DESCRIPTION

The AM2301C is available in SC70-3 Package.

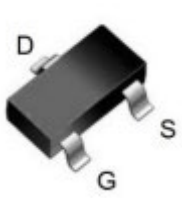
FEATURE

- TrenchFET Power MOSF
- Available in SC70-3 Package

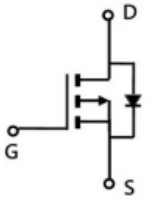
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

PIN DESCRIPTION



SC70-3



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

ORDERING INFORMATION

Package Type	Part Number	
SC70-3 SPQ: 3,000pcs/Reel	C3	AM2301CC3VR
		AM2301CC3VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

ABSOLUTE MAXIMUM RATINGS

T_A=25℃,unless otherwise noted.

V_{DS}, Drain-Source Voltage	-20V
V_{GS}, Gate-Source Voltage	±8V
I_D, Continuous Drain Continuous	-3A
I_{DM}, Pulsed Drain Current	-10A
I_S, Continuous Source-Drain Diode Current	-0.72A
P_D, Maximum Power Dissipation	0.35W
$R_{\theta JA}$, Thermal Resistance from Junction to Ambient (t ≤5s)	357mJ
T_{STG}, Storage Temperature	-55℃~+150℃
T_J, Junction Temperature	150℃

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_A=25℃,unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-20	-	-	V
Gate-Source Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS}, I_D=-250uA	-0.40	-	-1	V
Gate-Source Leakage	I_{GSS}	V_{GS} =±8V, V_{DS}= 0V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-16V, V_{GS}=0V	-	-	-1	μA
Drain-Source On-State Resistance (1)	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-3A	-	0.09	0.11	mΩ
		V_{GS}=-2.5V, I_D=-2A	-	0.11	0.14	
Forward Transconductance (1)	g_{FS}	V_{DS}=-5V, I_D=-2.8A	-	6.50	-	S
Dynamic (2)						
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, I_D=-3A, V_{GS}=-4.5V	-	5.5	10	nC
		V_{DS}=-10V, I_D=-3A, V_{GS}=-2.5V	-	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, I_D=-1A, R_L=10Ω, V_{GEN}=-4.5V Rg=1Ω	-	11	20	nS
Turn-on Rise Time	t_r		-	35	60	
Turn-Off Delay Time	$t_{d(off)}$		-	30	50	
Turn-Off Fall Time	t_f		-	10	20	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	T_C=25℃	-	-	-1.3	A
Pulse Diode Forward Current	I_{SM}	-	-	-	-10	A
Body Diode Voltage (1)	V_{SD}	I_S=-0.7A	-	-0.8	-1.2	V

(1) Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

(2) Guaranteed by design, not subject to production testing.

