DESCRIPTION

The AM04NN08M is available in SOP-8 Package.

BVDSS	RDSON	ID
40V	13mΩ	8A

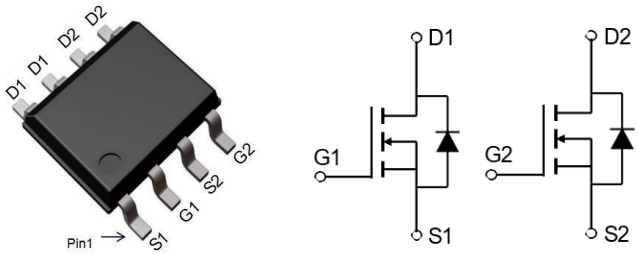
FEATURES

- 40V, 8A
- $R_{DS(ON)}$ Typ = 13mΩ @ V_{GS} = 10V
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge

APPLICATION

- Load Switch
- PWM Application
- Power Management

PIN DESCRIPTION



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

ORDERING INFORMATION

Package Type	Part Number	
SOP-8 SPQ: 4,000pcs/Reel	M8	AM04NN08MM8VR
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		40V
V_{GS}, Gate-to-Source Voltage		±20V
I_D, Continuous Drain Current	T_A = 25℃	8A
	T_A = 100℃	4.8A
I_{DM}, Pulsed Drain Current (1)		32A
E_{AS}, Single Pulse Avalanche Energy (2)		25mJ
P_D, Power Dissipation	T_A = 25℃	1.9W
$R_{\theta JC}$, Thermal Resistance, Junction to Case		65℃/W
T_J, T_{STG}, Junction & Storage Temperature Range		-55℃ ~ +150℃

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 junction temperature.

(2) E_{AS} condition: Starting T_J=25°C, V_{DD}=20V, V_G=10V, R_G=25ohm, L=0.5mH, I_{AS}=10A

ELECTRICAL CHARACTERISTICS

T_J=25℃, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BV)DSS}$	V_{GS}=0V, I_D=250μA	40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 40V, V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS}= 0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS\ (th)}$	V_{GS}=V_{DS}, I_D=250μA	1	1.5	2	V
Static Drain Source ON-Resistance (3)	$R_{DS(ON)}$	V_{GS}=10V, I_D=8A	-	13	16.9	mΩ
		V_{GS}=4.5V, I_D=6A		17	22.1	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=20V, V_{GS}=0V, f=1MHz	-	1000	-	pF
Output Capacitance	C_{oss}		-	84	-	
Reverse Transfer Capacitance	C_{rss}		-	63	-	
Total Gate Charge	Q_g	V_{GS}=0 to 10V, V_{DS}=20V, I_D=5A	-	14	-	nC
Gate Source Charge	Q_{gs}		-	4	-	
Gate-Drain("Miller") Charge	Q_{gd}		-	4.5	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V, V_{DD}=20V R_{GEN}=3Ω, I_D=5A	-	10	-	ns
Turn-On RIse Time	t_r		-	12	-	
Turn-Off Delay Time	$t_{d(off)}$		-	33	-	
Turn-Off Fall Time	t_f		-	10	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I_S	-	-	-	8	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	-	-	-	32	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=8A	-	-	1.2	V
Body Diode Reverse Recovery Time	Trr	I_F =5A, di/dt =100A/us	-	19	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	11	-	nC

(3) $R_{\theta JA}$ is measured with the device mounted on a 1inch^2 pad of 2oz copper FR4 PCB

