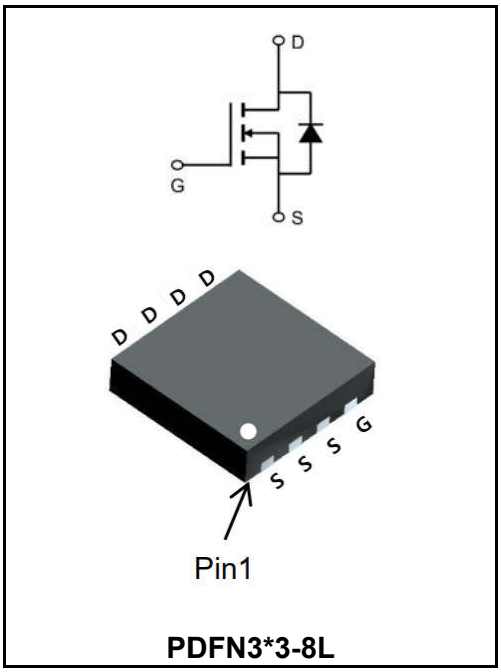
20V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	60A
V_{DSS}	20V
R_{DSON}-typ(@V_{GS}=4.5V)	< 6mΩ(Type:4.8 mΩ)



PDFN3*3-8L

lead-free ROHS

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW60N02DF	PDFN3*3-8L	YFW 60N02DF XXXXX	5000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	20	V
Gate - Source Voltage	V_{GS}	±12	V
Continuous Drain Current, V_{GS} @ 4.5V @T_A=25℃	I_D	60	A
Continuous Drain Current, V_{GS} @ 4.5V @T_A=70℃	I_D	39	A
Pulsed Drain Current note1	I_{DM}	200	A
Single Pulse Avalanche Energy note2	E_{AS}	47.6	mJ
Power Dissipation @T_A=25℃	P_D	37	W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +175	°C
Thermal Resistance Junction-Ambient [1]	$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	4	°C/W

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Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	**V(BR)DSS**	20	24	-	**V**
Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V	**I_{DSS}**	-	-	1.0	**μA**
Gate to Body Leakage Current	V_{GS}=±12V, V_{DS}=0V	**I_{GSS}**	-	-	±100	**nA**
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	**$V_{GS(th)}$**	0.5	0.7	1.2	**V**
Static Drain-Source on-Resistance note3	V_{GS}=4.5V, I_D=30A	**$R_{DS(ON)}$**	-	4.8	6.5	**mΩ**
	V_{GS}=2.5V, I_D=20A		-	6.2	10	
Input Capacitance	V_{DS}=10V V_{GS}=0V f=1.0MHz	**C_{iss}**	-	1832	-	**pF**
Output Capacitance		**C_{oss}**	-	289	-	
Reverse Transfer Capacitance		**C_{rss}**	-	271	-	
Total Gate Charge	V_{DS}=10V I_D=30A V_{GS}=4.5V	**Q_g**	-	23	-	**nC**
Gate-Source Charge		**Q_{gs}**	-	4.5	-	
Gate-Drain("Miller") Charge		**Q_{gd}**	-	7.3	-	
Turn-on delay time	V_{DS} =10V I_D= 30A V_{GS}=4.5V R_G = 3Ω	**$t_{d(on)}$**	-	15	-	**ns**
Turn-on Rise Time		**T_r**	-	37	-	
Turn-Off Delay Time		**$t_{d(OFF)}$**	-	52	-	
Turn- Off Fall Time		**t_f**	-	21	-	
Maximum Continuous Drain to Source Diode Forward Current		**I_S**	-	-	60	**A**
Maximum Pulsed Drain to Source Diode Forward Current		**I_{SM}**	-	-	210	**A**
Drain to Source Diode Forward Voltage	V_{GS}=0V , I_S=25A	**V_{SD}**	-	-	1.2	**V**

Notes:
1、Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2、The test condition is, VDD=10V, VG=4.5V, L=0.5mH, RG=25Ω, IAS=13.8A
3、The data tested by pulsed Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%
4、The power dissipation is limited by 150℃ junction temperature

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Ratings and Characteristic Curves

