DESCRIPTION

The AM8882 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 1.8V. The device is suitable for use as a load switch or in PWM applications. It is ESD protested.

AM8882 is available in a DFN8 (2 x 3) package.

ORDERING INFORMATION

Package Type	Part Number	
DFN8	J8	AM8882J8R
		AM8882J8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

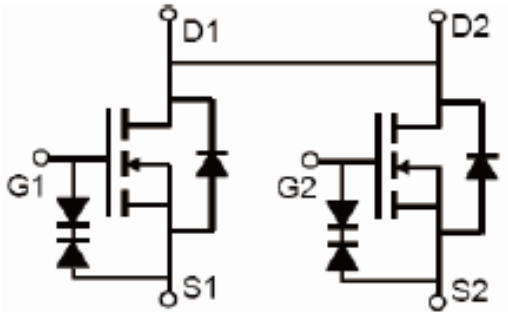
FEATURES

- V_{DS}= 20V, I_D= 8A
  Typ.$R_{DS(ON)}$ = 9.5mΩ @ V_{GS}= 4.5V
  Typ.$R_{DS(ON)}$ = 13mΩ @ V_{GS}= 2.5V
  ESD Rating: 2000V HBM
- High Power and current handing capability
- Surface Mount Package
- Available in a DFN8 (2 x 3) package.

APPLICATION

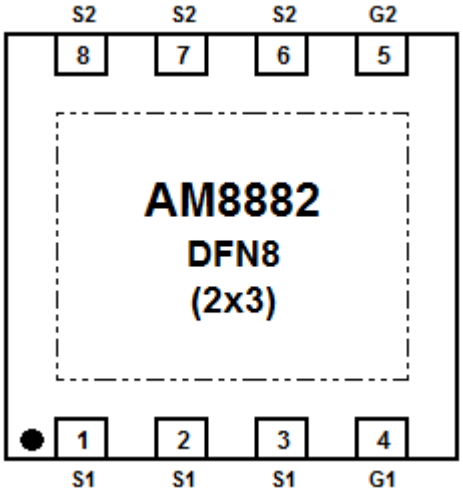
- Uni-directional load switch
- Bi-directional load switch

PIN DESCRIPTION



Schematic diagram

PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	S1	Source
2	S1	Source
3	S1	Source
4	G1	Gate
5	G2	Gate
6	S2	Source
7	S2	Source
8	S2	Source

ABSOLUTE MAXIMUM RATINGS

T_A = 25℃, unless otherwise noted

V_{DS}, Drain-Source Voltage	20V
V_{GS}, Gate-Source Voltage	±12V
I_D, Drain Current-Continuous	8A
I_{DM}, Drain Current-Pulsed NOTE1	30A
P_D, Maximum Power Dissipation	2W
T_J,T_{STG}, Operating Junction and Storage Temperature Range	-55℃~150℃

Stress beyond above listed “Absolute Maximum Ratings” may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Limit	Units
Thermal Resistance, Junction-to-Ambient NOTE2	$R_{\theta JA}$	62.5	°C/W

ELECTRICAL CHARACTERISTICS

T_A = 25℃, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±10V, V_{DS}=0V	-	-	±10	μA
On Characteristics NOTE3						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_{DS}=250μA	0.45	0.7	1.0	V
Drain-Source On-state Resistance	$R_{DS(ON)}$	V_{GS}=4.5V,I_D=5A	-	9.5	13	mΩ
		V_{GS}=2.5V,I_D=4A	-	13	17	
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=8A	-	15	-	S
Dynamic Characteristics NOTE3						
Input Capacitance	C_{ISS}	V_{DS}=10V, V_{GS}=0V, F=1.0MHz	-	1800	-	pF
Output Capacitance	C_{OSS}		-	230	-	
Reverse Transfer Capacitance	C_{RSS}		-	200	-	
Switching Characteristics NOTE3						
Turn-on Delay Time	$t_{D(ON)}$	V_{DD}=10V,R_L=1.2Ω, V_{GS}=10V, R_{GEN}=3Ω	-	2.5	-	nS
Turn-on Rise Time	t_R		-	7.2	-	
Turn-off Delay Time	$t_{D(OFF)}$		-	49	-	
Turn-off Fall Time	t_F		-	10.8	-	
Total Gate Charge	Q_G	V_{DS}=10V, I_D=8A, V_{GS}=4.5V	-	17.9	-	nC
Gate-Source Charge	Q_{GS}		-	1.5	-	
Gate-Drain Charge	Q_{GD}		-	4.7	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage NOTE3	V_{SD}	V_{GS}=0V, I_S=1A	-	-	1.2	V
Diode Forward Current NOTE2	I_S		-	-	7	A

