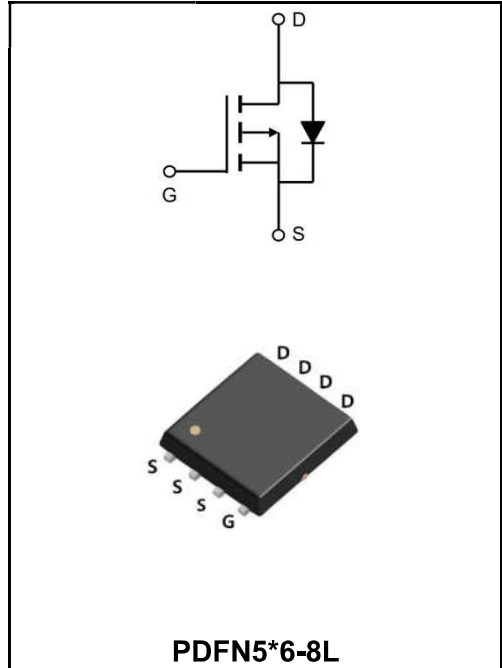


-30V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-120A
V_{DSS}	-30V
R_{DS(on)-typ(@V_{GS}=-10V)}	< 5.0mΩ (Type:3.8 mΩ)



Application

- ◆Lithium battery protection
- ◆Wireless impact
- ◆Mobile phone fast charging

Product Specification Classification

Part Number	Package	Marking	Pack
YFW120P03NF	PDFN5*6-8L	YFW 120P03NF XXXXX	5000PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current, V _{GS} @ -10V ¹ @T _C =25°C	I_D	-120	A
Continuous Drain Current, V _{GS} @ -10V ¹ @T _C =100°C	I_D	-65	A
Pulsed Drain Current 2	I_{DM}	-360	A
Single Pulse Avalanche Energy ³	E_{AS}	225	mJ
Avalanche Current	I_{AS}	-60	A
Total Power Dissipation ⁴ @T _C =25°C	P_D	103	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Thermal Resistance Junction-Ambient ¹	R_{θJA}	25	°C/W
Thermal Resistance Junction-Case ¹	R_{θJC}	1.48	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	V(BR)DSS	-30	-33	-	V
Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$	I_{DSS}	-	-	-1	μA
Gate to Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	±100	nA
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	V_{GS(th)}	-1.0	-1.6	-2.5	V
Static Drain-Source on-Resistance	$V_{GS}=-10V, I_D=-30A$	R_{DS(ON)}	-	3.8	5.5	mΩ
	$V_{GS}=-4.5V, I_D=-20A$		-	5.8	8.2	
Input Capacitance	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	9400	-	pF
Output Capacitance		C_{oss}	-	1000	-	
Reverse Transfer Capacitance		C_{rss}	-	767	-	
Total Gate Charge	$V_{DS}=-15V$ $V_{GS}=-10V$ $I_D=-30A$	Q_g	-	42	-	nC
Gate-Source Charge		Q_{gs}	-	8.4	-	
Gate-Drain("Miller") Charge		Q_{gd}	-	11.2	-	
Turn-on delay time	$V_{DD}=-15V$ $V_{GS}=-10V$ $I_D=-30A$ $R_{GEN}=2.5\Omega$	t_{d(on)}	-	15	-	ns
Turn-on Rise Time		T_r	-	16	-	
Turn-Off Delay Time		t_{d(OFF)}	-	69	-	
Turn-Off Fall Time		t_f	-	27	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	-90	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	-360	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=-30A$	V_{SD}	-	-0.8	-1.2	V

Note :

- 1、 The data tested by surface mounted on a 1 inch 2 FR-4 board with 2OZ copper.
- 2、 The data tested by pulsed , pulse width .The EAS data shows Max. rating .
- 3、 The power dissipation is limited by 175°C junction temperature
- 4、 EAS condition: T_J=25°C , V_{DD}= -24V, V_G= -10V, R_G=7Ω, L=0.1mH, I_{AS}= -60A
- 5、 The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Ratings and Characteristic Curves

