

**DESCRIPTION**

The AM85N10PJ is available in PDFN8(5x6) Package.

V _{DS}	R _{DS(ON)}	I _D
100V	6.5mΩ	85A

APPLICATION

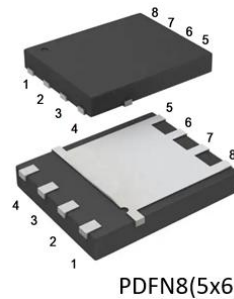
- Synchronous Rectification for AC/DC Quick Charger
- Battery Management
- UPS

ORDERING INFORMATION

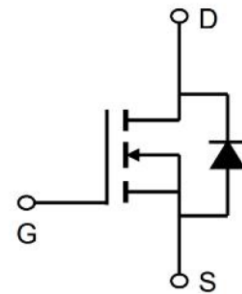
Package Type	Part Number	
PDFN8(5x6) SPQ: 5,000pcs/Reel	PJ8	AM85N10PJ8VR
Note	R: Tape & Reel	
AiT provides all RoHS products		

FEATURE

- Extremely low on-resistance R_{DS(on)}
- Excellent Q_gxR_{DS(on)}
- Excellent Low Ciss

PIN DESCRIPTION

PDFN8(5x6)



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

ABSOLUTE MAXIMUM RATINGS

T_C=25°C, unless otherwise Noted

V _{DS} , Drain-Source Voltage		100V
I _D , Continue Drain Current	T _C = 25°C (Silicon limit)	85A
	T _C = 25°C (Package limit)	100A
	T _C = 100°C (Silicon limit)	54A
	T _A = 25°C	13A
I _{D pulse} , Pulsed Drain Current (T _C = 25°C, t _p =100uS)		340A
E _{AS} , Avalanche Energy, Single Pulse (L=0.5mh, V _{DS} =50V)		64mJ
V _{GS} , Gate-Source Voltage		±20V
P _D , Power Dissipation	T _C = 25°C	105W
	T _A = 25°C	2.5W
T _J , T _{STG} Operating Junction And Storage Temperature		55°C~+150°C
T _L , Soldering Temperature, Wave Soldering Only Allowed At Leads (1.6mm from case for 10s)		260°C

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.



*Pulse test 300us pulse width, 2% duty cycle.

ELECTRICAL CHARACTERISTICST_J = 25°C, unless otherwise Noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} =0V, I _D =250μA	100	-	-	V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2	-	4	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} =0V T _J =25°C T _J =150°C	- -	0.02	1 100	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	±10-	±100	nA
Drain-Source On- State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =40A		6.5	8.0	mΩ
Transconductance	g _{fs}	V _{DS} =5V, I _D =40A		45		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f=1MHz	-	2042	-	pF
Output Capacitance	C _{oss}		-	1002	-	
Reverse Transfer Capacitance	C _{rss}		-	75	-	
Gate Total Charge	Q _g	V _{DS} = 50V, I _D =40A, V _{GS} =10V	-	37	-	nC
Gate-Source charge	Q _{gs}		-	13	-	
Gate-Drain charge	Q _{gd}		-	3	-	
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =50V, R _{G_ext} =10Ω, I _D =13A	-	22	-	ns
Rise Time	t _r		-	2	-	
Turn-Off Delay Time	t _{d(off)}		-	44	-	
Fall Time	t _f		-	5	-	
Gate Resistance	R _G	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.5		Ω
Body Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =40A	-	0.9	1.2	V
Body Diode Continuous Forward Current	I _S	TC = 25°C	-	-	85	A
Body Diode Pulsed Current	I _S pulse	TC = 25°C			340	
Body Diode Reverse Recovery Time	t _{rr}	I _F =1A, dI/dt=100A/μs	-	62	-	ns
Body Diode Reverse Recovery Charge	Q _{rr}		-	129	-	nC