NOTE1: Repetitive Rating: Pulse width limited by maximum junction temperature

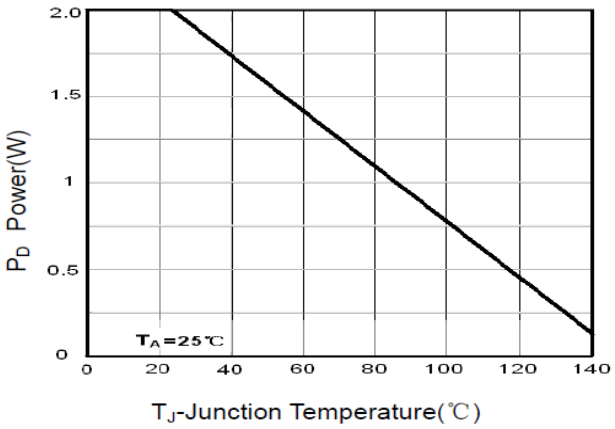
NOTE2: Surface Mounted on FR4 Board, t ≤ 10 sec.

NOTE3: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

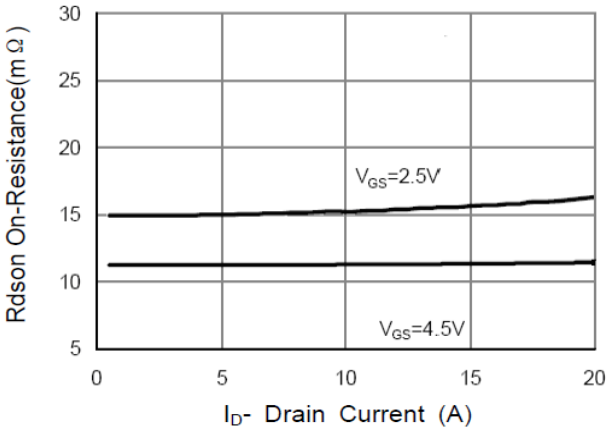
NOTE4: Guaranteed by design, not subject to production