(4)Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

TEST CIRCUIT

Fig 1. Gate Charge Test Circuit & Waveform

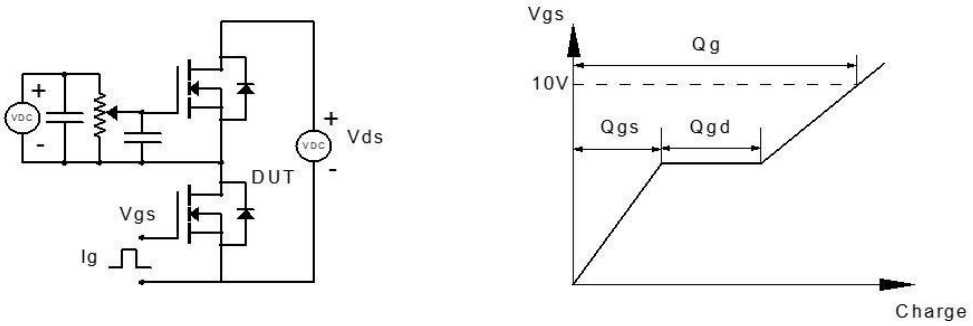


Fig 2. Resistive Switching Test Circuit & Waveform

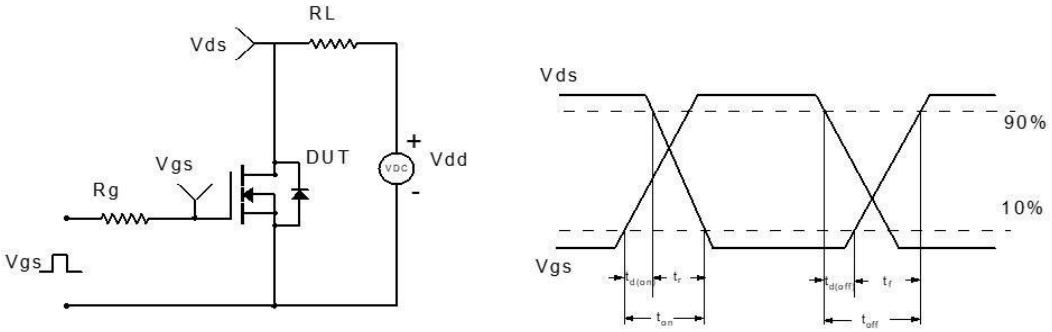


Fig 3. Unclamped Inductive Switching Test Circuit & Waveform

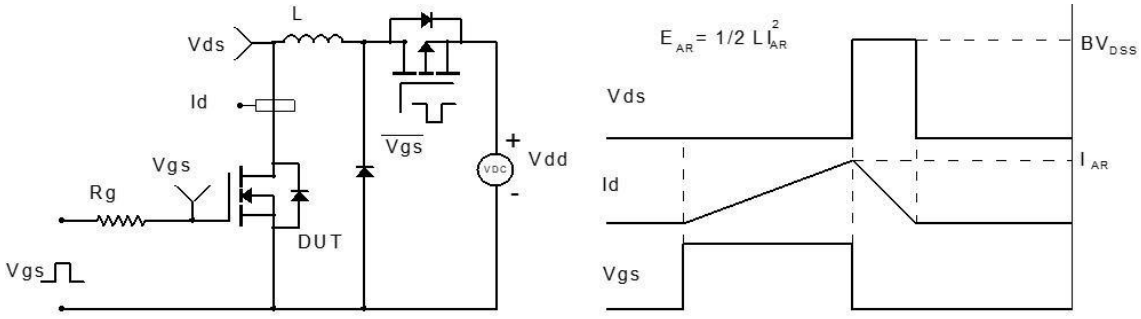
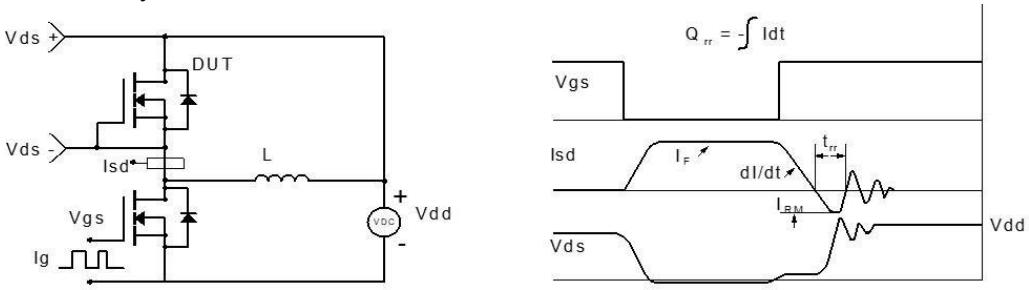
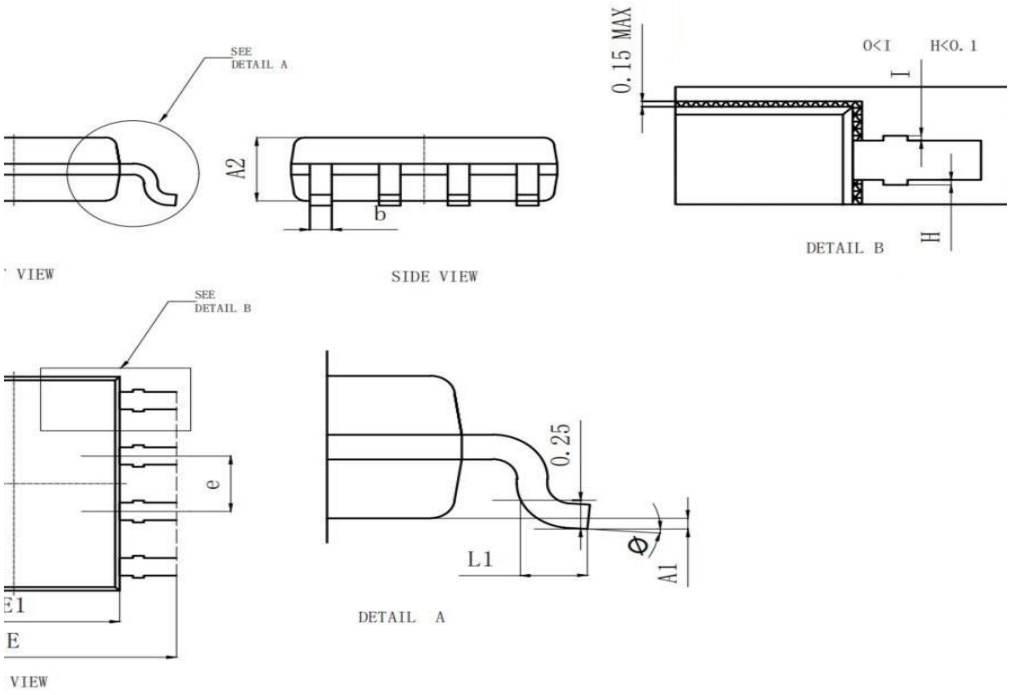


Fig 4. Diode Recovery Test Circuit & Waveform



PACKAGE INFORMATION

Dimension in SOP-8 (Unit: mm)



Symbol	MILLIMETER	
	Min.	Max.
A	0.030	0.150
A2	1.425	1.475
b	0.300	0.500
c	0.150	0.250
D	4.800	5.200
E	5.800	6.200
E1	3.800	4.200
e	1.270BSC	
L1	0.400	0.800
H、1	0	0.100
∅	0°	8°

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