

**DESCRIPTION**

The AM039NS08HPJ8VR is available in PDFN8 (5x6) Package.

VDSS	RDSON	ID
80V	3.9mΩ	125A

APPLICATIONS

- Load Switch
- PWM Application
- Power Management

ORDERING INFORMATION

Package Type	Part Number	
PDFN8 (5x6) SPQ: 5000pcs/Reel	PJ8	AM039NS08HPJ8VR
Note	R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

ABSOLUTE MAXIMUM RATINGS

T_J = 25°C, unless otherwise specified.

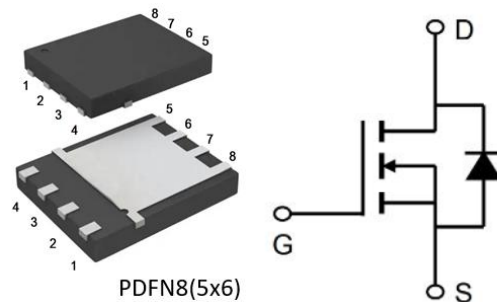
V _{DS} , Drain-to-Source Voltage		80V
V _{GS} , Gate Source Voltage		±20V
I _D , Continuous Drain Current	T _C = 25°C	125A
	T _C = 100°C	75A
I _{DM} , Pulsed Drain Current ⁽¹⁾		500A
E _{AS} , Avalanche Energy, Single Pulse ⁽²⁾		342mJ
P _D , Power Dissipation	T _C = 25°C	132W
R _{θJC} , Thermal Resistance, Junction-to-Case		0.95°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}=40V, V_G=10V, R_G=25ohm, L=0.5mH, I_{AS}=37A

FEATURE

- 80V, 125A
- R_{DS(ON)} Typ.= 3.9mΩ @ V_{GS} = 10V
- Advanced Split Gate Trench Technology
- Excellent R_{DS(ON)} and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!

PIN DESCRIPTION

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	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	80	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V, 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	2	3	4	V
Static Drain-Source ON-Resistance *	R _{DS(ON)}	V _{GS} = 10V, I _D = 20A	-	3.9	5.1	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 40V, V _{GS} =0V, f=1.0MHZ	-	4850	-	pF
Output Capacitance	C _{oss}		-	787	-	
Reverse Transfer Capacitance	C _{rss}		-	16	-	
Total Gate Charge	Q _g	V _{DS} = 40V , I _D =20A V _{GS} =0V ~10V	-	68	-	nC
Gate-Source Charge	Q _{gs}		-	23	-	
Gate-Drain Charge	Q _{gd}		-	15	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DD} =40V, I _D = 20A R _{GEN} =3Ω, V _{GS} = 10V	-	20	-	ns
Turn-On Rise Time	t _r		-	38	-	
Turn-Off Delay Time	t _{d(off)}		-	30	-	
Turn-Off Fall Time	t _f		-	15	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I _S	-	-	-	125	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}	-	-	-	500	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S = 20A	-	-	1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F = 20A,	-	48	-	ns
Body Diode Reverse Recovery Charge	Q _{rr}	di/dt = 100A/μs	-	100	-	nC

