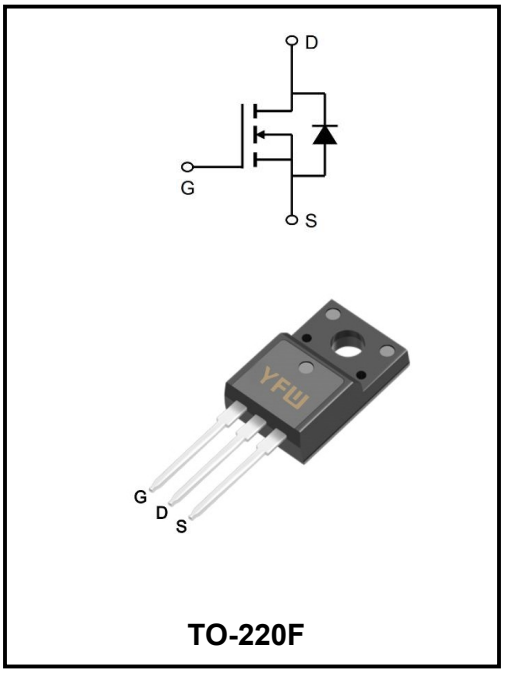
200V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	18A
V_{DSS}	200V
R_{DSON}-typ(@V_{GS}=10V)	＜160mΩ(Typ:120mΩ)



TO-220F

FEATURES

Adopt advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

- 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}	200	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current	I_D	18	A
Pulsed Drain Current (Note1)	I_{DM}	72	A
Power Dissipation	P_D	100	W
Single Pulse Avalanche Energy (Note2)	E_{AS}	500	mJ
Operating Junction and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.25	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	100	°C/W

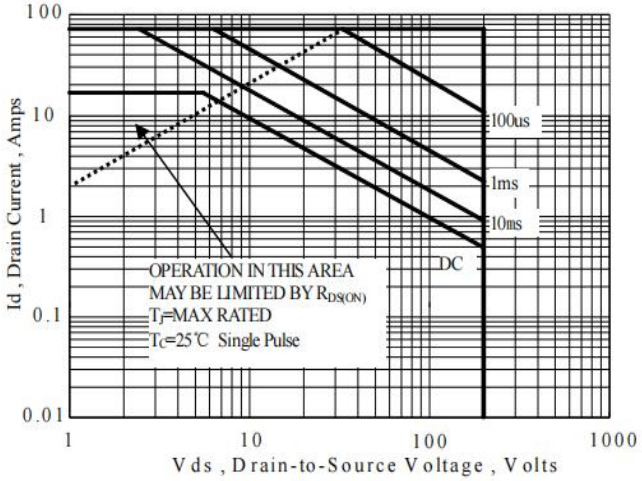
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

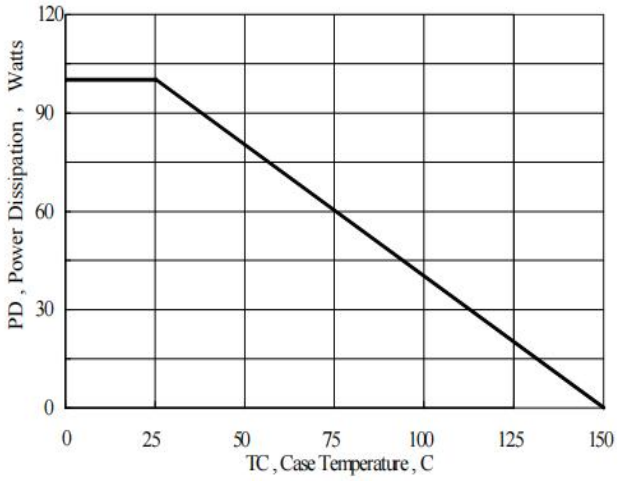
Maximum Ratings at Tc=25°C unless otherwise specified