Typical Characteristics

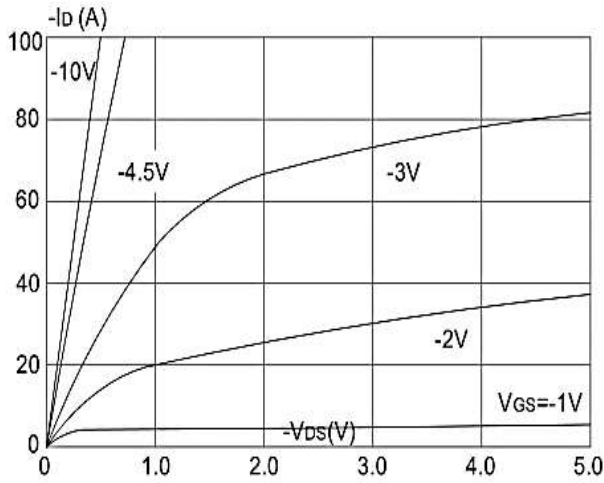


Figure1: Output Characteristics

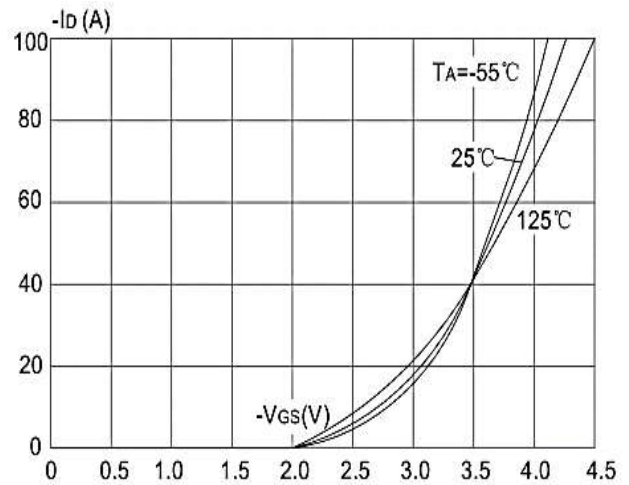


Figure 2: Typical Transfer Characteristics

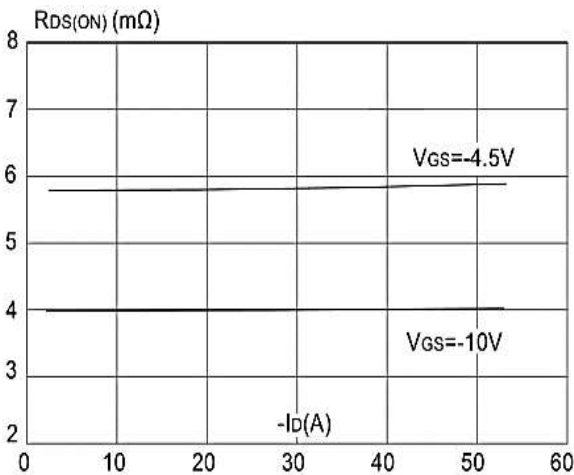


Figure 3: On-resistance vs. Drain Current

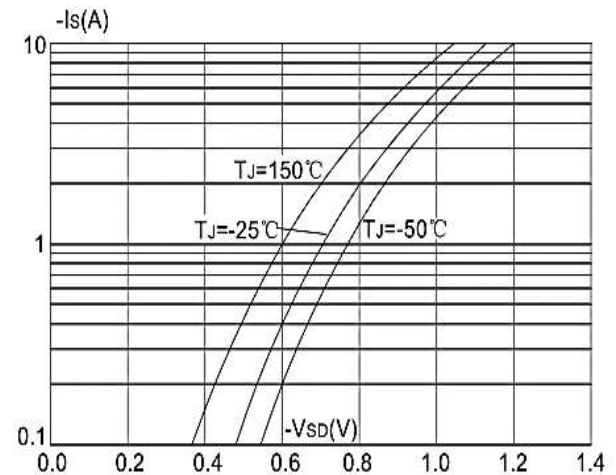


Figure 4: Body Diode Characteristics

