub> =-30V, I <sub>D</sub> =-3.2A, V <sub>GS</sub> =-4.5V		6.5		nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =-30V, I <sub>D</sub> =-3.2A, V <sub>GS</sub> =-10V		1.5		nC
Q <sub>gd</sub>	Gate-Drain Charge			3.2		nC
<b>DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS</b>						
I <sub>S</sub>	Maximum Continuous Drain-Source Diode Forward Current				-2.0	A
V <sub>SD</sub>	Diode Forward Voltage <sup>b</sup>	V <sub>GS</sub> =0V, I <sub>S</sub> =-2A		-0.8	-1.2	V

### Notes

- a. Surface Mounted on FR4 Board, t ≤ 10sec.
- b. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%.
- c. Guaranteed by design, not subject to production testing.