

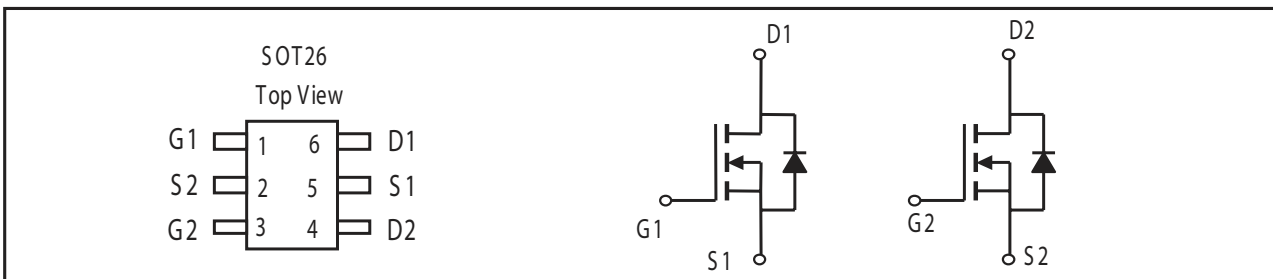
# STS 3623

## PRODUCT SUMMARY

V <sub>DS</sub>	I <sub>D</sub>	R <sub>DS(ON)</sub> (mΩ) Max
30V	4A	50 @ V <sub>GS</sub> = 10V 65 @ 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)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	V
Gate-Source Voltage	V <sub>GS</sub>	± 20	V
Drain Current-Continuous @ T <sub>J</sub> =25 °C -Pulsed <sup>b</sup>	I <sub>D</sub>	4	A
	I <sub>DM</sub>	16	A
Drain-Source Diode Forward Current	I <sub>S</sub>	1.25	A
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	1.25	W
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C

## THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	100	°C/W
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## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ <sup>c</sup>	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250uA	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			1	uA
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> = ± 20V, V <sub>DS</sub> = 0V			±100	nA
<b>ON CHARACTERISTICS<sup>b</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	1	1.6	3	V
Drain-Source On-State Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 3A		40	50	m-ohm
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 2A		50	65	m-ohm
On-State Drain Current	I <sub>D(ON)</sub>	V <sub>DS</sub> = 5V, V <sub>GS</sub> = 4.5V	10			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 3A		7		S
<b>DYNAMIC CHARACTERISTICS<sup>c</sup></b>						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V f = 1.0MHz		280		pF
Output Capacitance	C <sub>OSS</sub>			70		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			38		pF
<b>SWITCHING CHARACTERISTICS<sup>c</sup></b>						
Turn-On Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> = 15V, I <sub>D</sub> = 1A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6 ohm		6		ns
Rise Time	t <sub>r</sub>			5		ns
Turn-Off Delay Time	t <sub>D(OFF)</sub>			18		ns
Fall Time	t <sub>f</sub>			6		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15V, I <sub>D</sub> = 3A, V <sub>GS</sub> = 10V		5.9		nC
Gate-Source Charge	Q <sub>gs</sub>			0.7		nC
Gate-Drain Charge	Q <sub>gd</sub>			1.4		nC

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ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ <sup>c</sup>	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS <sup>b</sup>						
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_s = 1.25A$		0.81	1.15	V

## Notes

- a. Surface Mounted on FR4 Board,  $t \leq 10\text{sec}$ .  
 b. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .  
 c. Guaranteed by design, not subject to production testing.