

**DESCRIPTION**

The AM4406 is available in SOP8 package.

BVDSS	RDSON	ID
30V	8.5mΩ	13A

APPLICATION

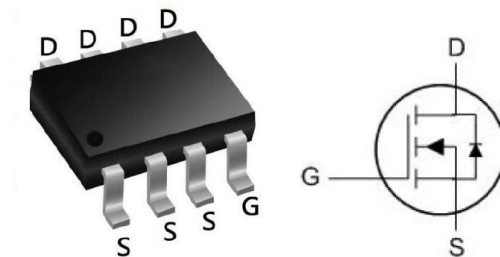
- Green Device Available
- Super Low Gate Charge
- Excellent CdV//dt Effect Decline
- Advanced High Cell Density Trench Technology

ORDERING INFORMATION

Package Type	Part Number	
SOP8 SPQ: 3,000/Reel	M8	AM4406M8VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

FEATURE

- Low Gate Charge
- Available in SOP8 package.

PIN DESCRIPTION

Pin #	Symbol	Function
1, 2, 3	S	Source
4	G	Gate
5,6,7,8	D	Drain

ABSOLUTE MAXIMUM RATINGS

V _{DS} , Drain-Source Voltage		30V
V _{GS} , Gate-Source Voltage		±20V
I _D , Continuous Drain Current, V _{GS} @10V	T _A = 25 °C	13A
	T _A = 70 °C	7.6A
I _{DM} , Drain Current-Pulsed		55A
EAS, Single Pulse Avalanche Energy		33mJ
I _{AS} , Avalanche Current		20A
P _D , Total Power Dissipation	T _A = 25 °C	5W
T _{STG} , Storage Temperature Range		-50°C ~ +150°C
T _J , Operating Junction Temperature Range		-50°C ~ +150°C
R _{θJA} , Thermal Resistance Junction-Ambient		85°C/W
R _{θJC} , Thermal Resistance Junction-Case		25°C/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°C, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristic						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30 V, V _{GS} =0V	-	-	1.0	μA
Gate to Body Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} =±20V	-	-	±100	nA
On Characteristic						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3A	-	8.50	12	mΩ
		V _{GS} =4.5V, I _D =10A	-	13	18	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iSS}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz	-	1011	-	pF
Output Capacitance	C _{oSS}		-	142	-	
Reverse Transfer Capacitance	C _{rSS}		-	119	-	
Total Gate Charge	Q _g	V _{DS} =15V, I _D =6A, V _{GS} =10V	-	19	-	nC
Gate-Source Charge	Q _{gs}		-	6.30	-	
Gate-Drain (“Miller”) Charge	Q _{gd}		-	4.50	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DS} =15V, I _D =13A, R _{GEN} =3Ω, V _{GS} =10V	-	6	-	nS
Turn-On Rise Time	t _r		-	5	-	
Turn-Off Delay Time	t _{d(off)}		-	25	-	
Turn-Off Rise Time	t _f		-	7	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I _S	-	-	-	13	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}	-	-	-	52	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =13A	-	-	1.20	V
Body Diode Reverse Recovery Time	t _{rr}		-	7	-	ns
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =13A, dI/dt=100A/μs	-	6.30	-	nC