Typical Characteristics

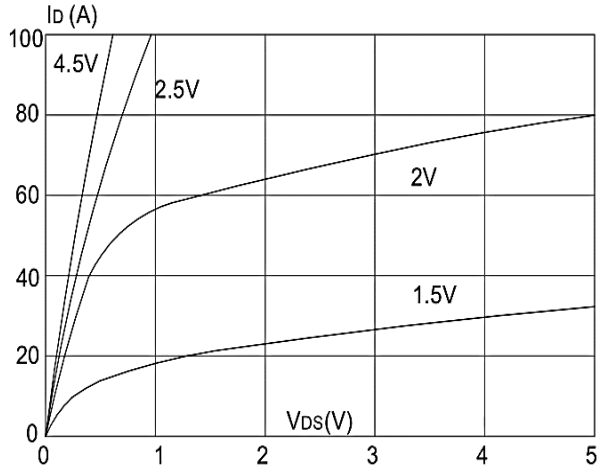


Figure1: Output Characteristics

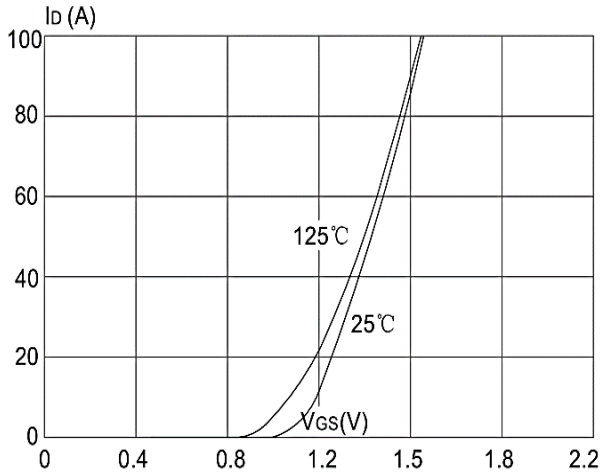


Figure 2: Typical Transfer Characteristics

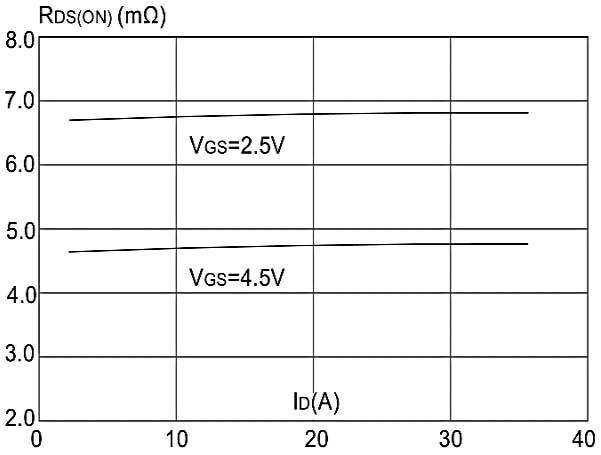


Figure 3:On-resistance vs. Drain Current

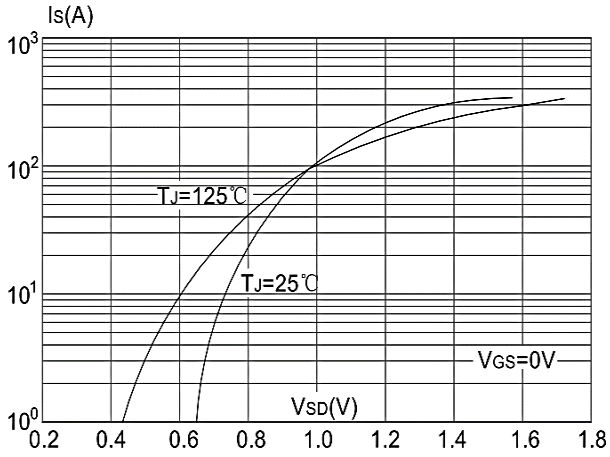


Figure 4: Body Diode Characteristics

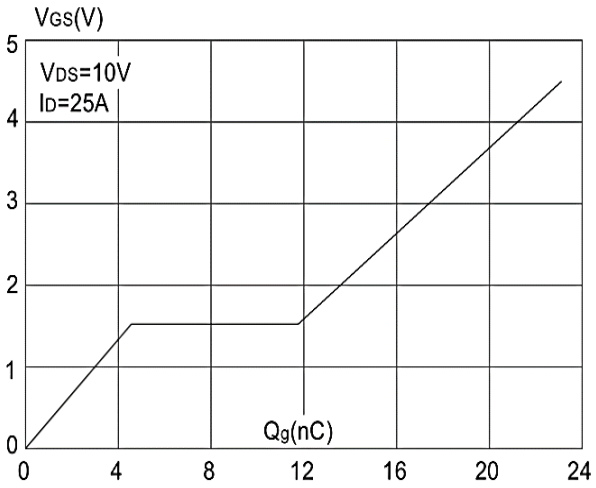


Figure 5: Gate Charge Characteristics

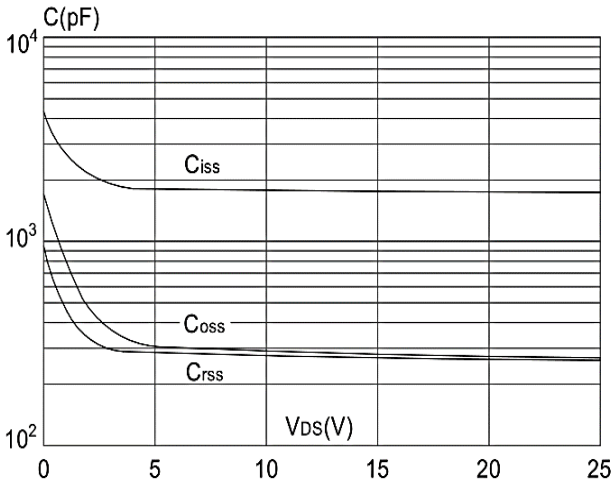


Figure 6: Capacitance Characteristics

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Ratings and Characteristic Curves

