DESCRIPTION

The AM6260 is available in DFN8(5x6) package.

FEATURES

- 60V/100A
  $R_{DS(ON)}$=2.3mΩ(max.)@V_{GS}=10V
  $R_{DS(ON)}$=3.4mΩ(max.)@V_{GS}=4.5V
- 100% UIS + R_g Tested
- Reliable and Rugged
- Available in DFN8(5x6) Package

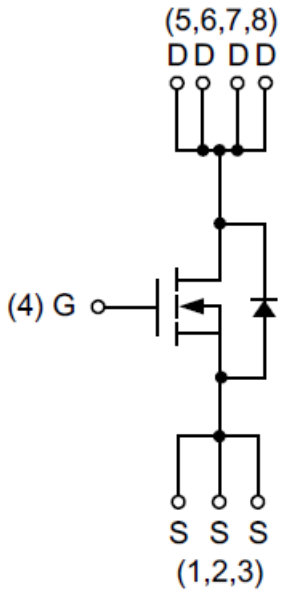
ORDERING INFORMATION

Package Type	Part Number	
DFN8(5x6) SPQ: 4,000pcs/Reel	J8	AM6260J8R
		AM6260J8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

APPLICATIONS

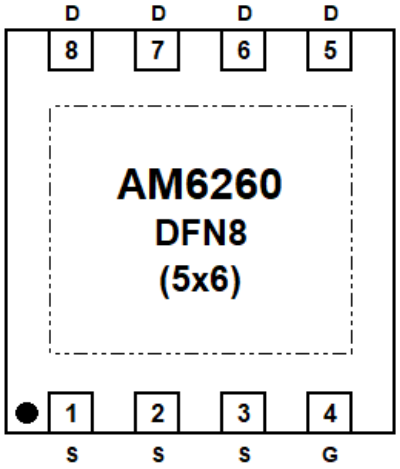
- Secondary Side Synchronous Rectification.
- DC-DC Converter.
- Motor Control.
- Load Switching.

TYPICAL APPLICATION



N-Channel MOSFET

PIN DESCRIPTION



Top View

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

ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise noted

V_{DSS}, Drain-Source Voltage		60V
V_{GSS}, Gate-Source Voltage		±20V
I_S, Diode Continuous Forward Current	T_C= 25°C	100A[NOTE1]
I_D, Continuous Drain Current	T_C = 25°C	100A[NOTE1]
	T_C= 100°C	100A[NOTE1]
I_{DM}, Pulsed Drain Current	T_C= 25°C	400A[NOTE2]
P_D, Maximum Power Dissipation	T_C = 25°C	250W
	T_C= 100°C	100W
$R_{\theta JC}$, Thermal Resistance-Junction to Case	Steady State	0.5°C/W
I_D, Continuous Drain Current	T_A = 25°C	21A
	T_A= 70°C	17A
P_D, Maximum Power Dissipation	T_A = 25°C	2.08W
	T_A= 70°C	1.33W
$R_{\theta JA}$, Thermal Resistance-Junction to Ambient[NOTE3]	Steady State	60°C/W
I_{AS}, Avalanche Current, Single pulse[NOTE4]	L=0.5mH	36A
E_{AS}, Avalanche Energy, Single pulse[NOTE4]	L=0.5mH	324mJ
T_J, Maximum Junction Temperature		150°C
T_{STG}, 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.

ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_{DS}=250μA	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=48V, V_{GS}=0V	-	-	1	μA
		T_J=85°C	-	-	30	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=250μA	1	2	3	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
Drain-source On-Resistance[NOTE5]	$R_{DS(ON)}$	V_{GS}=10V I_{DS}=25A	-	1.9	2.3	mΩ
		V_{GS}=4.5V, I_{DS}=25A	-	2.6	3.4	
Diode Characteristics						
Diode Forward Voltage[NOTE5]	V_{SD}	I_{SD}=20A, V_{GS}=0V	-	0.8	1.3	V
Reverse Recovery Time	t_{rr}	I_{SD}=25A,	-	50	-	ns
Reverse Recovery Charge	Q_{rr}	dI_{SD}/dt=100A/μs	-	72	-	nC
Dynamic Characteristics[NOTE6]						
Gate Resistance	R_G	V_{GS}=0V,V_{DS}=0V,f=1MHz	-	1.0	-	Ω
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=30V, f=1MHz	-	4950	6435	pF
Output Capacitance	C_{oss}		-	1000	-	
Reverse Transfer Capacitance	C_{rss}		-	130	-	
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V, R_L=30Ω, I_{DS}=1A, V_{GEN}=10V, R_G=6Ω	-	25	45	ns
Turn-on Rise Time	t_r		-	12	22	
Turn-off Delay Time	$t_{d(off)}$		-	90	162	
Turn-off Fall Time	t_f		-	100	180	
Gate Charge Characteristics[NOTE6]						
Total Gate Charge	Q_g	V_{DS}=30V, V_{GS}=4.5V, I_{DS}=25A	-	41	-	nC
Total Gate Charge	Q_g	V_{DS}=30V, V_{GS}=10V, I_{DS}=25A	-	87	122	
Gate-Source Charge	Q_{gs}		-	18	-	
Gate-Drain Charge	Q_{gd}		-	14	-	

