DESCRIPTION

The AM60N04 is available in PDFN8(3.3x3.3) Package.

VDS	RDSON	ID
40V	6.8mΩ	60A

FEATURE

- $R_{DS(ON),\ typ.}$=6.8 mΩ@V_{GS}=10V
- $R_{DS(ON),\ typ.}$=10 mΩ@V_{GS}=4.5V
- Fast Switching Mosfet

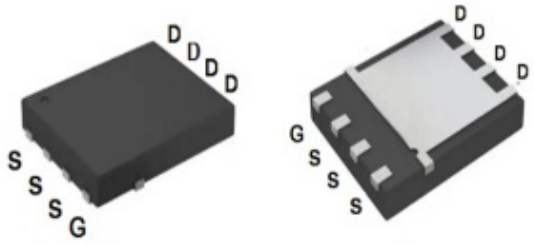
APPLICATION

- High Frequency Switching and Synchronous Rectification.
- DC/DC Converter.

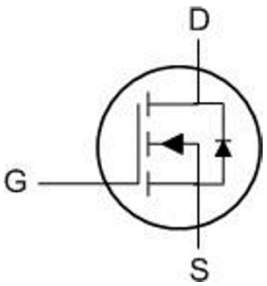
ORDERING INFORMATION

Package Type	Part Number	
PDFN8(3.3x3.3) SPQ: 5,000pcs/Reel	PJ8S	AM60N04PJ8SR
		AM60N04PJ8SVR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

PIN DESCRIPTION



PDFN8 (3.3 x 3.3)



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		40V
V_{GS}, Gate-Source Voltage		±20V
I_D, Continuous Drain Continuous (1)	T_C=25℃	60A
	T_C=100℃	35A
I_{DM} (2), Pulsed Drain Current		130A
EAS (3), Single Pulse Avalanche Energy		48mJ
I_{AS}, Avalanche Current		35A
P_D (4), Total Power Dissipation	T_C=25℃	39W
T_{STG}, Storage Temperature Range		-55℃~+150℃
T_J, Operating Junction Temperature Range		-55℃~+150℃
$R_{\theta JA}$ (1), Thermal Resistance Junction-Ambient(Steady State)		60℃/W
$R_{\theta JC}$ (1), Thermal Resistance Junction-Case		3.2℃/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.

(1) The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.

(2) The data tested by pulsed, pulse width≦300us, duty cycle≦2%

(3) The EAS data shows Max. rating. The test condition is V_{DD}=25V, V_{GS}=10V, L=0.1mH, I_{AS}=31A

(4) The power dissipation is limited by 150℃ junction temperature

ELECTRICAL CHARACTERISTICS

T_J=25℃,unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	40	-	-	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=12A	-	6.8	8.3	mΩ
		V_{GS}=4.5V, I_D=10A	-	10	15	
Gate Threshold Voltage	$V_{GS\ (th)}$	V_{GS}=V_{DS}, I_{DS}=250uA	1	-	3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 32V, V_{GS}=0V, T_J=25°C	-	-	1	μA
		V_{DS}= 32V, V_{GS}=0V, T_J=55°C	-	-	5	
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS}= 0V	-	-	±100	nA
Gate Resistance	R_g	V_{DS}=0V, V_{GS}=0V, f=1MHz	-	1.7	-	Ω
Total Gate Charge (4.5V)	Q_g	V_D=20V, V_{GS}=4.5V I_D=12A	-	5.8	-	nC
Gate-Source Charge	Q_{gs}		-	3	-	
Gate-Drain Charge	Q_{gd}		-	1.2	-	
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=15V, V_{GS}=10V R_G=3.3Ω, I_D=1A	-	14.3	-	ns
Rise Time	T_r		-	5.6	-	
Turn-Off Delay Time	$T_{d(off)}$		-	20	-	
Fall Time	T_f		-	11	-	
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1MHz	-	690	-	pF
Output Capacitance	C_{oss}		-	193	-	
Reverse Transfer Capacitance	C_{rss}		-	38	-	
Diode Characteristics						
Continuous Source Current	I_S	V_G=V_D=0V, Force Current	-	-	60	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A, T_J=25°C	-	-	1	V