TYPICAL CHARACTERISTICS

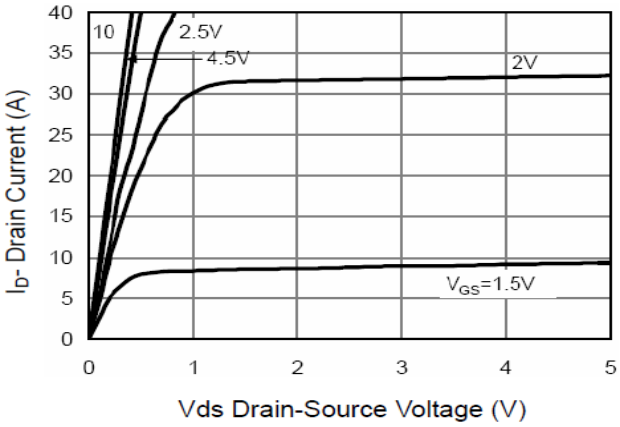
1. Power Dissipation



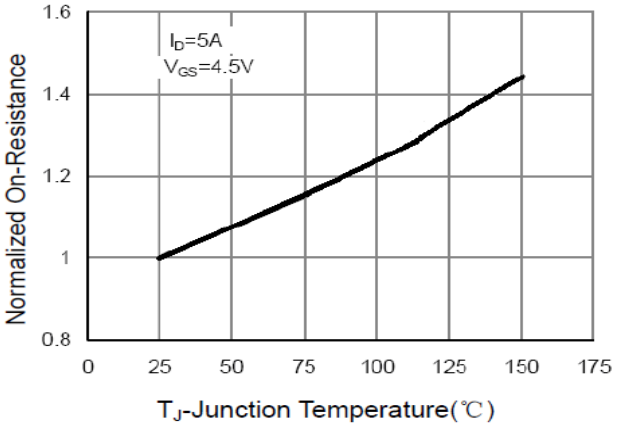
2. Drain-Source On-Resistance



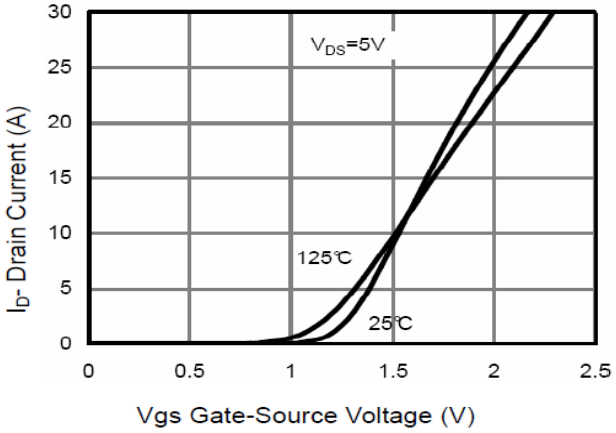
3. Output Characteristics



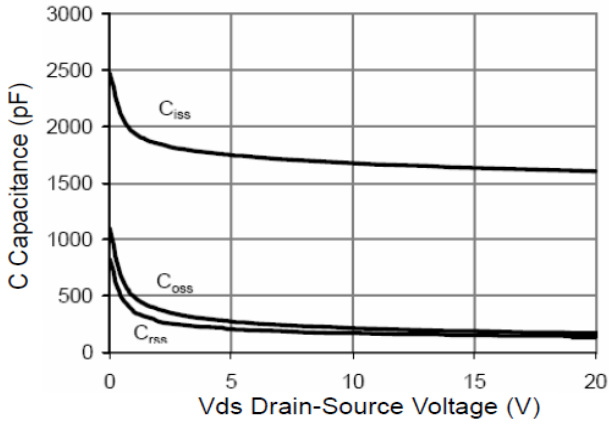
4. Drain-Source On-Resistance



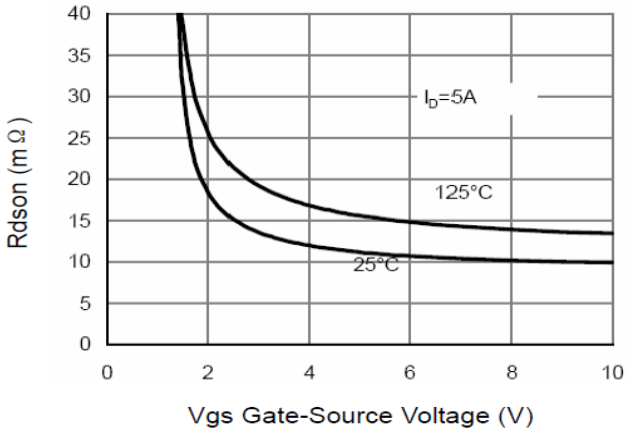
5. Transfer Characteristics



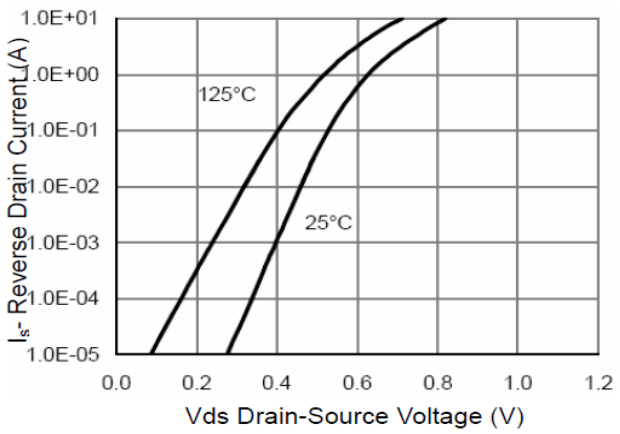
