DESCRIPTION

The AM8820 is available in TSSOP8 Packages

FEATURES

- 20V/6A,
  $R_{DS(ON)}$= 20mΩ(typ.) @ V_{GS}= 10V
  $R_{DS(ON)}$= 23mΩ(typ.) @ V_{GS}= 4.5V
  $R_{DS(ON)}$= 27mΩ(typ.) @ V_{GS}= 3.1V
  $R_{DS(ON)}$= 30mΩ(typ.) @ V_{GS}= 2.5V
  $R_{DS(ON)}$= 42mΩ(typ.) @ V_{GS}= 1.8V
- Super High Dense Cell Design
- Reliable and Rugged
- ESD Protected
- Lead Free and Green Devices Available (RoHS Compliant)
- Available in TSSOP8 Packages.

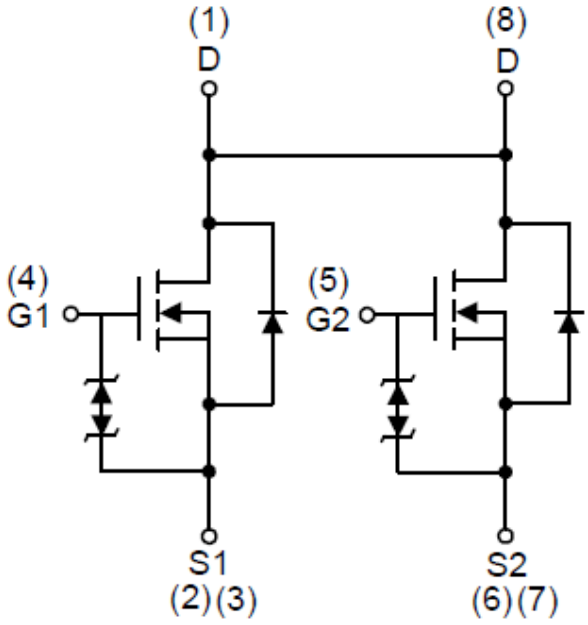
APPLICATION

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

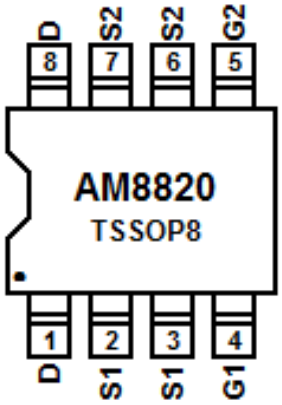
ORDERING INFORMATION

Package Type	Part Number	
TSSOP8	TMX8	AM8820TMX8R
		AM8820TMX8VR
Note	R: Tape & Reel V: Green Package	
AiT provides all Pb free products Suffix " V " means Green Package		

DUAL N-CHANNEL MOSFET



PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	D	Drain
2	S1	Source1
3	S1	Source1
4	G1	Gate1
5	G2	Gate2
6	S2	Source2
7	S2	Source2
8	D	Drain

ABSOLUTE MAXIMUM RATINGS

T_A = 25℃ Unless otherwise specified

V_{DSS}, Drain-Source Voltage		20V
V_{GSS}, Gate-Source Voltage		±12V
I_D, Continuous Drain Current	V_{GS}=10V	6A
I_{DM}, 300μs Pulsed Drain Current	V_{GS}=10V	20A
I_S, Diode Continuous Forward Current		1.5A
T_J, Maximum Junction Temperature		150℃
T_{STG}, Storage Temperature Range		-55 °Cto150℃
P_D, Maximum Power Dissipation	T_A=25℃	1.25W
	T_A=100℃	0.5W
$R_{\theta JA}$[Note1], Thermal Resistance-Junction to Ambient		100℃/W

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 is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1 : Surface Mounted on 1in² pad area, t ≤ 10sec.

