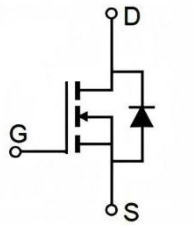
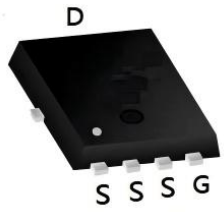
N-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	20	V
$R_{DS(on)}$	3.5	mΩ
I_D	80	A





PDFN5x6

Features

- Super Low Gate Charge
- 100% EAS Guaranteed
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

Applications

- Motor/Body Load Control
- Load Switch
- PWM Application
- DC-DC converters

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1]	T_C=25℃	I_D	80	A
	T_C=100℃		35	
Pulsed Drain Current [2]		I_{DM}	200	A
Single Pulse Avalanche Energy [3]		E_{AS}	58	mJ
Avalanche Current		I_{AS}	41	A
Total Power Dissipation	T_C=25℃	P_D	58	W
Storage Temperature Range		T_{STG}	-55 to 150	℃
Operating Junction Temperature Range		T_J	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance from Junction-to-Case [1]	$R_{\theta JC}$	--	2.6	℃/W

Electrical Characteristics(T_J=25℃,unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	20	--	--	V
Gate-body Leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	--	--	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V,T_J=25℃	--	--	1	uA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.4	0.7	1.1	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V, I_D=30A	--	3.5	5.0	mΩ
		V_{GS}=2.5V, I_D=20A	--	6.5	9.0	
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1MHz	--	2500	--	pF
Output Capacitance	C_{oss}		--	407	--	
Reverse Transfer Capacitance	C_{rss}		--	386	--	
Total Gate Charge	Q_g	V_{GS}=15V,V_{DS}=4.5V, I_D=20A	--	32	--	nC
Gate-Source Charge	Q_{gs}		--	3	--	
Gate-Drain Charge	Q_{gd}		--	11	--	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=10V, V_{GS}=4.5V, I_D=30A, R_G=3Ω	--	17	--	ns
Rise Time	t_r		--	49	--	
Turn-Off Delay Time	$t_{d(off)}$		--	74	--	
Fall Time	t_f		--	26	--	

Diode Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Diode continuous forward current	I_S	V_G=V_D=0V , Force Current	--	--	80	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V , I_S=30A ,T_J=25℃	--	--	1.2	V
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}		--	--	300	nS

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition: T_J=25℃, V_{DD}=10V, V_G=4.5V, L=0.5mH, R_G=25Ω, I_{AS}=15A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics

