DESCRIPTION

The AM2301D is available in SOT-23S Package.

B_{VDSS}	$R_{DS(ON)}$		I_D
	-4.5V	-2.5V	
-20V	50mΩ	80 mΩ	-3.7A

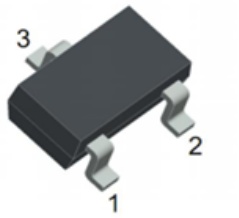
FEATURE

- V_{DS} = -20V, I_D = -3.7A
- Trench FET Power MOSFET
- Ultra Low On-Resistance
- SOT-23S Package.

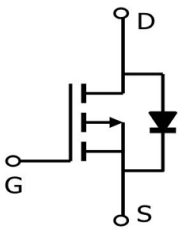
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

PIN DESCRIPTION



SOT-23S



Pin#	Symbol	Function
1	G	Gate
2	S	Source
3	D	Drain

ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	AM2301DE3R
		AM2301DE3VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

ABSOLUTE MAXIMUM RATINGS

T_a=25°C Unless otherwise noted

V_{DS}, Drain-Source Voltage	-20V
V_{GS}, Gate-Source Voltage	±12V
I_D, Continuous Drain Current (1)(2)	-3.7A
I_{DM}, Pulsed Diode Current (3)	-22A
P_D, Power Dissipation	1.4W
T_J, Operating Junction	-55℃~+150℃
T_{STG}, Storage Temperature	-55℃~+150℃
$R_{\theta JA}$, Thermal Resistance Junction to Ambient (t≤5s)	100℃/W

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

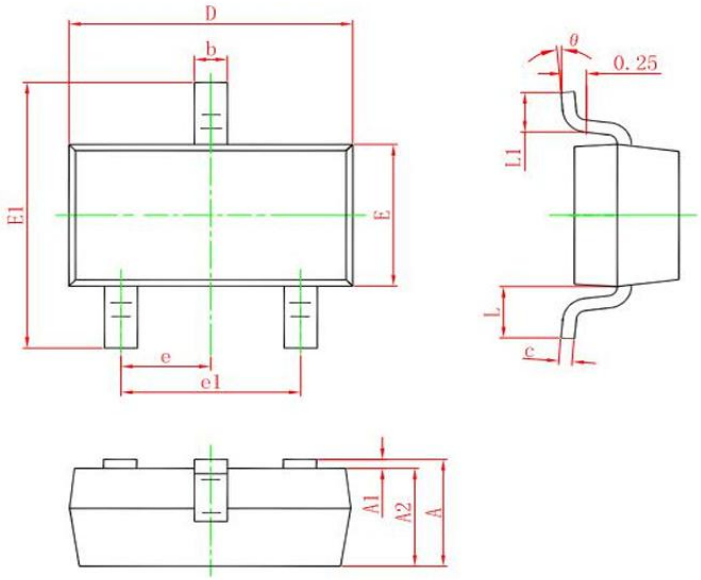
T_J=25℃, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D= -250μA	-20	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}= -20V, V_{GS}=0V	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±12V, V_{DS}= 0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS\ (th)}$	V_{DS}=V_{GS}, I_D= -250uA	-0.4	-	-1.2	V
Drain-Source On-Static Resistance	$R_{DS\ (on)}$	V_{GS}= -4.5V, I_D= -3.7A	-	50	65	mΩ
		V_{GS}= -2.5V, I_D= -3A	-	80	135	
Forward Transconductance	G_{fs}	V_{DS}= -4.5V, I_D= -3.7A	6	-	-	S
Drain Forward Voltage	V_{SD}	V_{GS}=0V, I_S= -1A	-	-0.8	-1.2	V
Continuous Source-Drain Diode Current	I_S	-	-	-	-1.3	A
Dynamic						
Input Capacitance	C_{iss}	V_{DS}= -10V, V_{GS}=0V, f=1MHz	-	633	-	pF
Output Capacitance	C_{oss}		-	145	-	
Reverse Transfer Capacitance	C_{rss}		-	110	-	
Total Gate Charge	Q_g	V_{DS}= -10V, V_{GS}= -4.5V I_D= -3.7A	-	8	-	nC
Gate-Source Charge	Q_{gs}		-	1.2	-	
Gate-Drain Charge	Q_{gd}		-	2.8	-	
Gate Resistance	R_g	f=1MHz	-	6.5	-	Ω
Diode Characteristics						
Body Diode Reverse Recovery Time	T_{rr}	I_F= -3.7A, dI/dt=100A/μs	-	29	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F= -3.7A, dI/dt=100A/μs	-	11	-	nC
Turn-on Delay Time	$t_{d(on)}$	V_{DS}= -10V, I_D= -1A, R_L=6Ω, V_{GEN}= -4.5V, Rg=3Ω	-	12	-	ns
Turn-on Rise Time	t_r		-	30	-	
Turn-off Delay Time	$t_{d(off)}$		-	60	-	
Turn-off Fall Time	t_f		-	50	-	

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test: Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing

PACKAGE INFORMATION

Dimension in SOT-23S (Unit: mm)



Symbol	Millimeters (mm)	
	Min.	Max.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP.	
e1	1.800	2.000
L	0.550 REF.	
L1	0.300	0.500
θ	0°	8°

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