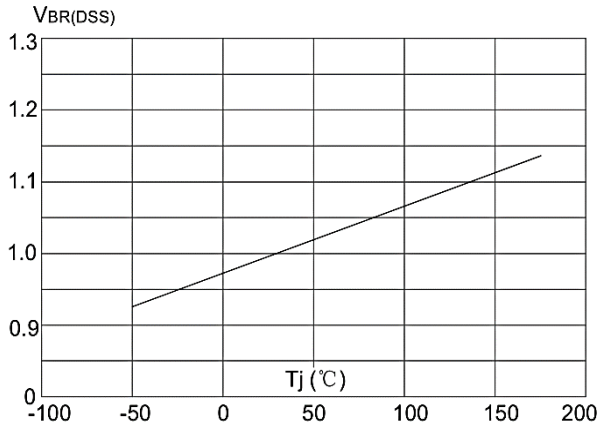


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

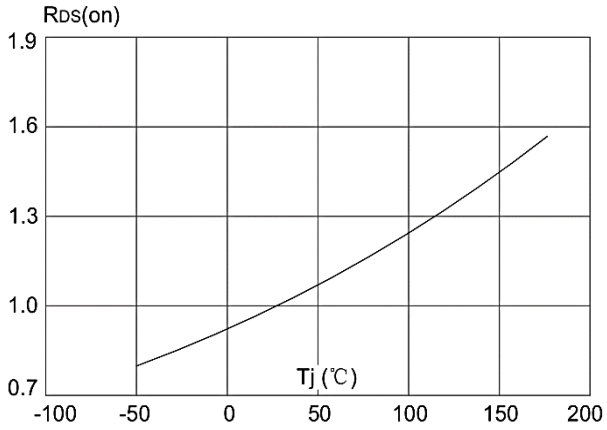


Figure 8: Normalized on Resistance vs Junction Temperature

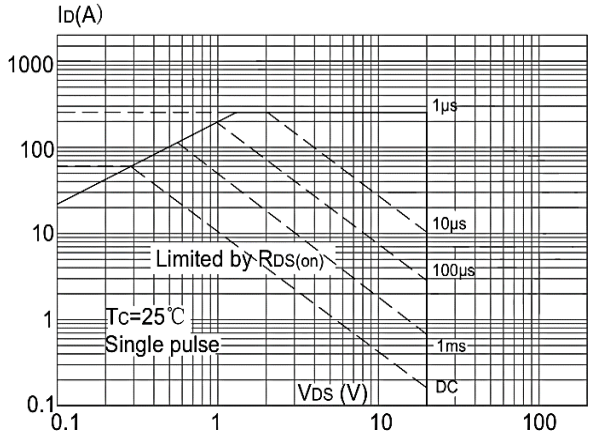


Figure 9: Maximum Safe Operating Area Current Temperature

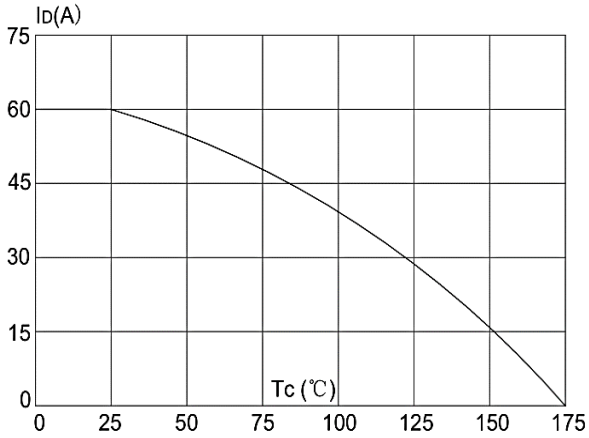


Figure 10: Maximum Continuous Drain vs. Case

