

**DESCRIPTION**

The AM80N06 is available in PDFN8 (5x6) Package.

BVDSS	RDSON	ID
60V	6mΩ	80A

**APPLICATION**

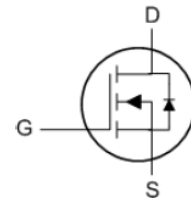
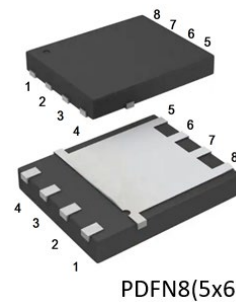
- Available in PDFN8 (5x6) Package.

**ORDERING INFORMATION**

Package Type	Part Number	
PDFN8(5x6) SPQ: 5,000pcs/Reel	PJ8	AM80N06PJ8R
		AM80N06PJ8VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

**FEATURE**

- Super Low Gate Charge
- 100% EAS Guaranteed
- Green Device Available
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

**PIN DESCRIPTION**

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

**ABSOLUTE MAXIMUM RATINGS**

$T_C=25^\circ\text{C}$ , unless otherwise Noted

$V_{DSS}$ , Drain-Source Voltage	60V	
$V_{GSS}$ , Gate-Source Voltage	$\pm 25\text{V}$	
$I_D$ , Continue Drain Current	$T_C=25^\circ\text{C}$	80A
	$T_C=100^\circ\text{C}$	52A
$I_{DM}^{(1)}$ , Pulsed Drain Current	320A	
$E_{AS}^{(2)}$ , Single Pulsed Avalanche Energy	169mJ	
$P_D$ , Power Dissipation	$T_C=25^\circ\text{C}$	108W
$R_{\theta JC}$ , Thermal Resistance, Junction to Case	1.40°C/W	
$T_J$ , Operating Junction Temperature Range	$-55^\circ\text{C} \sim +175^\circ\text{C}$	
$T_{STG}$ , Storage Temperature Range	$-55^\circ\text{C} \sim +175^\circ\text{C}$	

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 maximum junction temperature

(2)  $L=0.5\text{mH}$ ,  $I_{as}=30\text{A}$ , Start  $T_J=25^\circ\text{C}$



**ELECTRICAL CHARACTERISTICS**

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

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	60	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 60V, V <sub>GS</sub> =0V	-	-	1	μA
Gate-Source Forward Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
<b>On Characteristics</b>						
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =30A	-	6	7	mΩ
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
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> =0V, f=1MHz	-	4136	-	pF
Output Capacitance	C <sub>oss</sub>		-	286	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	257	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 30V, I <sub>D</sub> =30A, V <sub>GS</sub> = 10V	-	90	-	nC
Gate-Source charge	Q <sub>gs</sub>		-	9	-	
Gate-Drain charge	Q <sub>gd</sub>		-	18	-	
<b>Switching Characteristics</b>						
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> = 30V, I <sub>D</sub> =30A, V <sub>GS</sub> = 10V, R <sub>G</sub> =1.8Ω	-	9	-	ns
Rise Time	t <sub>r</sub>		-	7	-	
Turn-Off Delay Time	t <sub>d(off)</sub>		-	40	-	
Fall Time	t <sub>f</sub>		-	15	-	
<b>Source-Drain Diode Characteristics</b>						
Maximum Continuous Drain to Source Diode Forward Current	I <sub>S</sub>		-	-	80	A
Maximum Pulsed Drain to Source Diode Forward Current	I <sub>SM</sub>		-	-	320	
Drain to Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> =30A	-	-	1.2	V
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =30A,	-	33	-	ns
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	di/dt=100A/us	-	46	-	nC



## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

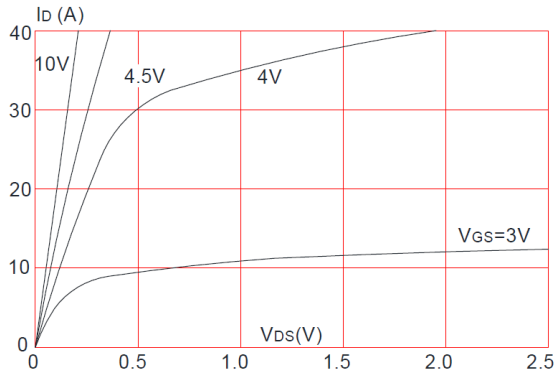


Fig 2. Typical Transfer Characteristics

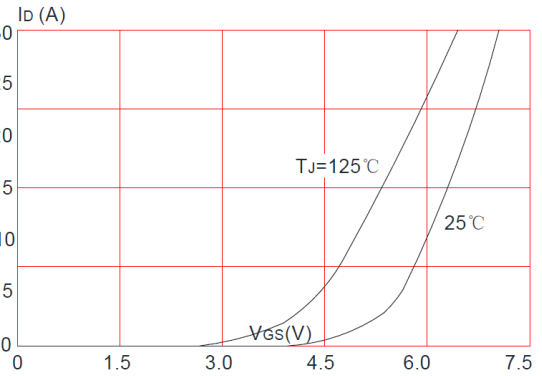


Fig 3. On-resistance vs. Drain Current

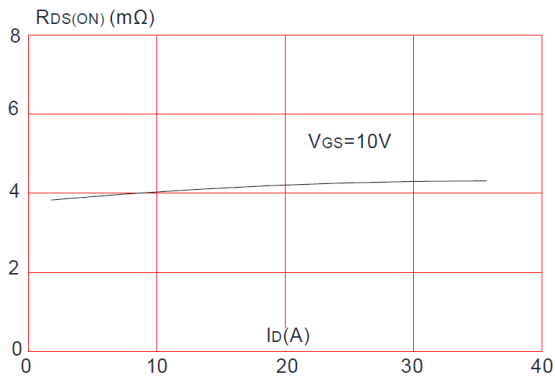


Fig 4. Body Diode Characteristics

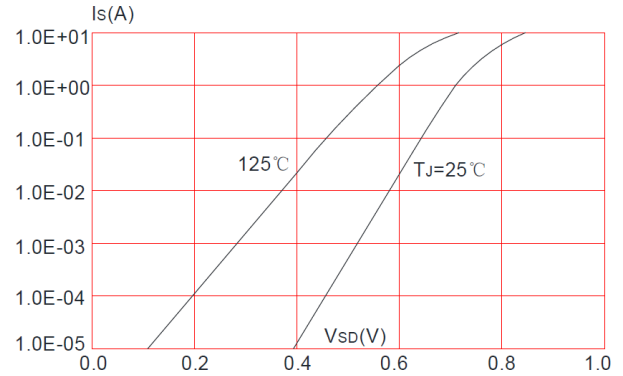


Fig 5. Gate Charge Characteristics

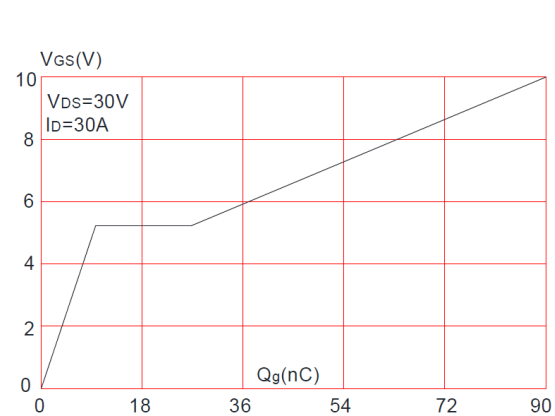


Fig 6. Capacitance Characteristics

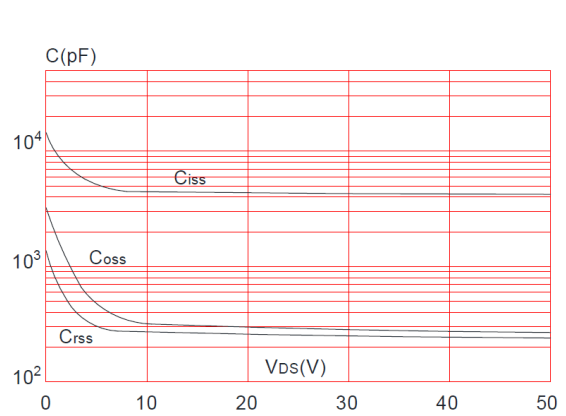




Fig 7. Normalized Breakdown Voltage vs. Junction Temperature

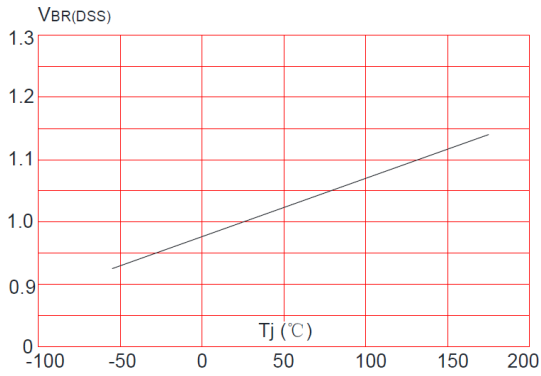


Fig 9. Maximum Safe Operating Area

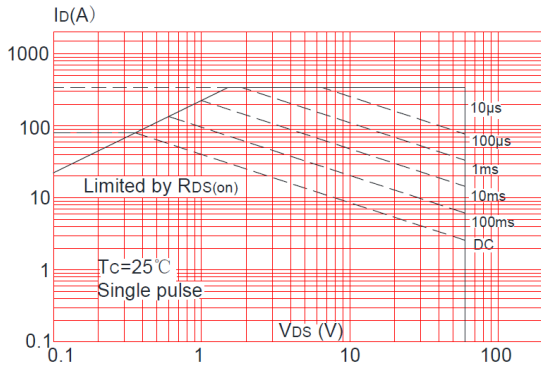