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

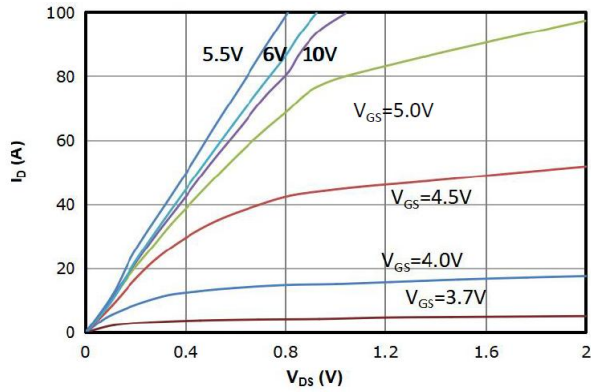


Fig 2. Transfer Characteristics

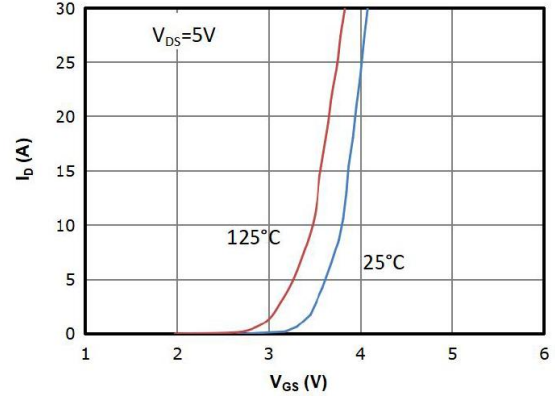


Fig 3. $R_{DS(on)}$ vs Drain Current and Gate Voltage

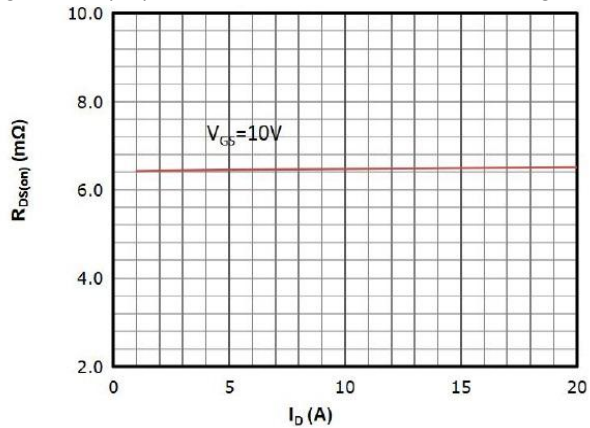


Fig 4. $R_{DS(on)}$ vs Gate Voltage

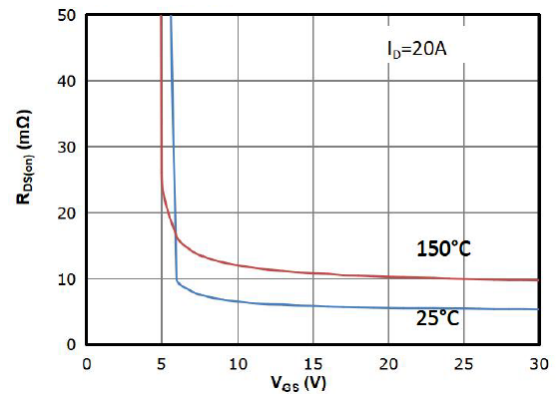