ELECTRICAL CHARACTERISTICS

T_A = 25℃ Unless otherwise noted

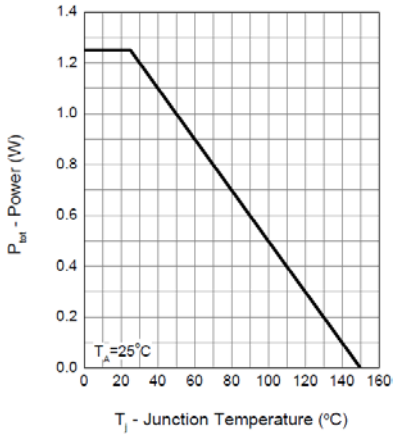
Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250μA	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V,V_{GS}=0V	-	-	1	μA
		V_{DS}=16V, V_{GS}=0V, T_J=85℃	-	-	30	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=250μA	0.4	0.7	1	V
Gate Leakage Current	I_{GSS}	V_{GS}=±10V, V_{DS}=0V	-	-	±10	μA
Drain-Source On-state Resistance	$R_{DS(ON)}$ Note2	V_{GS}=10V, I_{DS}=6A	16	20	27	mΩ
		V_{GS}=4.5V, I_{DS}=5A	19	23	30	
		V_{GS}=3.1V, I_{DS}=4A	22	27	35	
		V_{GS}=2.5V, I_{DS}=4A	25	30	39	
		V_{GS}=1.8V, I_{DS}=2A	32	42	55	
Diode Characteristics						
Diode Forward Voltage	V_{SD} Note2	I_{SD}=1.5A,V_{GS}=0V	-	0.7	1.3	V
Reverse Recovery Time	t_{rr}	I_{SD}=6A, dI_{SD}/dt=100A/μs	-	15	-	nS
Reverse Recovery Charge	Q_{rr}		-	7	-	nC
Dynamic Characteristics Note3						
Gate Resistance	R_G	V_{GS}=0V,V_{DS}=0V, F=1MHz	-	4	-	Ω
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, Frequency=1.0MHz	-	550	-	pF
Output Capacitance	C_{oss}		-	100	-	
Reverse Transfer Capacitance	C_{rss}		-	85	-	
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V, R_L=10Ω, I_{DS}=1A, V_{GEN}=4.5V, R_G=6Ω	-	5	10	ns
Turn-on Rise Time	t_r		-	15	26	
Turn-off Delay Time	$t_{d(off)}$		-	30	55	
Turn-off Fall Time	t_f		-	5	10	
Gate Charge Characteristics Note3						
Total Gate Charge	Q_g	V_{DS}=10V V_{GS}=4.5V I_{DS}=6A	-	8.8	12	nC
Gate-Source Charge	Q_{gs}		-	0.8	-	
Gate-Drain Charge	Q_{gd}		-	3.3	-	

NOTE2: Pulse test: pulse width ≦ 300μs, duty cycle ≦2%

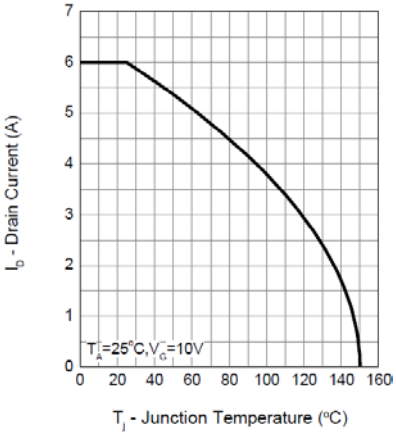
NOTE3: Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS

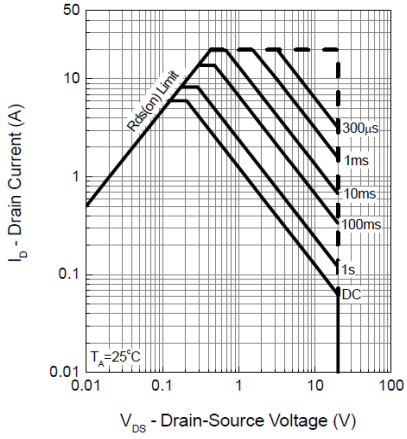
1. Power Dissipation



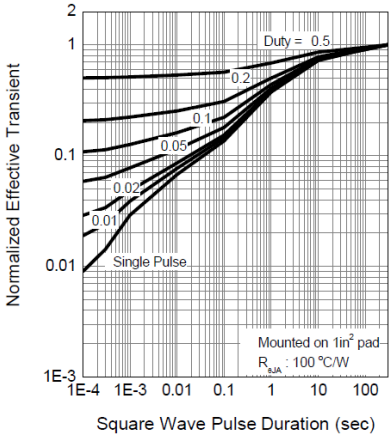
2. Drain Current



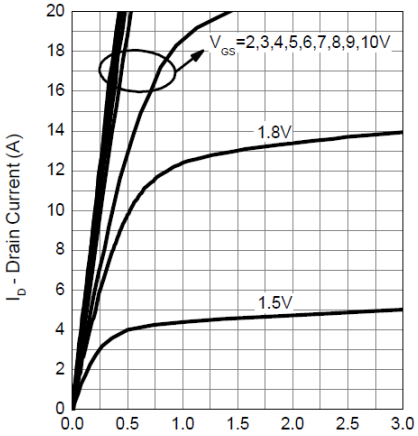
3. Safe Operation Area



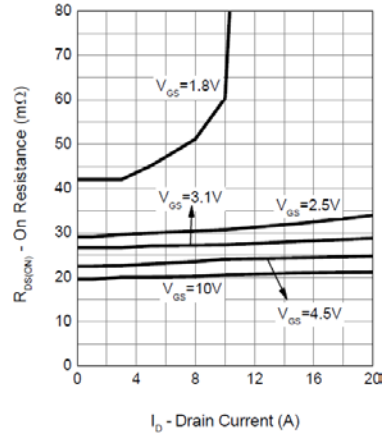
4. Thermal Transient Impedance



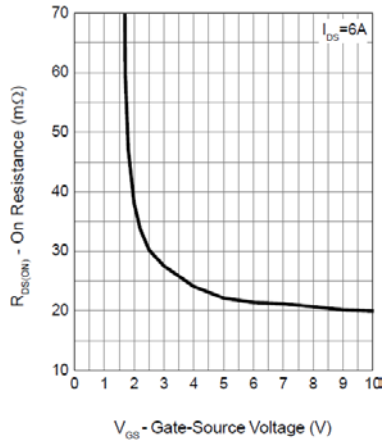
5. Output Characteristics



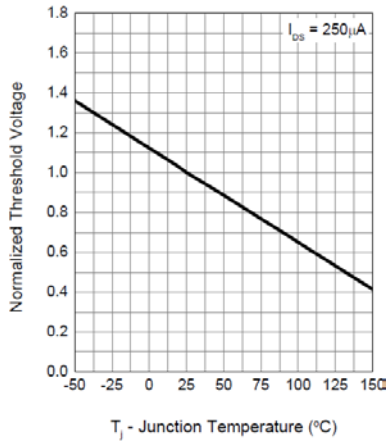
6. Drain-Source On Resistance



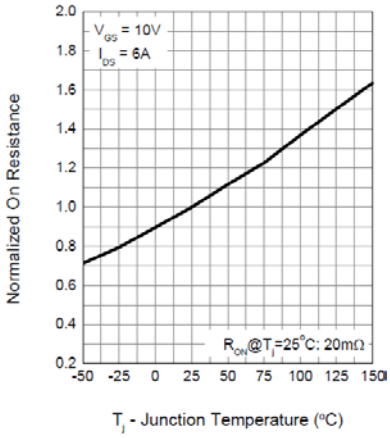
7. Gate-Source On Resistance



