



Micro Commercial Components



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SI2312A

Features

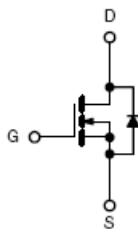
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- TrenchFET Power MOSFET
- Load Switch for Portable Devices

N-Channel Enhancement Mode Field Effect Transistor

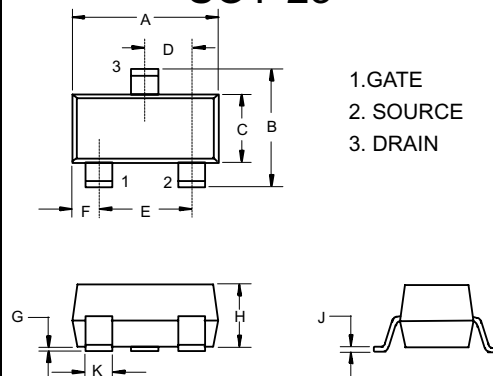
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	20	V
I_D	Continuous Drain Current	5.0	A
I_S	Continuous Source-Drain Diode Current	1.04	A
V_{GS}	Gate-source Voltage	± 8	V
P_D	Total Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	357	°C/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Internal Block Diagram

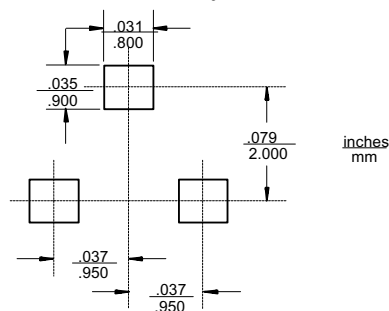


SOT-23



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



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$T_a = 25^\circ\text{C}$ unless otherwise specified

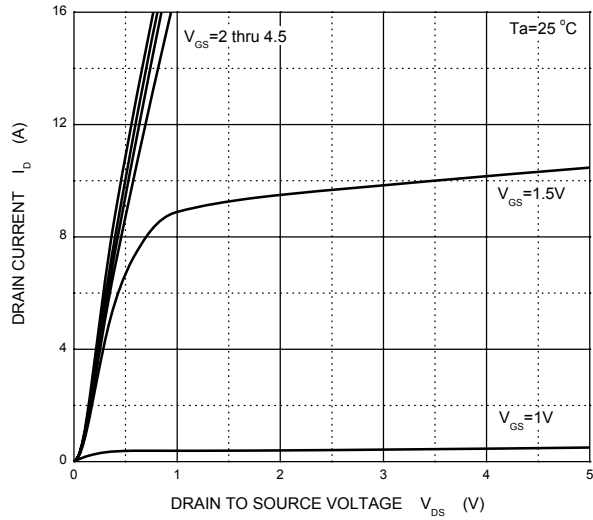
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	20			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.50		0.9	V
Drain-source on-state resistance ^a	R _{DS(on)}	V _{GS} =4.5V, I _D =3.4A		0.016	0.025	Ω
		V _{GS} =2.5V, I _D =3.4A		0.020	0.033	
Forward transconductance ^a	g _{fS}	V _{DS} =10V, I _D =5.0A	6			S
Dynamic ^b						
Input capacitance	C _{iSS}	V _{DS} =10V,V _{GS} =0V,f =1MHz		865		pF
Output capacitance	C _{oSS}			105		
Reverse transfer capacitance	C _{rSS}			55		
Gate resistance	R _g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	t _{d(on)}	V _{GEN} =5V,V _{DD} =10V, I _D =4A,R _G =1Ω, R _L =2.2Ω			10	ns
Rise time	t _r				20	
Turn-off Delay time	t _{d(off)}				32	
Fall time	t _f				12	
Drain-source body diode characteristics						
Forward diode voltage	V _{SD}	V _{GS} =0V,I _S =4A		0.75	1.2	V

Notes :