Figure1: Output Characteristics

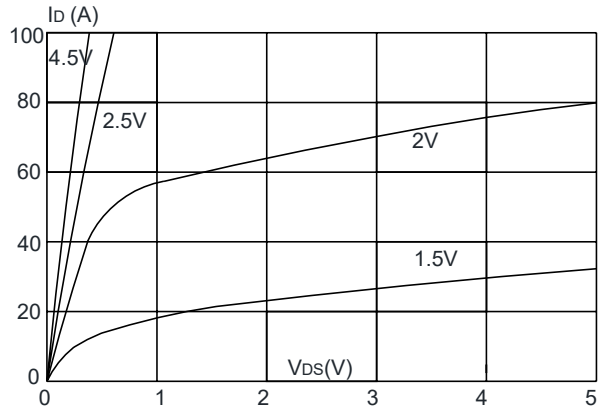


Figure 2: Typical Transfer Characteristics

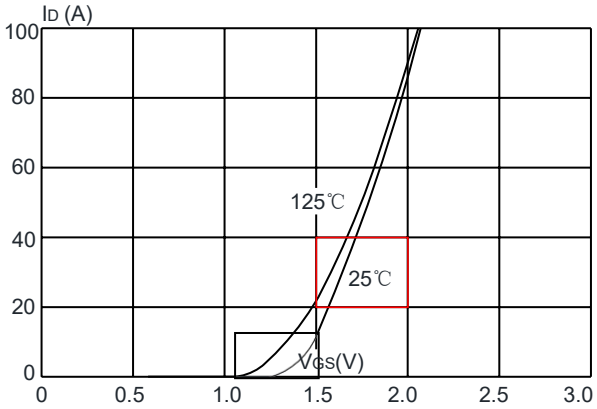


Figure 3: On-resistance vs. Drain Current

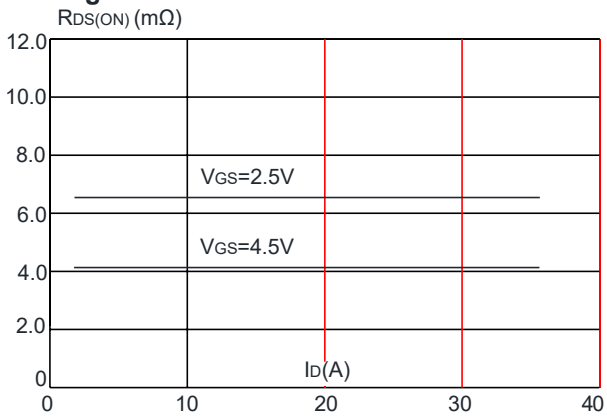


Figure 4: Body Diode Characteristics

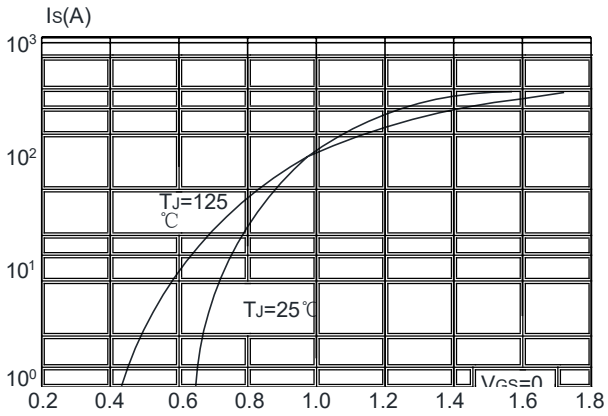


Figure 5: Gate Charge Characteristics

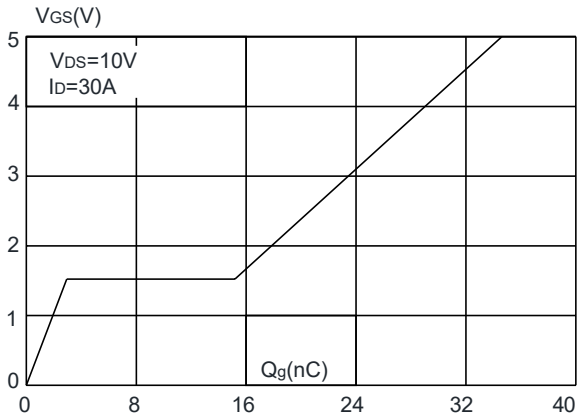


Figure 6: Capacitance Characteristics

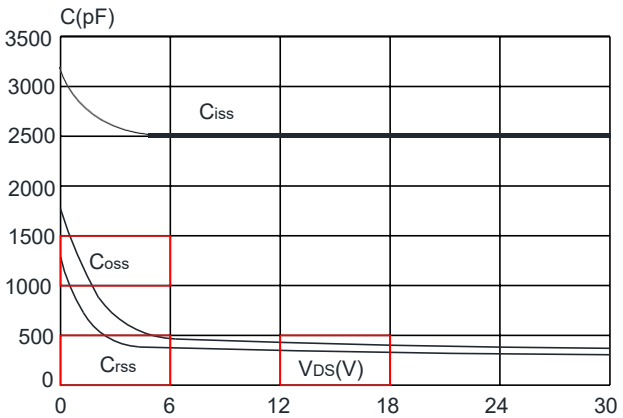


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

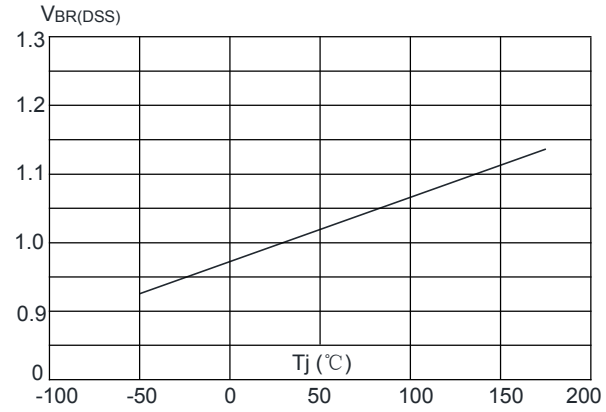


Figure 8: Normalized on Resistance vs. Junction Temperature

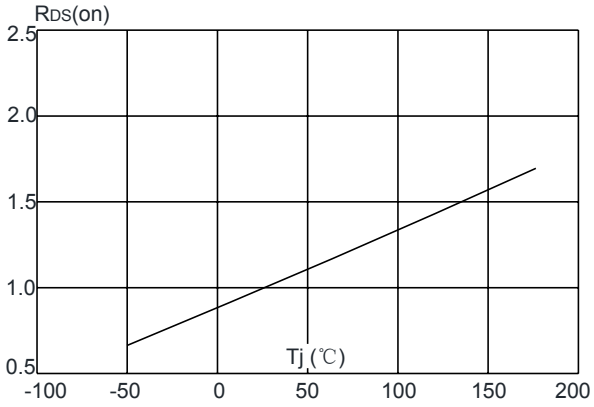