NOTE1: Current limited by bonding wire.

NOTE2: Pulse width limited by max. junction temperature.

NOTE3: Surface Mounted on 1in² pad area.

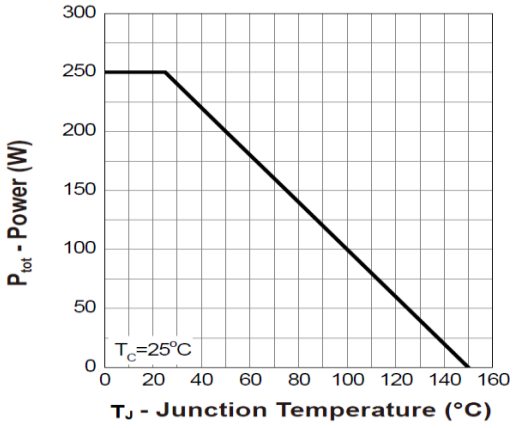
NOTE4: UIS tested and pulse width limited by maximum junction temperature 150oC (initial temperature T_J=25°C).

NOTE5: Pulse test ; pulse width≤300ms, duty cycle≤2%.

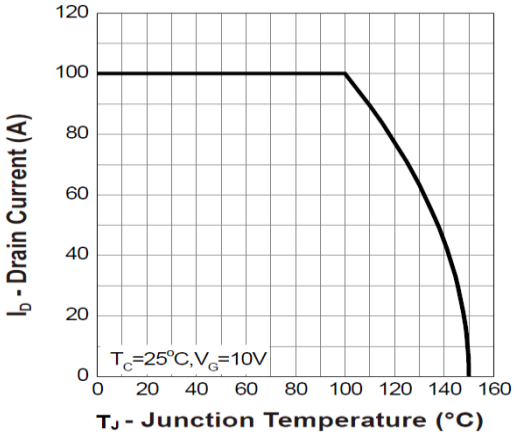
NOTE6: Guaranteed by design, not subject to production testing.