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

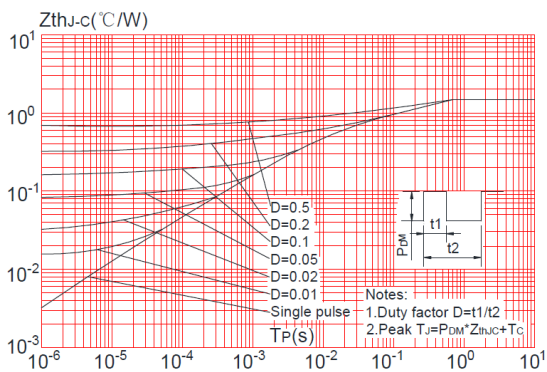


Fig 8. Normalized on Resistance vs. Junction Temperature

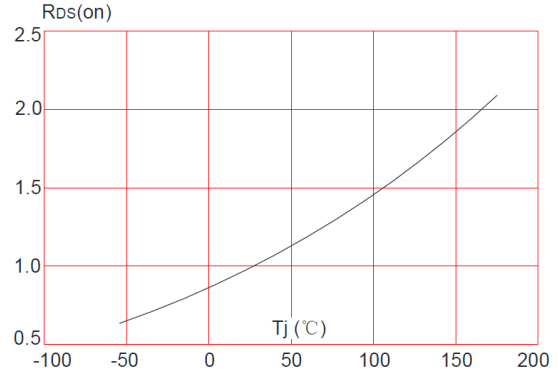
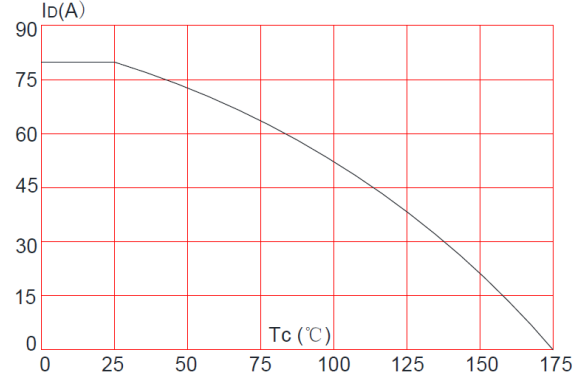


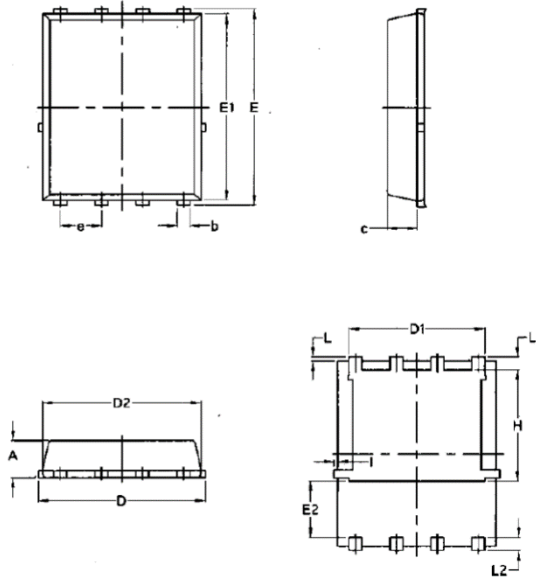
Fig 10. Maximum Continuous Drain Current vs. Case Temperature





**PACKAGE INFORMATION**

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



Symbol	Millimeter	
	Min.	Max.
A	1.030	1.170
b	0.340	0.480
c	0.824	0.970
D	4.800	5.400
D1	4.110	4.310
D2	4.800	5.000
E	5.950	6.150
E1	5.650	5.850
E2	1.600	-
e	1.270 BSC.	
L	0.050	0.250
L1	0.380	0.500
L2	0.380	0.500
H	3.300	3.500
I	-	0.180



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