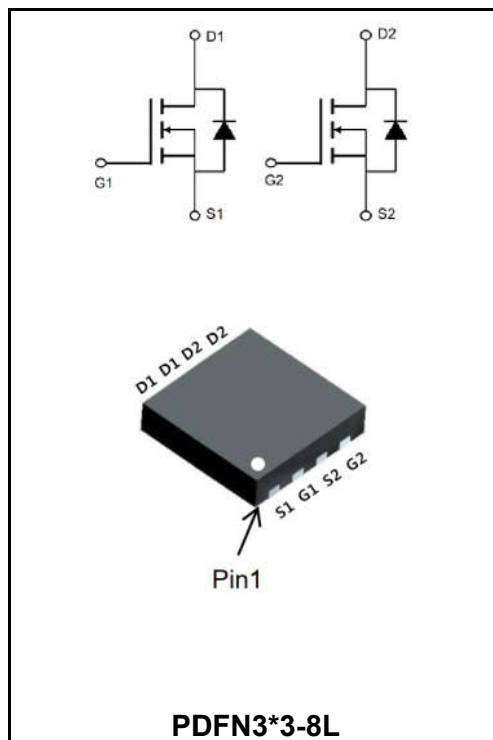


30V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	35A
V_{DSS}	30V
$R_{DS(on)-typ}(@V_{GS}=10V)$	< 12mΩ (Type: 10 mΩ)



Application

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



Product Specification Classification

Part Number	Package	Marking	Pack
YFW10H03DF	PDFN3*3-8L	YFW 10H03DF XXXXX	5000PCS/Tape

Maximum Ratings at Tc=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	35	A
Continuous Drain Current, V_{GS} @ 10V ¹ @ T _C =75°C	I_D	18	A
Pulsed Drain Current ²	I_{DM}	10	A
Single Pulse Avalanche Energy ³	E_{AS}	24.2	mJ
Avalanche Current	I_{AS}	22	A
Total Power Dissipation ⁴ @ T _A =25°C	P_D	7	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	$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	18	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$V(BR)_{V_{DS}}$	30	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$	I_{DSS}	-	-	1.0	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	1.5	2.5	V
Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=10A$	$R_{DS(on)}$	-	10	12	m Ω
	$V_{GS}=4.5V, I_D=5A$		-	16	18	m Ω
Input Capacitance	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$	C_{iss}	-	633	-	pF
Output Capacitance		C_{oss}	-	120	-	pF
Reverse Transfer Capacitance		C_{rss}	-	99	-	pF
Total Gate Charge	$V_{DS}=15V$ $I_D=10A$ $V_{GS}=10V$	Q_g	-	15	-	nC
Gate-Source Charge		Q_{gs}	-	4.7	-	nC
Gate-Drain("Miller") Charge		Q_{gd}	-	3.6	-	nC
Turn-on delay time	$V_{DS}=30V$ $I_D=18A$ $R_{GEN}=3\Omega$ $V_{GS}=10V$	$t_{d(on)}$	-	5	-	ns
Turn-on Rise Time		T_r	-	8	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	21	-	ns
Turn- Off Fall Time		t_f	-	7	-	ns
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	18	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	72	A
Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=18A$	V_{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time	$I_F=18A, dI/dt=100A/\mu s$	t_{rr}	-	7	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	5.9	-	nC

Note :

- 1、The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
- 2、The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3、The EAS data shows Max. rating . The test condition is $V_{DD}=25V, V_{GS}=10V, L=0.1mH, I_{AS}=10A$
- 4、The power dissipation is limited by 175°C junction temperature
- 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