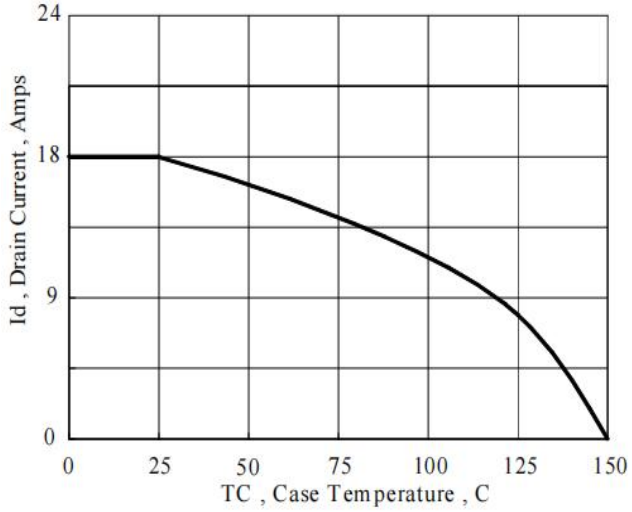
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	200	-	-	V
Drain-Source Leakage Current	V_{DS}=200V , V_{GS}=0V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS} = ± 30 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate Source Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance (Note 3)	V_{GS}=10V, I_D=9A	$R_{DS(ON)}$	-	120	160	mΩ
Input Capacitance	V_{DS}=25V V_{GS}=0V f=1MHz	C_{iss}	-	1135	-	pF
Output Capacitance		C_{oss}	-	180	-	
Reverse Transfer Capacitance		C_{rss}	-	15.8	-	
Total Gate Charge(Note2)	V_{DS}=16V I_D=18A V_{GS}=10V	Q_g	-	20	-	nC
Gate to Source Charge(Note2)		Q_{gs}	-	7	-	
Gate to Drain Charge(Note2)		Q_{gd}	-	7.3	-	
Turn-on Delay Time(Note2)	V_{DD}=100V I_D=18A R_G=10Ω	$t_{d(on)}$	-	18.8	-	ns
Rise Time(Note2)		T_r	-	32	-	
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	35	-	
Fall Time(Note2)		t_f	-	8	-	
Maximun Body-Diode Continuous Current		I_S	-	-	18	A
Maximum Pulsed Current (Body Diode)		I_{SM}	-	-	72	A
Drain-Source Diode Forward Voltage	V_{GS}=0V , I_{SD}=18A , T_J= 25℃	V_{SD}	-	-	1.5	V
Reverse Recovery Time(Note2)	T_J = 25℃, I_F= 18A di / dt = 100 A/μs	t_{rr}	-	187	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	924	-	nC

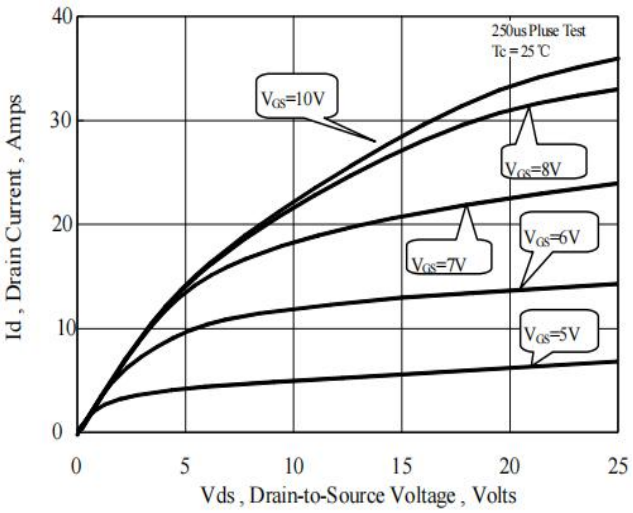
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