TYPICAL ELECTRICAL CHARACTERISTICS

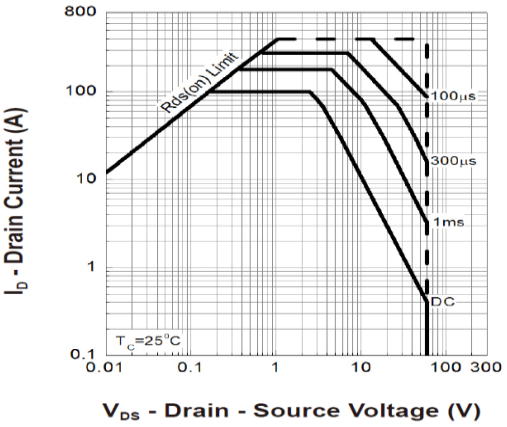
1. Power Dissipation



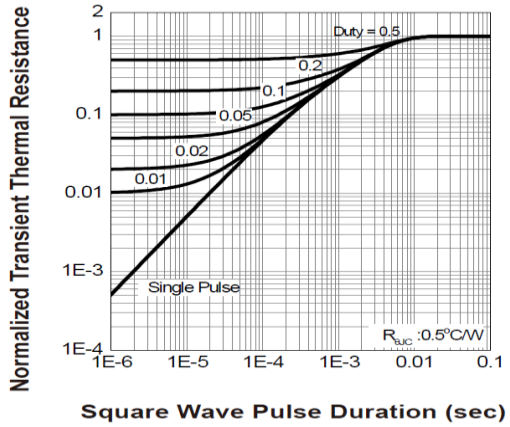
2. Drain Current



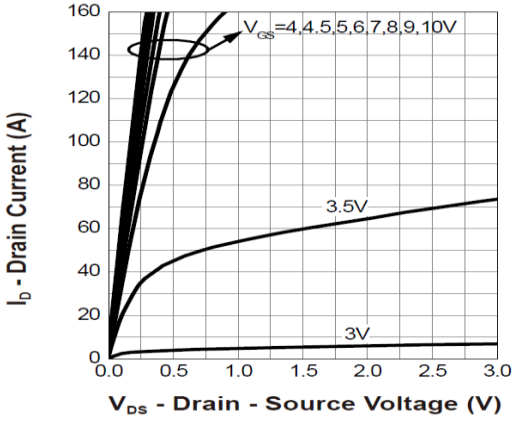
3. Safe Operation Area



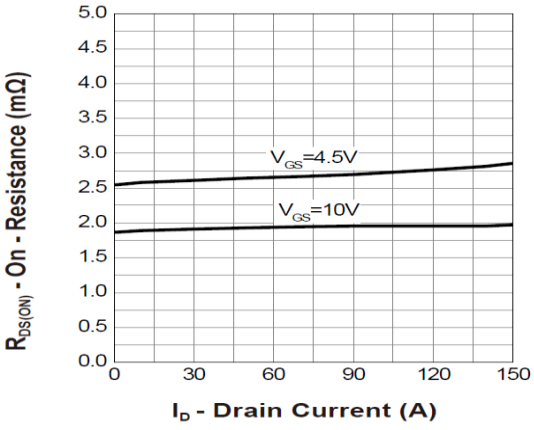
4. Thermal Transient Impedance



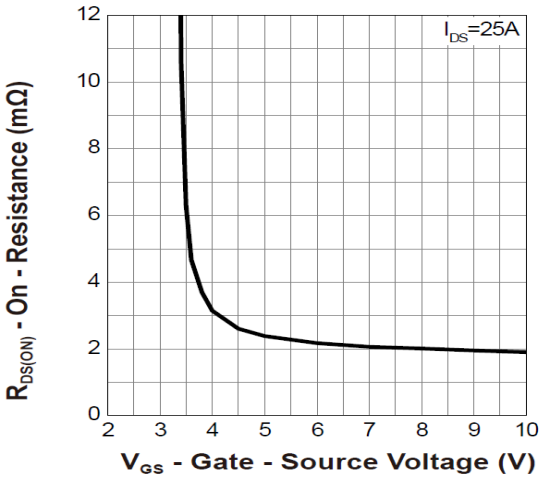
5. Output Characteristics



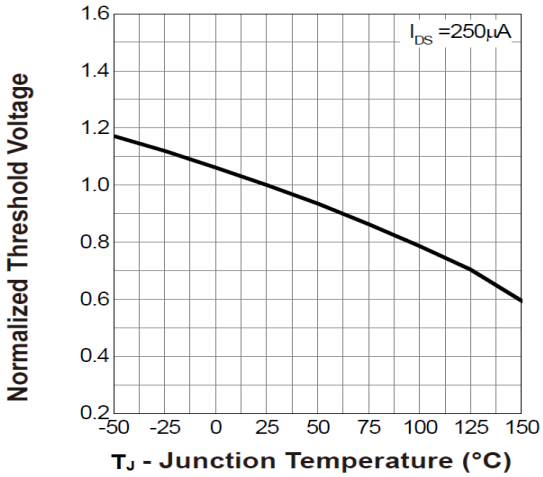
6. Drain-Source On Resistance



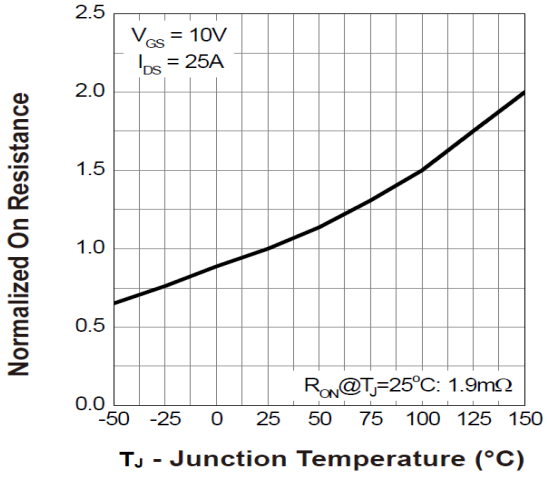
7. Gate-Source On Resistance



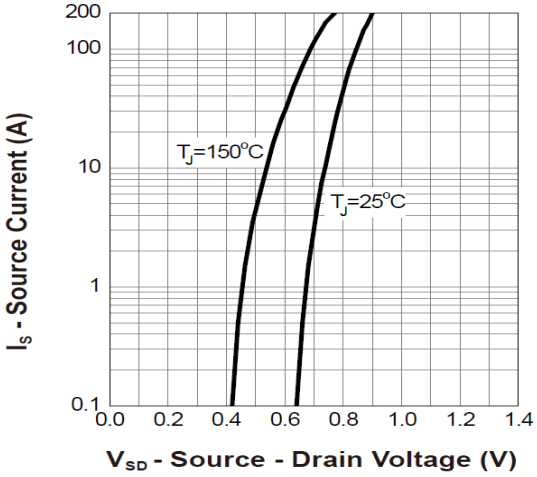
8. Gate Threshold Voltage