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

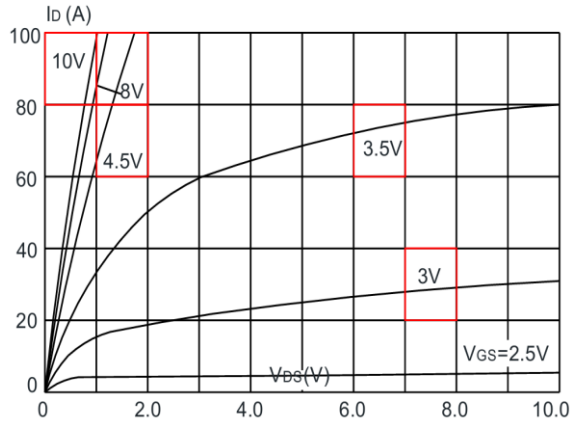


Fig 2. Typical Transfer Characteristics

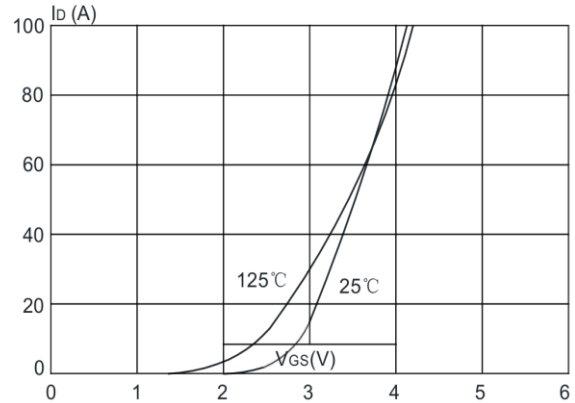


Fig 3. On-Resistance vs. Drain Current

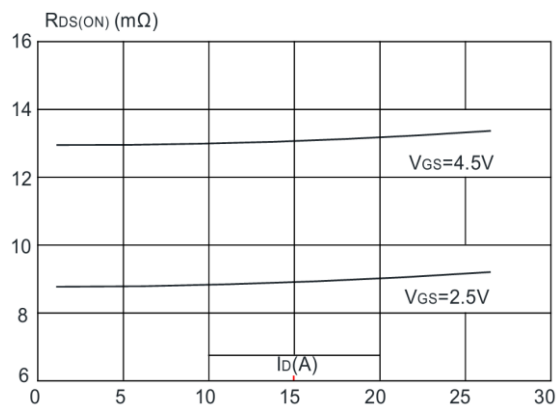


Fig 4. Body Diode Characteristics

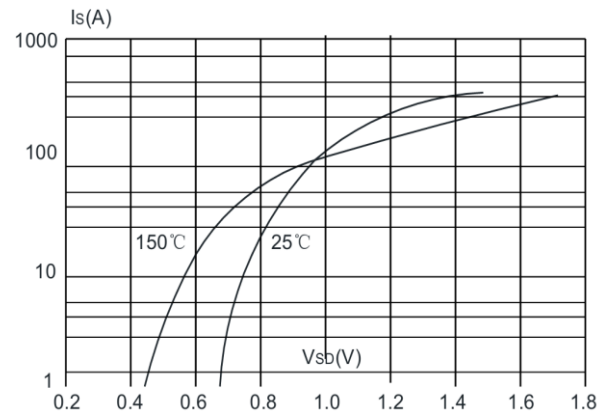


Fig 5. Gate Charge Characteristics

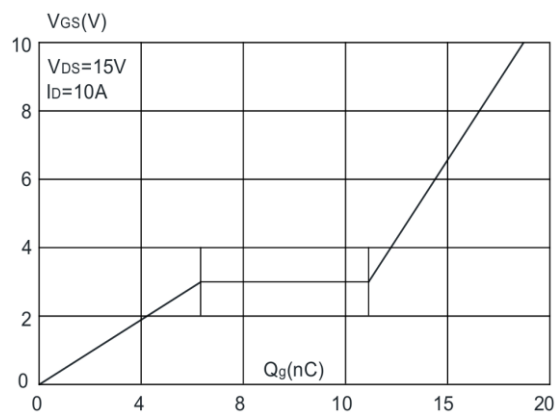


Fig 6. Capacitance Characteristics

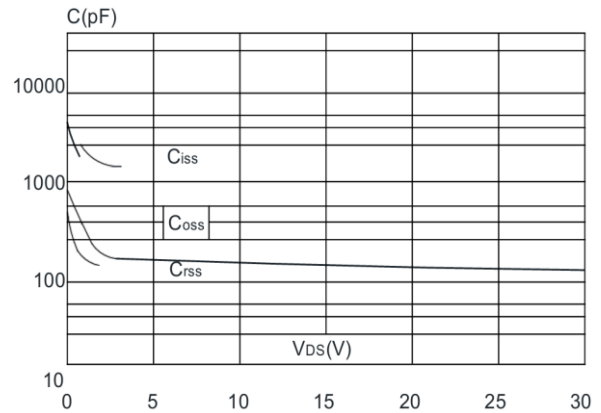




Fig 7. Normalized Breakdown Voltage vs.
Junction Temperature

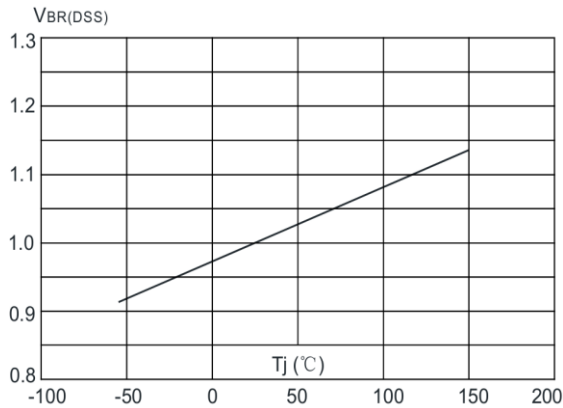


Fig 9. Maximum Safe Operation Area

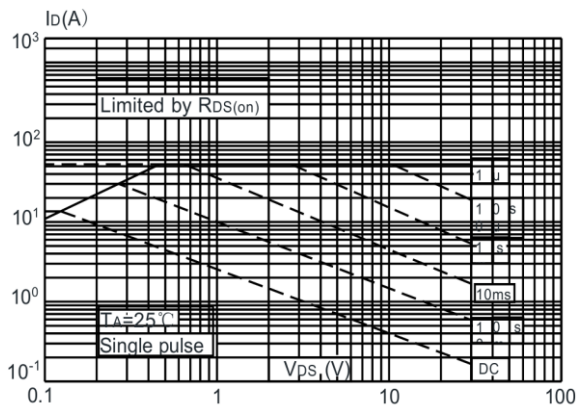