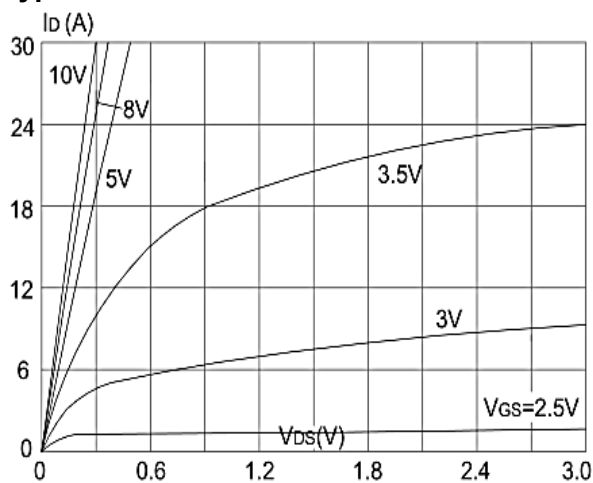


Figure1: Output Characteristics

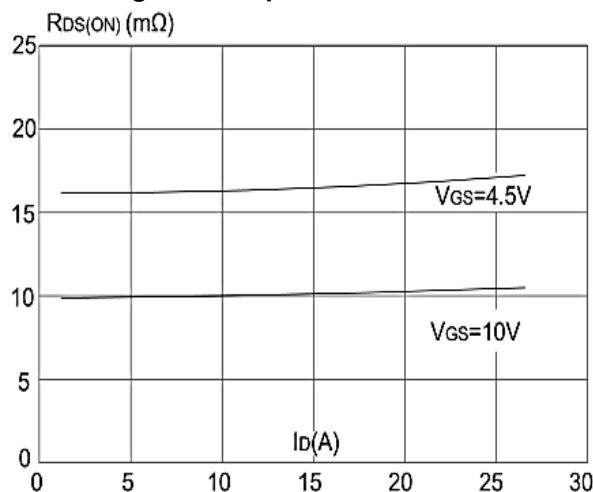


Figure 3:On-resistance vs. Drain Current

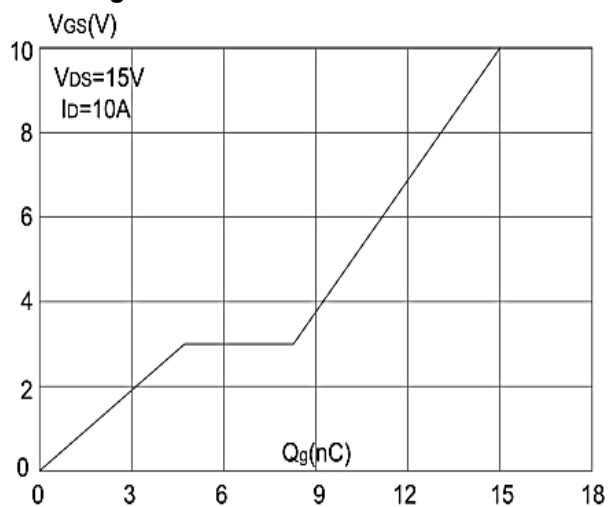


Figure 5: Gate Charge Characteristics

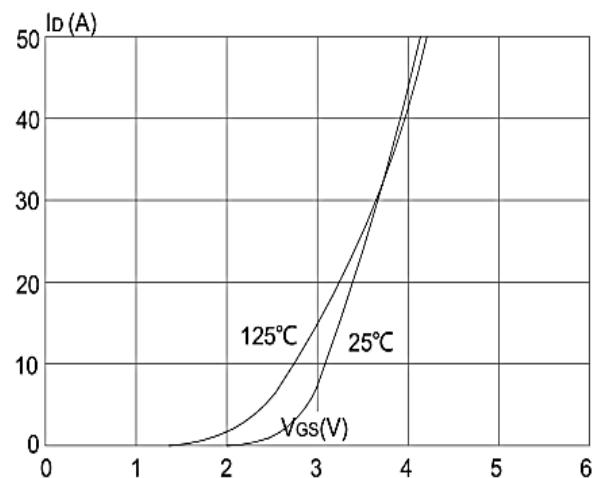


Figure 2: Typical Transfer Characteristics

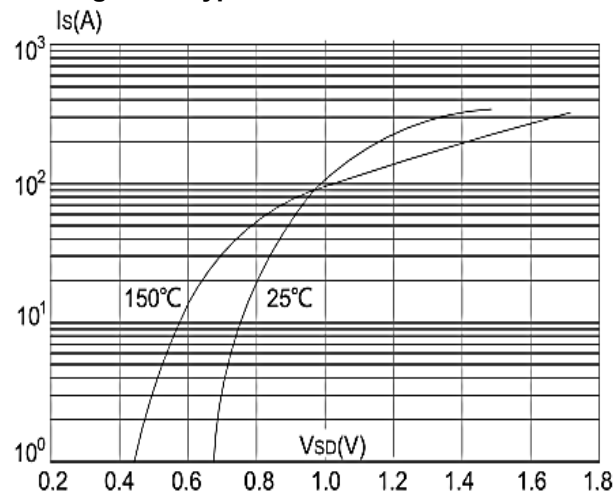


Figure 4: Body Diode Characteristics

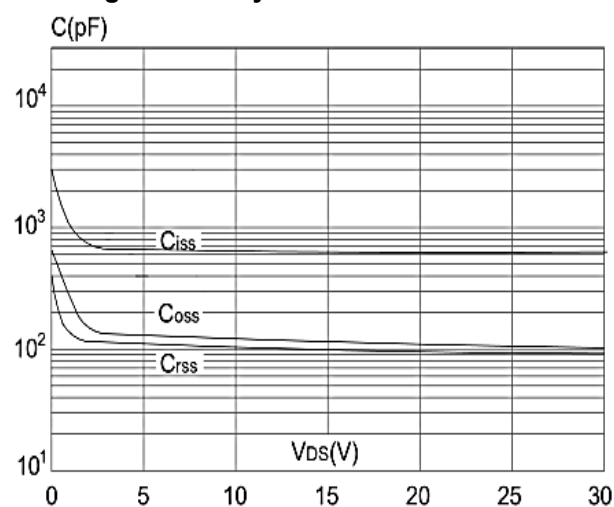


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

