DESCRIPTION

The AM50N06 is available in PDFN8(5x6) Package.

VDSS	RDSON	ID
	V_{GS}=10V TYP.	
60V	12mΩ	50A

APPLICATION

- Load Switch
- PWM Application
- Power management

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275℃ maximum,10s per JESD 22-B106

ORDERING INFORMATION

Package Type	Part Number	
PDFN8(5x6) SPQ: 5,000pcs/Reel	PJ8	AM50N06PJ8R
		AM50N06PJ8VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

FEATURE

- Fast Switching
- Low on Resistance
- Low Gate Charge
- 100% Single Pulse Avalanche Energy Test
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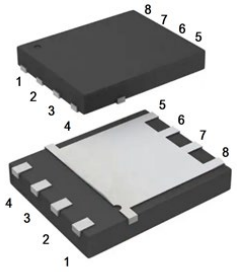
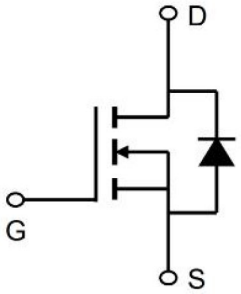
PIN DESCRIPTION



PDFN8(5x6)



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

ABSOLUTE MAXIMUM RATINGS

T_C=25℃, unless otherwise Noted

V_{DS}, Drain-Source Voltage	60V
V_{GS}, Gate-Source Voltage	±20V
I_D, Continue Drain Current	50A
I_{DM} *, Pulsed Drain Current	200A
E_{AS} , Single Pulsed Avalanche Energy	80mJ
P_D, Power Dissipation	75W
$R_{\theta JC}$, Thermal Resistance, Junction to Case	2℃/W
$R_{\theta JA}$, Thermal Resistance, Junction to Ambient	62℃/W
T_J, Operating Temperature Range	+150℃
T_{STG}, Storage Temperature Range	-55℃~+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.
*Pulse test 300us pulse width, 2% duty cycle.

ELECTRICAL CHARACTERISTICS

T_C = 25°C, unless otherwise Noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	60	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}= 60V, V_{GS}=0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	V_{DS}= 0V, V_{GS}=±20V	-	-	±100	nA
Drain-Source On- State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=30A	-	12	17	mΩ
		V_{GS}=4.5V, I_D=20A	-	16	25	
Gate-Source Threshold Voltage	$V_{GS\ (th)}$	V_{DS}=V_{GS}, I_D=250uA	1	-	2.50	V
Input Capacitance	C_{iss}	V_{DS}= 25V, V_{GS}=0V, f=1MHz	-	2030	-	pF
Output Capacitance	C_{oss}		-	130	-	
Reverse Transfer Capacitance	C_{rss}		-	115	-	
Total Gate Charge	Q_g	V_{DS}= 30V, I_D=30A, V_{GS}=10V	-	45	-	nC
Gate-Source charge	Q_{gS}		-	8	-	
Gate-Drain charge	Q_{gd}		-	11	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}= 30V, I_D=30A, V_{GS}= 10V, R_G=1.8Ω	-	11	-	ns
Rise Time	t_r		-	79	-	
Turn-Off Delay Time	$t_{d(off)}$		-	33	-	
Fall Time	t_f		-	105	-	
Maximum Body-Diode Continuous Current	I_S	-	-	-	50	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	200	
Drain-Source Diode Forward Voltage	V_{SD}	I_{SD}=30A	-	-	1.20	V
Reverse Recovery Time	t_{rr}	I_F=I_S, I_{SD}=30A, V_{GS}=0V, di/dt=100A/us	-	14	-	ns
Reverse Recovery Charge	Q_{rr}		-	10	-	nC

