

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
85V	4.3mΩ@10V	90A

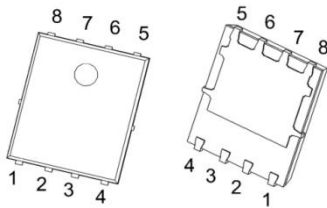
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

Applications

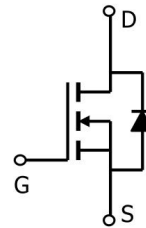
- Power switching application
- PWM Application
- DC-DC Converter

Package

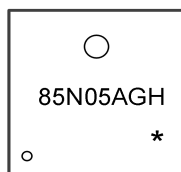


PDFN5X6-8L

Circuit diagram



Marking



85N05AGH
*

=Device Code
=Month Code

Absolute maximum ratings (Ta=25°C , unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	85	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (Tc=25°C)	I _D	90	A
Pulsed Drain Current ²	I _{DM}	360	A
Single Pulse Avalanche Energy ³	E _{AS}	116	mJ
Total Power Dissipation ⁴ (Tc=25°C)	P _D	125	W
Thermal Resistance Junction-Case ¹	R _{θJC}	1	°C/W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

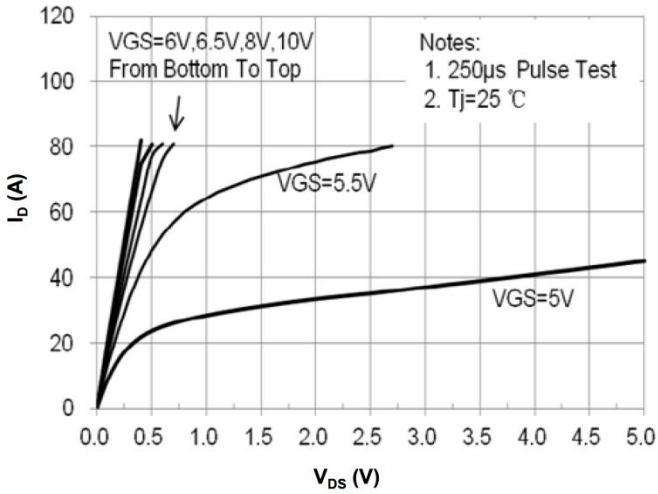
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250uA	85	---	---	V
Drain-Source Leakage Current	I _{DSS}	VDS=85V , VGS=0V , TJ=25°C	---	---	1	uA
Gate-Source Leakage Current	I _{GSS}	VGS=±20V , VDS=0V	---	---	±100	nA
Gate Threshold Voltage	V _{GS(th)}	VGS=VDS , ID =250uA	2.0	3.0	4.0	V
Static Drain-Source On-Resistance ²	R _{DS(ON)}	VGS=10V , ID=20A	---	4.3	5.5	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	VDS=40V , VGS=0V , f=1MHz	---	2777	---	pF
Output Capacitance	C _{oss}		---	951	---	
Reverse Transfer Capacitance	C _{rss}		---	26	---	
Switching Characteristics						
Total Gate Charge	Q _g	VDS=40V , VGS=10V , ID=50A	---	49	---	nC
Gate-Source Charge	Q _{gs}		---	13	---	
Gate-Drain Charge	Q _{gd}		---	11	---	
Turn-On Delay Time	T _{d(on)}	VDD=40V , VGS=10V , RG=3Ω , ID=50A	---	19	---	ns
Rise Time	T _r		---	35	---	
Turn-Off Delay Time	T _{d(off)}		---	43	---	
Fall Time	T _f		---	22	---	
Source-Drain Diode Characteristics						
Diode Forward Voltage ²	V _{SD}	VGS=0V , IS=1A , TJ=25°C	---	---	1.2	V

Note :