6. Capacitance vs. V_{DS}



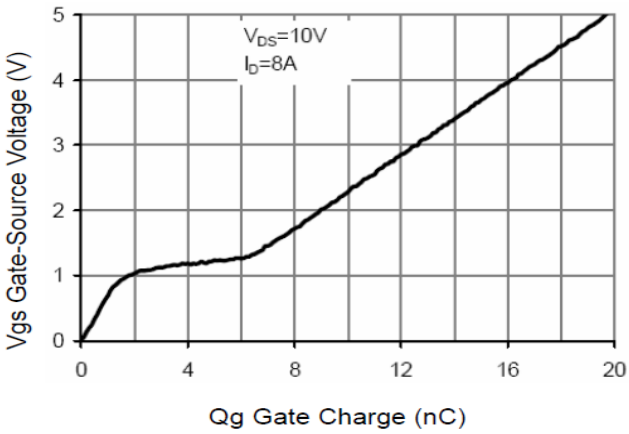
7. R_{DSON} vs. V_{GS}



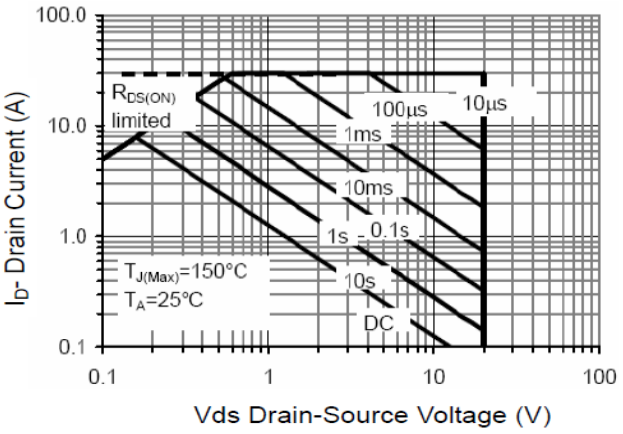
8. Source-Drain Diode Forward



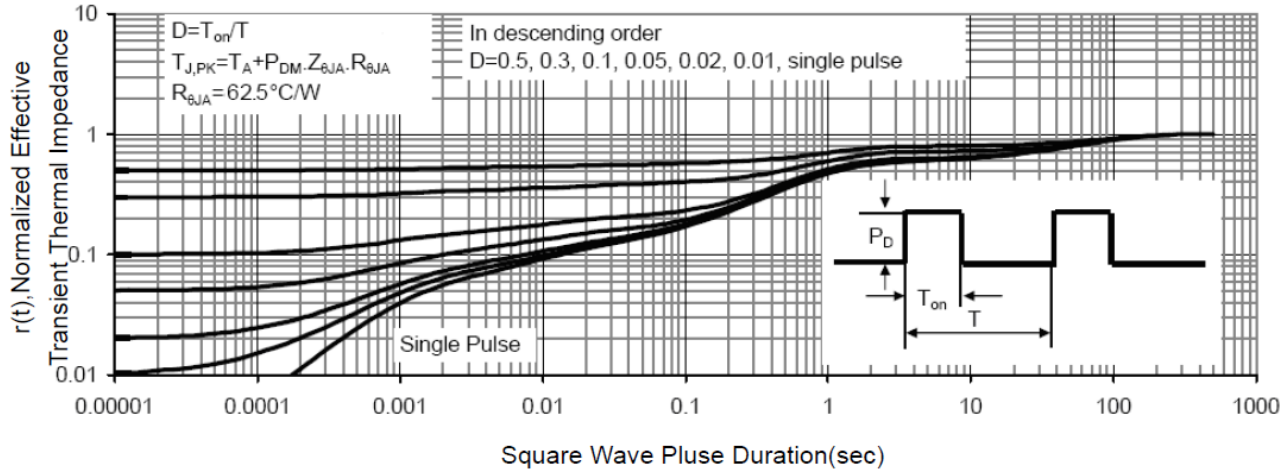
9. Gate Charge



10. Safe Operation Area

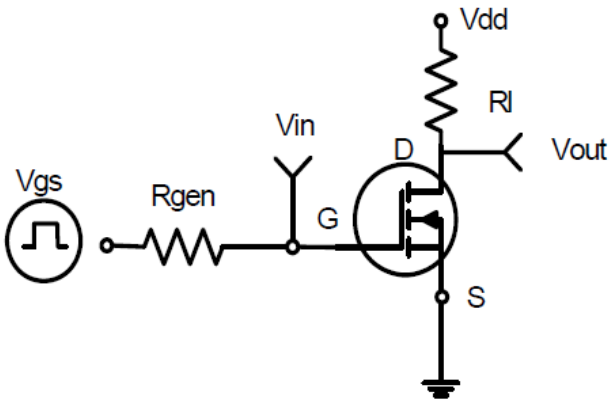


11. Normalized Maximum Transient Thermal Impedance

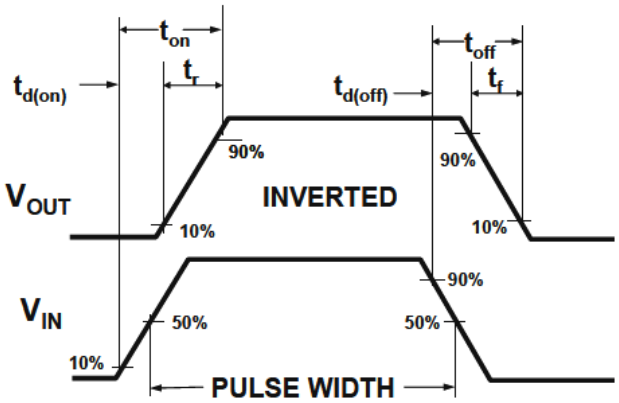


