



Micro Commercial Components



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SI2307

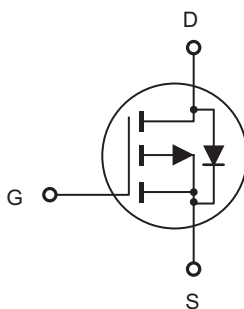
Features

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- TrenchFET Power MOSFET
- Marking Code: S7

Maximum Ratings @ 25°C Unless Otherwise Specified

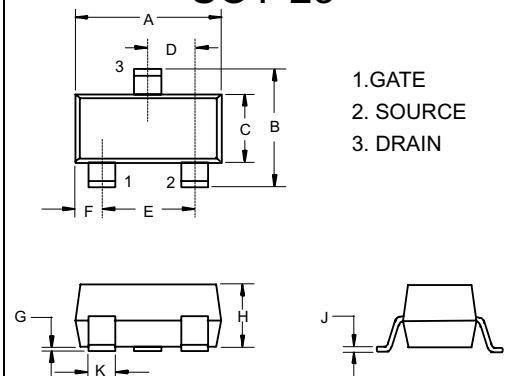
Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	-30	V
I_D	Continuous Drain Current	-2.7	A
I_S	Continuous Source-Drain Diode Current	-0.91	A
V_{GS}	Gate-source Voltage	± 20	V
P_D	Total Power Dissipation	1.1	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient ^D	114	°C/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Internal Block Diagram



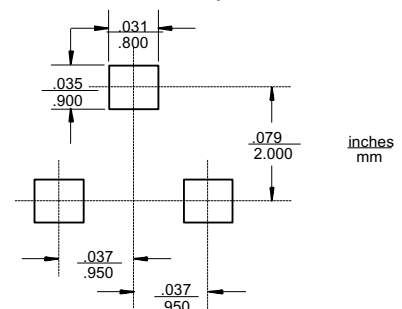
P-Channel Enhancement Mode Field Effect Transistor

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°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250μA	-1		-3	
Gate-Source Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
		V _{DS} =-30V, V _{GS} =0V, T _J =55°C			-10	
Drain-Source On-State Resistance ^c	R _{DS(on)}	V _{GS} =-4.5V, I _D =-2.5A		0.110	0.138	Ω
		V _{GS} =-10V, I _D =-3.5A		0.073	0.088	
Forward Transconductance ^c	g _{fs}	V _{DS} =-10V, I _D =-3.5A		7		S
Dynamic ^d						
Input Capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V,f =1MHz		340		pF
Output Capacitance	C _{oss}			67		
Reverse Transfer Capacitance	C _{rss}			51		
Total Gate Charge	Q _g	V _{DS} =-15V,V _{GS} =-4.5V, I _D =-2.5A		4.1	6.2	nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.8		
Gate Resistance	R _g	f =1MHz		10		Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} =-15V, R _L =15Ω, I _D =-1A, V _{GEN} =-4.5V,R _g =1Ω		40	60	ns
Rise Time	t _r			40	60	
Turn-Off Delay Time	t _{d(off)}			20	40	
Fall Time	t _f			17	30	
Drain-source Body diode characteristics						
Body Diode Voltage	V _{SD}	I _S =-0.75A, ,V _{GS} =0		-0.8	-1.2	V

Notes:

- t = 5s.
- Surface mounted on 1" × 1" FR4 board.
- Pulse Test : Pulse Width < 300μs, Duty Cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

Output Characteristics

$T_a = 25^\circ\text{C}$
Pulsed

$V_{GS} = -10V, -8V, -6V$

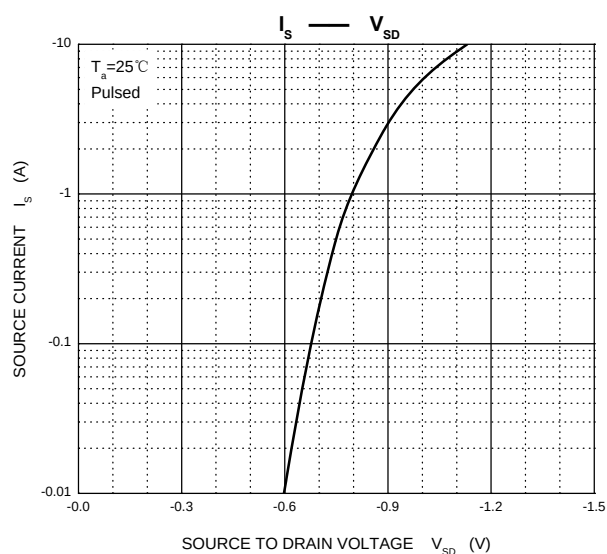
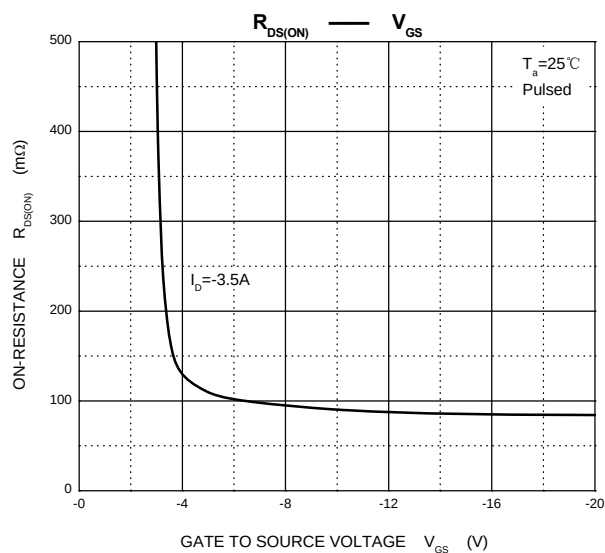
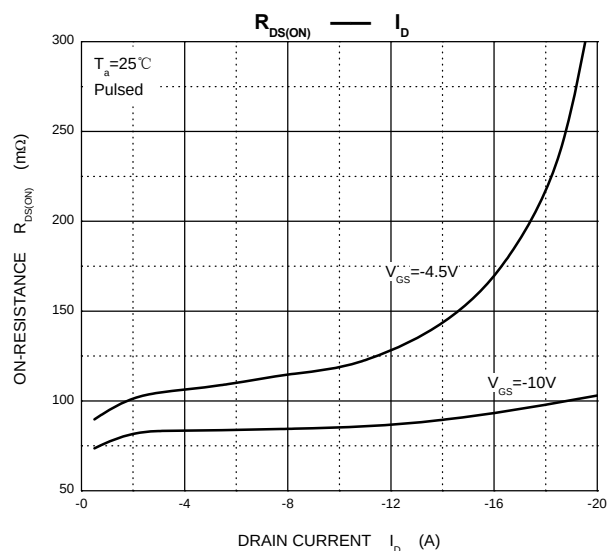
$V_{GS} = -4.5V$

$V_{GS} = -4.0V$

$V_{GS} = -3.5V$

$V_{GS} = -3.0V$

DRAIN TO SOURCE VOLTAGE V_{DS} (V)





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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