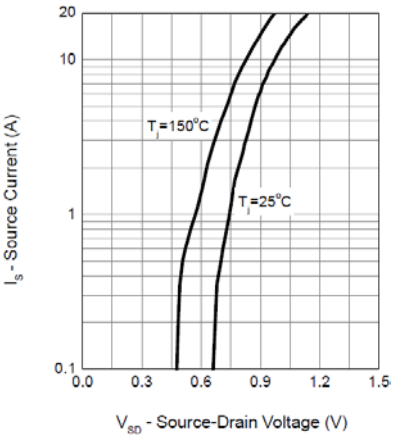
8. Gate Threshold Voltage



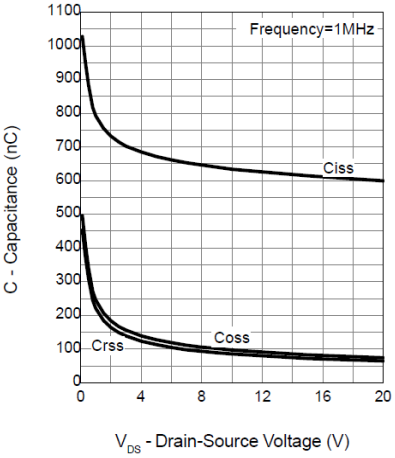
9. Drain-Source On Resistance



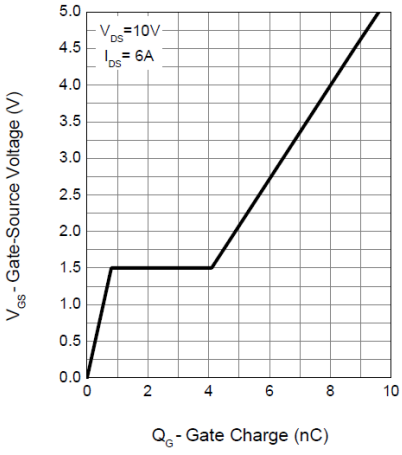
10. Source-Drain Diode Forward



11. Capacitance

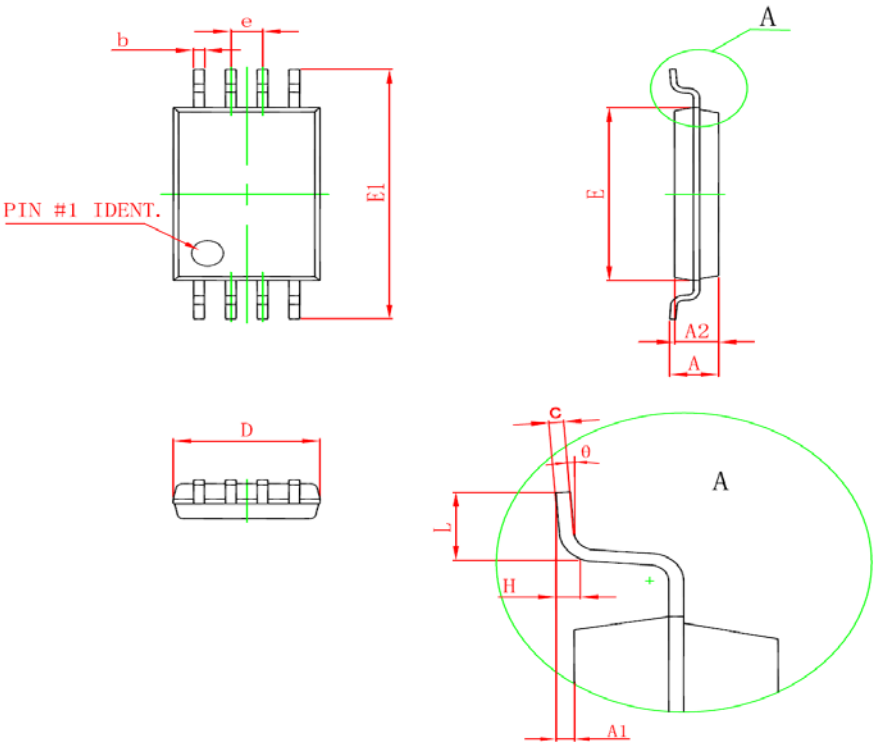


12. Gate Charge



PACKAGE INFORMATION

Dimension in TSSOP8 Package (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	0.65 (BSC)	
L	0.500	0.700
H	0.25(TYP)	
θ	1°	7°

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