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Typical Output Characteristics

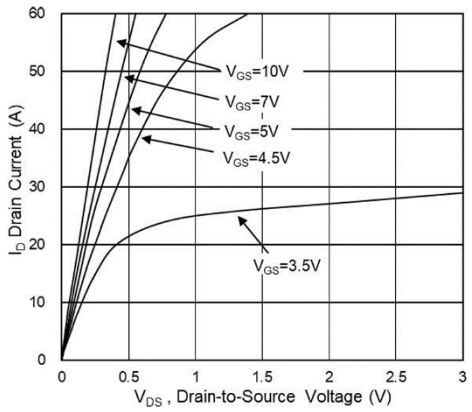


Fig 2. On-Resistance vs. G-S Voltage

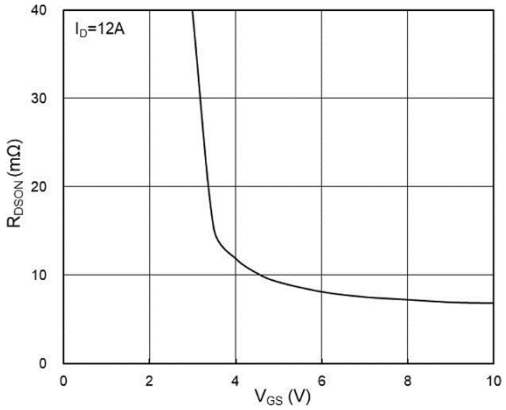


Fig 3. Source Drain Forward Characteristics

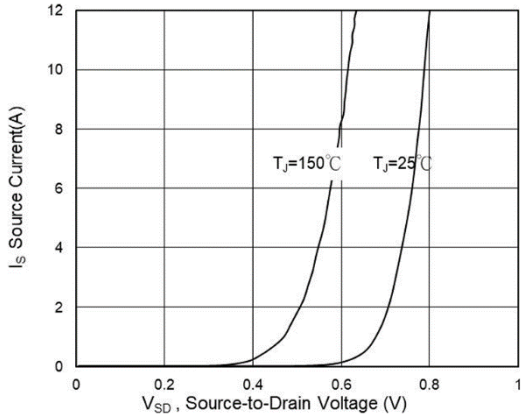


Fig 4. Gate-Charge Characteristics

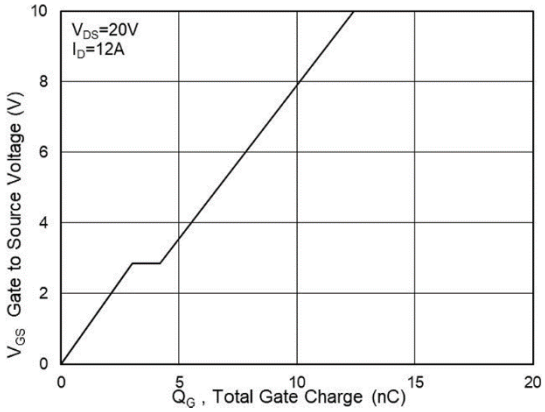


Fig 5. Normalized $V_{GS\,(th)}$ vs. T_J

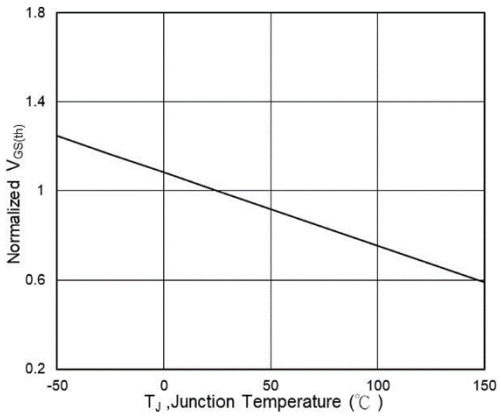


