

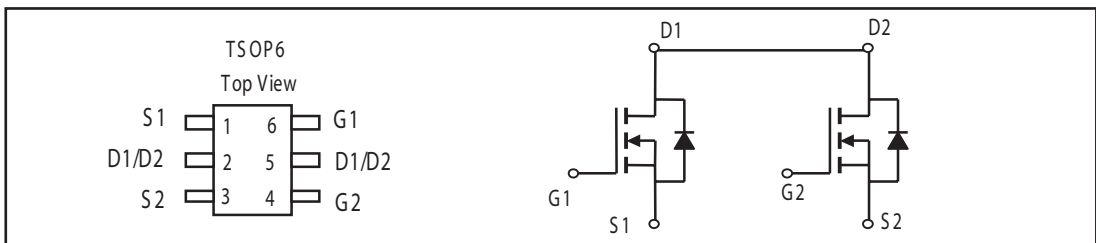
STS 8205

PRODUCT SUMMARY

V _{DSS}	I _D	R _{DS(ON)} (mΩ) Max
20V	4A	30 @ V _{GS} = 4.0V 46 @ V _{GS} = 2.5V

FEATURES

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



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}	±10	V
Drain Current-Continuous @ T _J =25°C -Pulsed ^b	I _D	4	A
	I _{DM}	25	A
Drain-Source Diode Forward Current ^a	I _S	2	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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ELECTRICAL CHARACTERISTICS (TA=25 °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 = 250uA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ± 10V, V _{DS} = 0V			±100	nA
ON CHARACTERISTICS^b						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.5	0.8	1.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = 4.0V, I _D = 4A		27	30	m ohm
		V _{GS} = 2.5V, I _D = 3A		35	46	m ohm
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D = 4A		13		S
DYNAMIC CHARACTERISTICS^c						
Input Capacitance	C _{ISS}	V _{DS} = 8V, V _{GS} = 0V f = 1.0MHz		800		pF
Output Capacitance	C _{OSS}			155		pF
Reverse Transfer Capacitance	C _{RSS}			125		pF
SWITCHING CHARACTERISTICS^c						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 10V, I _D = 1A, V _{GEN} = 4.0V, R _L = 10 ohm R _{GEN} = 10 ohm		18.3		ns
Rise Time	t _r			4.8		ns
Turn-Off Delay Time	t _{D(OFF)}			43.5		ns
Fall Time	t _f			20		ns
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 4A, V _{GS} = 4.0V		11		nC
Gate-Source Charge	Q _{gs}			2.2		nC
Gate-Drain Charge	Q _{gd}			2.5		nC



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

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS ^b						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_s = 2A$		0.8	1.2	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.