Figure 9: Maximum Safe Operating Area

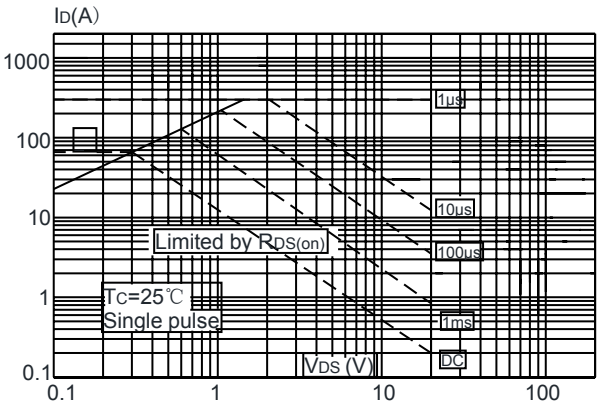


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

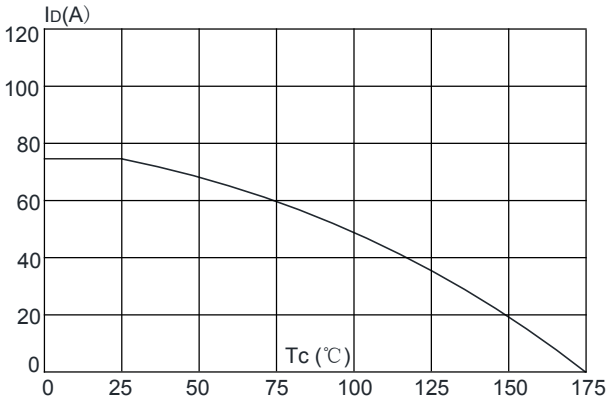
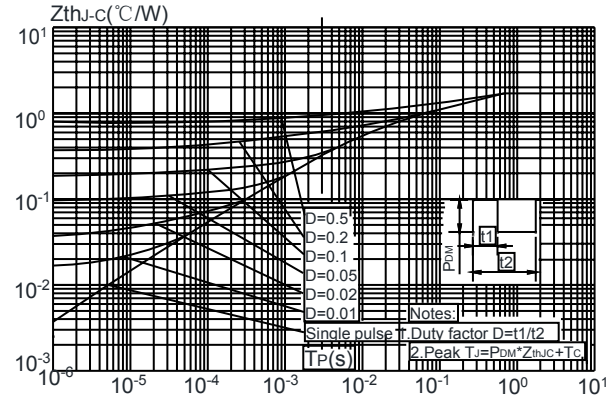
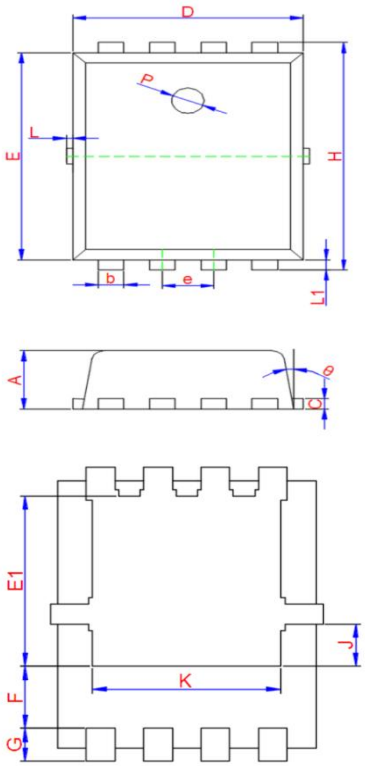


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



Package Outline

PDFN5x6



Symbol	Dimensions in mm		
	Min.	Typ.	Max.
A	0.800	1.050	1.200
b	0.250	0.350	0.490
c		0.254TYP.	
D	4.800	5.000	5.100
e		1.270TYP.	
E	5.650	5.800	5.900
E1		3.400TYP.	
F		1.300TYP.	
G		0.600TYP.	
H	5.950	6.080	6.200
J		0.950TYP.	
K		4.000TYP	
L	-	-	0.150
L1	0.100	0.140	0.180
P		1.180TYP.	
θ	6°	10°	14°

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