Fig 5. $R_{DS(on)}$ vs. Temperature

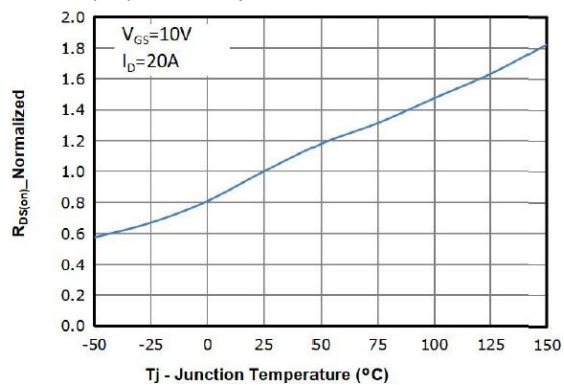


Fig 6. $V_{GS(th)}$ vs. Temperature

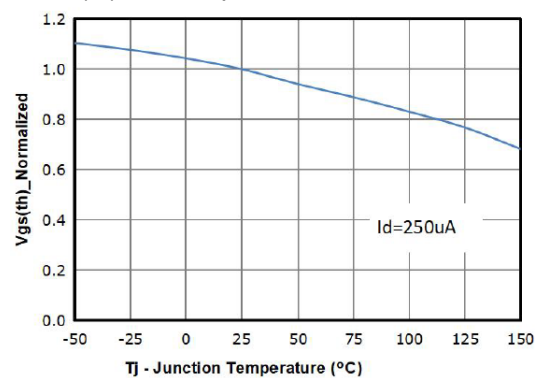




Fig 7: V_{DS} vs. Temperature

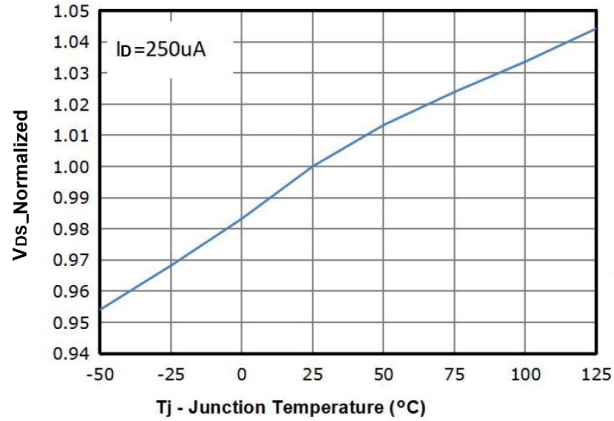


Fig 8: Capacitance Characteristics

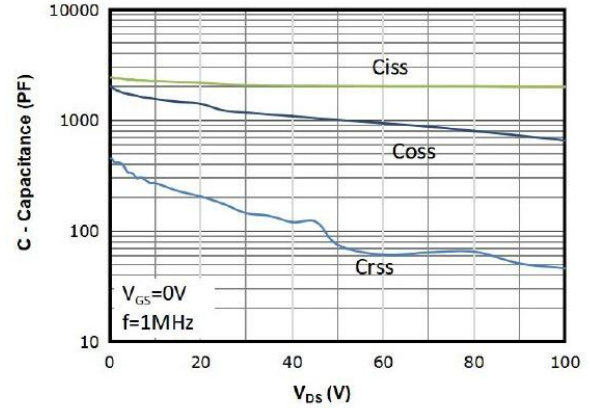


Fig 9: Gate Charge Characteristics

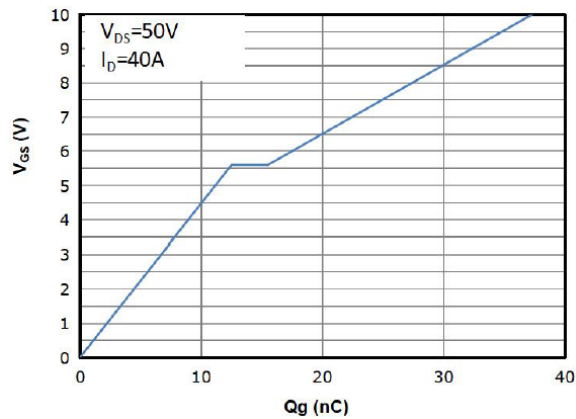


