DESCRIPTION

The AM65N07PJ is available in PDFN8(5x6) package.

BVDSS	RDSON	ID
68V	7mΩ	64A

Application

- Motor Control
- Battery Management System
- Power Management
- Rectifier

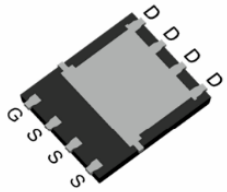
ORDERING INFORMATION

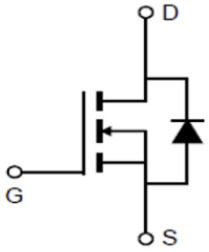
Package Type	Part Number	
PDFN8(5x6) SPQ:4,000pcs/Reel	PJ8	AM65N07PJ8R
Note	R: Tape & Reel	
AiT provides all RoHS products		

FEATURES

- 68V, 64A
  $R_{DS(ON)}$ Typ = 7mΩ @ V_{GS} = 10V
- Low reverse transfer capacitances
- ΔVDS test
- 100% single pulse avalanche energy test

PIN DESCRIPTION





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

ABSOLUTE MAXIMUM RATINGS

TC= 25°C, unless otherwise specified.

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	68	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	T_A= 25°C	I_D	64	A
	T_A= 100°C		41	
Pulsed Drain Current		I_{DM}	256	
Single Pulse Avalanche Energy		E_{AS}	272	mJ
Power Dissipation	T_C= 25°C	P_D	66	W
	T_A= 25°C		1.7	W
Operation Junction and Storage Temperature Range		T_J, T_{STG}	-55 ~ 150	°C
Thermal Resistance, Junction-to-ambient[1]		$R_{\theta JA}$	75	°C/W
Thermal Resistance, Junction-to-case[1]		$R_{\theta JC}$	1.9	°C/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 are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

TJ = 25°C, unless otherwise specified.

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	68	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V,	-	-	1.0	μA
Gate to Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	3.0	4.0	V
Static Drain-Source on-Resistance note3	$R_{DS(on)}$	V_{GS}=10V, I_D=30A	-	7	8	mΩ
Transconductance	G_{fs}	V_{DS}=5V, I_D=30A	-	36	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=35V, V_{GS}=0V, f=1.0MHz	-	2859	-	pF
Output Capacitance	C_{oss}		-	193	-	pF
Reverse Transfer Capacitance	C_{rss}		-	160	-	pF
Total Gate Charge	Q_g	V_{DS}=35V, I_D=30A, V_{GS}=10V	-	59	-	nC
Gate-Source Charge	Q_{gs}		-	17	-	nC
Gate-Drain(“Miller”) Charge	Q_{gd}		-	19	-	nC
Gate plateau voltage	$V_{plateau}$		-	5.8	-	V
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=35V, R_G=3Ω, V_{GS}=10V	-	13	-	ns
Turn-on Rise Time	t_r		-	28	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	34	-	ns
Turn-off Fall Time	t_f		-	11	-	ns
Gate resistance	R_G	V_{GS}=0V, V_{DS}=0V, f=1MHz	-	1.4	-	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I_S	-	-	-	64	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=30A	-	-	1.2	V
Body Diode Reverse Recovery Time	T_{rr}	I_F=30A, dI/dt=100A/μs	-	29	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	21	-	nC

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Maximum Continuous Drain Current vs. Drain-Source Voltage