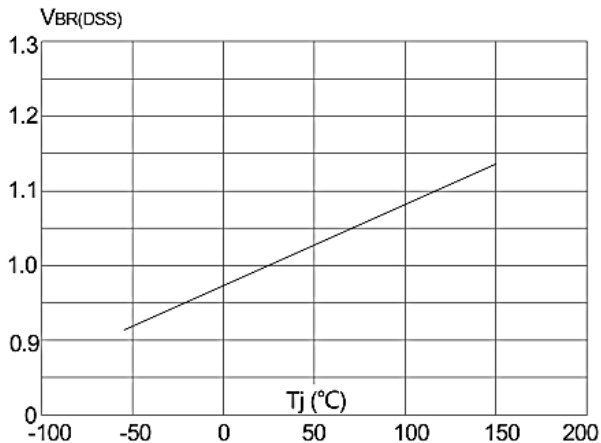


Figure 7: Normalized Breakdown Voltage vs Junction Temperature

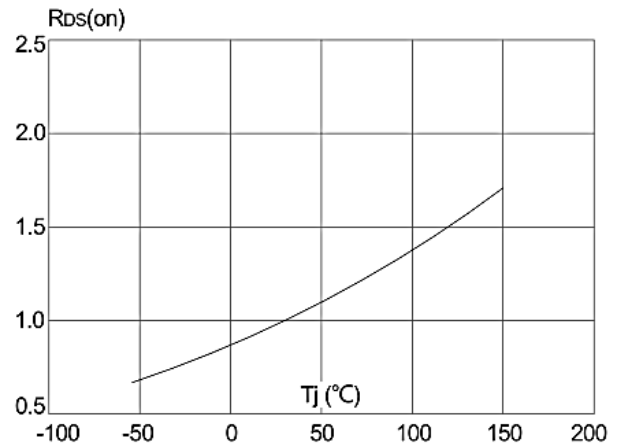


Figure 8: Normalized on Resistance vs. Junction Temperature

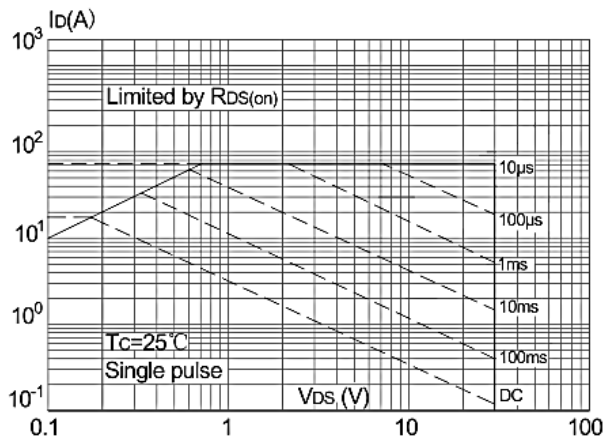


Figure 9: Maximum Safe Operating Area

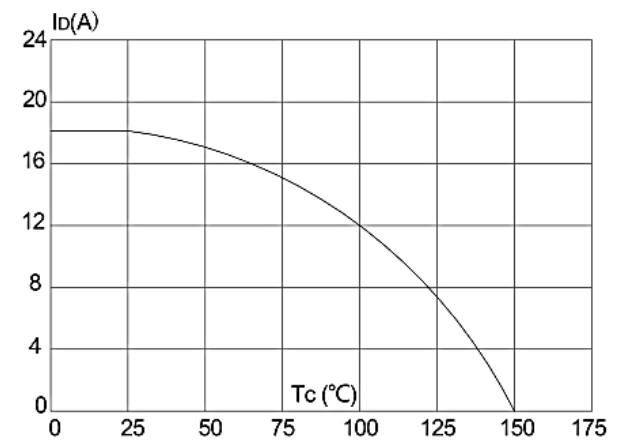


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

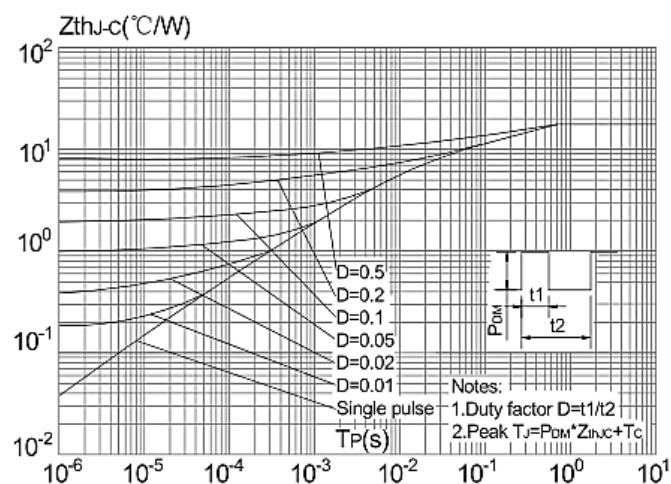
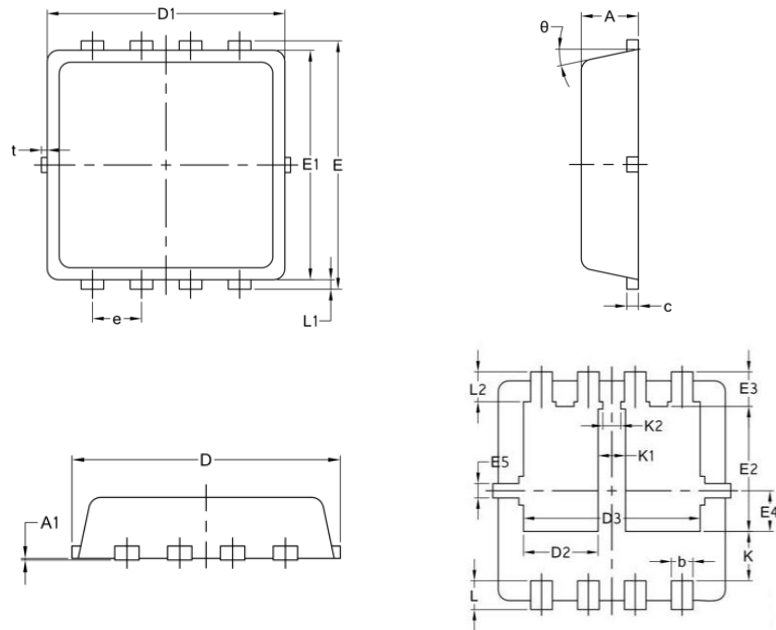


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambien

PDFN3*3-8L



Symbol	Common		
	Mm		
	Min	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.25	0.30	0.39
c	0.14	0.152	0.20
D	3.20	3.30	3.45
D1	3.05	3.15	3.25
D2	0.84	1.04	1.24
D3	2.30	2.45	2.60
E	3.20	3.30	3.40
E1	2.95	3.05	3.15
E2	1.60	1.74	1.90
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	0.50	0.69	0.80
K1	0.30	0.38	0.53
K2	0.15	0.25	0.35
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
L2	0.27	0.42	0.57
t	0	0.075	0.13
Φ	10°	12°	14°