



DESCRIPTION

The AM8812 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 1.8V. This device is suitable for use as a load switch or in PWM applications. It is ESD protected.

AM8812 is available in TSSOP8 package.

ORDERING INFORMATION

Package Type	Part Number	
TSSOP8	TMX8	AM8812TMX8R
		AM8812TMX8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

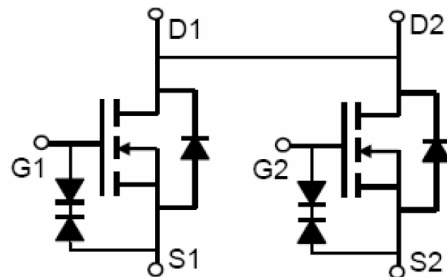
FEATURES

- $V_{DS}=20V, I_D=8A$,
Typ. $R_{DS(ON)} = 11m\Omega @ V_{GS} = 4.5V$
Typ. $R_{DS(ON)} = 15m\Omega @ V_{GS} = 2.5V$
ESD Rating: 2000V HBM
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package
- Available in TSSOP8 package.

APPLICATION

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

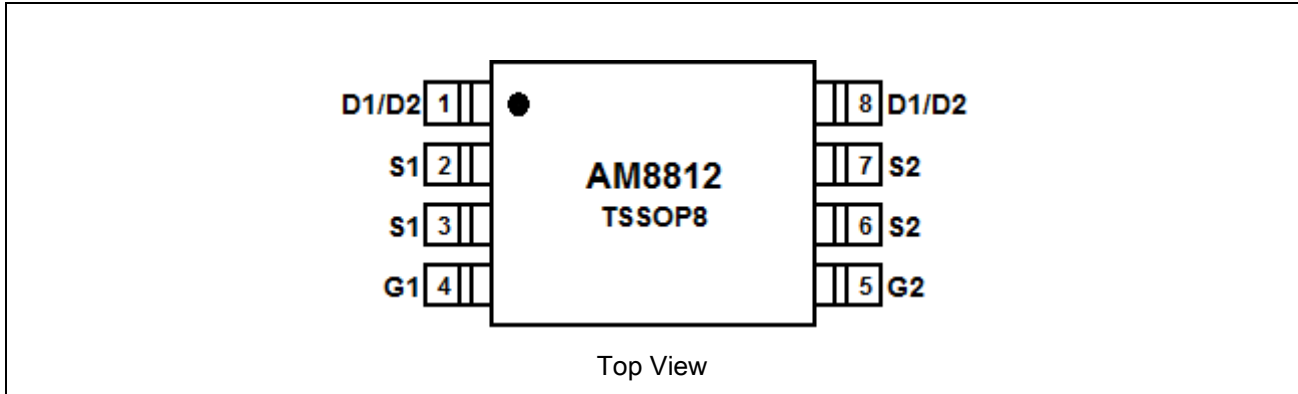
PIN DESCRIPTION



Schematic diagram



PIN DESCRIPTION



Pin #	Symbol	Function
1	D1/D2	Drain
2	S1	Source
3	S1	Source
4	G1	Gate
5	G2	Gate
6	S2	Source
7	S2	Source
8	D1/D2	Drain



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, 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°C~150°C

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 CHARACTERISTIC

Parameter	Symbol	Limit	Units
Thermal Resistance, Junction-to-Ambient ^{NOTE2}	R _{θJA}	62.5	°C/W



ELECTRICAL CHARACTERISTICS

T_A = 25°C, 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 NOTE 3						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =5A	-	11	15	mΩ
		V _{GS} =2.5V, I _D =4A	-	15	19	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =8A	-	15	-	S
Dynamic Characteristics NOTE 4						
Input Capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0V, f=1MHz	-	1800	-	pF
Output Capacitance	C _{OSS}		-	230	-	
Reverse Transfer Capacitance	C _{RSS}		-	200	-	
Switching Characteristics NOTE 4						
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	V _{SD}	V _{GS} =0V, I _S =1A	-	-	1.2	V
Diode Forward Current	I _S		-	-	7	A

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

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

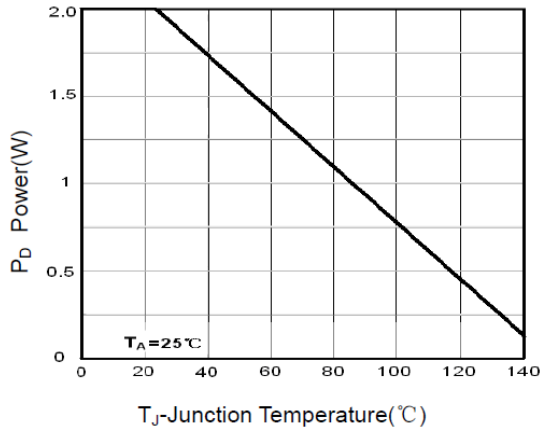
NOTE3: Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.