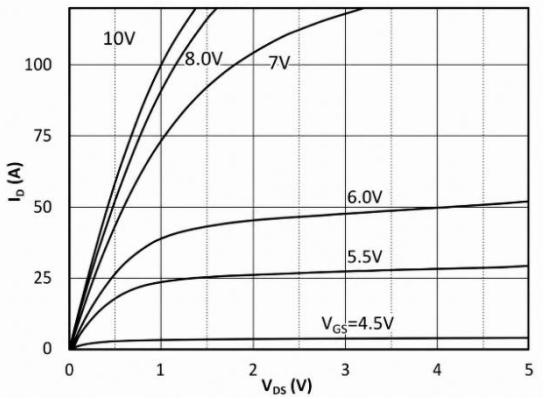


Fig 2. Maximum Continuous Drain Current vs. Gate-Source Voltage

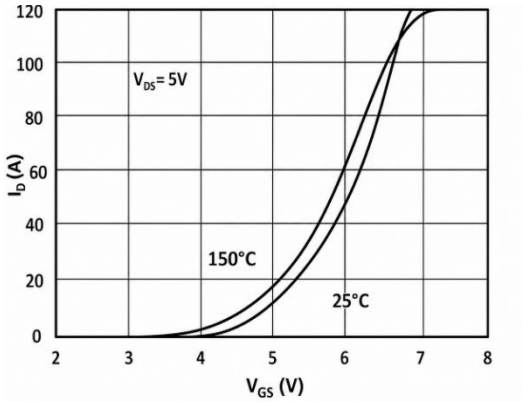


Fig 3. Static Drain-Source On-Resistance vs. Continuous Drain Current

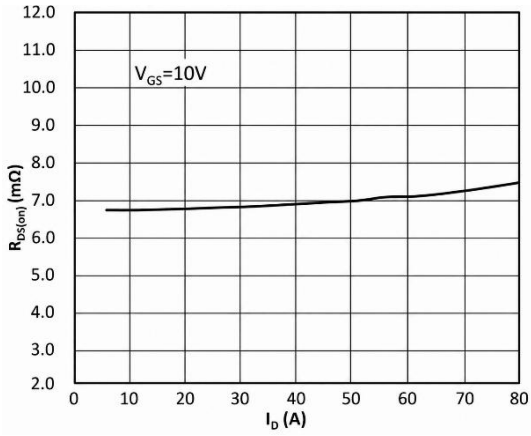


Fig 4. Static Drain-Source On-Resistance vs. Gate-Source Voltage

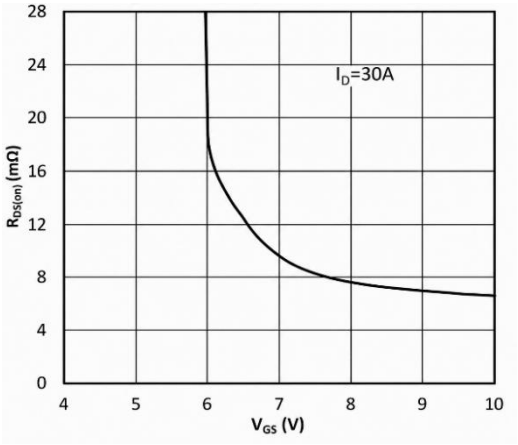


Fig 5. Static Drain-Source On-Resistance vs. Junction Temperature

