



DESCRIPTION

The AM3406A is available in SOT-23S package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-23S	E3S	AM3406AE3SR
		AM3406AE3SVR
Note	V: Halogen free Package R: Tape & Reel SPQ: 3,000pcs/Reel	
AiT provides all RoHS products		

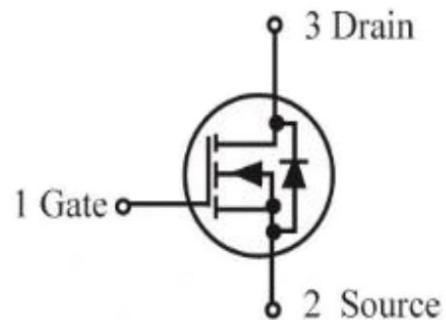
FEATURES

- $V_{DS} = 30V$
 $R_{DS(ON)}, V_{GS}=4.5V, I_{DS}@5A = 52m\Omega$
 $R_{DS(ON)}, V_{GS}=10V, I_{DS}@6A = 38m\Omega$
- Available in SOT-23S Package

APPLICATION

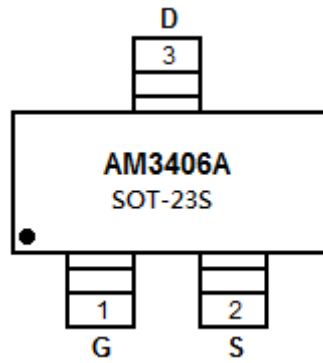
- High density cell design for ultra low on-resistance
- Advanced trench process technology
- High power and current handling capability

P CHANNEL MOSFET





PIN DESCRIPTION



Top View

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



ABSOLUTE MAXIMUM RATINGS

$T_A=25^{\circ}\text{C}$

V_{DSS} , Drain-Source Voltage	30V
V_{GS} , Gate-to-Source Voltage – Continuous	$\pm 20\text{V}$
I_D , Drain Current – Continuous $T_A=25^{\circ}\text{C}$	6A
I_{DM} , Drain Current – Pulsed ^{NOTE1}	30A

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.

THERMAL CHARACTERISTICS

Parameter	Symbol	Limit	Units
Maximum Power Dissipation	P_D	1.4	W
Thermal Resistance, Junction-to-Ambient ^{NOTE2}	$R_{\theta JA}$	90	$^{\circ}\text{C}/\text{W}$
Junction and Storage temperature	T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS

T_A=25°C

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current, Forward	I _{GSSF}	V _{DS} =0V, V _{GS} =20V	-	-	100	nA
Gate-Body Leakage Current, Reverse	I _{GSSR}	V _{DS} =0V, V _{GS} =-20V	-	-	-100	nA
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =6.9A	-	15.4	-	S
ON CHARACTERISTICS NOTE 3						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	3.0	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =6A	-	22	38	mΩ
		V _{GS} =4.5V, I _D =5A	-	35	52	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1.0MHz	-	610	-	pF
Output Capacitance	C _{oss}		-	100	-	
Reverse Transfer Capacitance	C _{rss}		-	77	-	
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V, R _L =15Ω I _D =1A, V _{GEN} =10V R _G =6Ω	-	9	-	ns
Rise Time	t _r		-	14	-	
Turn-Off Delay Time	t _{d(off)}		-	30	-	
Fall Time	t _f		-	5	-	
SOURCE-DRAIN DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} =0V, I _{DS} =1A	-	-	1.3	V
Max. Diode Forward Current	I _S		-	-	3	A

NOTE1: Repetitive Rating: Pulse width limited by the Maximum junction temperature.

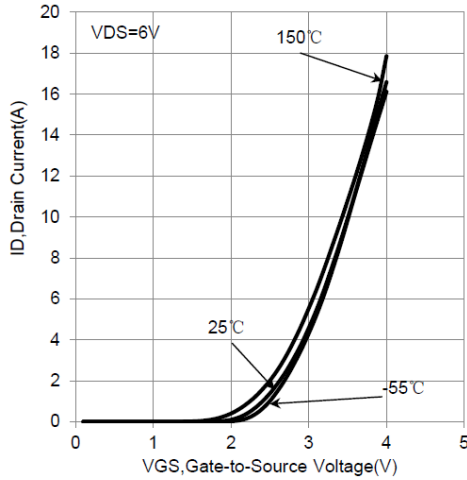
NOTE2: 1-in² 2oz Cu PCB board.

NOTE3: Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2.0%.