NOTE4: Guaranteed by design, not subject to production

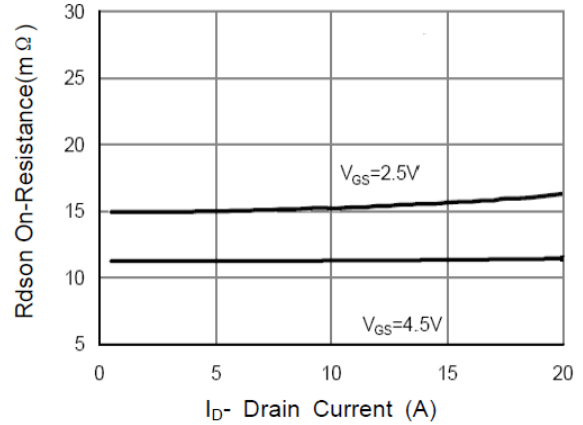


TYPICAL CHARACTERISTICS

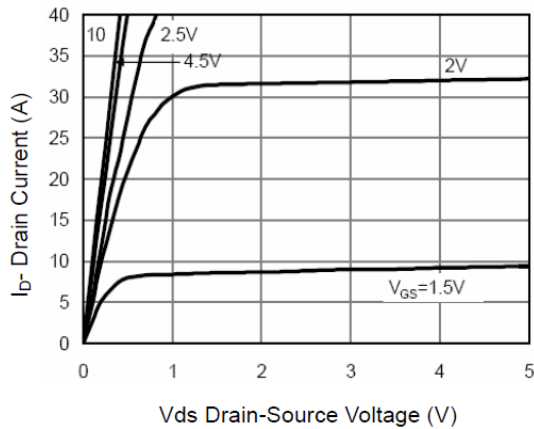
1. Power Dissipation



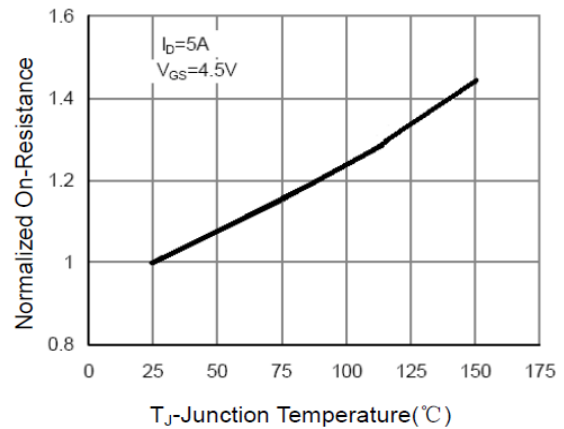
2. Drain-Source On-Resistance



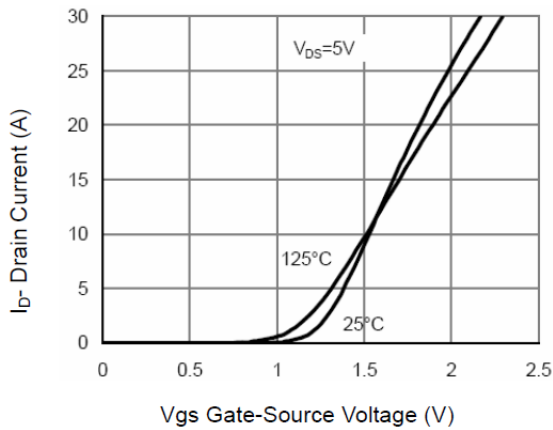
3. Output Characteristics



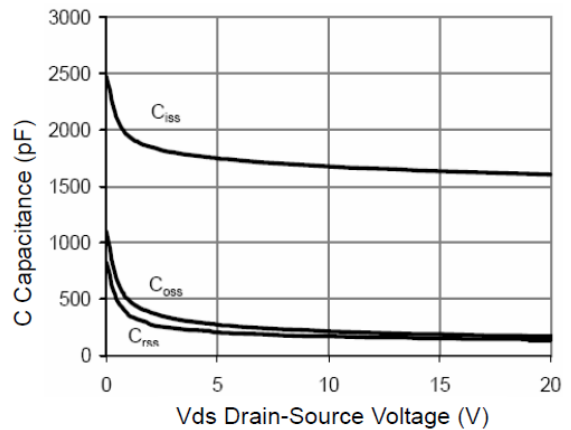
4. Drain-Source On-Resistance



5. Transfer Characteristics

