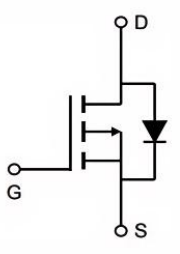
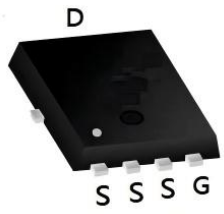
P-Channel Enhancement Mode MOSFET

Parameter	Value	Unit
V_{DS}	-40	V
$R_{DS(on)}$	6.4	mΩ
I_D	-60	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 (T_A=25℃,unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃	I_D	-60	A
	T_C= 100℃		-50.6	
Pulsed Drain Current [1]		I_{DM}	-320	A
Single Pulse Avalanche Energy [2]		E_{AS}	101.25	mJ
Total Power Dissipation	T_C=25℃	P_D	81.16	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance Junction-Ambient [3]	$R_{\theta JA}$	---	54	℃/W
Thermal Resistance from Junction-to-Case	$R_{\theta JC}$	---	1.54	℃/W

Electrical Characteristics(TJ=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	-40	-	-	V
Gate-body Leakage current		I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	T_J=25℃	I_{DSS}	V_{DS}=-40V, V_{GS}=0V	-	-	-1	uA
	T_J=100℃			-	-	-100	
Gate-Threshold Voltage		$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.0	-1.6	-2.5	V
Drain-Source On-Resistance4		$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A	-	6.4	8.2	mΩ
			V_{GS}=-4.5V, I_D=-15A	-	8.2	11	
Forward Transconductance4		g_{fs}	V_{DS}=-10V, I_D=-20A	-	104	-	S
Input Capacitance		C_{iss}	V_{DS}=-20V, V_{GS}=0V, f=1MHz	-	5295	-	pF
Output Capacitance		C_{oss}		-	430	-	
Reverse Transfer Capacitance		C_{rss}		-	385	-	
Gate Resistance		R_g	f=1MHz	-	4.3	-	Ω
Total Gate Charge		Q_g	V_{GS}=-10V,V_{DS}=-20V, I_D=-20A	-	110	-	nC
Gate-Source Charge		Q_{gs}		-	12.5	-	
Gate-Drain Charge		Q_{gd}		-	23	-	
Turn-On Delay Time		$t_{d(on)}$	V_{GS}=-10V, V_{DD}=-20V, R_G=3Ω , I_D=-20A	-	16.8	-	ns
Rise Time		t_r		-	10	-	
Turn-Off Delay Time		$t_{d(off)}$		-	65	-	
Fall Time		t_f		-	17	-	
Body Diode Reverse Recovery Time		t_{rr}	I_F=-20A, dI/dt=100A/μs	-	42	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}		-	29	-	nC
Diode Forward Voltage4		V_{SD}	I_S=-20A, V_{GS}=0V	-	-	-1.2	V
Continuous Source Current	T_C=25℃	I_S	-	-	-	-20	A

Notes:
1. Repetitive rating, pulse width limited by junction temperature TJ(MAX)=150℃.
2. The EAS data shows Max. rating . The test condition is VDD= -30V, VGS= -10V, L= 0.1mH, IAS= -45A.
3. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width≤300us , duty cycle≤2%.
5. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