DETAILED INFORMATION

1. Switching Test Circuit

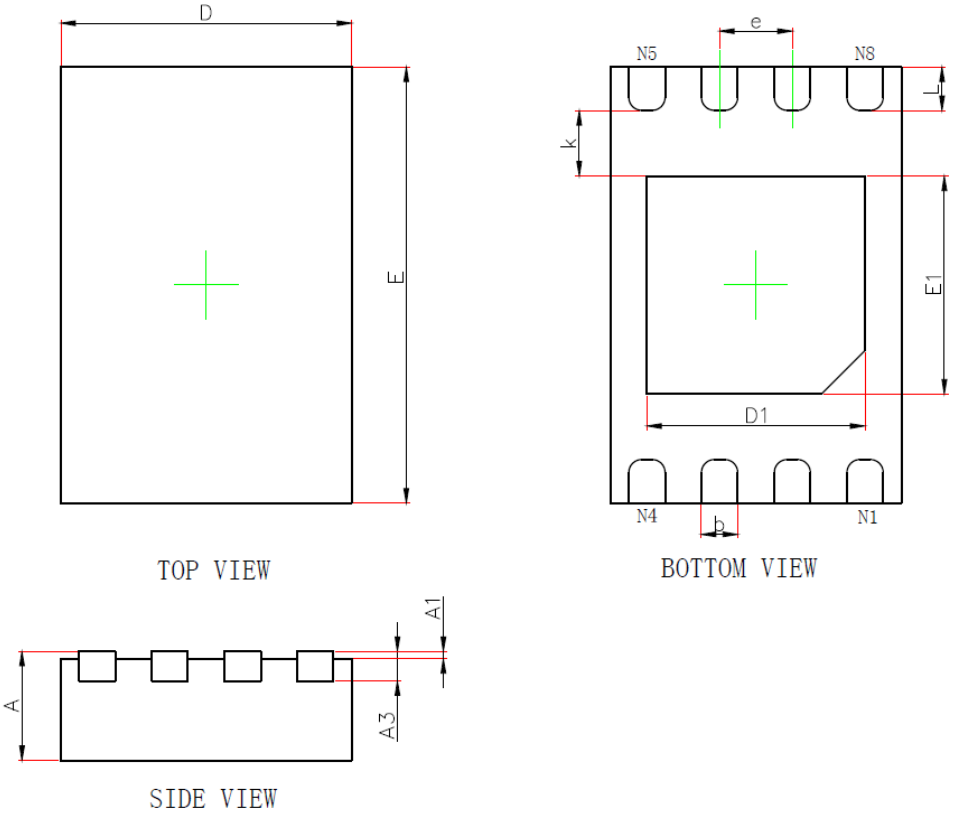


2. Switching Waveforms



PACKAGE INFORMATION

Dimension in DFN8 (Unit: mm)



Symbol	Min	Max
A	0.700/0.800	0.800/0.900
A1	0.000	0.050
A3	0.203(REF)	
D	1.924	2.076
E	2.924	3.076
D1	1.400	1.600
E1	1.400	1.600
k	0.200(MIN)	
b	0.200	0.300
e	0.500 (TYP.	
L	0.224	0.376

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