Fig 6. Normalized R_{DSON} vs. T_J

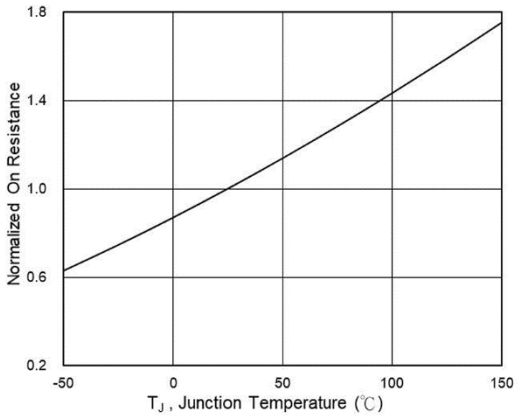


Fig 7. Capacitance

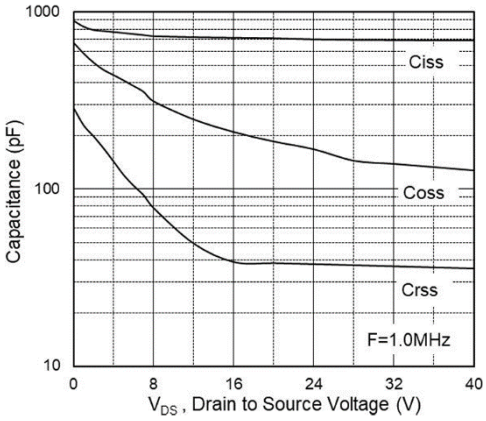


Fig 8. Safe Operating Area

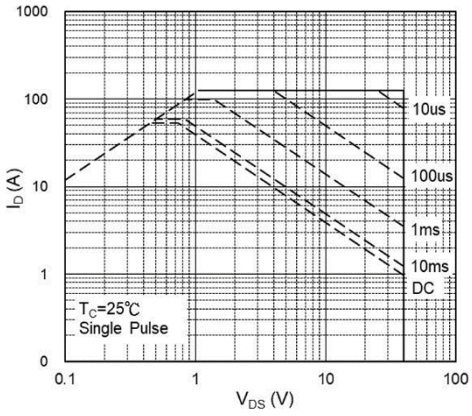


Fig 9. Normalized Maximum Transient Thermal Impedance

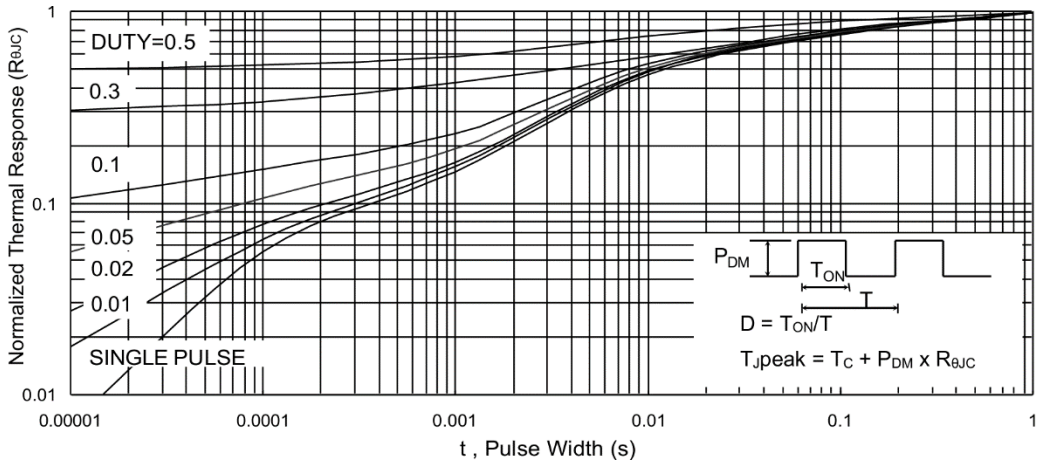


Fig 10. Resistive Switching Test Waveforms

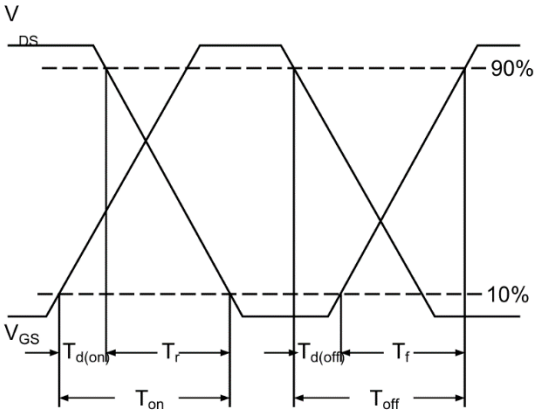
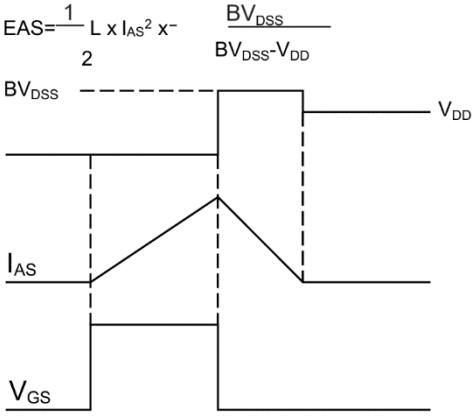
