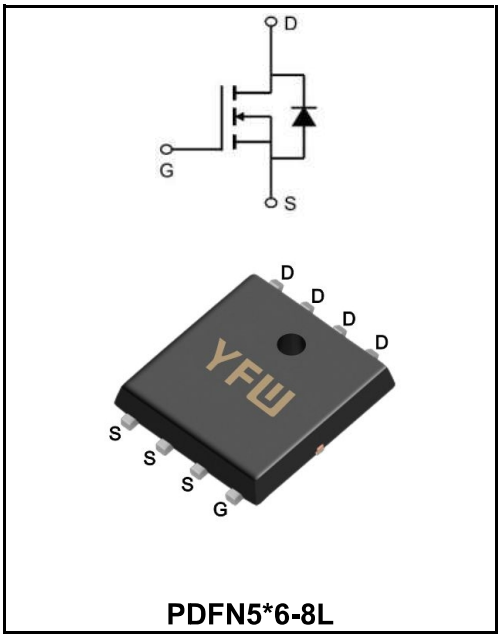
40V N- Channel Advanced Power MOSFET

MAIN CHARACTERISTICS

I_D	80A
V_{DSS}	40V
R_{DSON}-typ(@V_{GS}=10V)	＜7mΩ(Type:5.5mΩ)



PDFN5*6-8L

Application

- Battery protection
- Load switch
- Uninterruptible power supply

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275℃ maximum,10s per JESD 22-B106

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	40	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	80	A
Pulsed Drain Current(Note1)	I_{DM}	350	A
Single Pulse Avalanche Energy(Note1)	E_{AS}	750	mJ
Total Power Dissipation	P_D	80	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	150	°C
Thermal Resistance, Junction ambient	$R_{\theta JA}$	62	°C/W
Thermal Resistance, Junction-case	$R_{\theta JC}$	1.88	°C/W

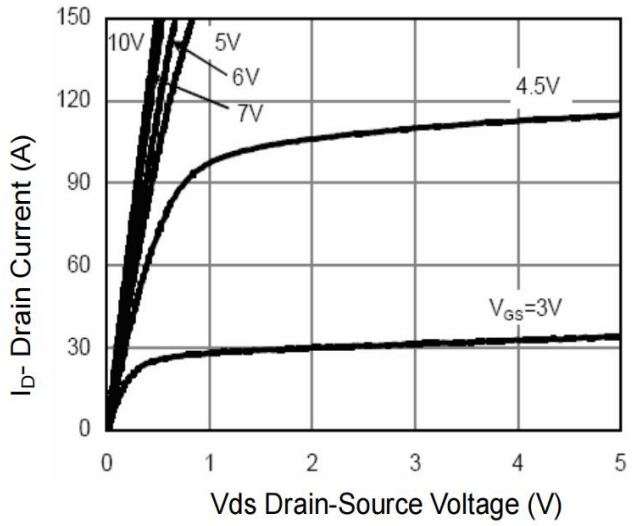
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

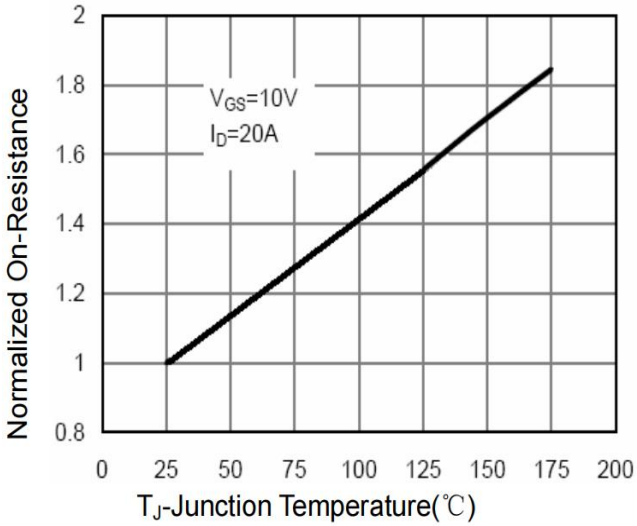
Maximum Ratings at Tc=25°C unless otherwise specified