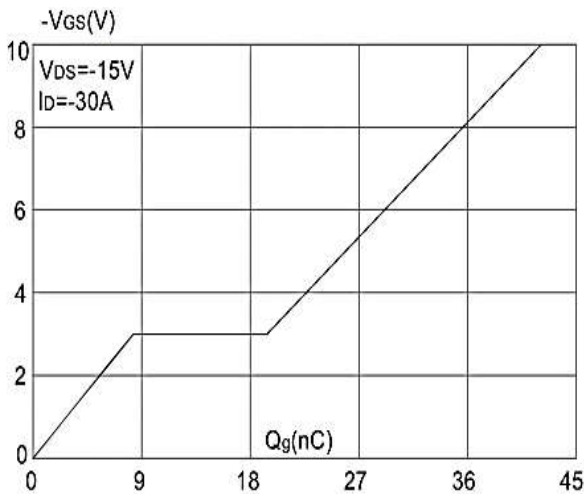


Figure 5: Gate Charge Characteristics

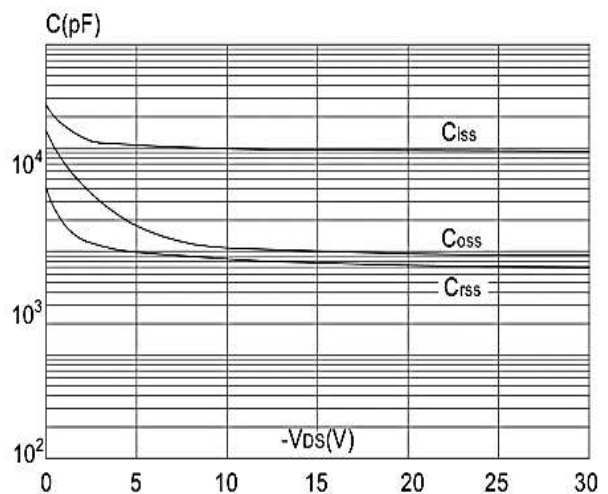


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

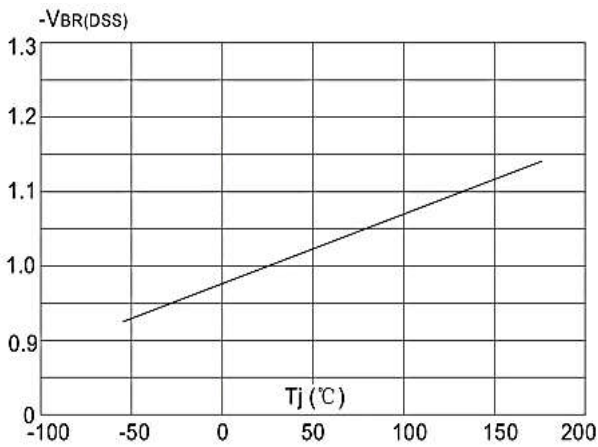


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

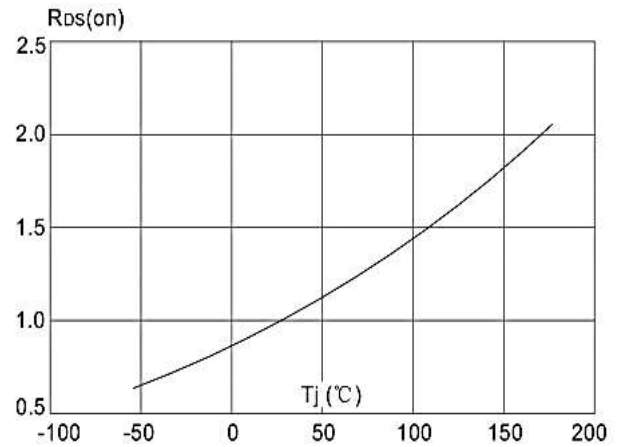


Figure 8: Normalized on Resistance vs. Junction Temperature