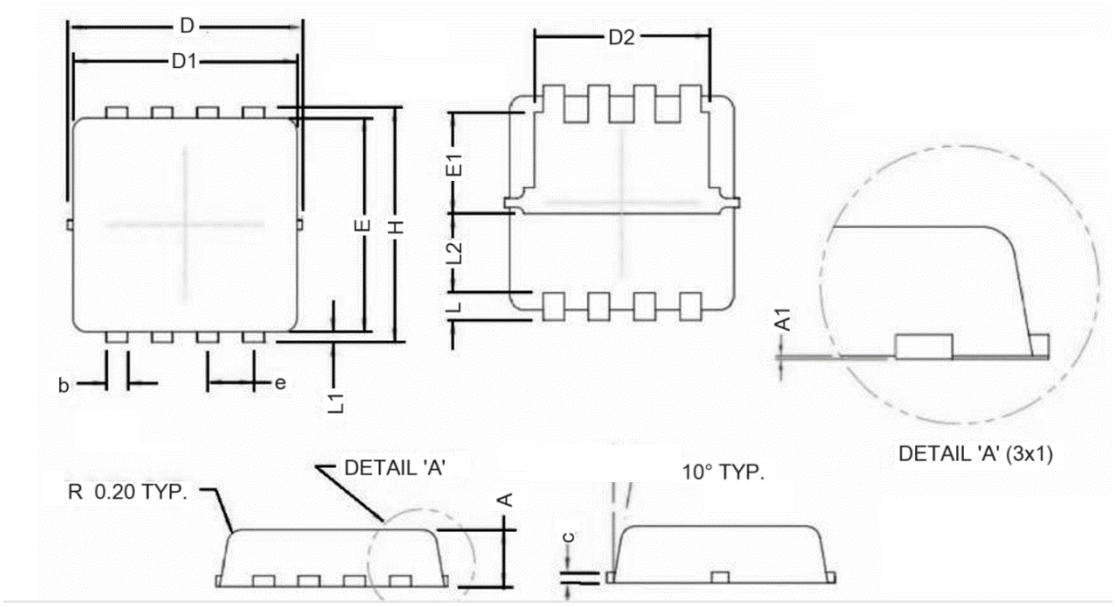


Fig 11. Unclamped Inductive Waveform



PACKAGE INFORMATION

Dimension in PDFN8(3.3x3.3) (Unit: mm)



Symbol	Millimeters (mm)	
	Min.	Max.
A	0.700	0.900
A1	0.000	0.050
b	0.240	0.350
c	0.100	0.200
D	3.250	3.400
D1	3.050	3.250
D2	2.400	2.600
E	3.000	3.200
E1	1.350	1.550-
e	0.650 BSC	
H	3.200	3.400
L	0.300	0.500
L1	0.100	0.200
L2	1.130 REF.	

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