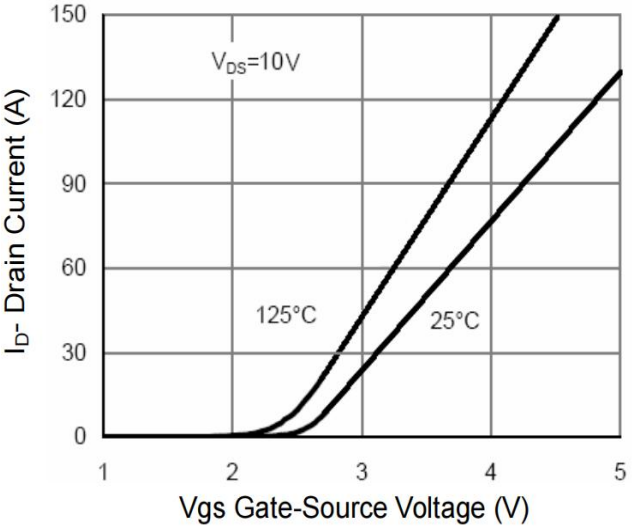
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	40	-	-	V
Gate Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Zero Gate Voltage Drain Current	V_{DS} =40 V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	1.1		2.4	V
Drain-Source on-Resistance	V_{GS}=10V, I_D=30A	$R_{DS(ON)}$	-	5.5	7	mΩ
	V_{GS} = 4.5 V, I_D = 20 A	$R_{DS(ON)}$		8	12	mΩ
Forward Transconductance	V_{DS} = 10 V, I_D = 20 A	gfs	15	-	-	S
Input Capacitance	VDS=20V VGS=0V f=1MHz	C_{iss}	-	2662	3200	pF
Output Capacitance		C_{oss}	-	322	-	
Reverse Transfer Capacitance		C_{rss}	-	246	-	
Total Gate Charge(Note2)	V_{DS}=20V V_{GS}=10V I_D=20A	Q_g	-	54.3	-	nC
Gate-Source Charge(Note2)		Q_{gs}	-	6.9	-	
Gate-Drain Charge(Note2)		Q_{gd}	-	14.5	-	
Turn-on delay time(Note2)	V_{DD}=20V V_{GS}=10V RG=3 Ω RL=1 Ω	$t_{d(on)}$	-	12	-	ns
Rise Time(Note2)		T_r	-	11	-	
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	39	-	
Fall Time(Note2)		t_f	-	12	-	
Reverse Recovery Time(Note2)	T_J = 25℃, I_F= 20A di / dt = 100 A/μs	t_{rr}	-	-	45	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	-	50	nC
Drain-Source Diode Forward Voltage	VGS=0V , IS=10A , TJ=25℃	V_{SD}	-	-	1.2	V
Maximun Body-Diode Continuous Current		I_S	-	-	80	A

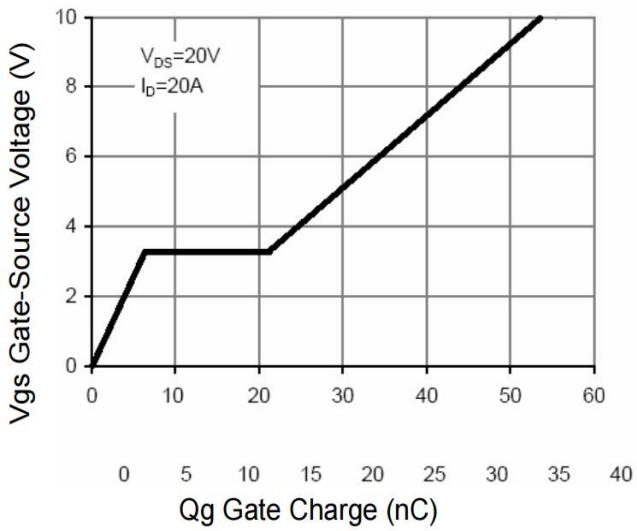
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