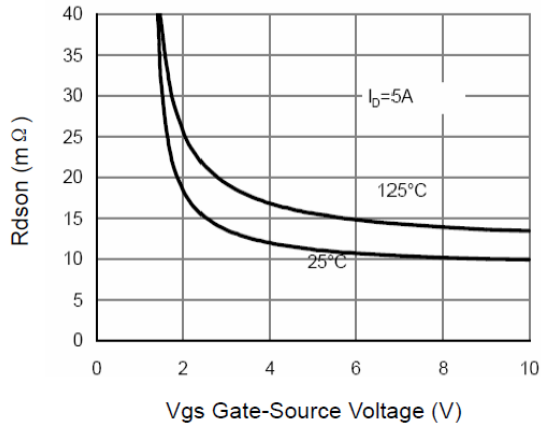


6. Capacitance vs. V_{DS}

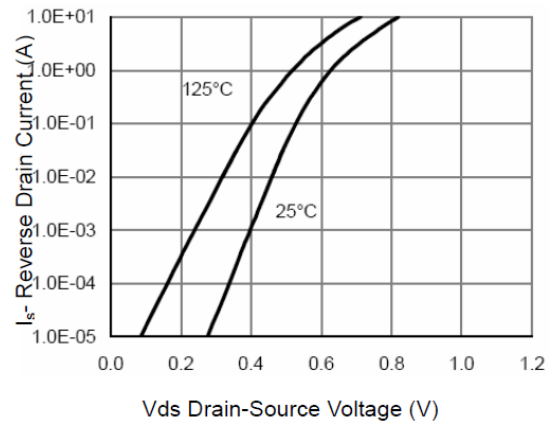




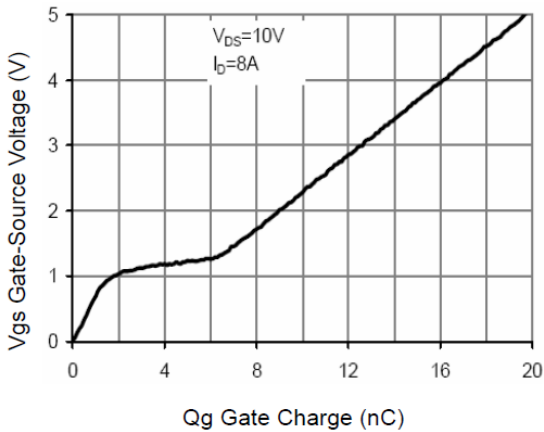
7. $R_{DS(on)}$ vs. V_{GS}



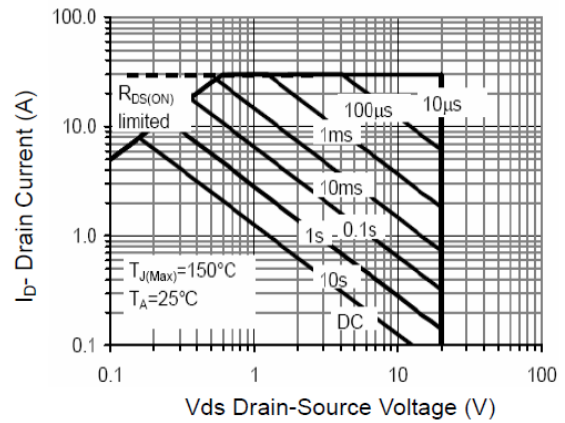
8. Capacitance vs. V_{DS}



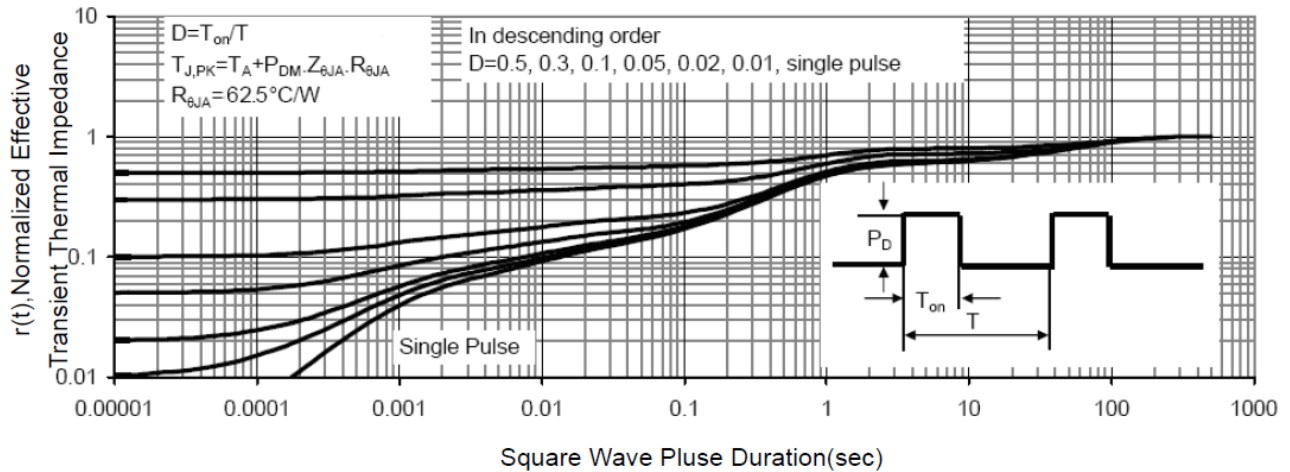
9. Gate Charge



10. Safe Operation Area



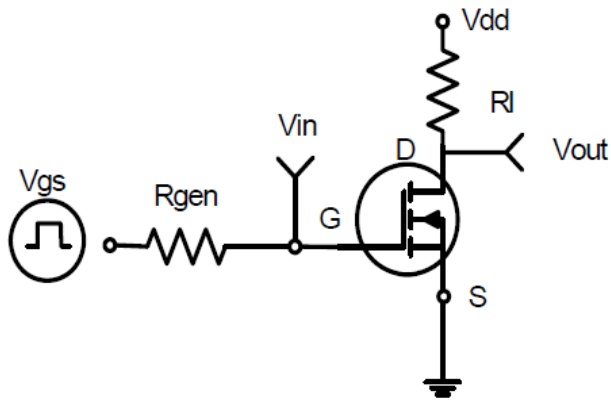
11. Normalized Maximum Transient Thermal Impedance



