



SI2301A

SI2301A-Channel 20-V(D-S)MOSFET

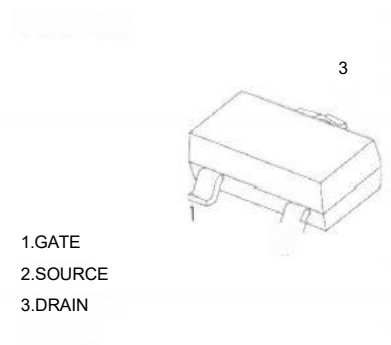
SOT-23

FEATURE

- TrenchFET Power MOSFET

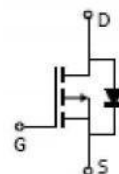
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter



V (BR) DSS	RDs (on) MAX	lb
-20V	85 mΩ @-4.5V	-2.8A
	110mΩ @-2.5V	

Equivalent Circuit



Maximum ratings(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unt
Drain-Source Voltage	Vos	-20	V
Gate-Source Voltage	Vgs	±12	
Continuous Drain Current	Io	-2.8	A
Pulsed Drain Current	IDM	-12	
Continuous Source-Drain Diode Current	Is	-0.72	
Maximum Power Dissipation	Po	0.4	W
Thermal Resistance from Junction to Ambient(t≤5s)	RaJA	125	℃W
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-55~+150	

Ta=25℃ unless otherwise specified

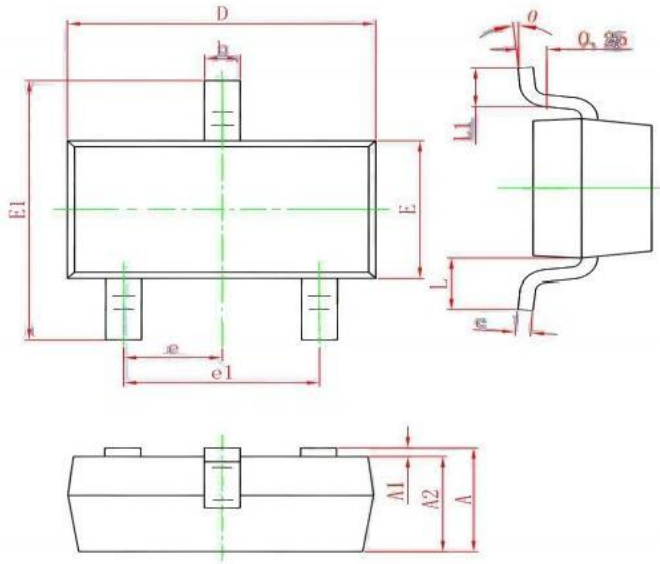
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V (BR) DSS	VGs =0V, Ib =-250 μ A	-20			V
Gate-source threshold voltage	VGS (th)	Vos =VGs, Io =-250 μ A	-0.4		-1	
Gate-source leakage	IGss	Vos =0V, VGs =±8V			±100	nA
Zero gate voltage drain current	Ibss	VDs =-20V, VGs =0V			-1	μ A
Drain-source on-state resistancea	RDS (on)	VGs =-4.5V, Io=-2.8A			85	m Ω
		VGs =-2.5V, Ib=-2.0A			110	
Forward transconductancea	gfs	Vbs =-5V, Ib =-2.8A		6.5		S
Dynamic ⁶						
Input capacitance	Ciss	Vos =-10V, VGs=0V, f=1MHz		405		pF
Output capacitance	Coss			75		
Reverse transfer capacitance	Crss			55		
Total gate charge	Qg	Vos =-10V, VGs =-4.5V, Ib =-3A		5.5	10	nC
		Vos =-10V, VGs =-2.5V, Io =-3A		3.3	6	
Gate-source charge	Qgs			0.7		
Gate-drain charge	Qgd			1.3		
Gate resistance	Rg	f=1MHz		6.0		Ω
Turn-on delay time	td (on)	Vop=-10V, RL=10 Ω, ID =-1A, VGEN=-4.5V, Rg=1 Ω		11	20	ns
Rise time	tr			35	60	
Turn-off delay time	td (off)			30	50	
Fall time	tf			10	20	
Drain-source body diode characteristics						
Continuous source-drain diode current	Is	Tc=25℃			-1.3	A
Pulse diode forward currenta	IsM				-10	
Body diode voltage	VsD	Is=-0.7A		-0.8	-1.2	V

Notes:

a.Pulse Test:Pulse Width<300μs,Duty Cycle ≤2%.

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

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbo	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
C	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°