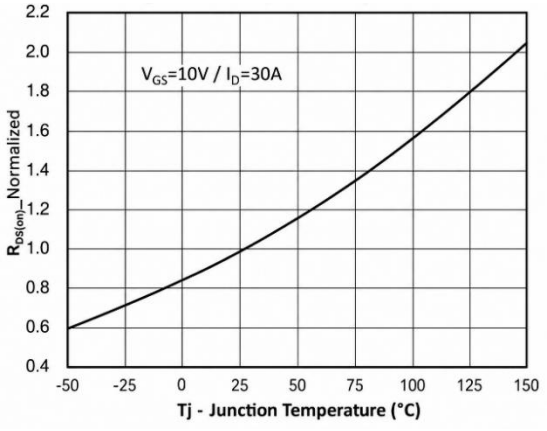


Fig 6. Capacitance vs. Drain-Source Voltage

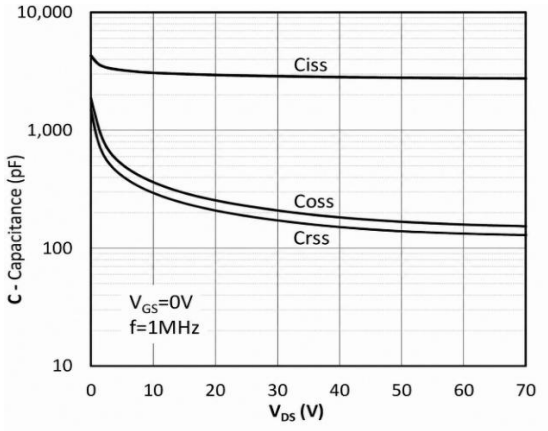


Fig 8. Diode Forward Current

Fig 7. Gate-Source Voltage vs Total Gate Charge

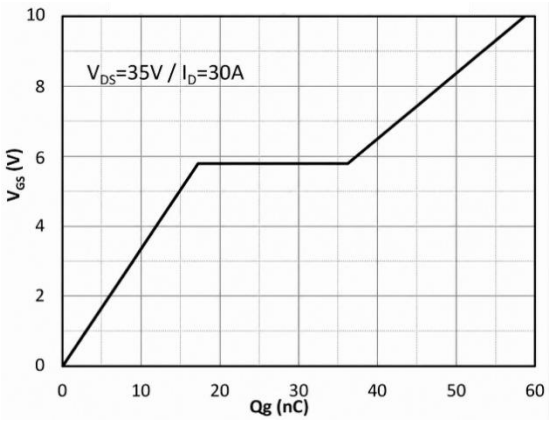


Fig 9. Total Power Dissipation vs. Case Temperature

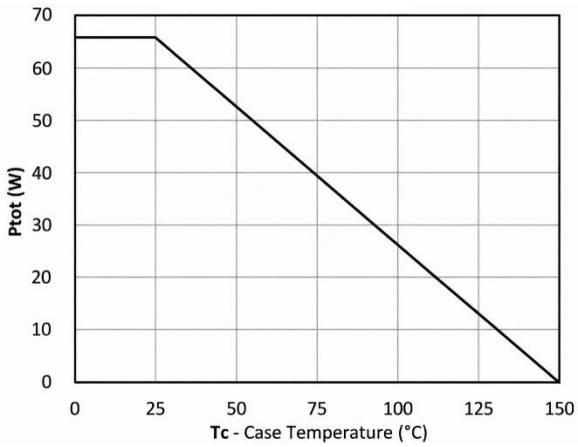
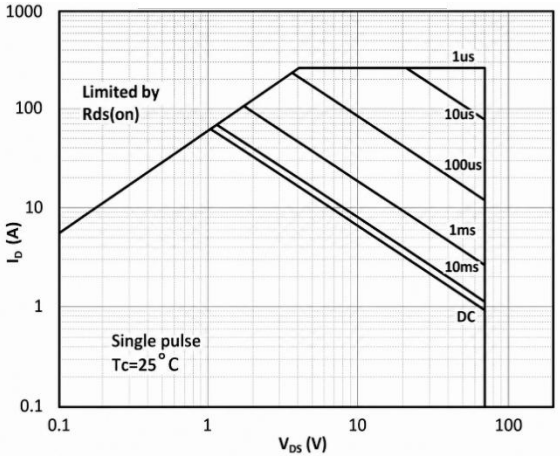


