

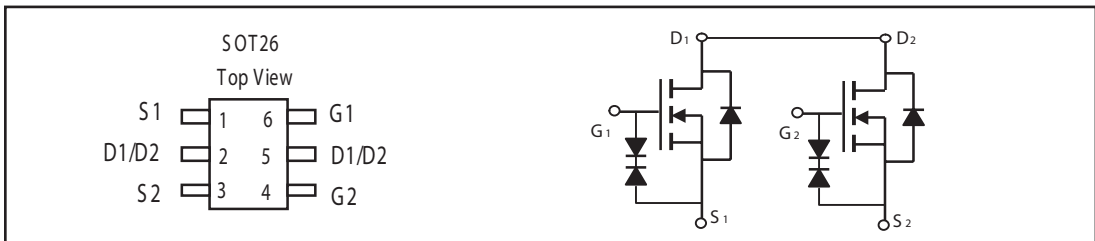
STS8201

PRODUCT SUMMARY

V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
20V	5A	27 @ V _{GS} = 4.0V 40 @ V _{GS} = 2.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.



ABSOLUTE MAXIMUM RATINGS (T_A=25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	±20	V
Gate-Source Voltage	V _{GS}	±12	V
Drain Current-Continuous @ T _J =25°C -Pulsed ^b	I _D	5	A
	I _{DM}	20	A
Drain-Source Diode Forward Current ^a	I _S	1.25	A
Maximum Power Dissipation ^a	P _D	1.25	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient ^a	R _{θJA}	100	°C/W
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STS8201

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

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$			± 10	μA
ON CHARACTERISTICS^b						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.8	1.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.0V, I_D=5A$		22	27	m ohm
		$V_{GS}=2.5V, I_D=3A$		30	40	m ohm
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=5A$		19		S
DYNAMIC CHARACTERISTICS^c						
Input Capacitance	C_{ISS}	$V_{DS}=8V, V_{GS}=0V$ $f=1.0MHz$		720		pF
Output Capacitance	C_{OSS}			195		pF
Reverse Transfer Capacitance	C_{RSS}			147		pF
SWITCHING CHARACTERISTICS^c						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=10V,$ $I_D=1A,$ $V_{GEN}=4.0V,$ $R_{GEN}=10\text{ ohm}$		34		ns
Rise Time	t_r			68		ns
Turn-Off Delay Time	$t_{D(OFF)}$			104		ns
Fall Time	t_f			43		ns
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=5A,$ $V_{GS}=4.0V$		12		nC
Gate-Source Charge	Q_{gs}			2.3		nC
Gate-Drain Charge	Q_{gd}			5.5		nC



STS8201

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS ^b						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{V}, I_s = 1.25\text{A}$		0.8	1.2	V

Notes

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