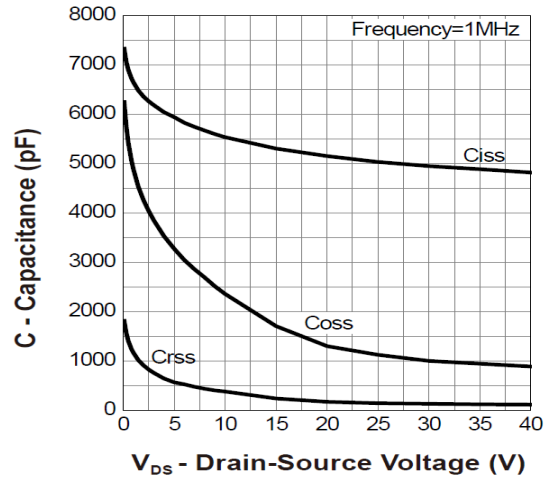
9. Drain-Source On Resistance



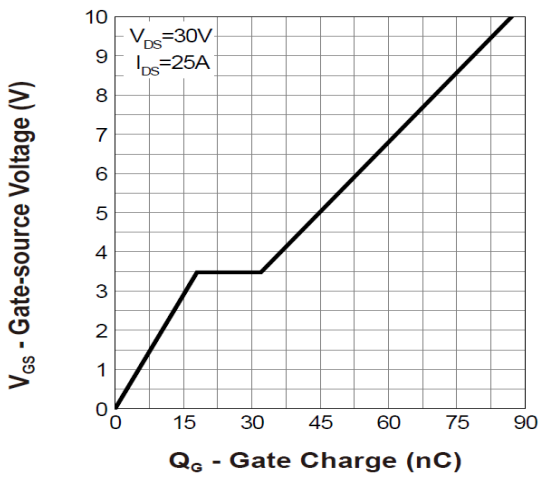
10. Source-Drain Diode Forward



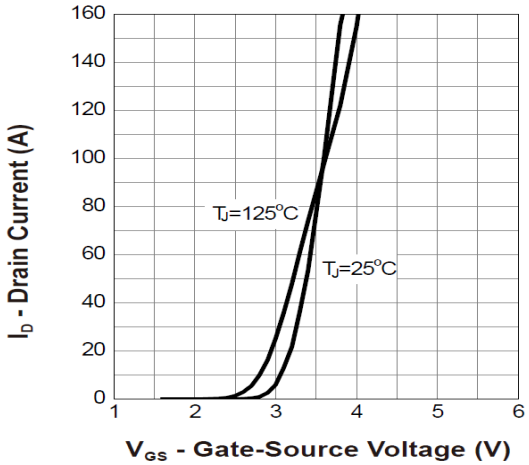
11. Capacitance



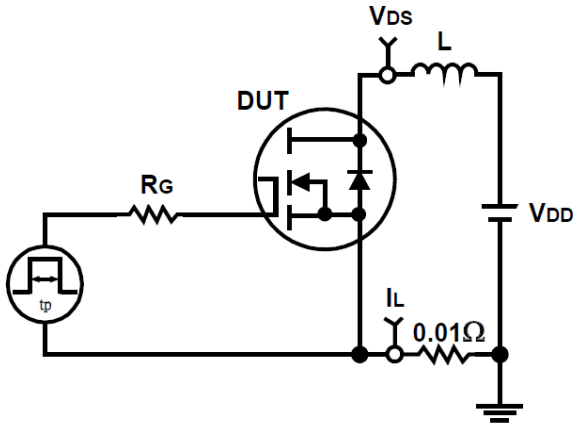
12. Gate Charge

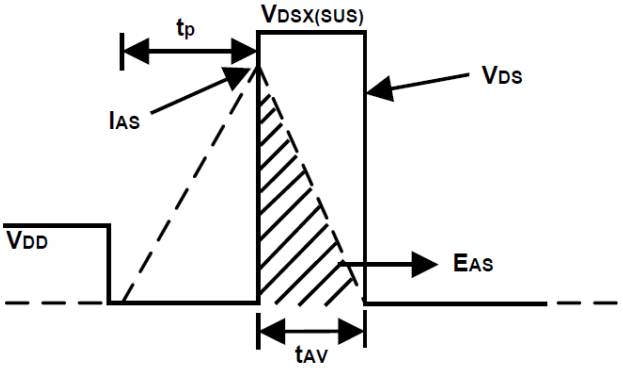


13. Transfer Characteristics

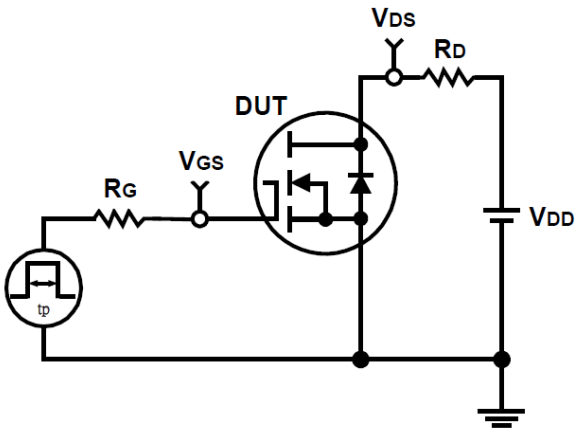


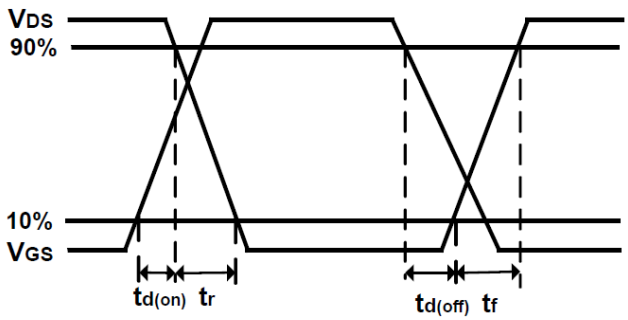
Avalanche Test Circuit and Waveforms





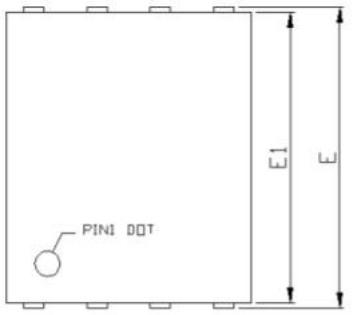
Switching Time Test Circuit and Waveforms



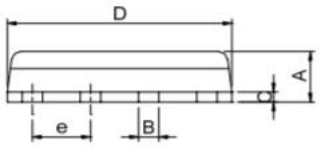


PACKAGE INFORMATION