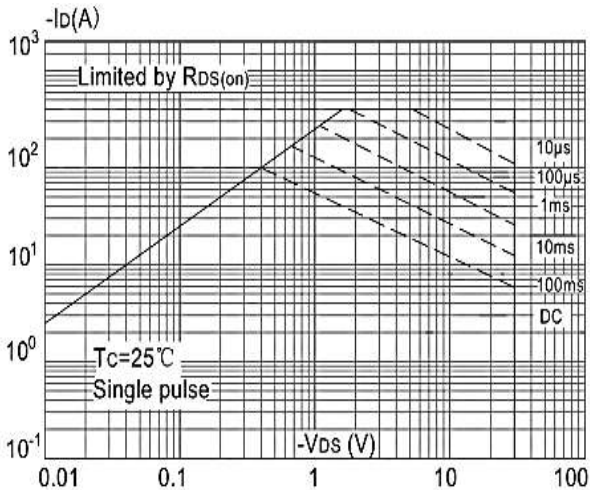


Figure 9: Maximum Safe Operating Area

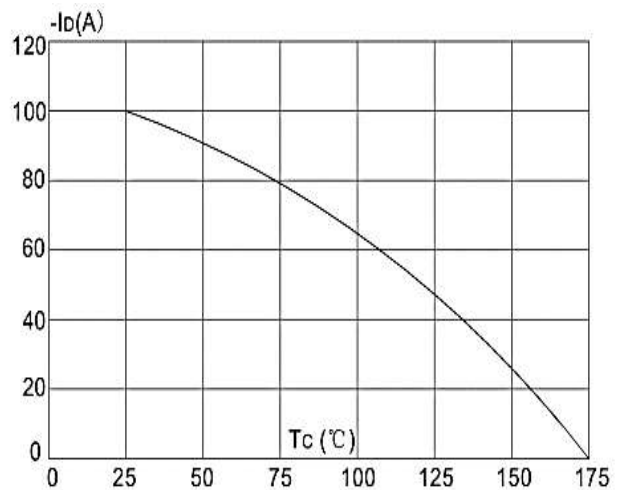


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

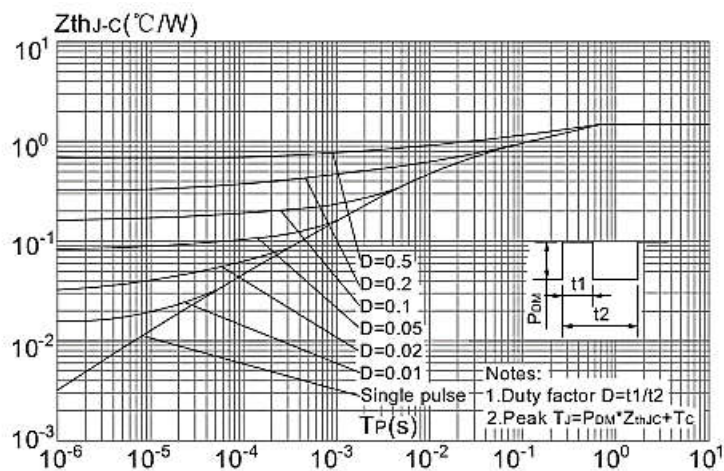
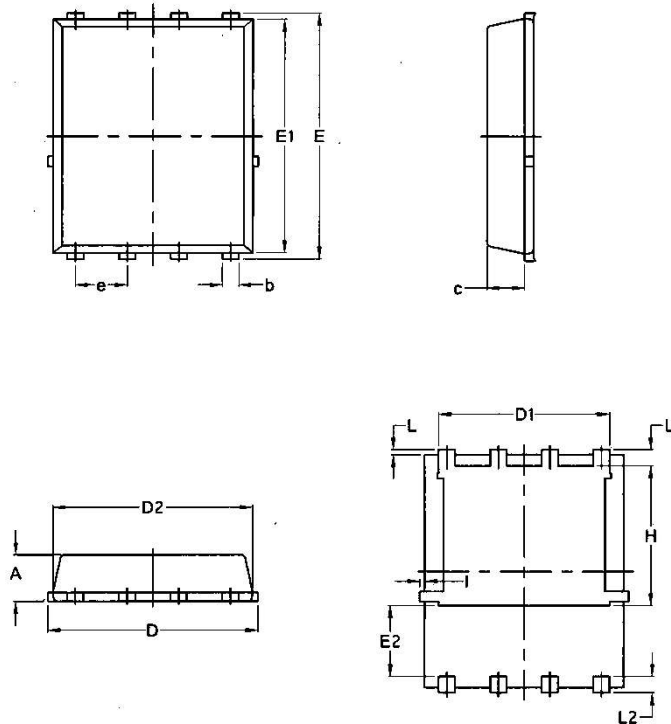


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

PDFN5*6-8L



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070