



DESCRIPTION

The AM046NS06LPJ is available in PDFN8(5x6) package.

BVDSS	RDS(ON)	ID
60V	4.3mΩ	70A

Application

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

ORDERING INFORMATION

Package Type	Part Number	
PDFN8(5x6)	PJ8	AM046NS06LPJ
Note	SPQ:4,000pcs/Reel	
AiT provides all RoHS products		

ABSOLUTE MAXIMUM RATINGS

T_J = 25°C, unless otherwise specified.

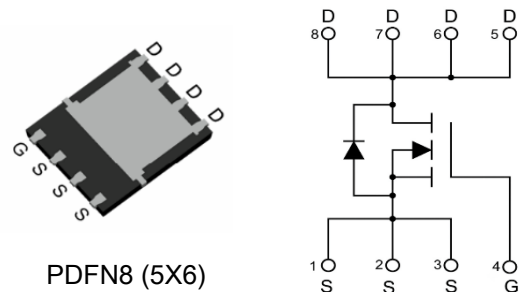
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	70	A
Continuous Drain Current T _C = 100°C		47	
Pulsed Drain Current	I _{DM}	280	
Single Pulse Avalanche Energy	E _{AS}	256	mJ
Power Dissipation	P _D	70	W
Operation Junction and Storage Temperature Range	T _J , T _{STG}	-55 ~ 150	°C
Thermal Resistance, Junction-case	R _{thJC}	1.79	°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.

FEATURES

- V_{DS} = 60V, I_D = 70A
- R_{DS(ON)} Typ = 4.3mΩ @ V_{GS} = 10V
- R_{DS(ON)} Typ = 5.5mΩ @ V_{GS} = 4.5V
- Fast switching
- Low gate charge and R_{ds(on)}
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

PIN DESCRIPTION



PDFN8 (5X6)

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



ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise specified.

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	60	-	-	V
Drain- Source Leakage Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	-	-	1	μA
Gate- Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{GS} =0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1	2	3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A	-	4.3	6.0	mΩ
		V _{GS} =4.5V, I _D =10A	-	5.5	7.3	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} =0 V, V _{DS} =30 V, f=1.0MHz	-	2304	-	pF
Output Capacitance	C _{oss}		-	660	-	pF
Reverse Transfer Capacitance	C _{rss}		-	19	-	pF
Total Gate Charge	Q _g	V _{DS} =30V, I _D =20A, V _{GS} =10V	-	37.5	-	nC
Gate-Source Charge	Q _{gs}		-	6.5	-	nC
Gate-Drain Charge	Q _{gd}		-	10	-	nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =30V, R _G =4.7Ω, I _D =20A	-	9	-	ns
Turn-on Rise Time	t _r		-	35	-	ns
Turn-off Delay Time	t _{d(off)}		-	32	-	ns
Turn-off Fall Time	t _f		-	58	-	ns
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A	-	-	1.2	V
Diode Forward Current	I _S	-	-	-	70	A
Reverse Recovery Time	T _{rr}	V _{GS} =0V, I _S =20A,	-	27	-	nS
Reverse Recovery Charge	Q _{rr}	di/dt=100 A/μs	-	39	-	nC

Note:

The test condition is V_{DD}=30V, V_{GS}=10V, L=0.5mH, R_G=25Ω



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Saturation Characteristics

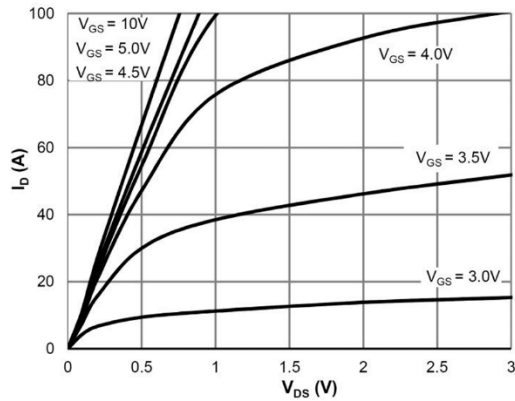


Fig 2. Transfer Characteristics

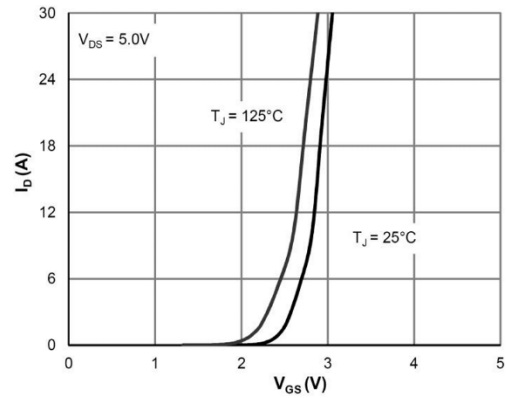


Fig 3. R_DS(ON) vs. Drain Current

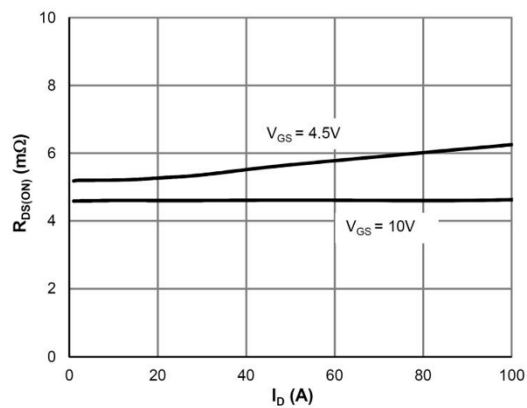


Fig 4. R_DS(ON) vs. Junction Temperature

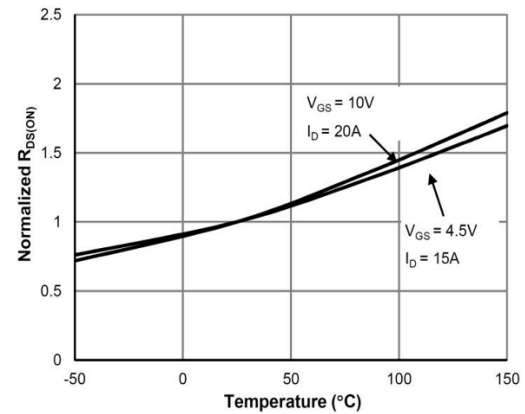


Fig 5. Body-Diode Characteristics

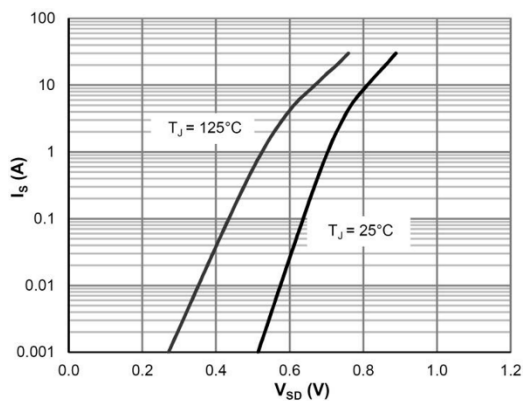


Fig 6. Capacitance Characteristics

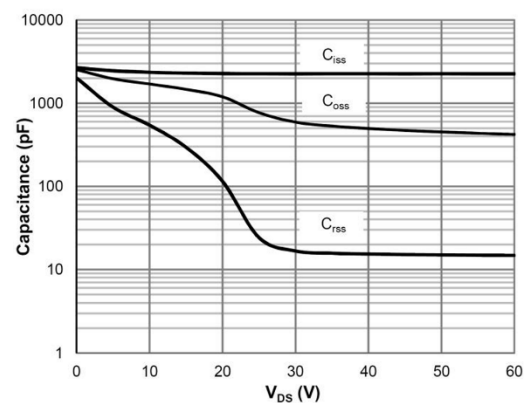




Fig 7. Current De-rating

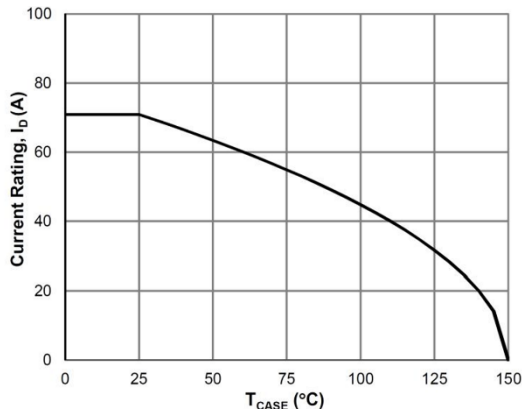


Fig 8. Power De-rating

