DESCRIPTION

The AM04NS10LPJ8VR is available in PDFN8(5x6) Package.

VDSS	RDSON	ID
100V	4mΩ	120A

FEATURE

- 100V, 120A
- $R_{DS(ON)}$ Typ.= 4mΩ @ V_{GS} = 10V
- Advanced Split Gate Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔVds TESTED!

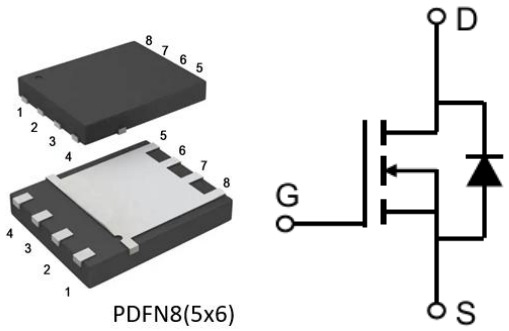
APPLICATIONS

- Load Switch
- PWM Application
- Power Management

ORDERING INFORMATION

Package Type	Part Number	
PDFN8 (5x6) SPQ: 5000pcs/Reel	PJ8	AM04NS10LPJ8VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

PIN DESCRIPTION



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

ABSOLUTE MAXIMUM RATINGS

T_J = 25°C, unless otherwise specified.

V_{DS}, Drain-to-Source Voltage		100V
V_{GS}, Gate Source Voltage		±20V
I_D, Continuous Drain Current	T_C = 25°C	120A
	T_C = 100°C	72A
I_{DM}, Pulsed Drain Current (1)		480A
E_{AS}, Avalanche Energy, Single Pulse (2)		248mJ
P_D, Power Dissipation	T_C = 25°C	125W
$R_{\theta JC}$, Thermal Resistance, Junction-to-Case		1°C/W
T_{STG}, Storage Temperature Range		-55°C ~ +150°C
T_J, Junction Temperature Range		-55°C ~ +150°C

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. EAS condition: Starting T_J=25°C, V_{DD}=50V, V_G=10V, RG=25ohm, L=0.5mH, I_{AS}=31.5A

ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D = 250μA	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}= V_{GS}, I_D = 250μA	1.4	2	2.6	V
Static Drain-Source ON-Resistance *	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 30A	-	4	5.2	mΩ
		V_{GS} = 4.5V, I_D = 20A		5.3	6.9	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}= 25V, V_{GS}=0V, f=1.0MHZ	-	3655	-	pF
Output Capacitance	C_{oss}		-	2061	-	
Reverse Transfer Capacitance	C_{rss}		-	57	-	
Total Gate Charge	Q_g	V_{DS} = 50V , I_D =20A V_{GS}=0V ~10V	-	55	-	nC
Gate-Source Charge	Q_{gs}		-	20	-	
Gate-Drain Charge	Q_{gd}		-	12	-	
Switching Characteristic						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=50V, I_D = 20A R_{GEN}=3Ω, V_{GS}= 10V	-	16	-	ns
Turn-On Rise Time	t_r		-	20	-	
Turn-Off Delay Time	$t_{d(off)}$		-	30	-	
Turn-Off Fall Time	t_f		-	17	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I_S	-	-	-	120	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}		-	-	480	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S= 30A	-	-	1.2	V
Body Diode Reverse Recovery Time	trr	I_F= 20A, di/dt = 100A/μs	-	60	-	ns
Body Diode Reverse Recovery Charge	Qrr		-	120	-	nC

Notes:

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

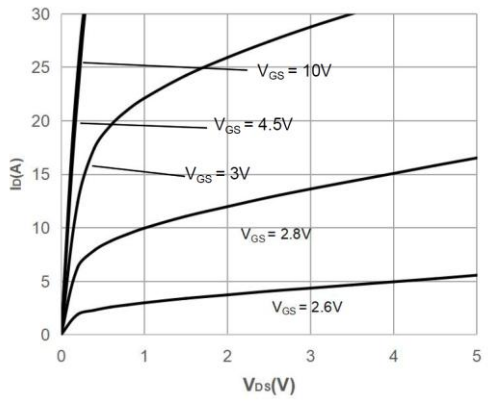


Fig 2. Typical Transfer Characteristics

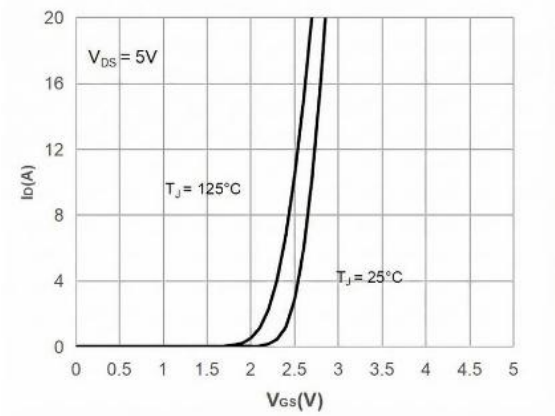


Fig 3. On-resistance vs. Drain Current

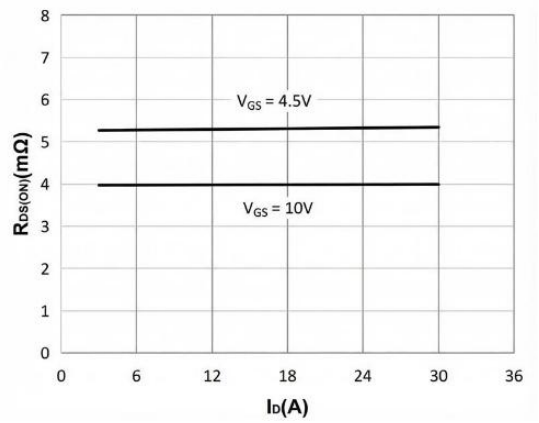


Fig 4. Normalized Breakdown voltage vs. Junction Temperature

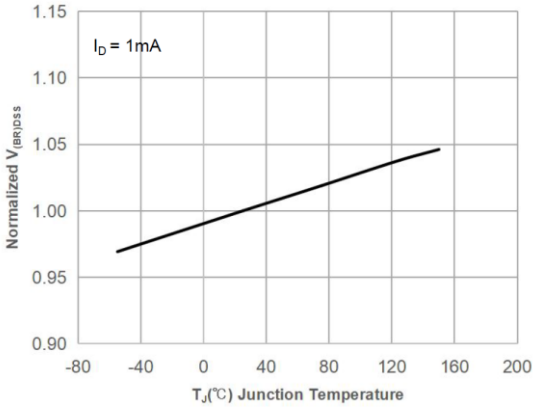


Fig 5. Gate Change Characteristics

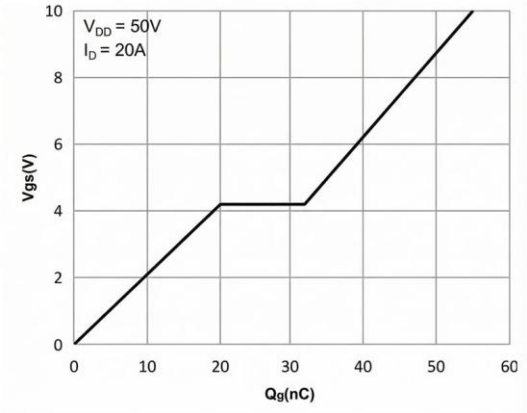


