



Micro Commercial Components



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SI2305

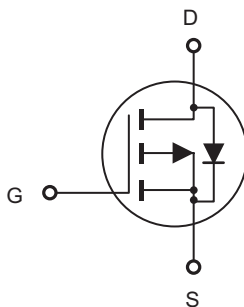
Features

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- TrenchFET Power MOSFET
- Load Switch for Portable Devices
- DC/DC Converter
- SOT-23 Package
- Marking Code: S5

Maximum Ratings @ 25°C Unless Otherwise Specified

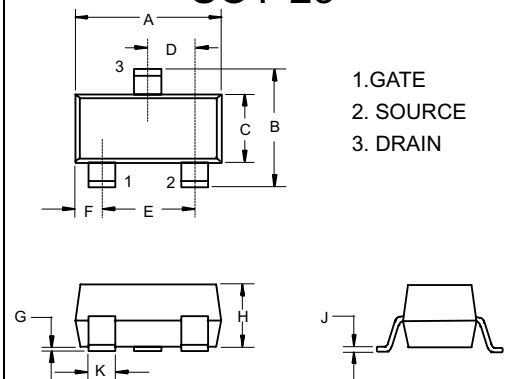
Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	-8	V
I_D	Continuous Drain Current	-4.1	A
I_S	Continuous Source-Drain Diode Current	-0.8	A
V_{GS}	Gate-source Voltage	± 8	V
P_D	Total Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient ^b	357	°C/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Internal Block Diagram



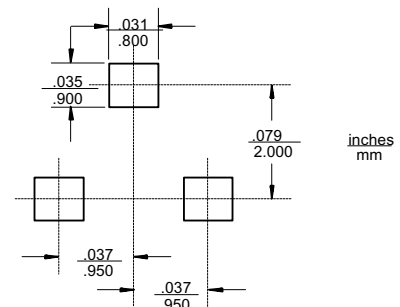
P-Channel Enhancement Mode Field Effect Transistor

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout

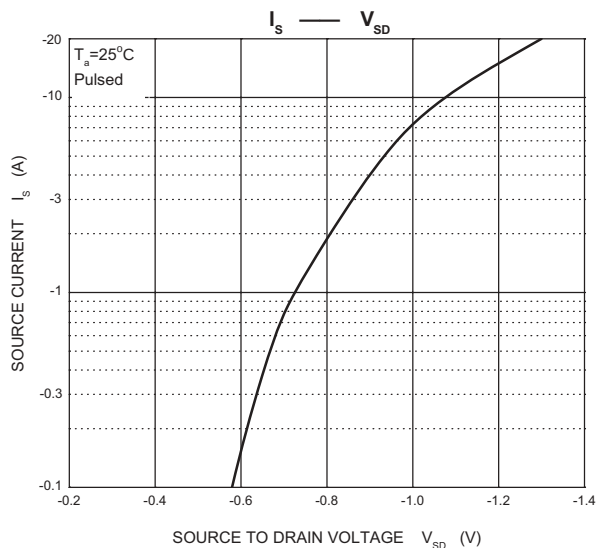
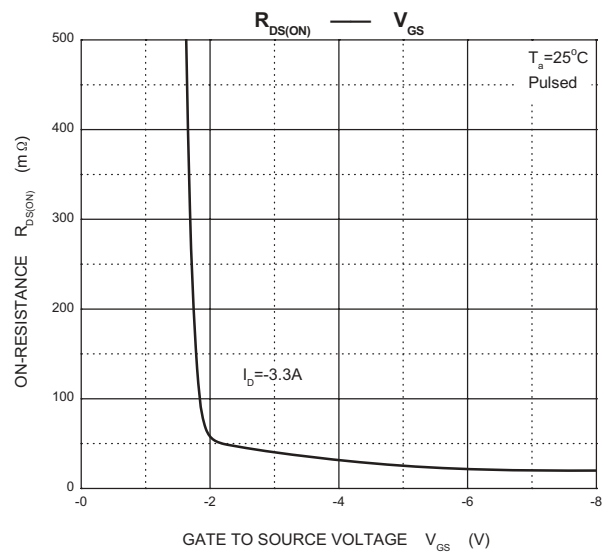
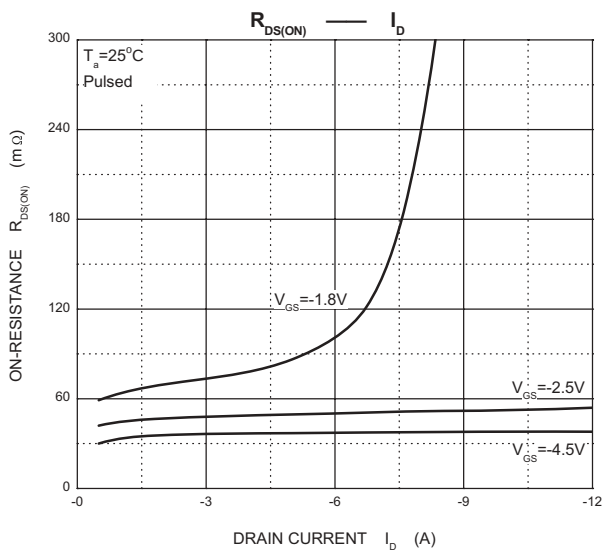
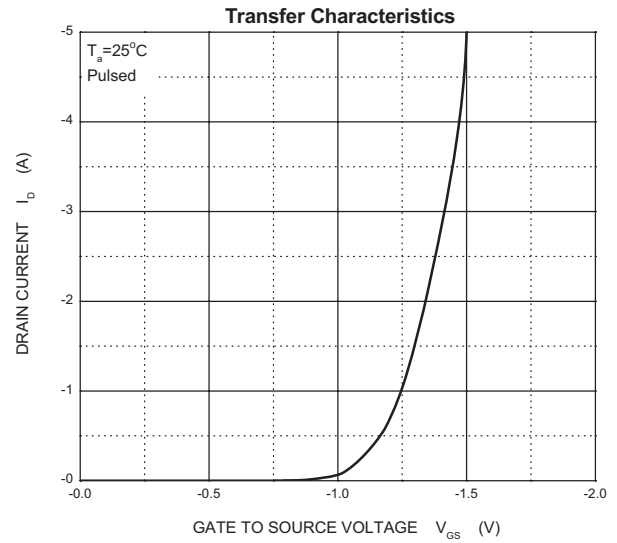
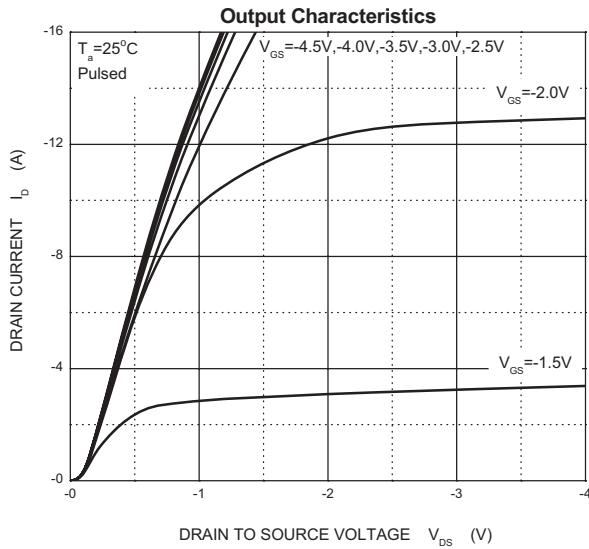