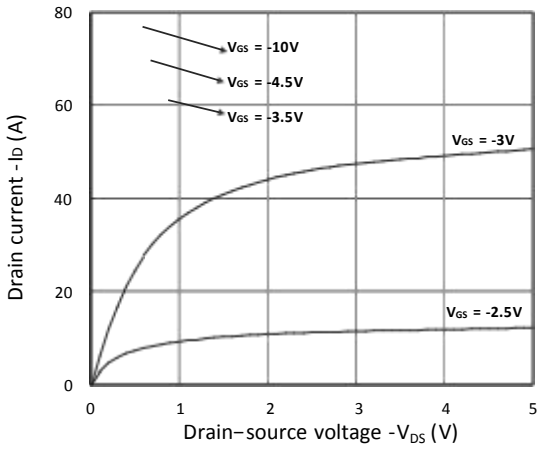


Figure 1. Output Characteristics

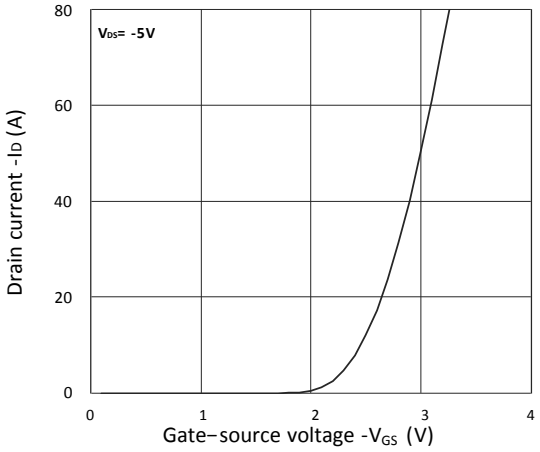


Figure 2. Transfer Characteristics

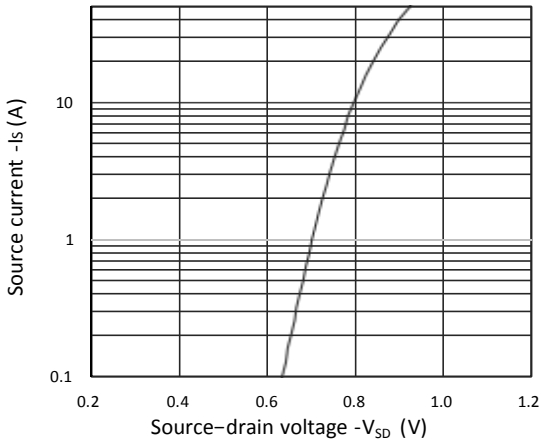


Figure 3. Forward Characteristics of Reverse

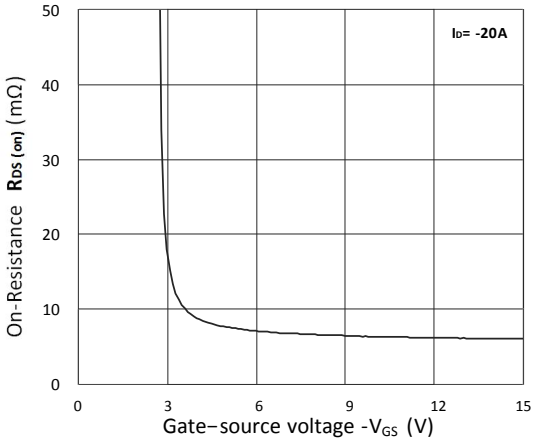


Figure 4. $R_{DS(ON)}$ vs . V_{GS}

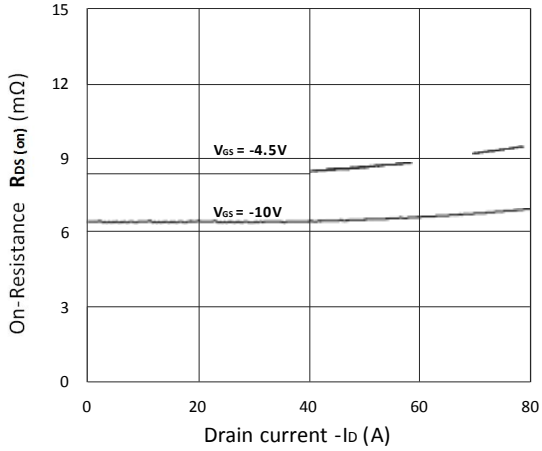


Figure 5. $R_{DS(ON)}$ vs . I_D

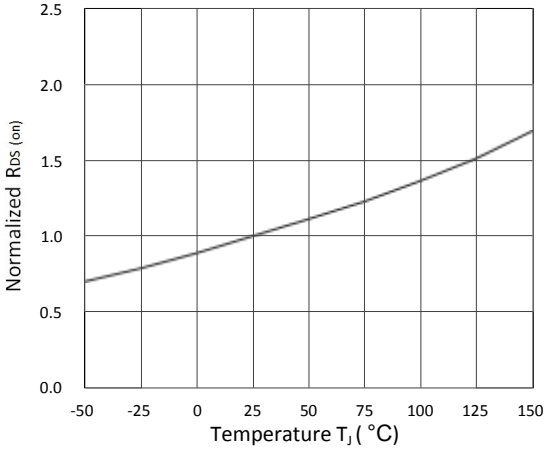


Figure 6. Normalized $R_{DS(on)}$ vs . Temperature

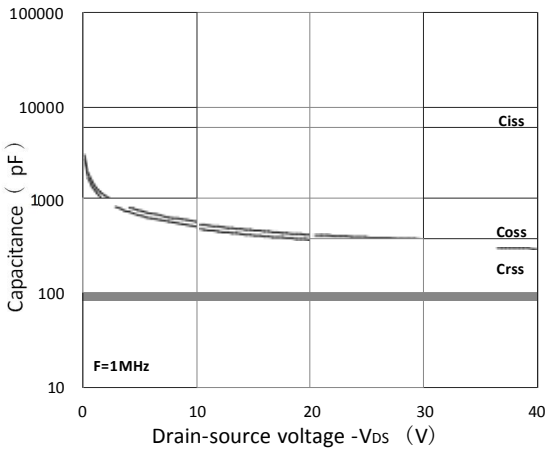


