

**DESCRIPTION**

The AM2301C is available in SC70-3 package.

Application:

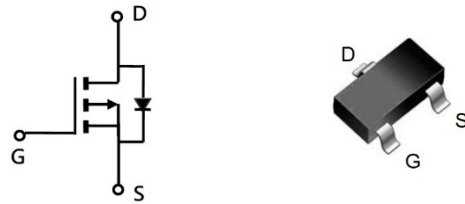
- Power Management in Note book
- Portable Equipment
- DSC
- LCD Display inverter
- Battery Powered System
- DC/DC Converter
- Load Switch

**FEATURE**

- -20V/-3.4A,  $R_{DS(ON)} = 88m\Omega$ (typ.)  
@ $V_{GS} = -4.5V$
- -20V/-2.4A,  $R_{DS(ON)} = 110m\Omega$ (typ.)  
@ $V_{GS} = -2.5V$
- -20V/-1.7A,  $R_{DS(ON)} = 150m\Omega$ (typ.)  
@ $V_{GS} = -1.8V$
- Super high-density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability

**PIN DESCRIPTION****ORDERING INFORMATION**

Package Type	Part Number	
SC70-3 SPQ: 3,000pcs/Reel	C3	AM2301CC3R
		AM2301CC3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		



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

**ABSOLUTE MAXIMUM RATINGS**

$T_A = 25^\circ C$ , unless otherwise stated.

$V_{DSS}$ , Drain-Source Voltage	-20V
$V_{GSS}$ , Gate-Source Voltage	$\pm 12V$
$I_D$ , Continuous Drain Current ( $T_J = 150^\circ C$ )	$V_{GS} = -4.5V$ -3.4A
$I_{DM}$ , Pulsed Drain Current	-6A
$I_S$ , Continuous Source Current (Diode Conduction)	-1.4A
$P_D$ , Power Dissipation	$T_A = 25^\circ C$ 330mW
	$T_A = 70^\circ C$ 210mW
$T_J$ , Operation Junction Temperature	150°C
$T_{STG}$ , Storage Temperature Range	-55°C ~ +150°C

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<sub>A</sub> = 25°C, unless otherwise stated.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-20	-	-	V
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-0.4	-	-1.0	V
Gate Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V	-	-	±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V,	-	-	-1	μA
		V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C	-	-	-10	
Drain-Source On-State Resistance	R <sub>DSON</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3.4A	-	88	95	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2.4A	-	110	125	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1.7A	-	150	170	
Forward Transconductance	G <sub>fs</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-2.8A	-	6.5	-	S
<b>Source-Drain Diode</b>						
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.6A, V <sub>GS</sub> =0V	-	-0.7	-1.2	V
<b>Dynamic Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-3.2A V <sub>GS</sub> =-4.5V	-	7	10	nC
Gate Source Charge	Q <sub>gs</sub>		-	1.8	-	
Gate Drain Charge	Q <sub>gd</sub>		-	2	-	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHz	-	415	-	pF
Output Capacitance	C <sub>oss</sub>		-	223	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	87	-	
Turn-On Time	t <sub>d(ON)</sub>	V <sub>DD</sub> =-10V, R <sub>L</sub> =10Ω I <sub>D</sub> =-1.0A, V <sub>GEN</sub> =-4.5V R <sub>G</sub> =6Ω	-	13	25	ns
	t <sub>r</sub>		-	36	60	
Turn-Off Time	t <sub>d(OFF)</sub>		-	42	70	
	t <sub>f</sub>		-	34	60	



## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

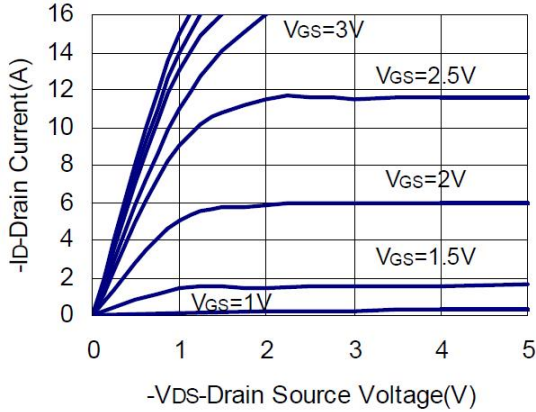


Fig 2. Drain-Source on Resistance

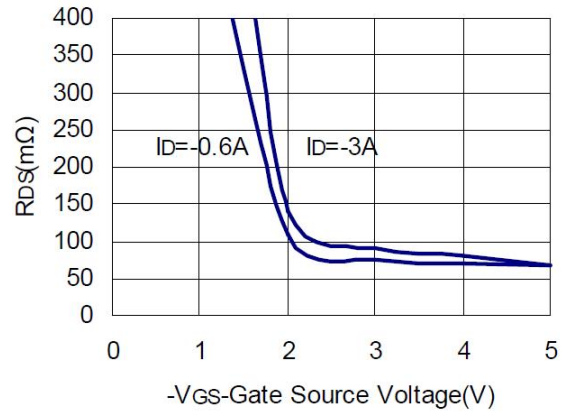


Fig3. Drain Source on Resistance

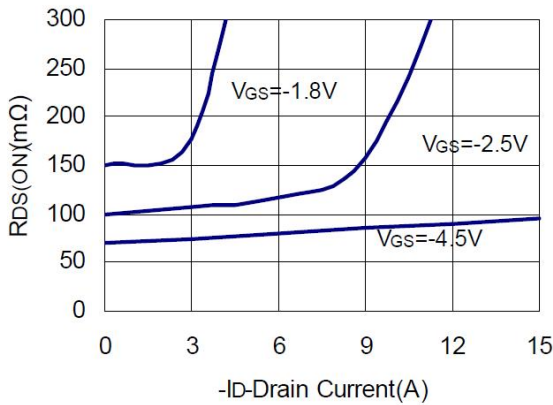


Fig4. Gate Threshold Voltage

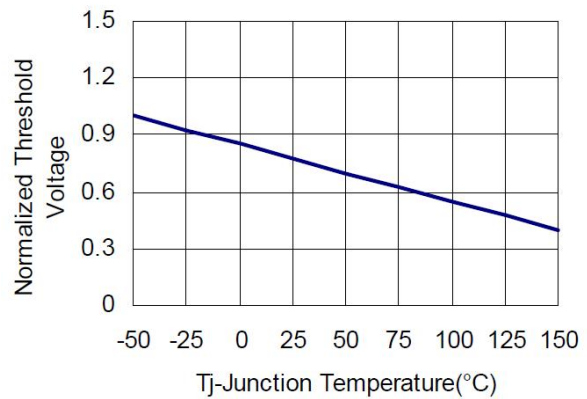


Fig5. Gate Charge

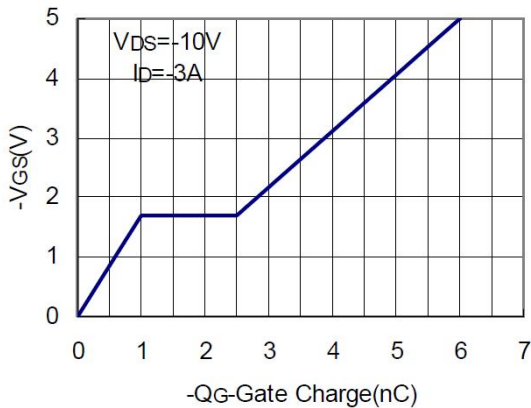


Fig6. Drain Source on Resistance

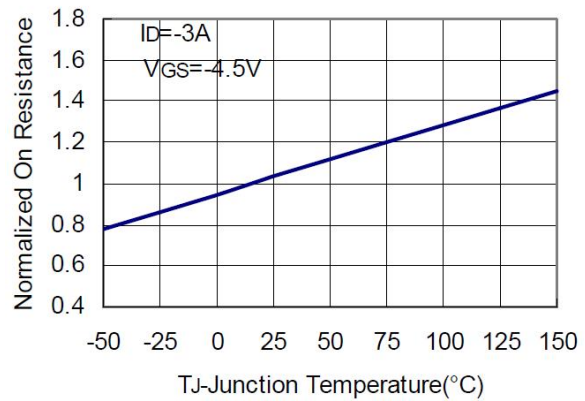




Fig7. Source Drain Diode Forward

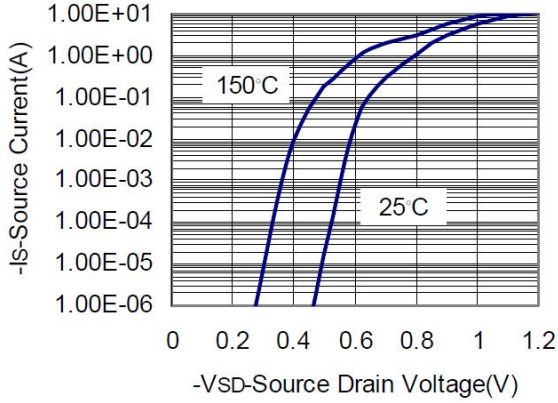


Fig8. Capacitance

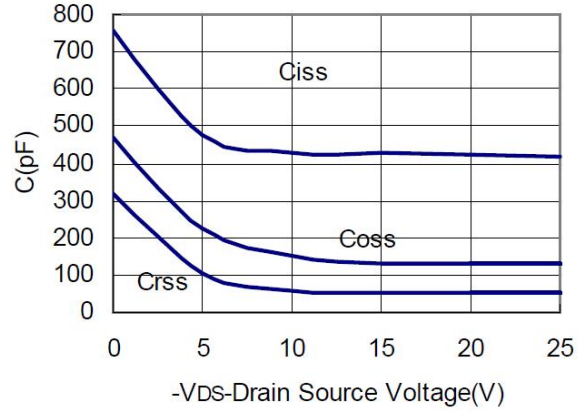