Fig 10: Body-diode Forward Characteristics

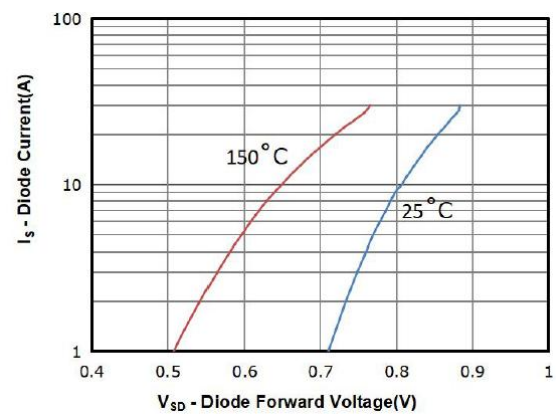


Fig 11: Power Dissipation

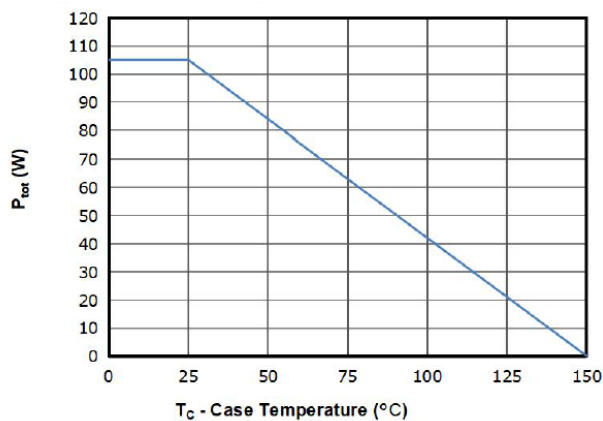


Fig 12: Drain Current Derating

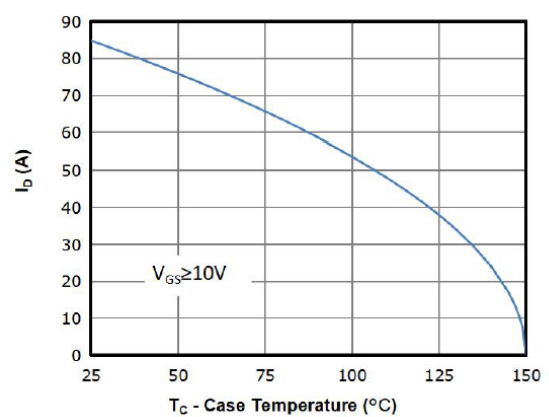




Fig 13. Safe Operating Area

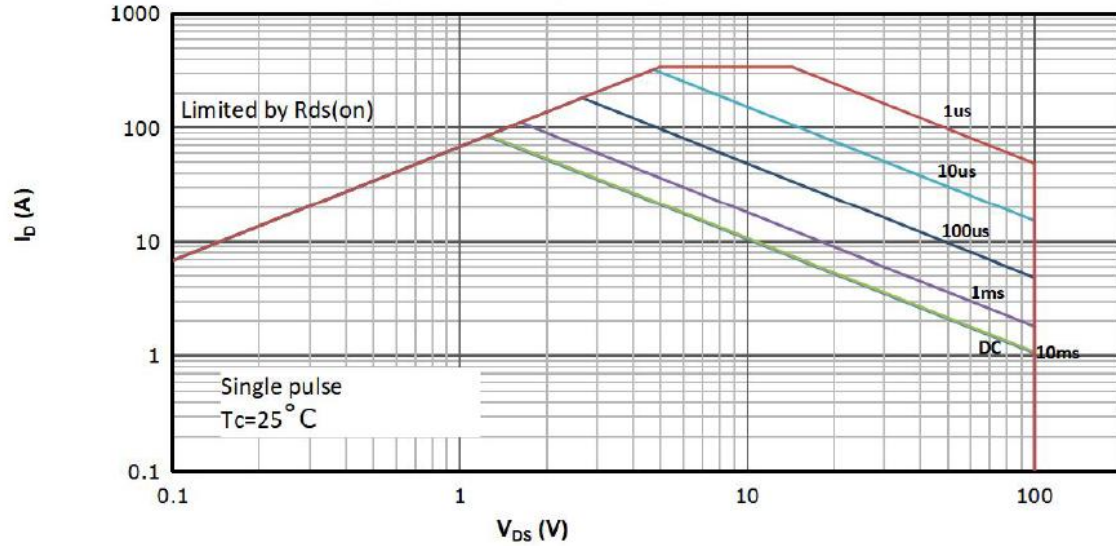
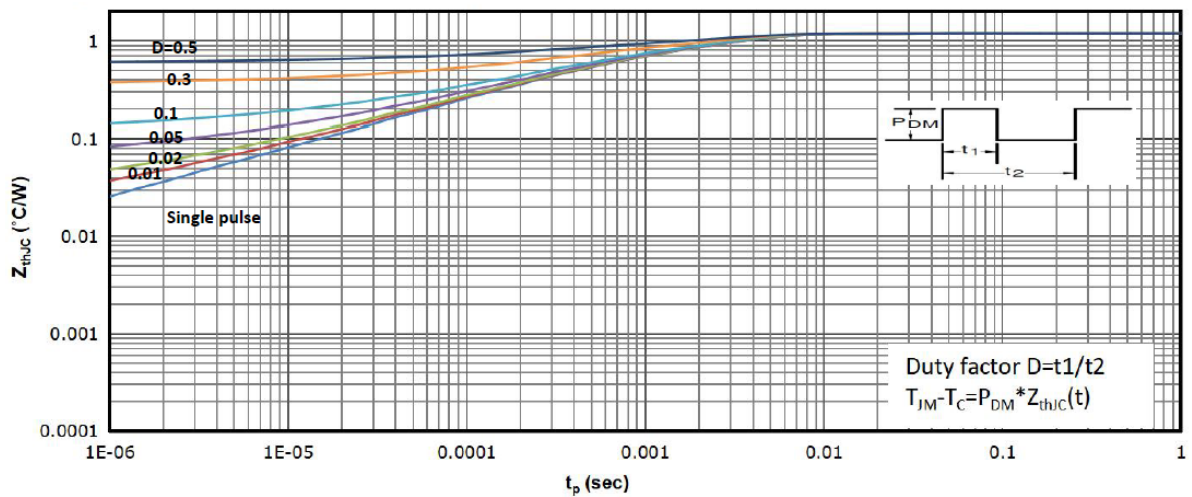