Figure 7. Capacitance Characteristics

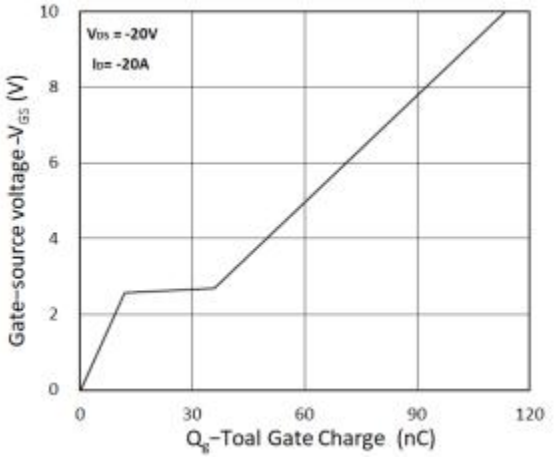


Figure 8. Gate Charge Characteristics

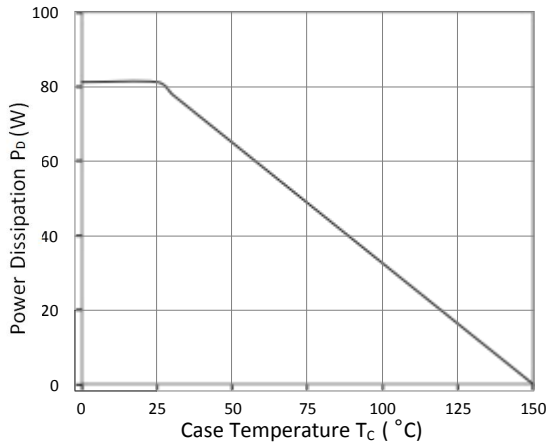


Figure 9. Power Dissipation

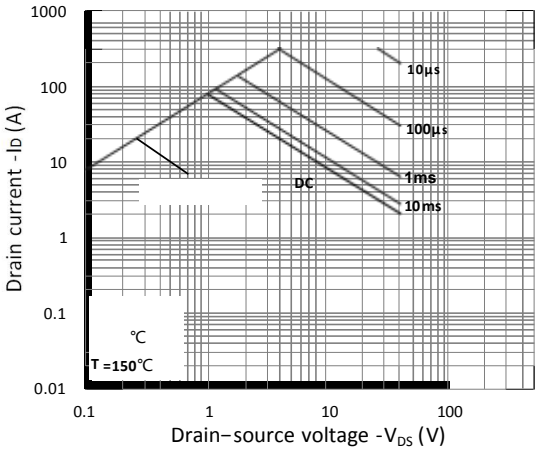


Figure10. Safe Operating Area

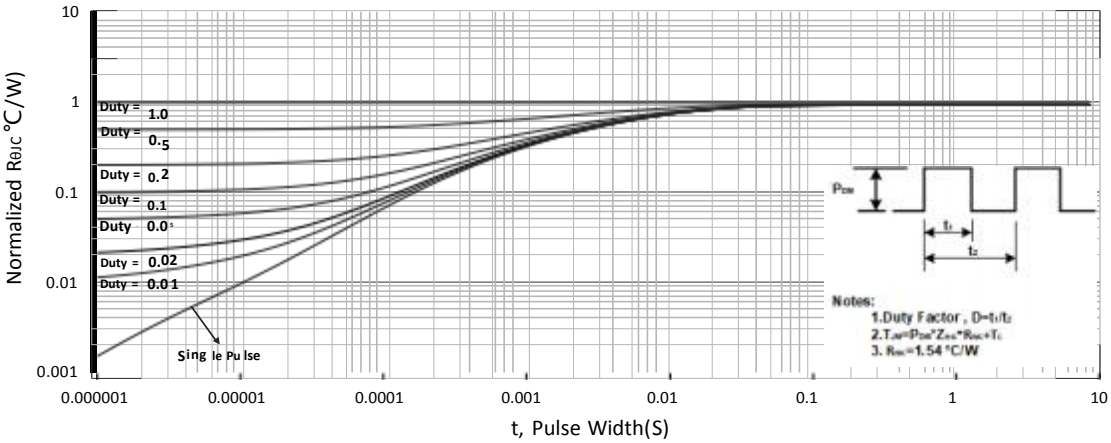
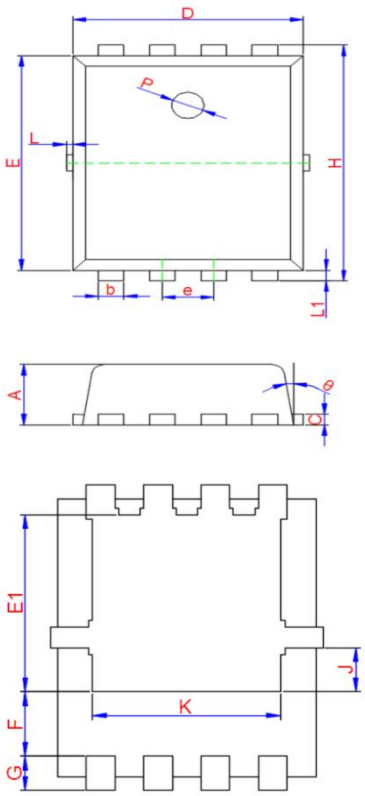


Figure 11. Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions (Units: mm)



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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