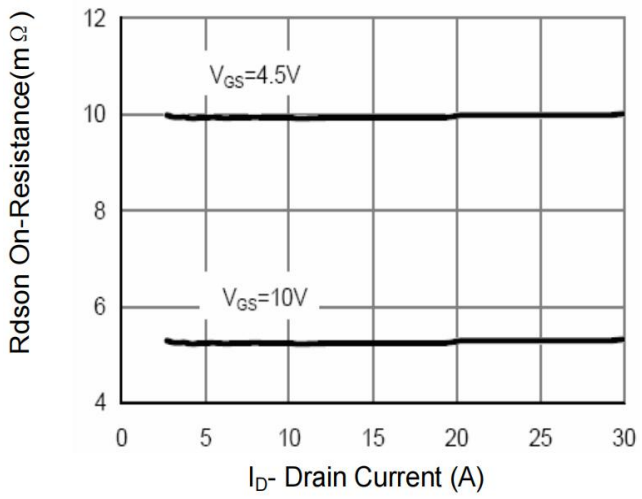
Ratings and Characteristic Curves

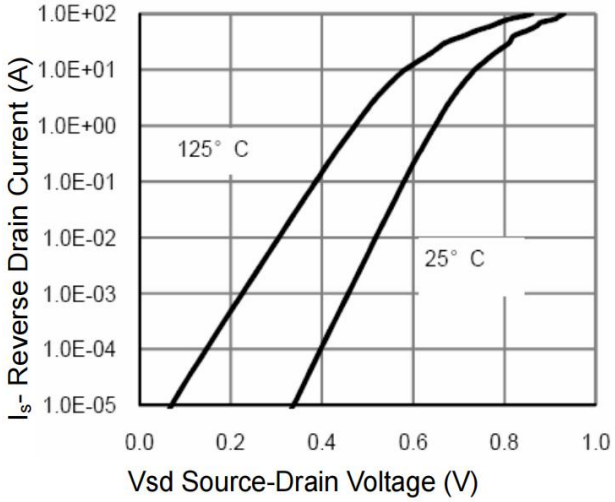




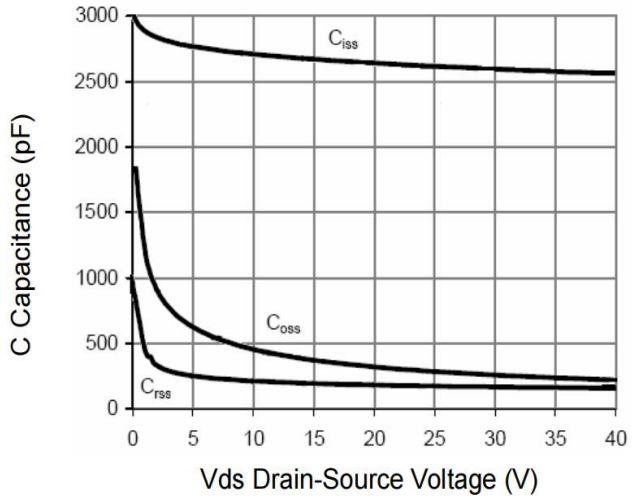


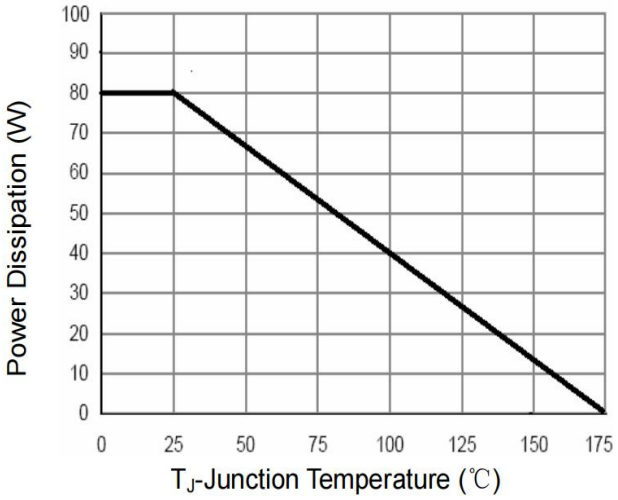


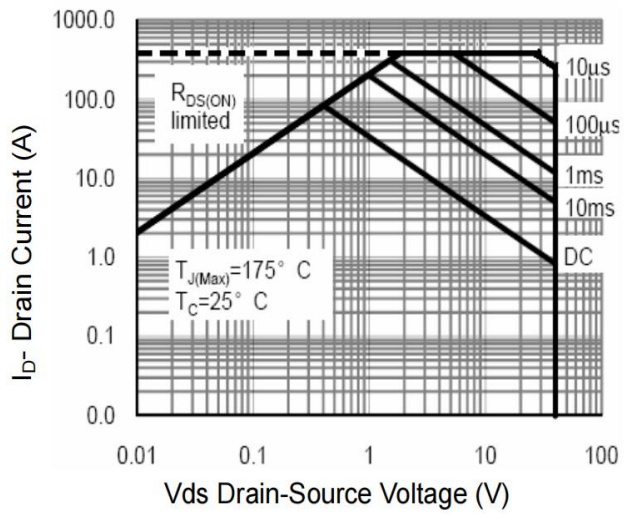


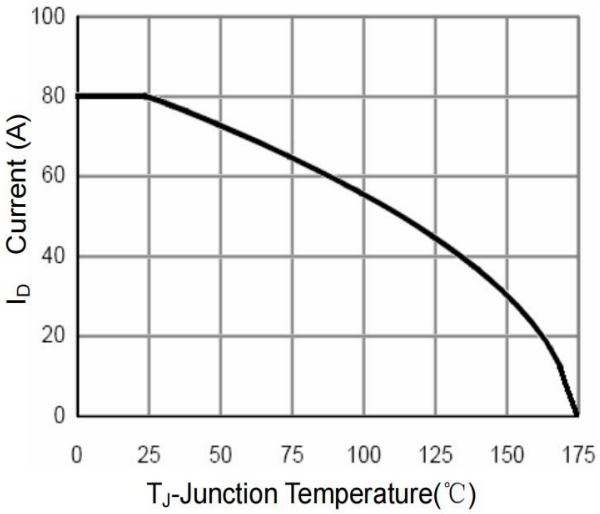


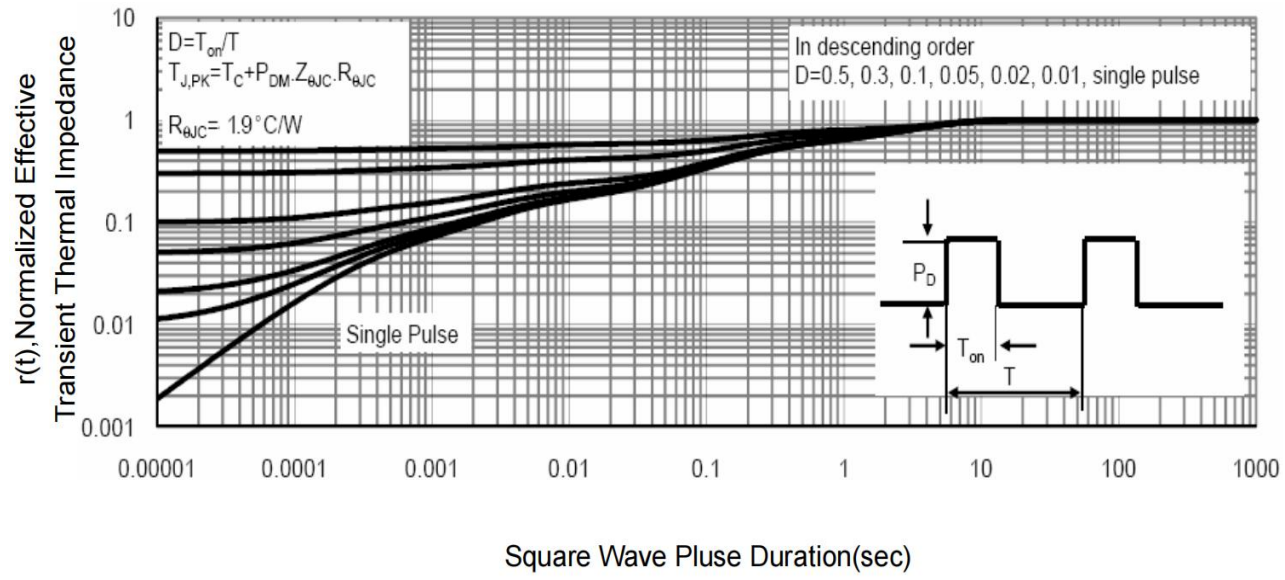
Ratings and Characteristic Curves



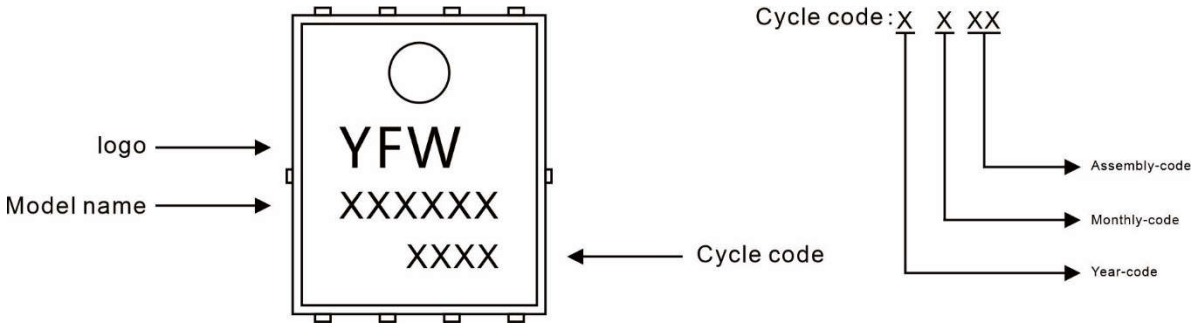