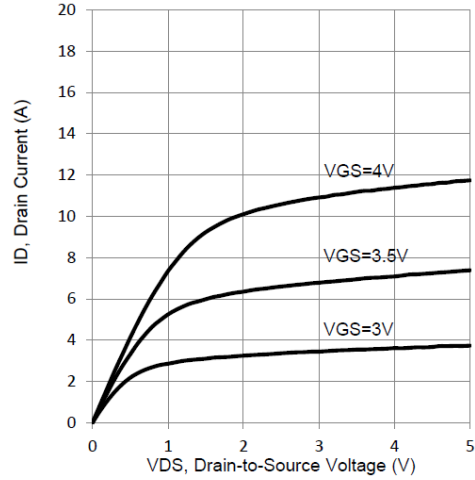


TYPICAL PERFORMANCE CHARACTERISTICS

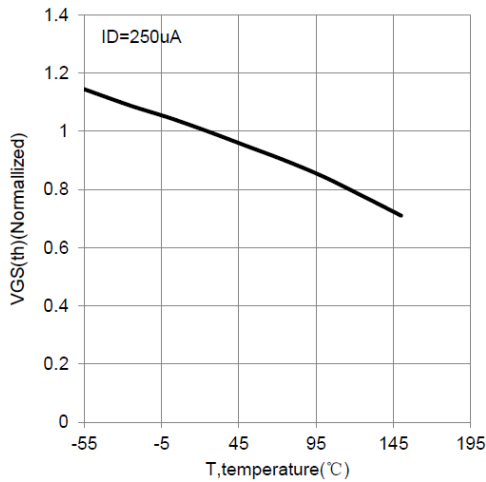
1. Transfer Characteristics



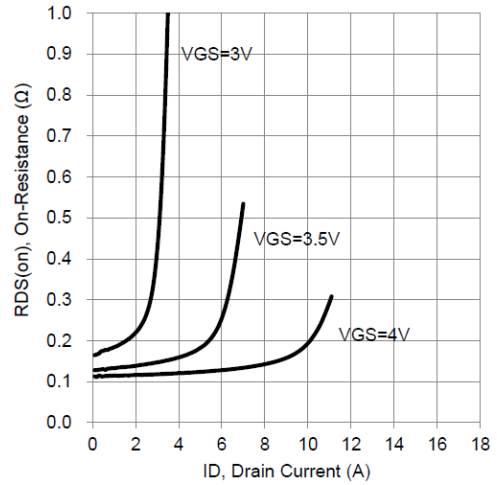
2. On-Region Characteristics



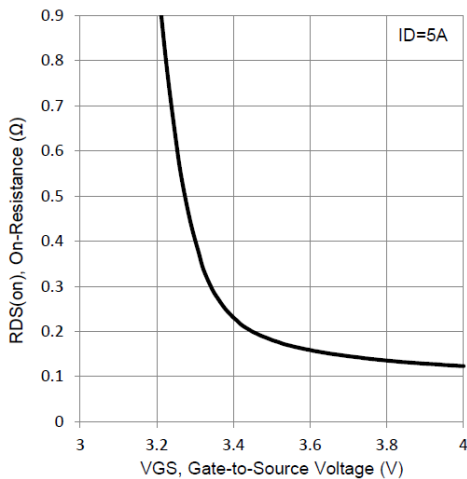
3. VGS(th) vs. Temperature



4. RDS(on) vs. ID



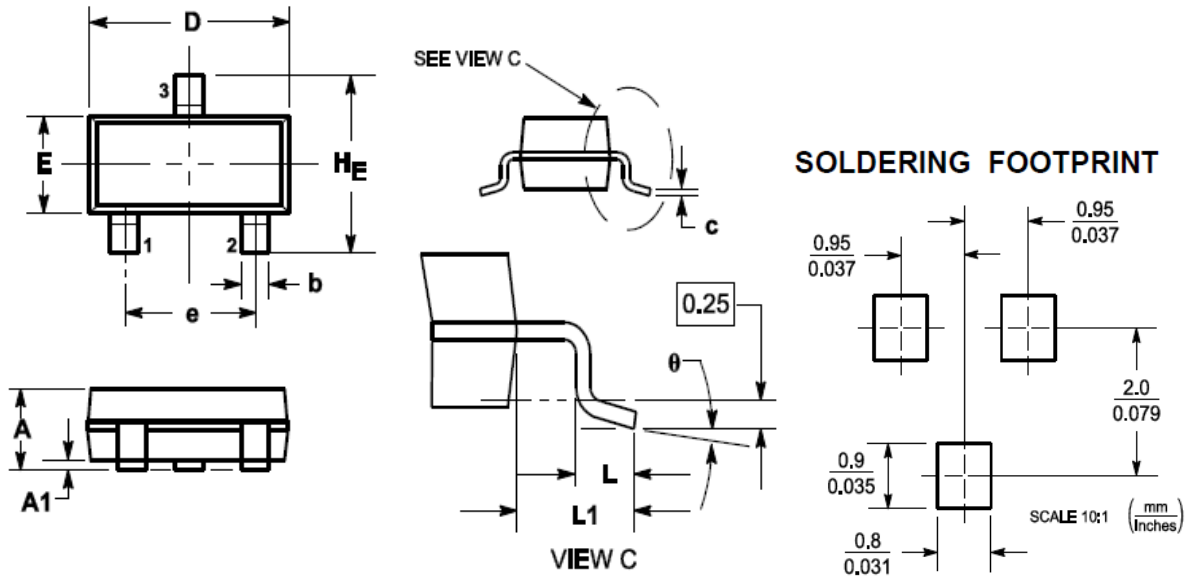
5. RDS(on) vs. VGS





PACKAGE INFORMATION

Dimension in SOT-23S Package (Unit: mm)



DIM	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.02
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.11	0.12
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.07	0.081
L	0.10	0.30	0.004	0.012
L1	0.35	0.69	0.014	0.029
HE	2.10	2.64	0.083	0.104
θ	0°	10°	0°	10°



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