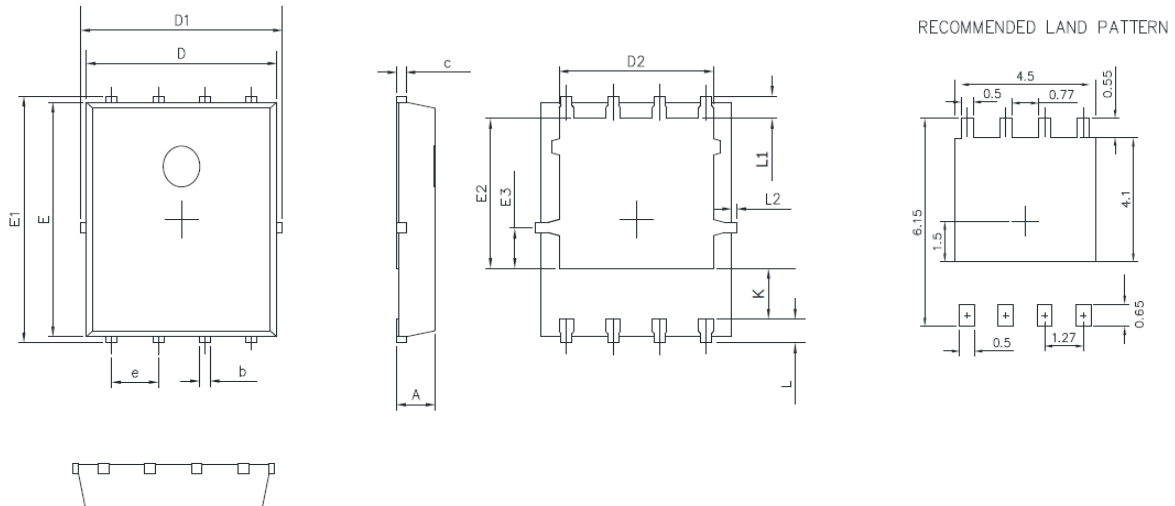
Fig 14. Max Transient Thermal Impedance





PACKAGE INFORMATION

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



Symbol	Millimeters	
	Min.	Max.
A	0.900	1.100
b	0.250	0.500
c	0.100	0.300
D	4.800	5.300
D1	4.900	5.500
D2	3.920	4.200
E	5.650	5.850
E1	5.900	6.200
E2	3.330	3.780
E3	0.800	1.000
e	1.270	
L	0.400	0.700
L1	0.650	
L2	0.000	0.150
K	1.000	1.500



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