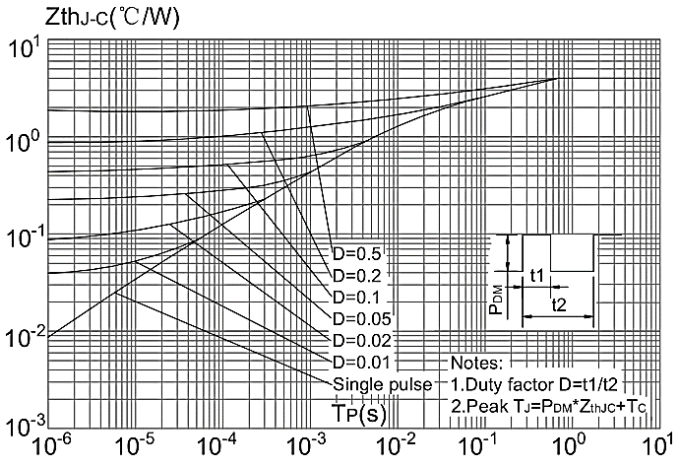
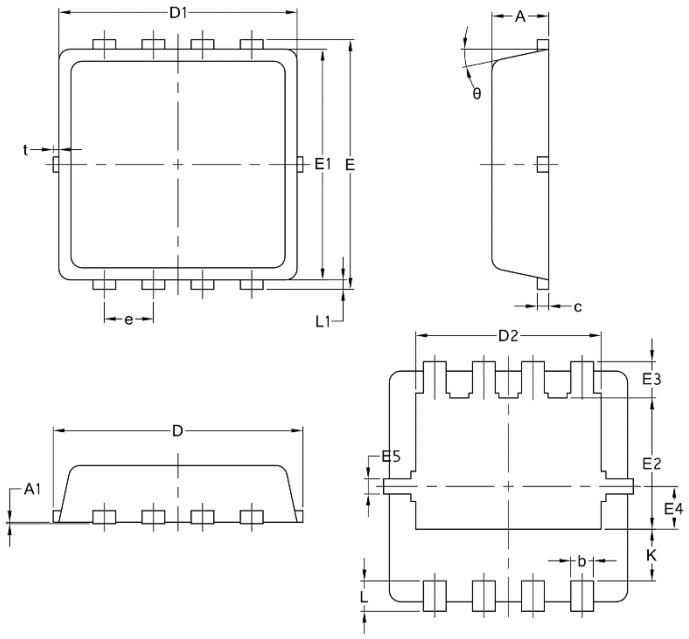


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

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Package Outline Dimensions Millimeters

PDFN3*3-8L



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
Φ	10	12	14

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