Fig 11. Maximum Continuous Drain Current vs. Drain-Source Voltage



vs. Drain to Source Diode Forward Voltage

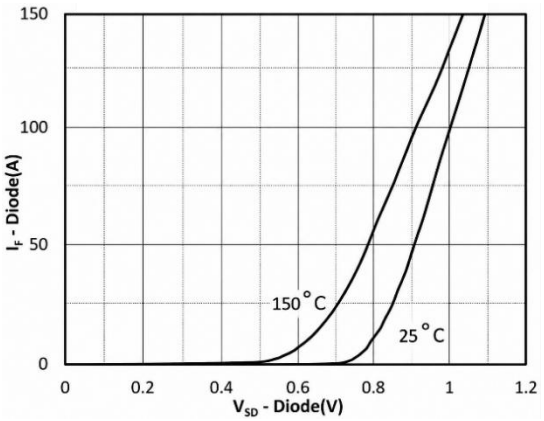


Fig 10. Maximum Continuous Drain Current vs. Case Temperature

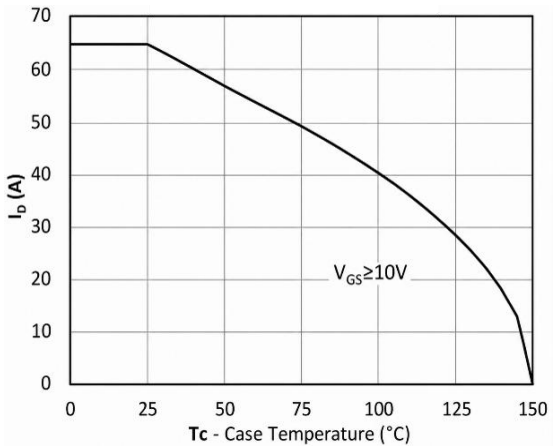
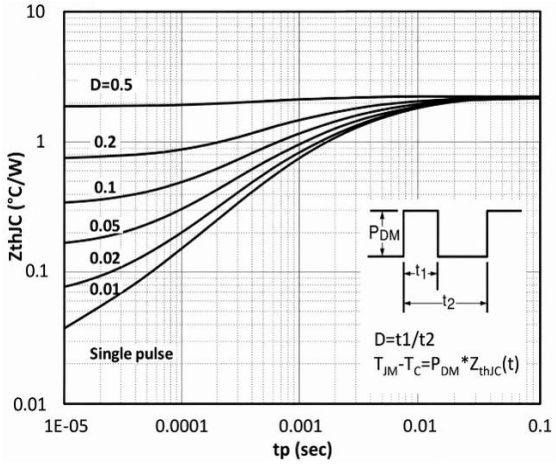
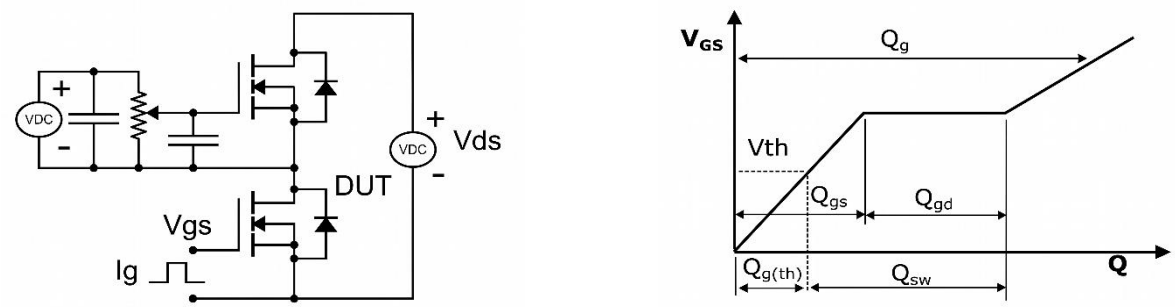


Fig 12. Transient Thermal Impedance vs. Pulse Time(sec)