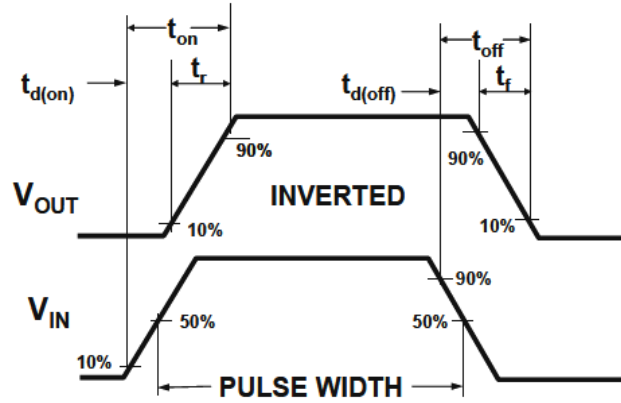


DETAILED INFORMATION

1. Switching Test Circuit



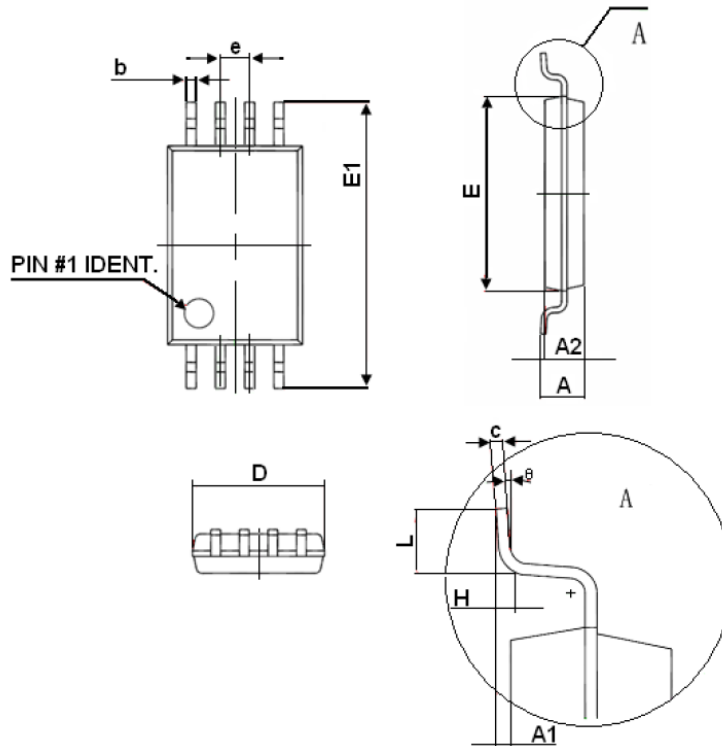
2. Switching Waveforms





PACKAGE INFORMATION

Dimension in TSSOP8 (Unit: mm)



Symbol	Min	Max
D	2.900	3.100
E	4.300	4.500
b	0.190	0.300
c	0.090	0.200
E1	6.250	6.550
A	-	1.100
A2	0.800	1.000
A1	0.020	0.150
e	0.650(BSC)	
L	0.500	0.700
H	0.250(TYP)	
θ	1°	7°



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