Fig9. Power Dissipation

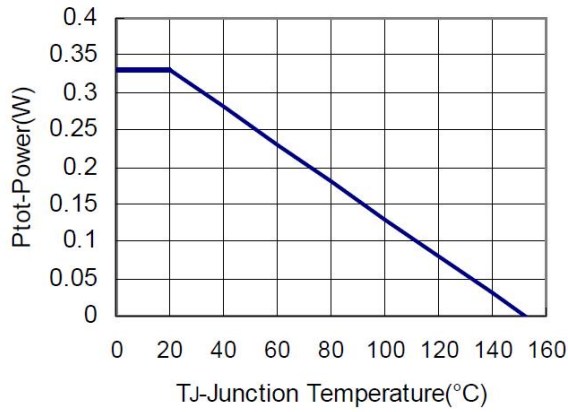


Fig10. Transfer Characteristics

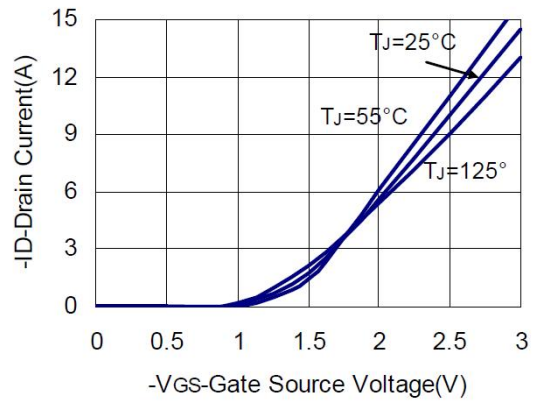
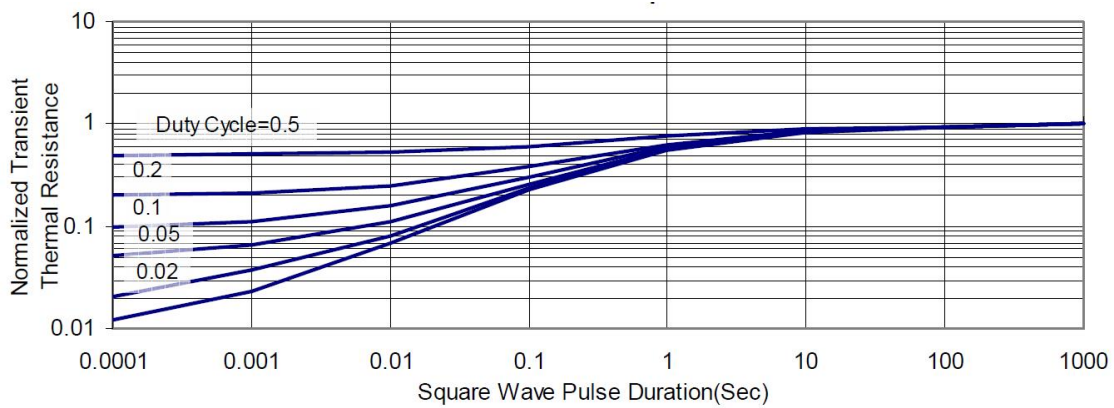


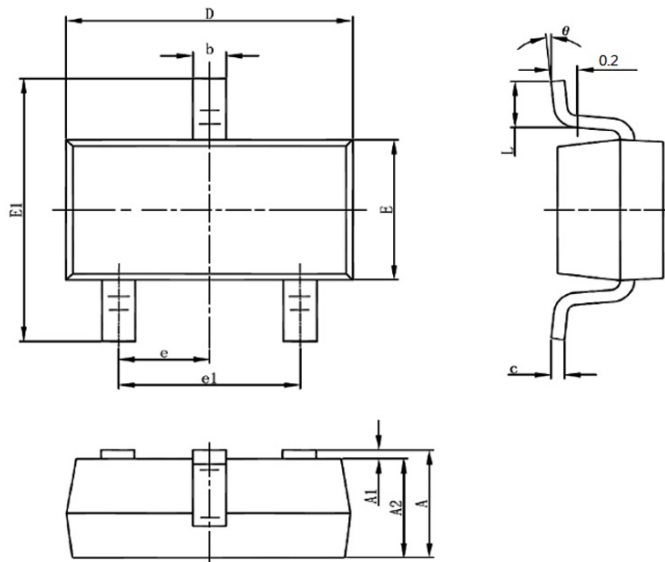
Fig11. Thermal Transient Impedance





## PACKAGE INFORMATION

Dimension in SC70-3 (Unit: mm)



Symbol	MILLIMETERS	
	Min.	Max.
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
A		
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	0.260	0.460
$\theta$	0°	8°



## IMPORTANT NOTICE

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