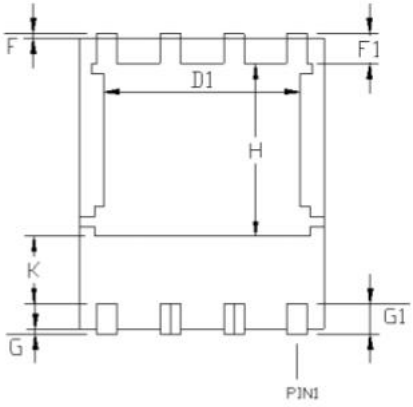
Dimension in DFN8 (Unit: mm)



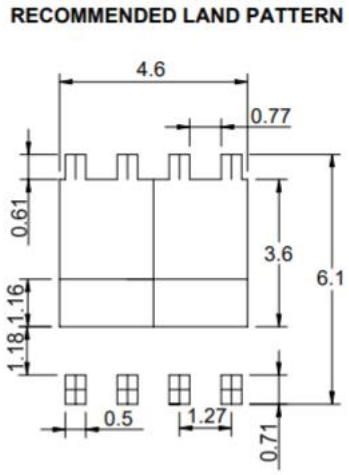
Top View



Side View



Bottom View



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.90	1.20	0.035	0.047
B	0.30	0.51	0.012	0.020
C	0.19	0.25	0.007	0.010
D	4.80	5.30	0.189	0.209
D1	3.60	4.40	0.141	0.173
E	5.90	6.20	0.232	0.244
E1	5.50	5.80	0.217	0.228
e	1.27BSC		0.050BSC	
F	0.05	0.30	0.002	0.012
F1	0.35	0.75	0.014	0.030
G	0.05	0.30	0.002	0.012
G1	0.35	0.75	0.014	0.030
H	3.34	3.90	0.131	0.154
K	0.762	-	0.030	-

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