

**DESCRIPTION**

The AM01N70 is available in SOT-23 Package.

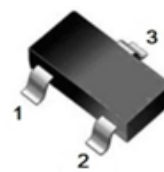
BVDSS	RDSON	ID
700V	8.3Ω	1A

**APPLICATION**

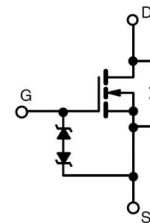
- Low Power Battery chargers
- SMPS
- Low Power, Ballast, CFL

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

Package Type		Part Number	
SOT-23 SPQ: 3,000pcs/Reel		E3	AM01N70E3VR
Note		V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products			



SOT-23



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

**ABSOLUTE MAXIMUM RATINGS**

T<sub>A</sub>=25°C Unless otherwise noted

V <sub>DS</sub> , Drain-Source Voltage		700V
V <sub>GS</sub> , Gate-Source Voltage		±30V
I <sub>D</sub> , Continuous Drain Current	T <sub>A</sub> =25°C	1A
	T <sub>A</sub> =100°C	0.6A
I <sub>DM</sub> <sup>(1)</sup> , Pulsed Drain Current		4A
E <sub>AS</sub> <sup>(2)</sup> , Single Pulse Avalanche		6.05mJ
T <sub>J</sub> , Operating Junction Temperature		-55°C~+150°C
T <sub>STG</sub> , Storage Temperature		-55°C~+150°C
T <sub>L</sub> , Lead Temperature (1/16" from case for 10sec.)		300°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.

(1) Repetitive rating, pulse width limited by junction temperature T<sub>J</sub>(MAX)=150°C.

(2) The EAS data shows Max. rating. The test condition is V<sub>DD</sub>=-90V, V<sub>DS</sub>=650V, L=10mH



## ELECTRICAL CHARACTERISTICS

T<sub>J</sub>=25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	700	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	2	3	4	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±30V	-	-	±1	μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =650V, V <sub>GS</sub> =0V	-	-	10	μA
		V <sub>DS</sub> =650V, V <sub>GS</sub> =0V, T <sub>J</sub> =150°C	-	-	100	
On-State Drain Current	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =0.5A	-	8.3	9.5	Ω
Body Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>SD</sub> =1A, T <sub>J</sub> =25°C	-	0.98	1.4	V
Dynamic Characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=100KHz	-	38	-	pF
Output Capacitance	C <sub>oss</sub>		-	34	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	4	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DD</sub> =100V, V <sub>GS</sub> =10V I <sub>D</sub> =1A	-	9.4	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	3.1	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	1.6	-	
Switching Characteristics						
Turn-on Delay Time	t <sub>(on)</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =10V R <sub>G</sub> =25Ω, I <sub>D</sub> =1A	-	3.5	-	ns
Rise Time	t <sub>r</sub>		-	16	-	
Turn-Off Delay Time	t <sub>(off)</sub>		-	14	-	
Fall Time	t <sub>f</sub>		-	43.3	-	
Drain-Source Body Diode Characteristics						
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>F</sub> =I <sub>S</sub>	-	0.98	-	V
Continuous Current	I <sub>S</sub>	-	-	-	1	A
Body Diode Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> =1A, di/dt =100A/us	-	204	-	nS
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>		-	402	-	μC



## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

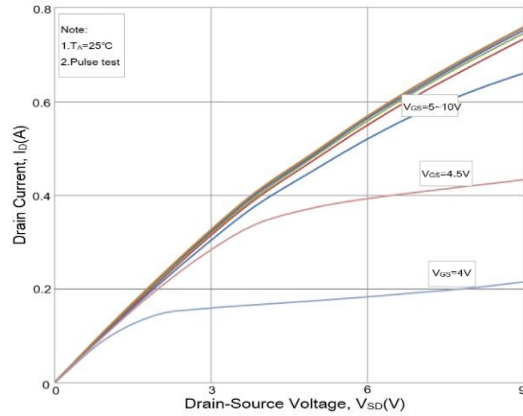


Fig 2.  $R_{DS(on)}$  vs.  $I_D$

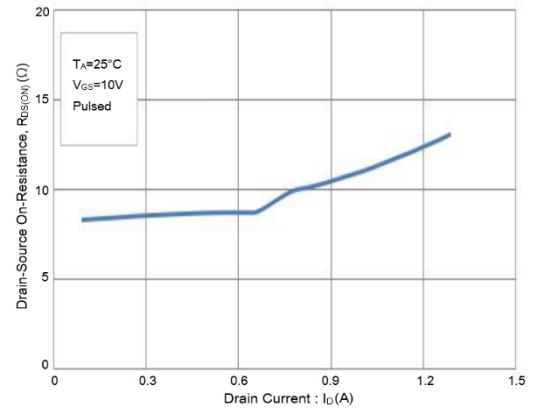


Fig 3. Gate Charge characteristics

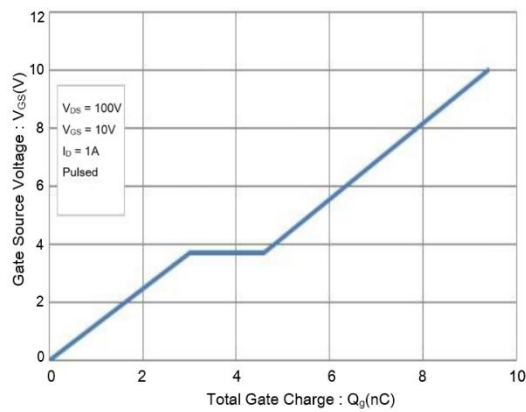


Fig 4.  $I_D$  vs.  $V_{GS}$

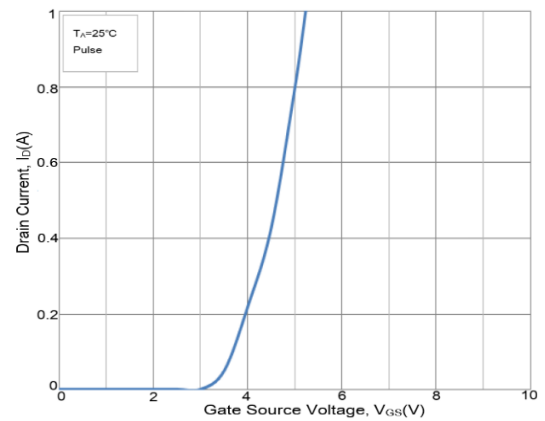


Fig 5.  $I_S$  vs.  $V_{SD}$

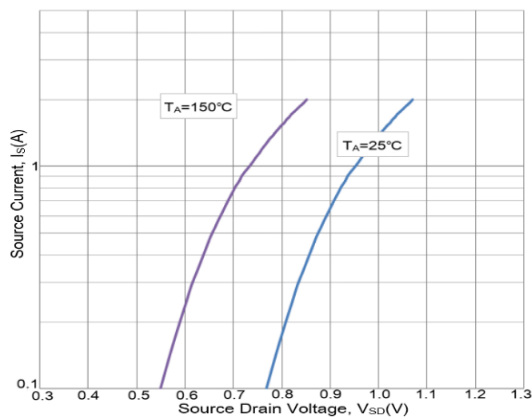


Fig 6. Breakdown vs. Temperature

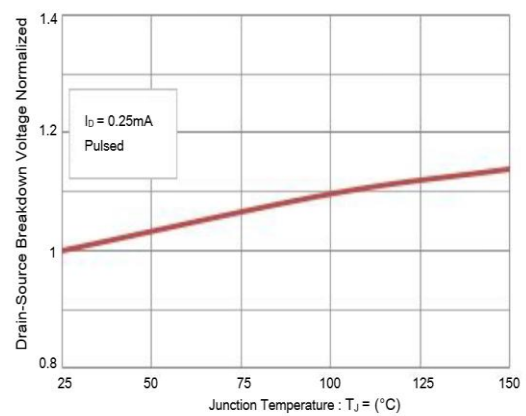




Fig 7. On-Resistance vs. Junction Temperature

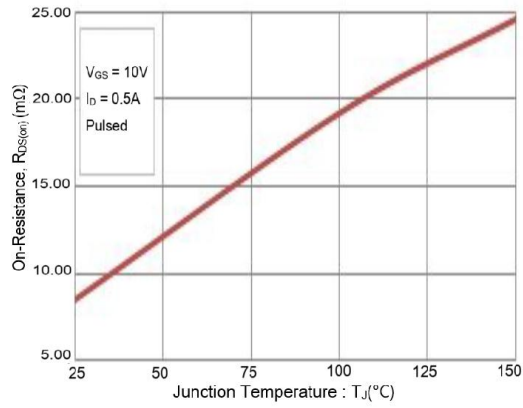