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

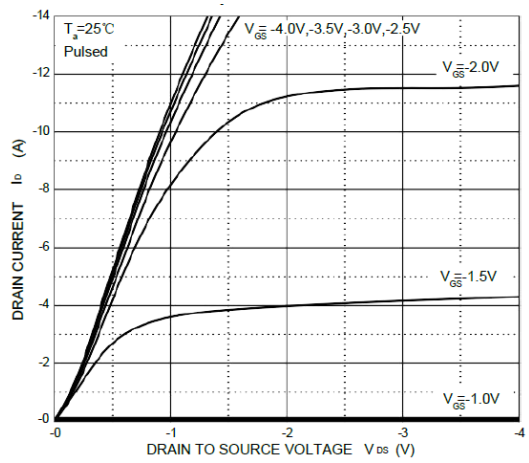


Fig 2. Transfer Characteristics

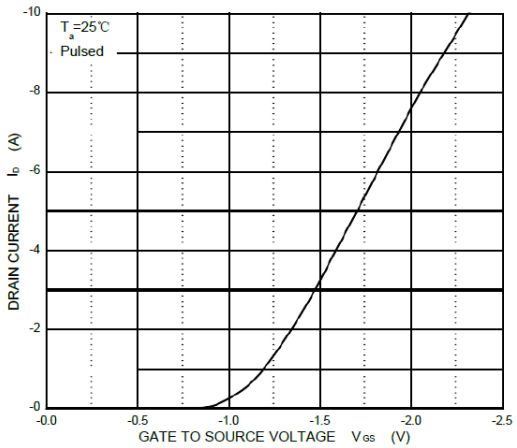


Fig 3. $R_{DS(ON)}$ vs. I_D

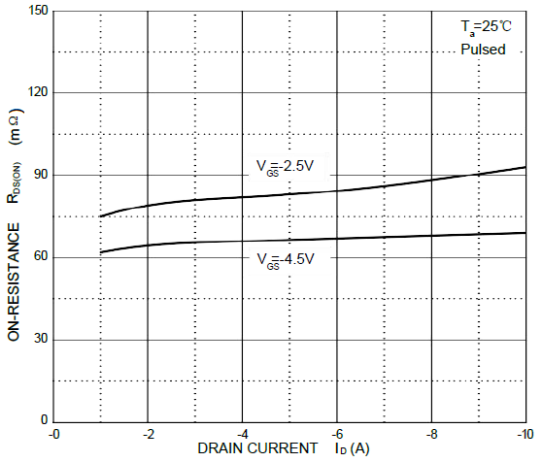


Fig 4. $R_{DS(ON)}$ vs. V_{GS}

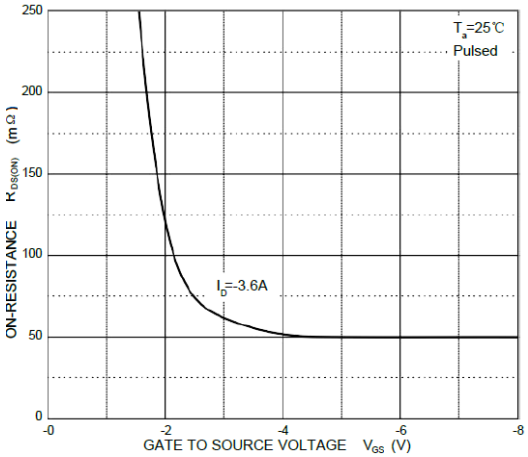
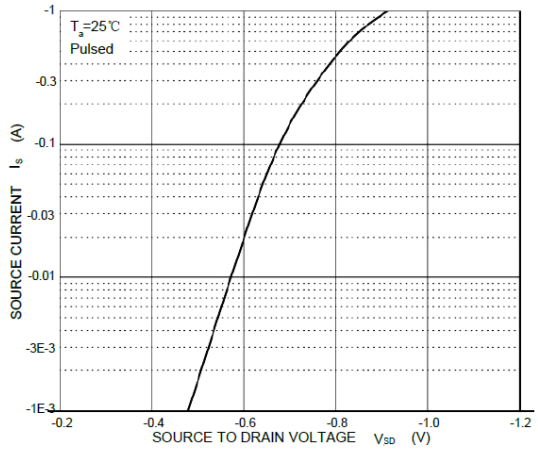
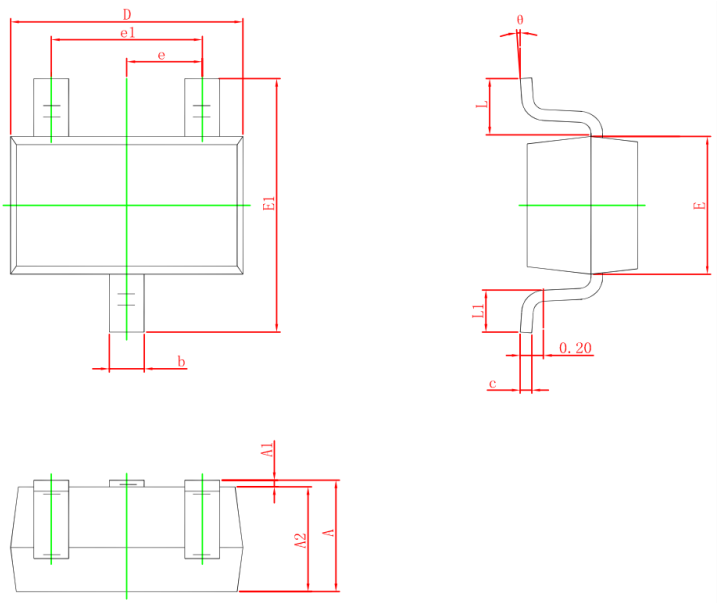


Fig 5. I_S vs. V_{SD}



PACKAGE INFORMATION

Dimension in SC70-3 (SOT-323) (Unit: mm)



SYMBOL	MILLIMETERS	
	Min.	Max.
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc. integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.