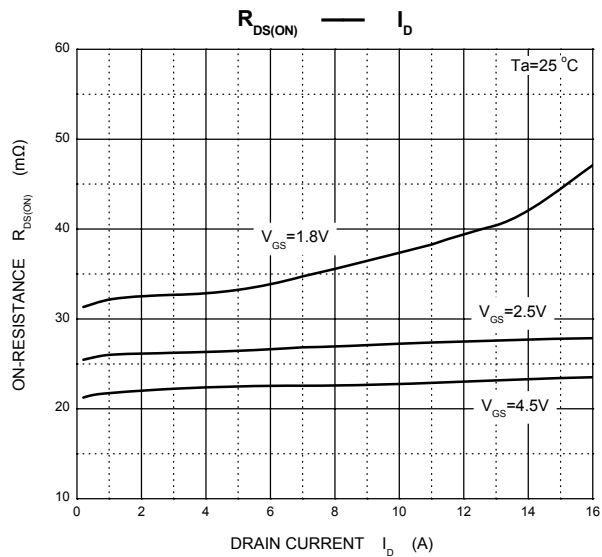
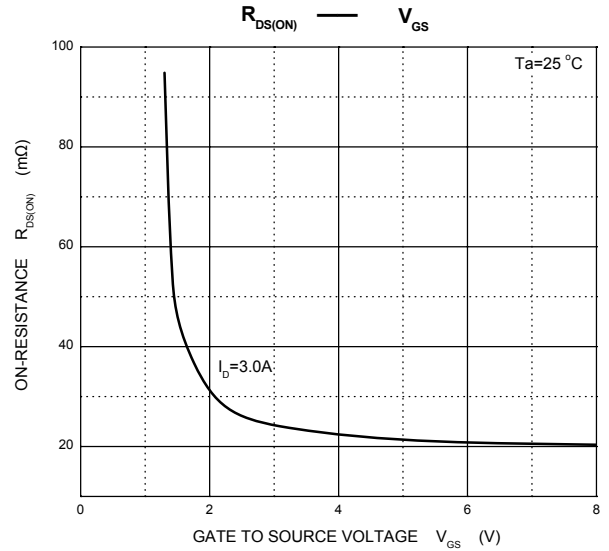
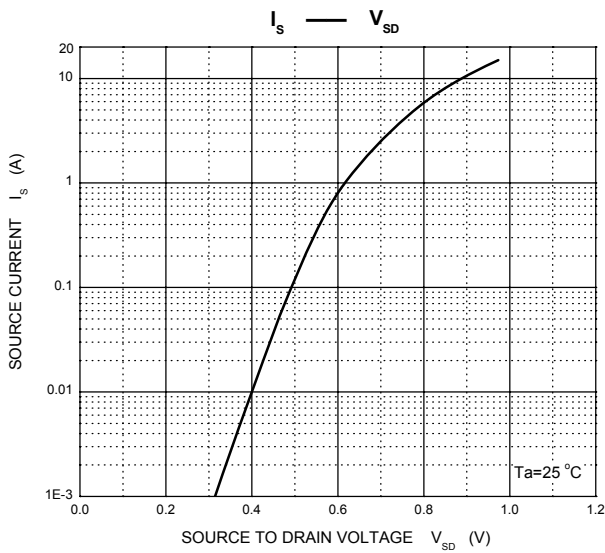
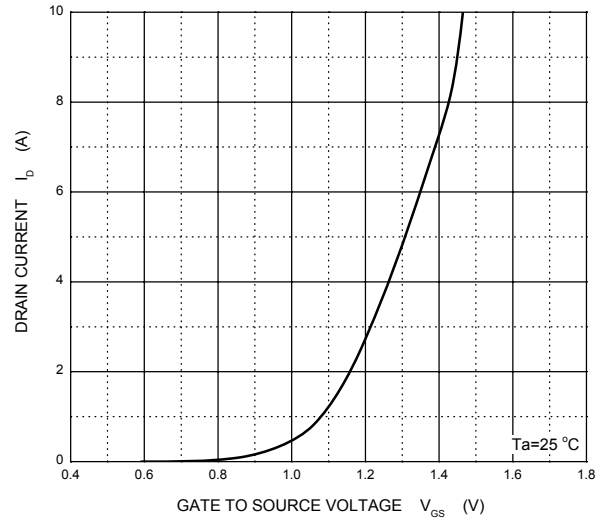
- Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- These parameters have no way to verify.

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Output Characteristics



Transfer Characteristics



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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