Marking Diagram

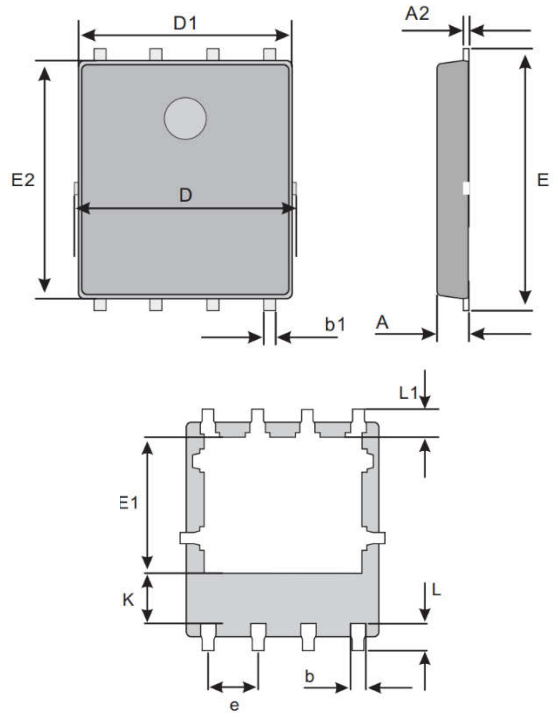


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW80N04NF	PDFN5*6-8L	0.0032oz(0.093g)	5000pcs/reel	10000pcs/box 50000pcs/Carton

Package Dimensions

PDFN5*6-8L



Dim	Millimeter		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.2	35	45
A2	0.204	0.304	8	12
b	0.4ref.		16ref.	
b1	0.2	0.4	8	16
D	5.0	5.3	197	209
D1	4.84	5.24	191	206
E	5.95	6.35	234	250
E1	3.275	3.675	129	145
E2	5.69	6.09	224	232
e	1.27typ.		50typ.	
K	1.29typ.		51typ.	
L	0.585	0.785	23	27
L1	0.7typ.		28typ.	

Disclaimer

The information presented in this document is for reference only. GuangDong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices),YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website https://www.yfwdiode.com, or consult YFW sales office for further assistance.