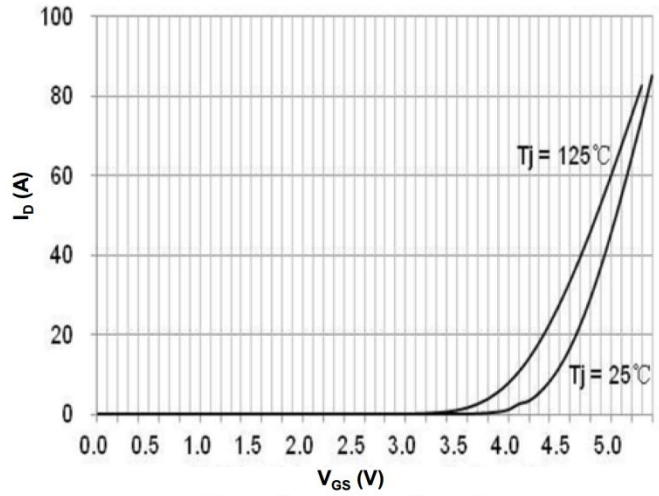
1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3. The EAS data shows Max. rating . The test condition is VDD=42.5V,VGS=10V,L=0.5mH,IAS=46A
4. The power dissipation is limited by 150°C junction temperature



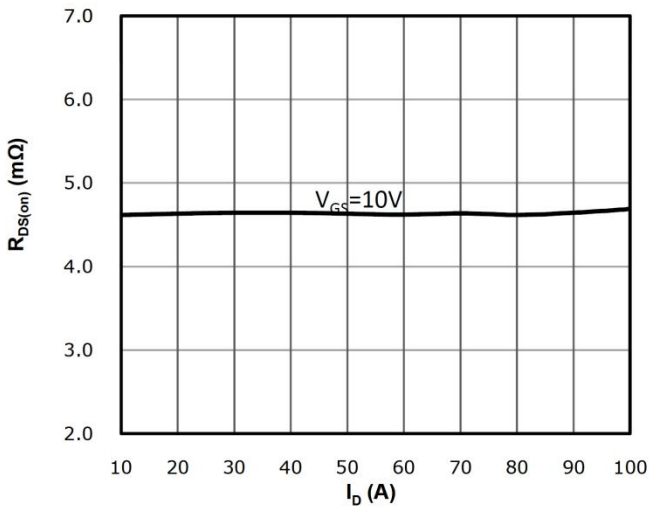
Typical Characteristics



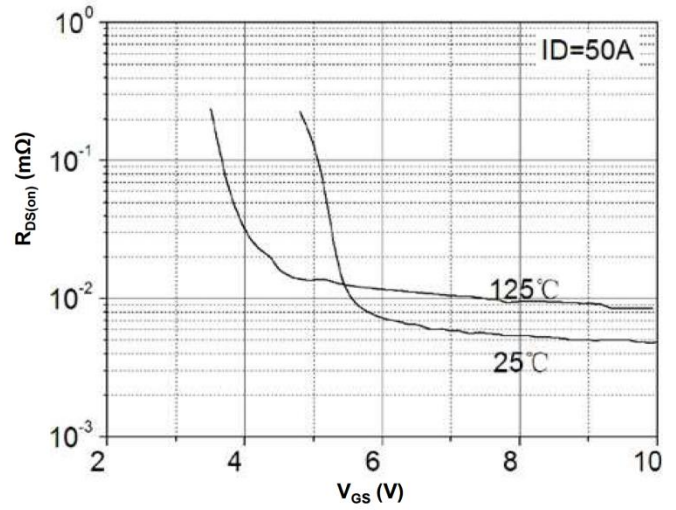
Output Characteristics



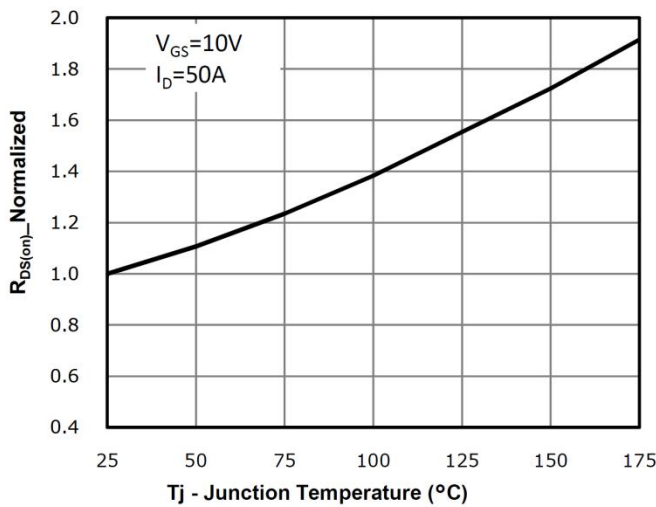
Transfer Characteristics



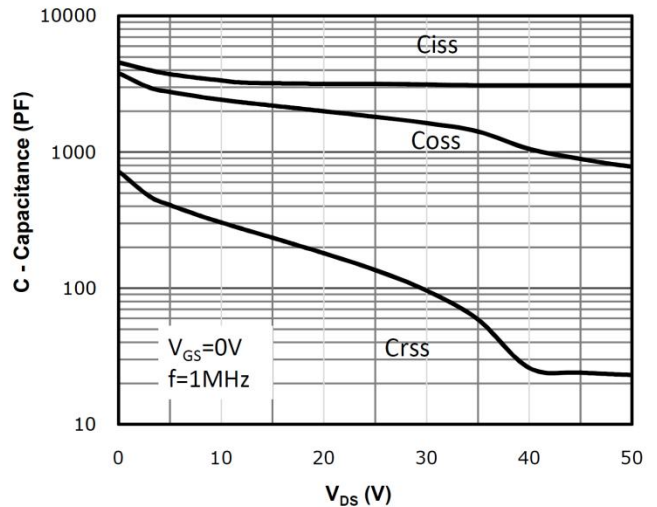
Rds(on) vs Drain Current and Gate Voltage