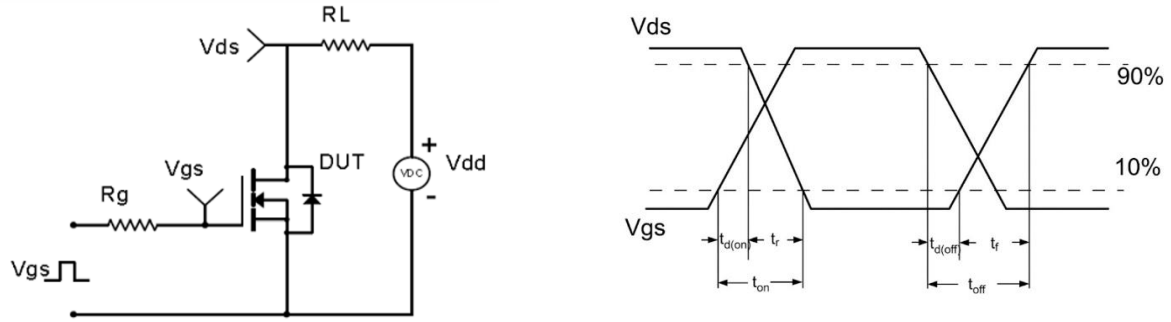


Test Circuit & Waveform

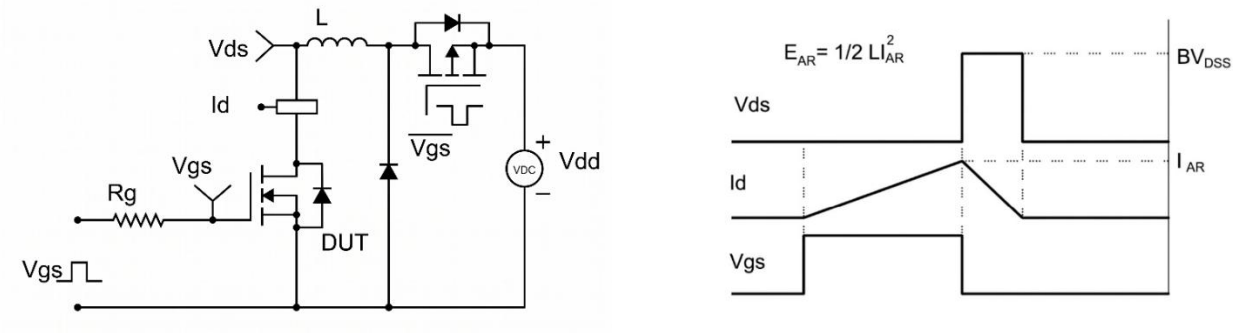
Gate Charge Test Circuit & Waveform



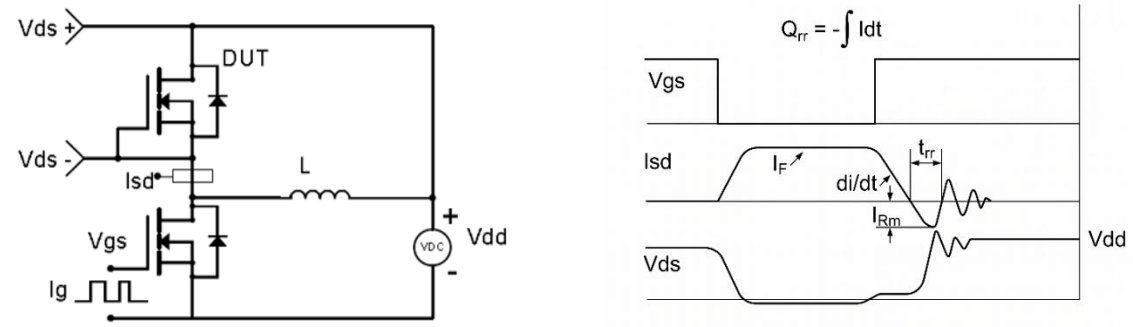
MOSFET Switching Test Circuit & Waveform



EAS Test Circuit & Waveform

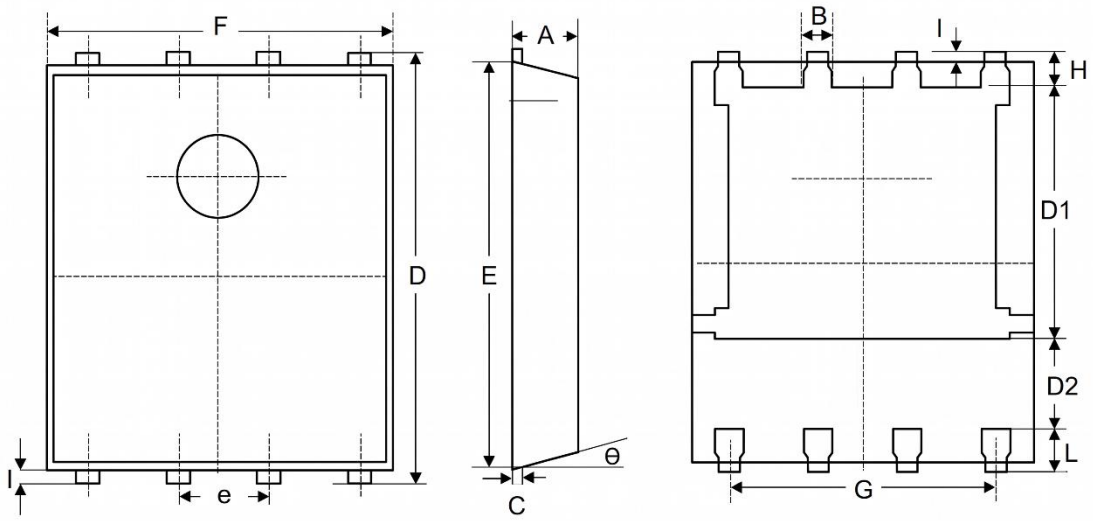


Diode Recovery Test Circuit & Waveform



PACKAGE INFORMATION

Dimension in PDFN8(5x6) (Unit: mm):



Symbol	Millimeters	
	Min	Max
A	0.900	1.100
B	0.330	0.510
C	0.200	0.300
D	5.900	6.100
D1	3.380	3.780
D2	1.100	-
E	5.700	5.800
e	1.270 BSC	
F	4.800	5.000
G	0.361	0.396
H	0.410	0.610
I	0.060	0.200
L	0.510	0.710
θ	0°	12°

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