Electrical characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-8			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.55		-0.9	
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =-8V, V _{GS} =0V			-1	μA
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} =-4.5V, I _D =-3.5A			0.045	Ω
		V _{GS} =-2.5V, I _D =-3A			0.060	
		V _{GS} =-1.8V,I _D =-2.0A			0.090	
Forward transconductance ^a	g _{fs}	V _{DS} =-5V, I _D =-4.1A	6			S
Dynamic						
Input capacitance ^{b,c}	C _{iss}	V _{DS} =-4V,V _{GS} =0V,f =1MHz		740		pF
Output capacitance ^{b,c}	C _{oss}			290		
Reverse transfer capacitance ^{b,c}	C _{rss}			190		
Total gate charge ^b	Q _g	V _{DS} =-4V,V _{GS} =-4.5V, I _D =-4.1A		7.8	15	nC
		V _{DS} =-4V,V _{GS} =-2.5V, I _D =-4.1A		4.5	9	
Gate-source charge ^b	Q _{gs}			1.2		
Gate-drain charge ^b	Q _{gd}			1.6		
Gate resistance ^{b,c}	R _g	f =1MHz	1.4	7	14	Ω
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} =-4V, R _L =1.2Ω ,I _D =-3.3A, V _{GEN} =-4.5V,R _g =1Ω		13	20	ns
Rise time ^{b,c}	t _r			35	53	
Turn-off Delay time ^{b,c}	t _{d(off)}			32	48	
Fall time ^{b,c}	t _f			10	20	
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} =-4V, R _L =1.2Ω ,I _D =-3.3A, V _{GEN} =-8V,R _g =1Ω		5	10	
Rise time ^{b,c}	t _r			11	17	
Turn-off delay time ^{b,c}	t _{d(off)}			22	33	
Fall time ^{b,c}	t _f			16	24	
Drain-source body diode characteristics						
Continuous source-drain diode current	I _S	T _C =25 ^o C			-1.4	A
Pulse diode forward current ^a	I _{SM}				-10	
Body ciode voltage	V _{SD}	I _F =-3.3A		-0.8	-1.2	V

Note :

- a. Pulse Test ; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.



Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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