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

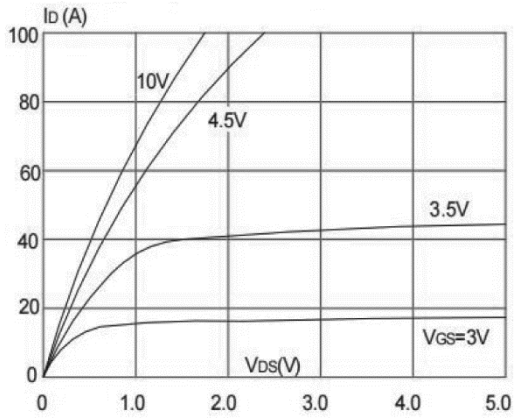


Fig 2. Typical Transfer Characteristics

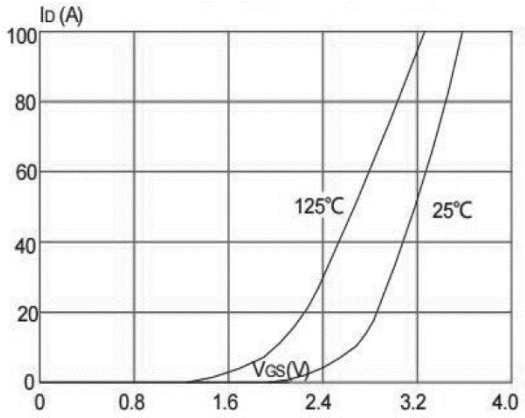


Fig 3. On-Resistance vs. Drain Current

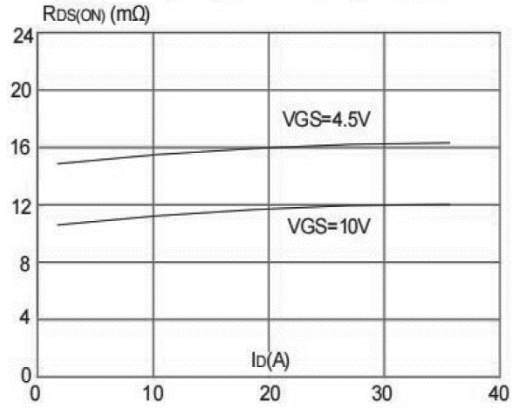


Fig 4. Body Diode Characteristics

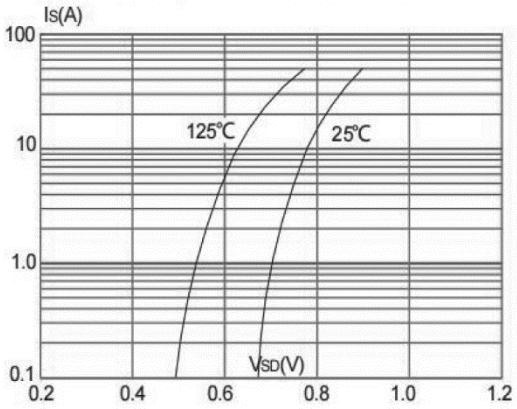


Fig 5. Gate Charge Characteristics

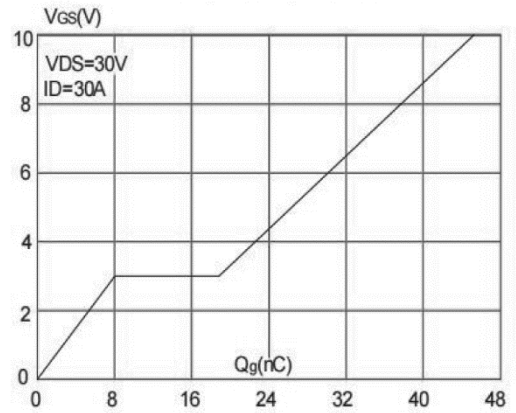


Fig 6. Capacitance Characteristics

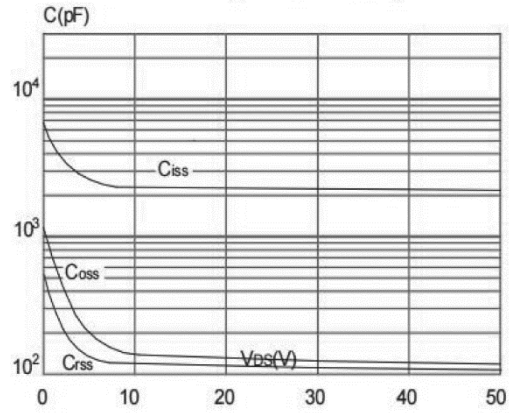


Fig 7. Normalized Breakdown Voltage vs. Junction Temperature

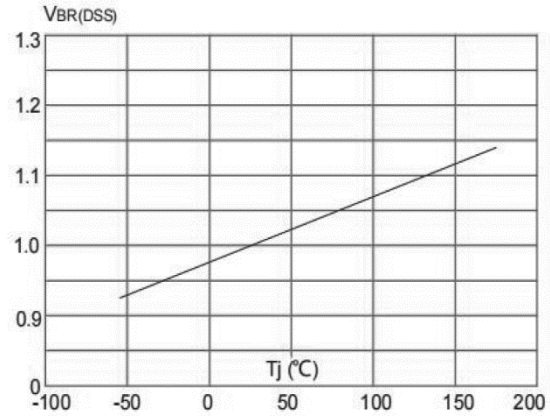


Fig 8. Normalized On Resistance vs. Junction Temperature

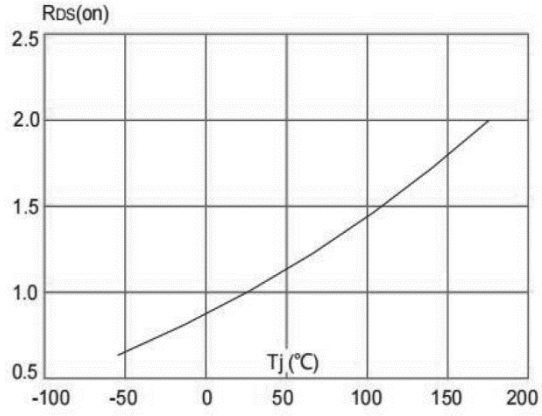


