



AOS
SEMICONDUCTOR

产品规格说明书

Product Data Sheet

SI2301A

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电源管理IC



通信接口芯片



二三极管



LDO稳压器



逻辑器件



MOSFETs



运算放大器



显示驱动



MCU单片机



光电器件

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MOSFET

-20V P-Channel MOSFET

1.Features

- ★ $V_{DS(V)} = -20V$
- ★ $I_D = -2.8A$
- ★ $R_{DS(ON)} < 0.112\Omega (V_{GS} = -4.5V)$
- ★ $R_{DS(ON)} < 0.142\Omega (V_{GS} = -2.5V)$

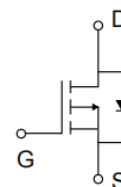
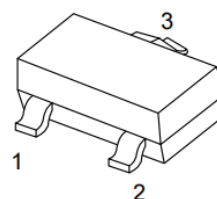
2.Applications

- ★ Load Switch for Portable Devices
- ★ DC/DC Converter

3.Pinning information

Pin	Symbol	Description
1	G	GATE
2	S	SOURCE
3	D	DRAIN

SOT-23

4.Absolute Maximum Ratings $T_A = 25^\circ C$

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	
Continunous Drain Current	I_D	-2.8	A
Pulsed Drain Current	I_{DM}	-12	
Continunous Source-Drain Current	I_S	-0.72	
Maximum Power Dissipation	P_D	0.4	W
Thermal Power Dissipation	$R_{\theta JA}$	125	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55 to 150	



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5. Electrical Characteristics T=25°C

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-20			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4		-1	
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	μA
Drain-source on-state resistance ^a	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2.8A		0.090	0.112	Ω
		V _{GS} =-2.5V, I _D =-2A		0.110	0.142	
Forward transconductance ^a	g _{FS}	V _{DS} =-5V, I _D =-2.8A		6.5		S
Dynamic ^b						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz		405		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			55		
Total gate charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-3A		5.5	10	nC
		V _{DS} =-10V, V _{GS} =-2.5V I _D =-3A		3.3	6	
Gate-source charge	Q _{gs}			0.7		
Gate-drain charge	Q _{gd}			1.3		
Gate resistance	R _g	f=1MHz		6		Ω
Turn-On Delay Time	t _{D(on)}	V _{DD} =-10V R _L =10Ω, I _D =-1A V _{GEN} =-4.5V, R _G =1Ω		11	20	ns
Rise Time	t _r			35	60	
Turn-Off Delay Time	t _{D(off)}			30	50	
Fall time	t _f			10	20	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I _S	T _C =25°C			-1.3	A
Pulsed diode forward Current ^a	I _{SM}				-10	
Body diode voltage	V _{SD}	I _S =-0.7A		-0.8	-1.2	V

a. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

b. Guaranteed by design, not subject to production testing.



Shanghai Aos Semiconductor Co.Ltd.

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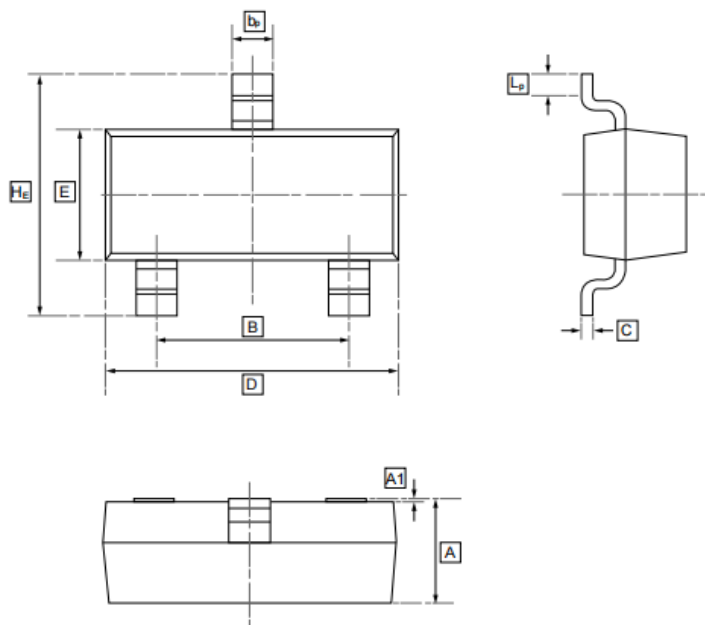
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6.SOT-23 Package Outline Dimensions



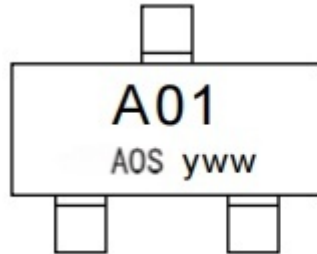
Symbol	A	B	b _P	C	D	E	H _E	A1	L _P
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



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7.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
SI2301A	SOT-23	3000	Tape and reel