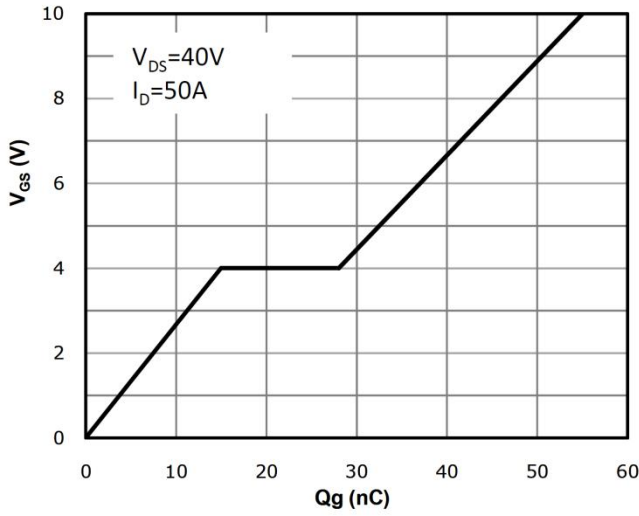
Rds(on) vs Gate Voltage



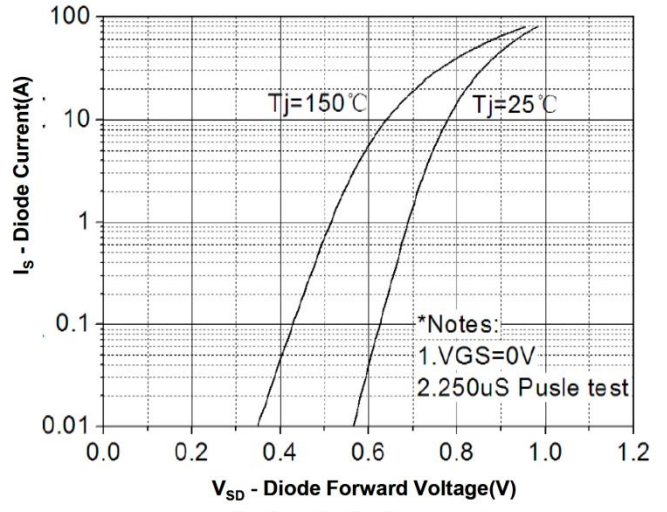
Rds(on) vs. Temperature



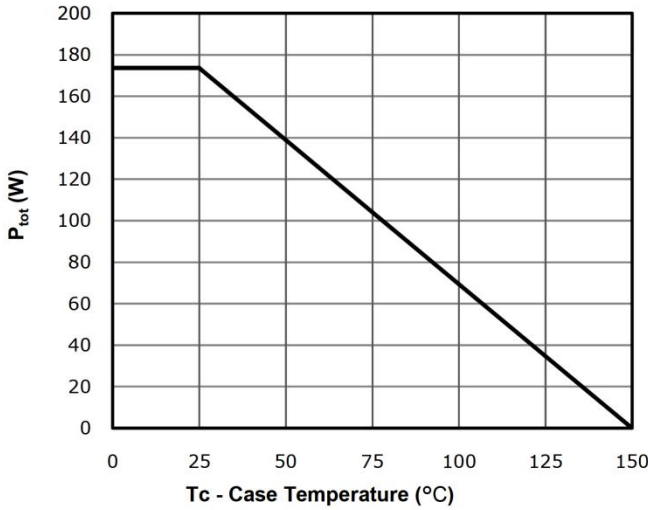
Capacitance Characteristics



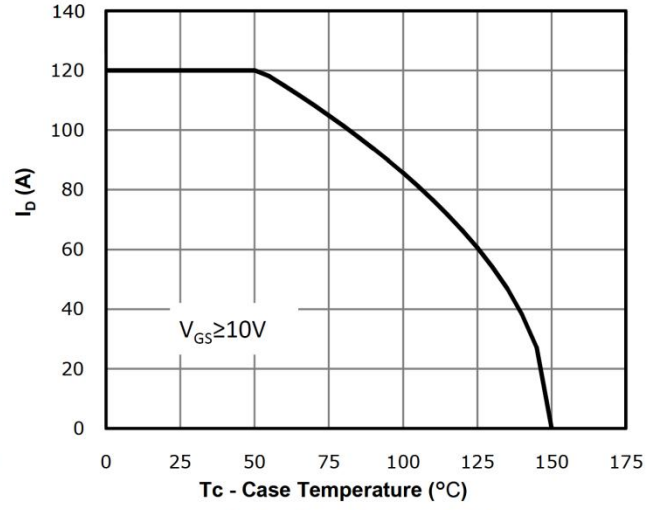