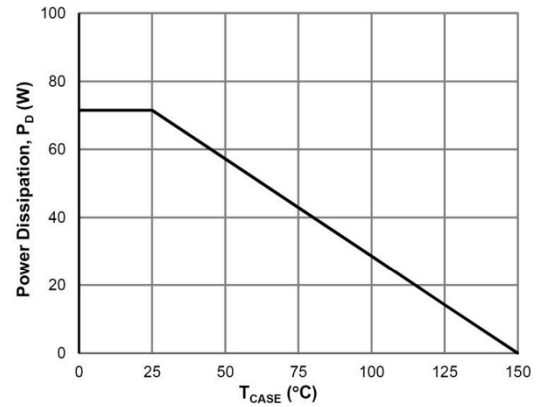


Fig 9. Maximum Safe Operating Area

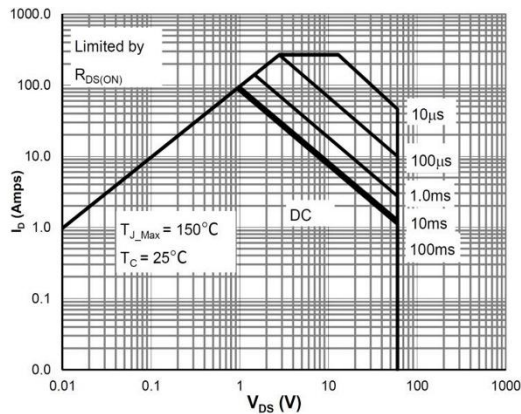


Fig 10. Single Pulse Power Rating, Junction-Case

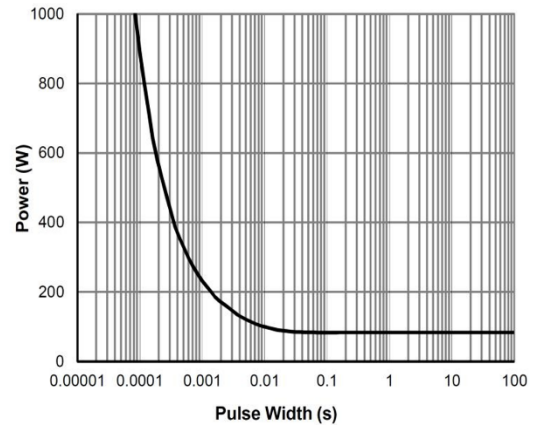
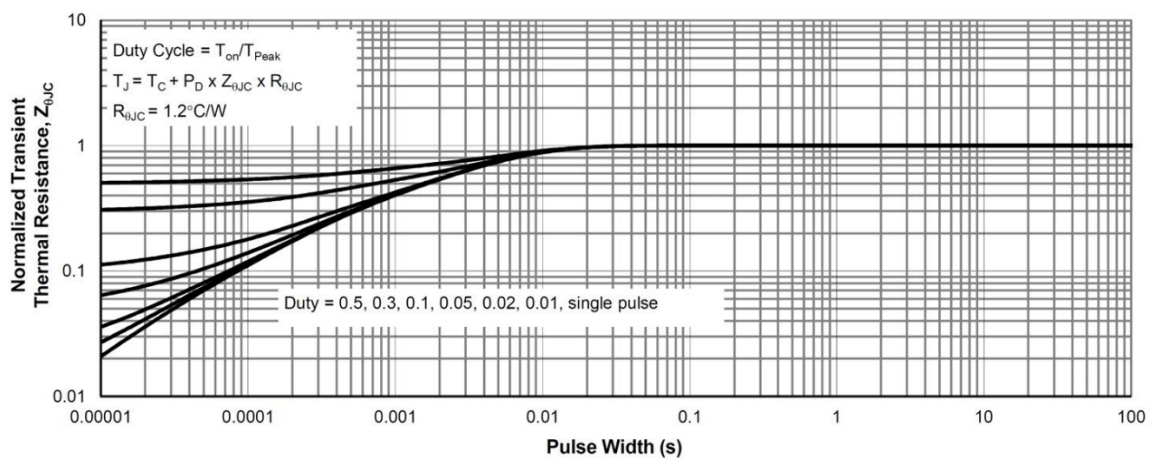


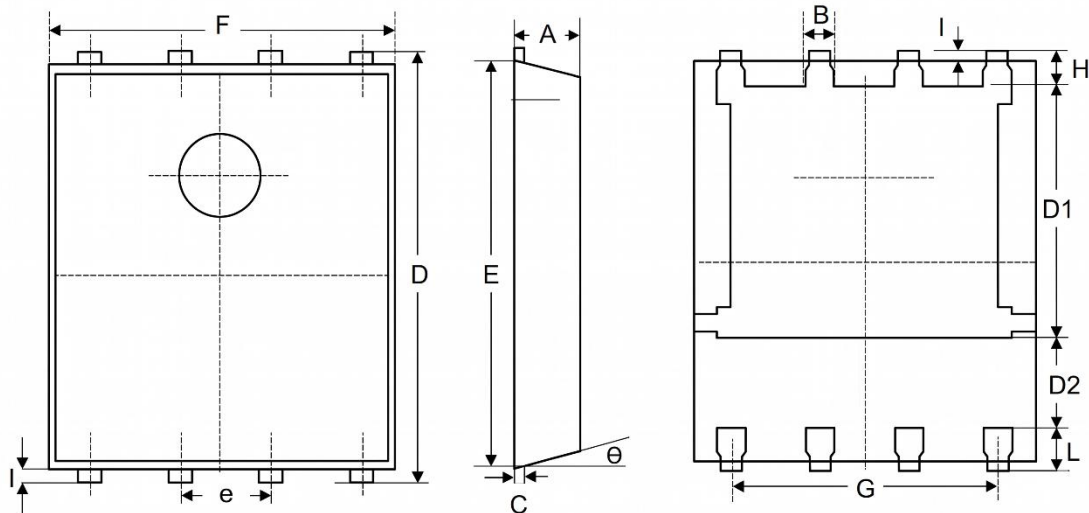
Fig 11. Normalized Maximum Transient Thermal Impedance





PACKAGE INFORMATION

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



Symbol	Millimeters	
	Min	Max
A	0.900	1.100
B	0.330	0.510
C	0.200	0.300
D	5.900	6.100
D1	3.380	3.780
D2	1.100	-
E	5.700	5.800
e	1.270 BSC	
F	4.800	5.000
G	0.361	0.396
H	0.410	0.610
I	0.060	0.200
L	0.510	0.710
θ	0°	12°

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