Fig 11. Maximum Effective Transient Thermal
Impedance, Junction-to-Ambient

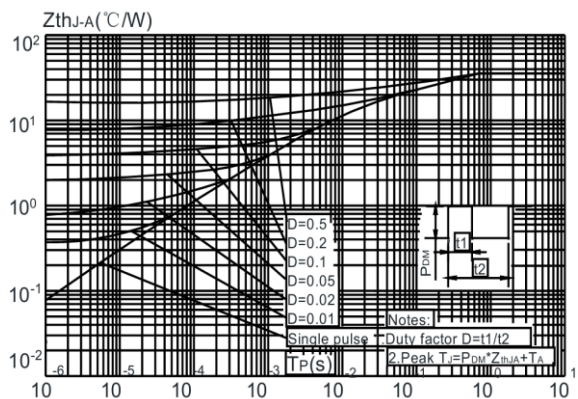


Fig 8. Normalized on Resistance vs.
Junction Temperature

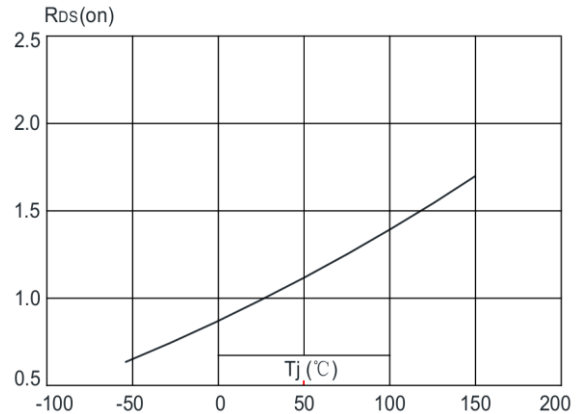
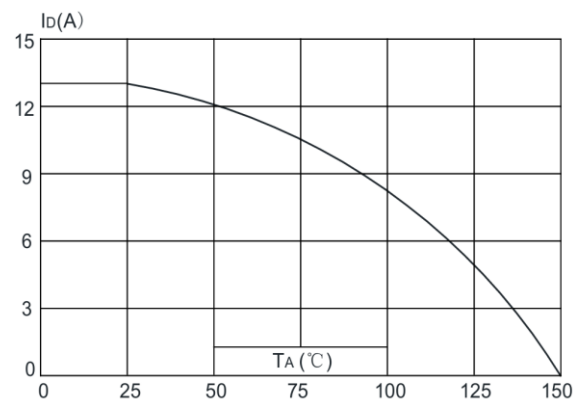


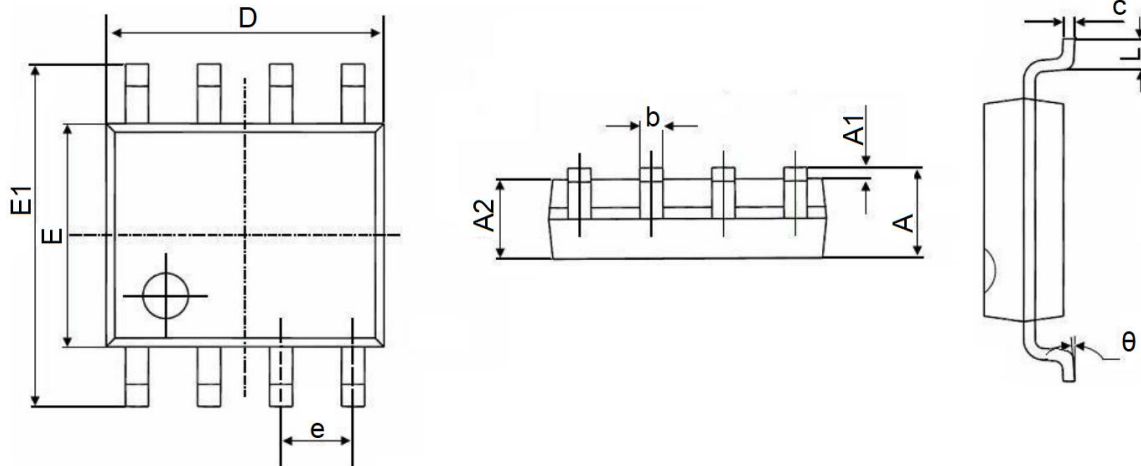
Fig 10. Maximum Continuous Drain Current vs.
Ambient Temperature





PACKAGE INFORMATION

Dimension in SOP8 (unit: mm)



Symbol	Millimeters	
	Min.	Max.
A	1.350	1.750
A1	0.100	0.250
A2	1.350	1.550
b	0.330	0.510
c	0.170	0.250
D	4.700	5.100
E	3.800	4.000
E1	5.800	6.200
e	1.270 BSC	
L	0.400	1.270
θ	0°	8°



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