Gate Charge Characteristics



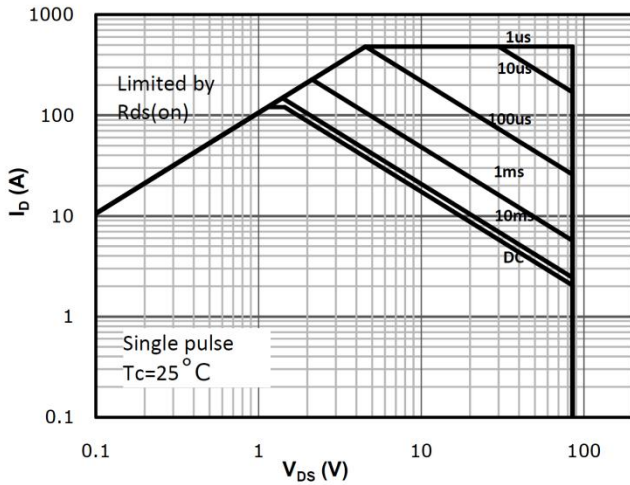
Body-diode Forward Characteristics



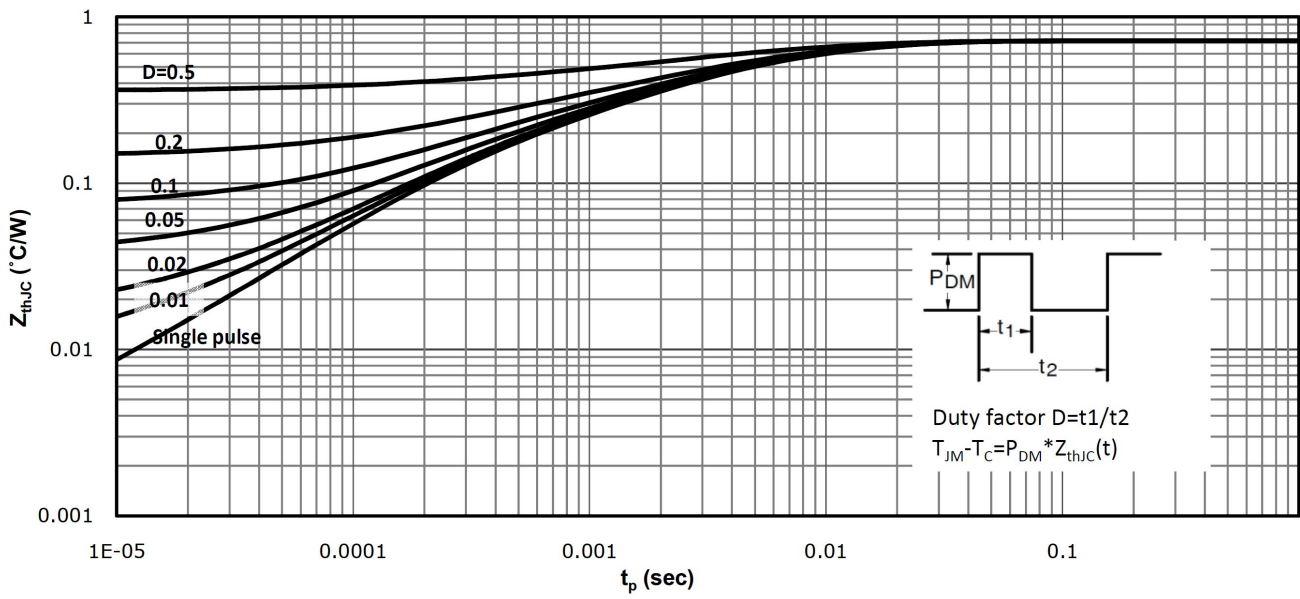
Power Dissipation



Drain Current Derating



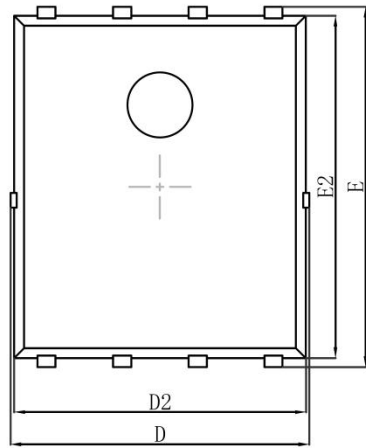
Safe Operating Area



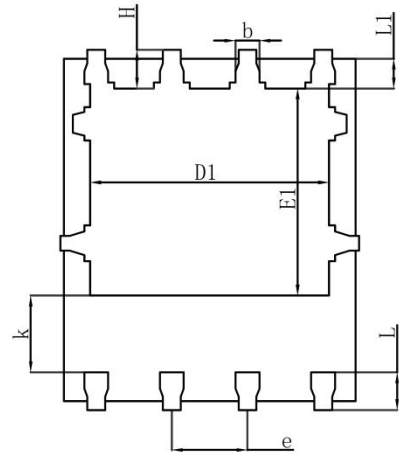
Max. Transient Thermal Impedance



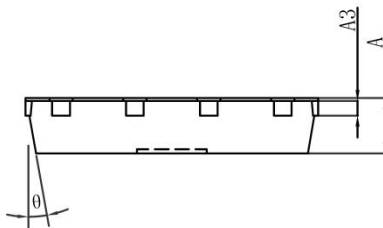
PDFN5X6-8L Package Outline Dimensions



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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