Fig 8.  $V_{th}$  vs. Junction Temperature

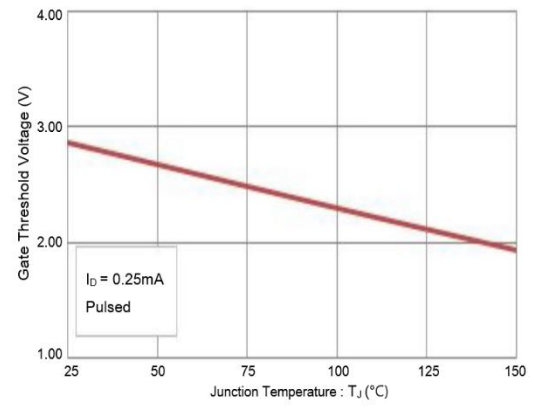
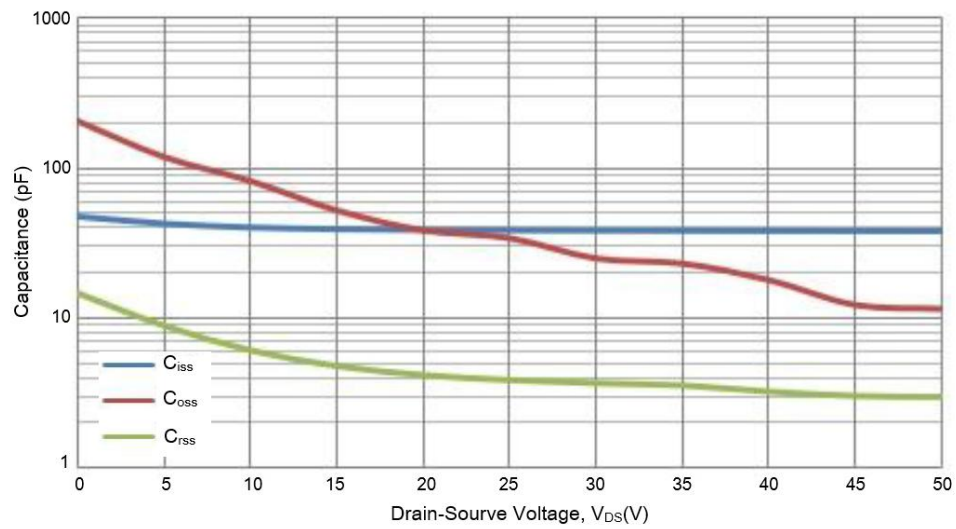


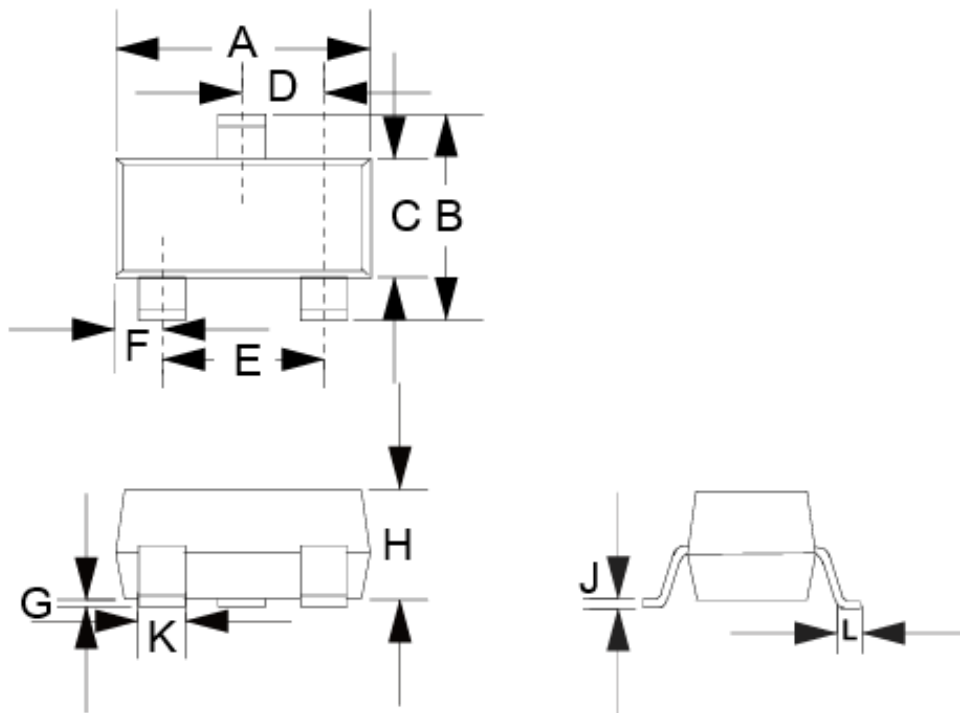
Fig 9. Capacitance characteristics



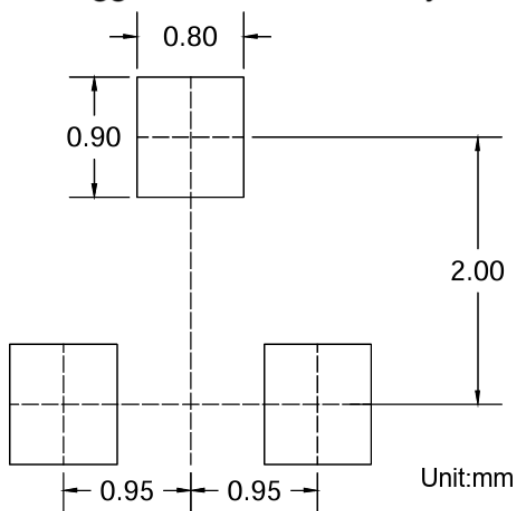


## PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



Suggested Solder Pad Layout



Symbol	MILLIMETER	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.850	1.050
E	1.700	2.100
F	0.450	0.600
G	0.010	0.150
H	0.900	1.100
J	0.080	0.180
K	0.300	0.510
L	0.200	0.500



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