Fig 9. Maximum Safe Operating Area

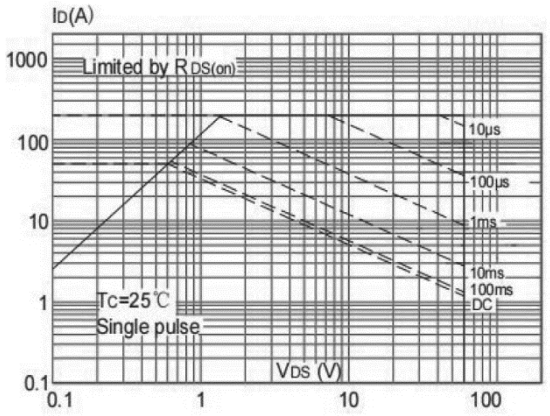


Fig 10. Maximum Continuous Drain Current vs. Case Temperature

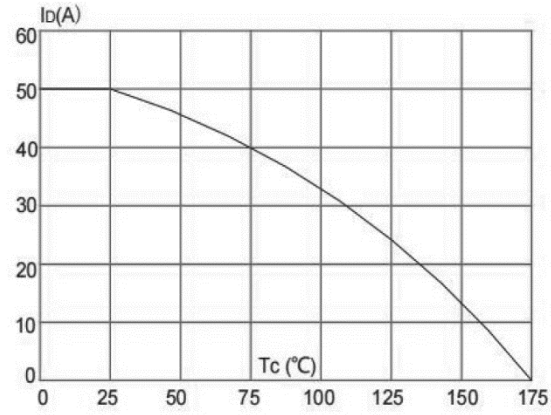
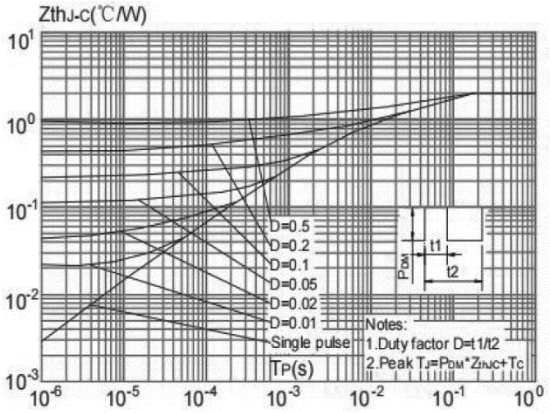
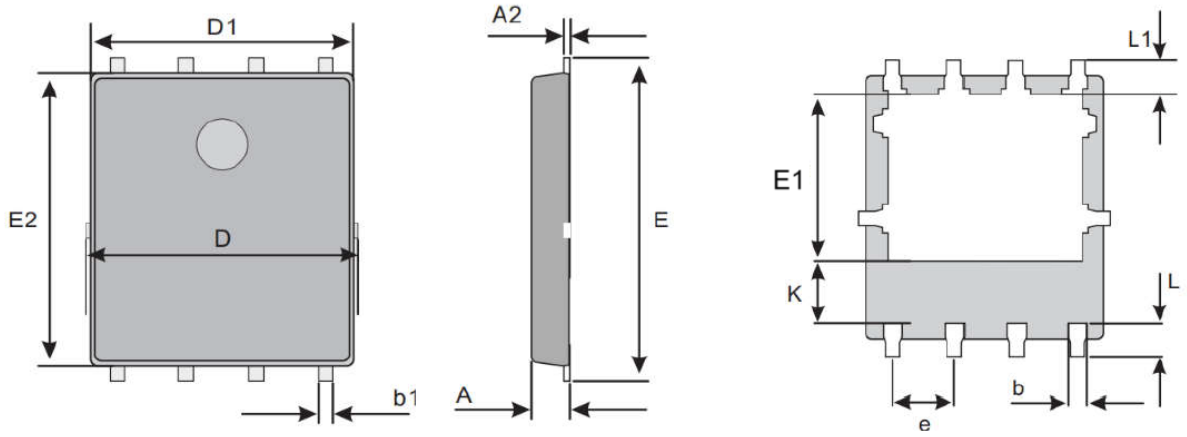


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case



PACKAGE INFORMATION

Dimension in PDFN8 (5x6) (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	0.900	1.200
A2	0.204	0.304
b	0.400 REF.	
b1	0.200	0.400
D	5.000	5.300
D1	4.840	5.240
E	5.700	5.900
E1	3.275	3.675
E2	5.690	6.090
e	1.270 BSC.	
K	1.290 REF.	
L	0.585	0.785
L1	0.700 TYP.	

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