Fig 6. Capacitance Characteristics

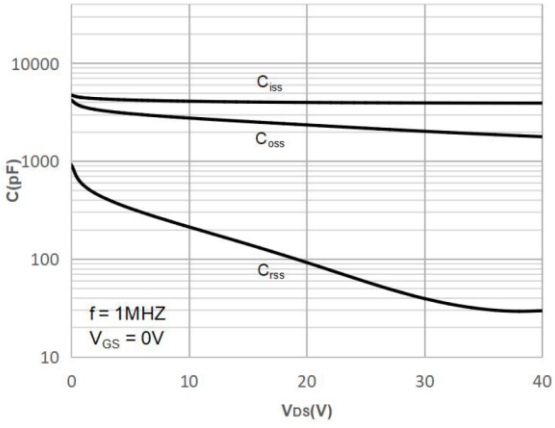


Fig 7. Gate Charge Test Circuit

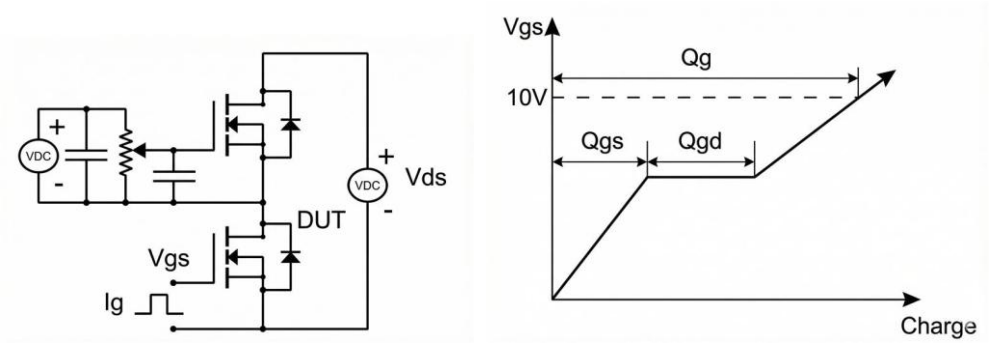


Fig 8. Resistive Switching Test Circuit & Waveform

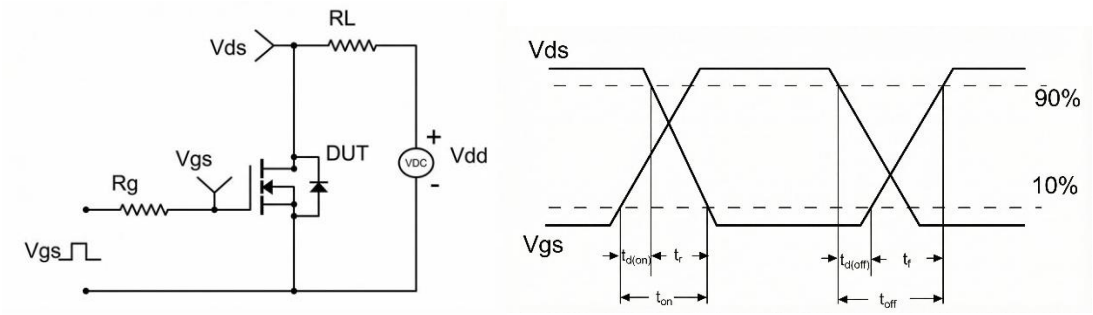


Fig 9. Unclamped Inductive Switching Test Circuit& Waveform

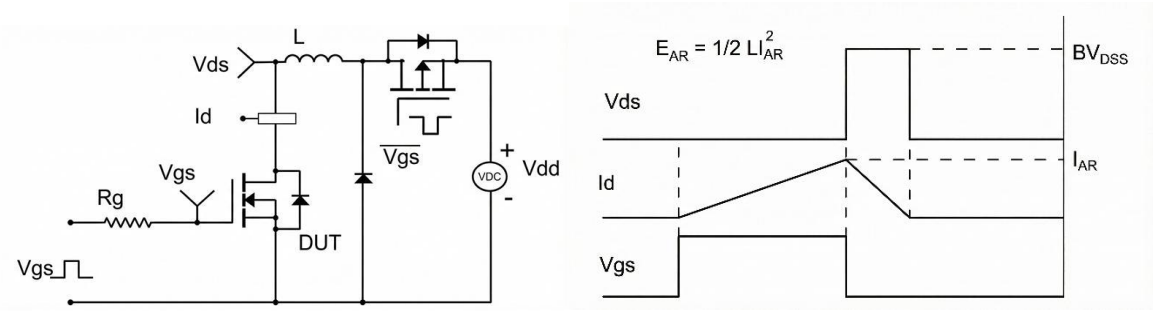
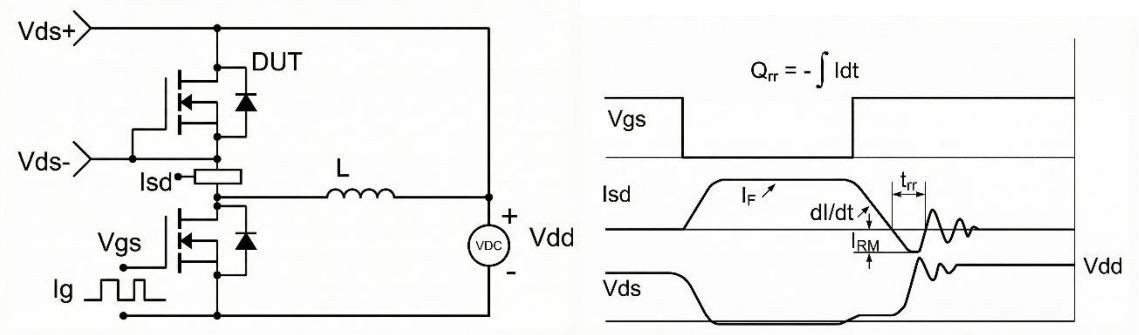
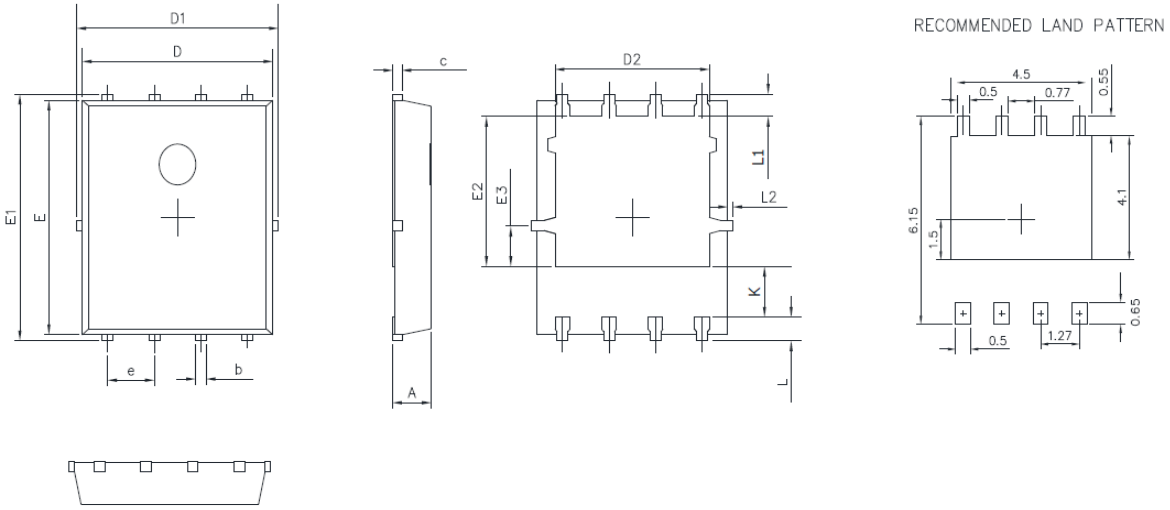


Fig 10. Diode Recovery Test Circuit & Waveform



PACKAGE INFORMATION

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



Symbol	Millimeters	
	Min.	Max.
A	0.900	1.100
b	0.250	0.500
c	0.100	0.300
D	4.800	5.300
D1	4.900	5.500
D2	3.920	4.200
E	5.650	5.850
E1	5.900	6.200
E2	3.330	3.780
E3	0.800	1.000
e	1.270	
L	0.400	0.700
L1	0.650	
L2	0.000	0.150
K	1.000	1.500

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