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



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Gate Charge Test Circuit

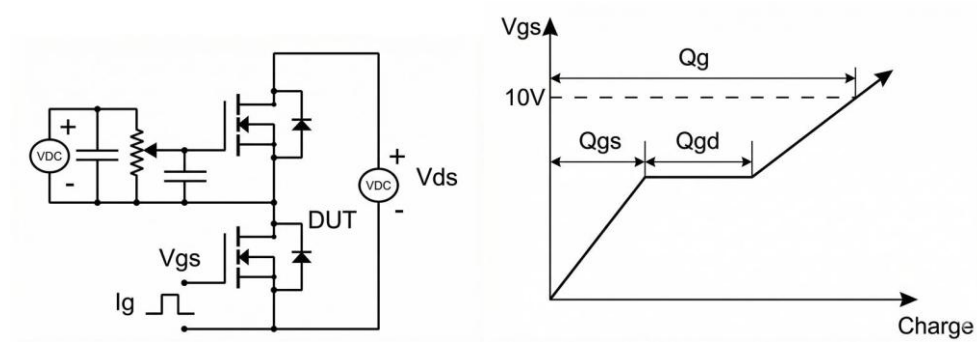


Fig 2. Resistive Switching Test Circuit & Waveform

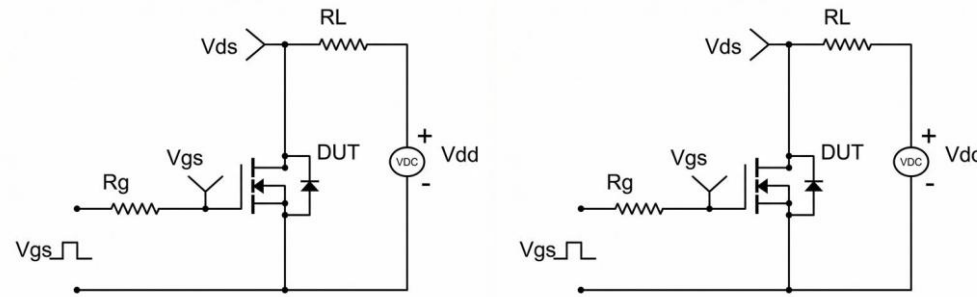


Fig 3. Unclamped Inductive Switching Test Circuit & Waveform

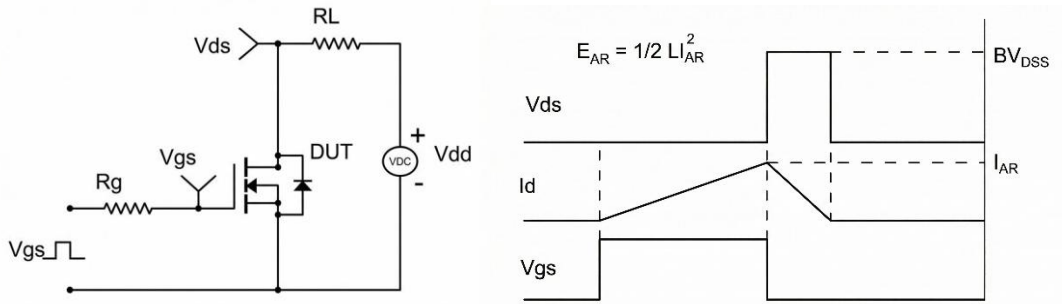
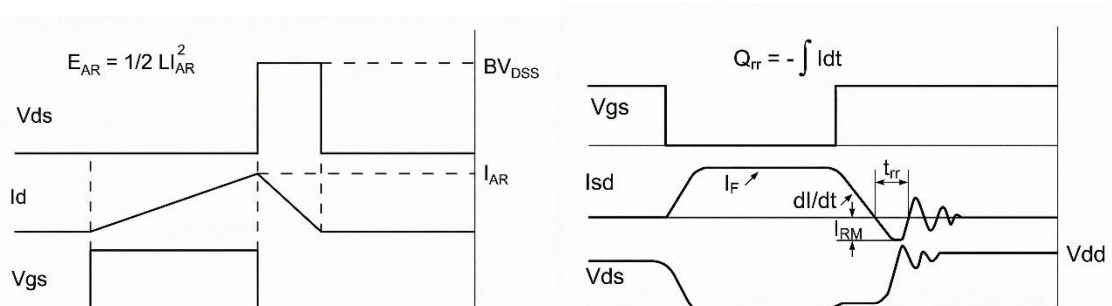


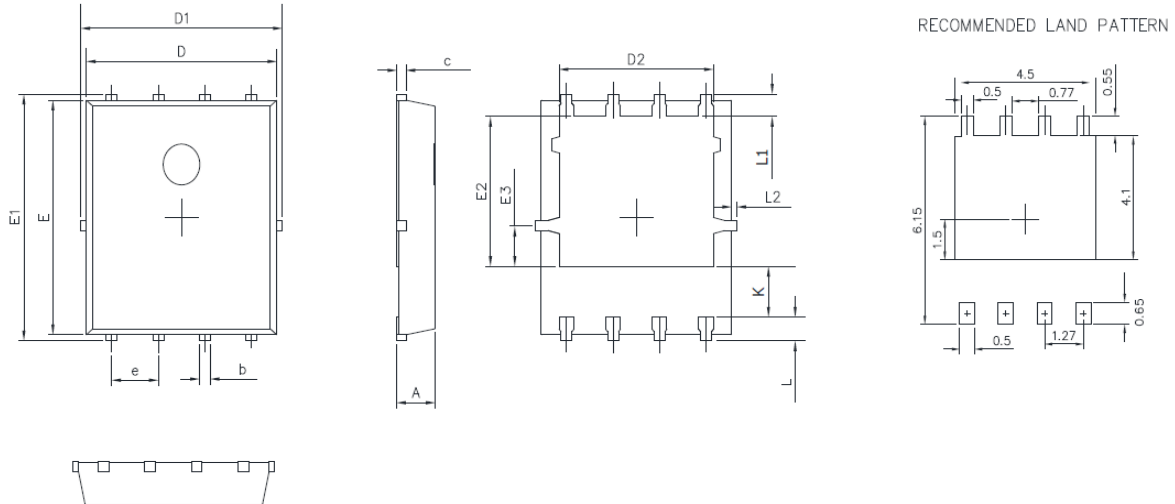
Fig 4. Diode Recovery Test Circuit & Waveform





PACKAGE INFORMATION

Dimension in PDFN5x6-8L (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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