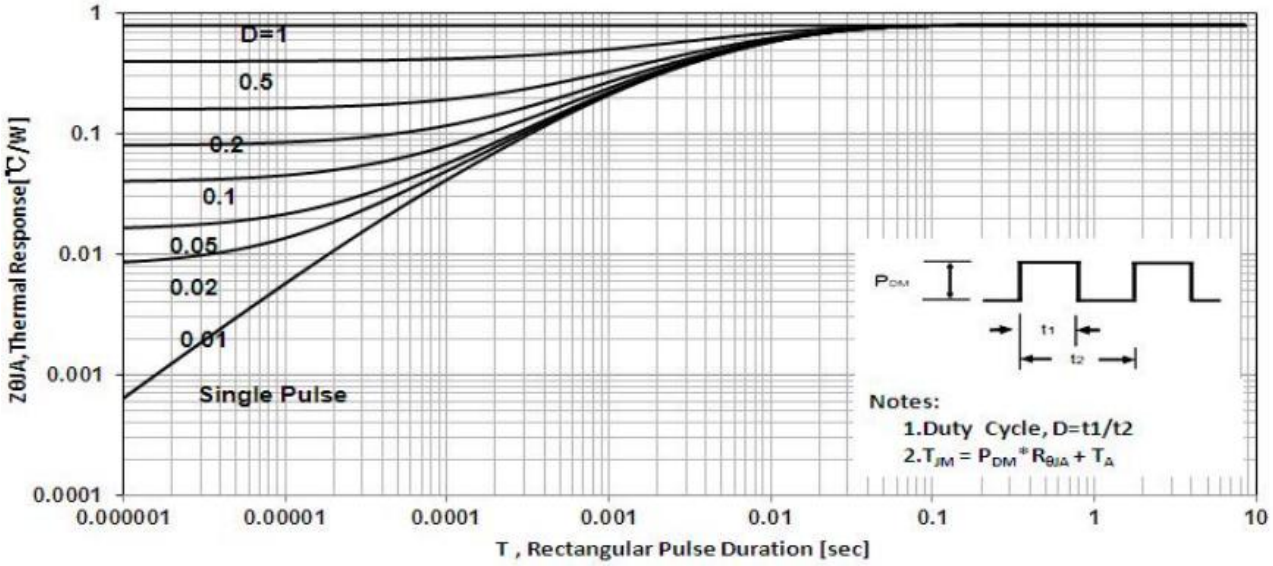
Ratings and Characteristic Curves



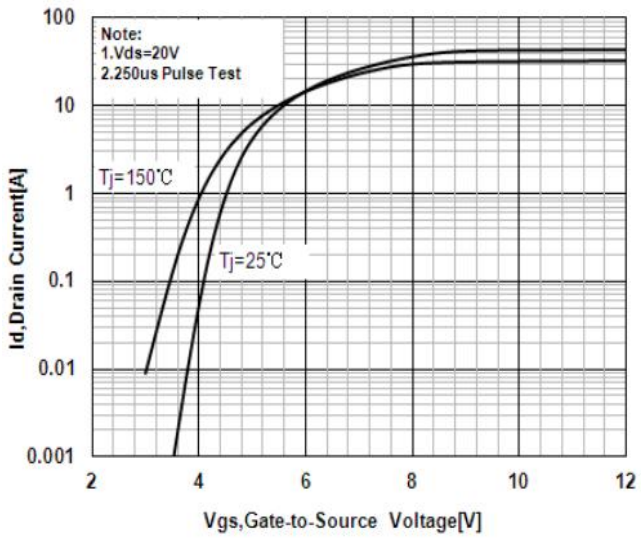


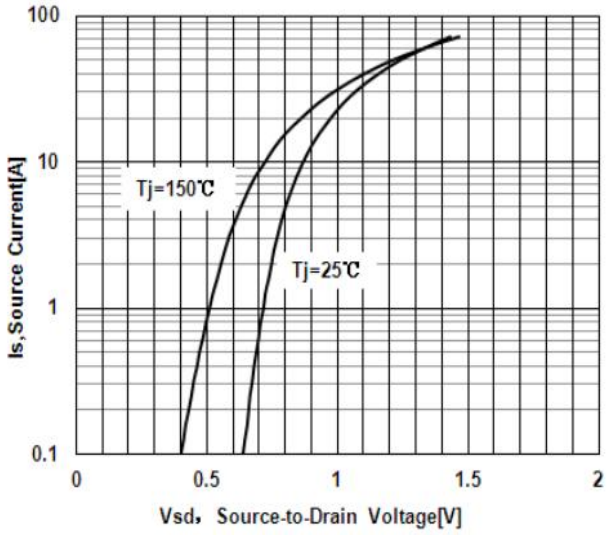


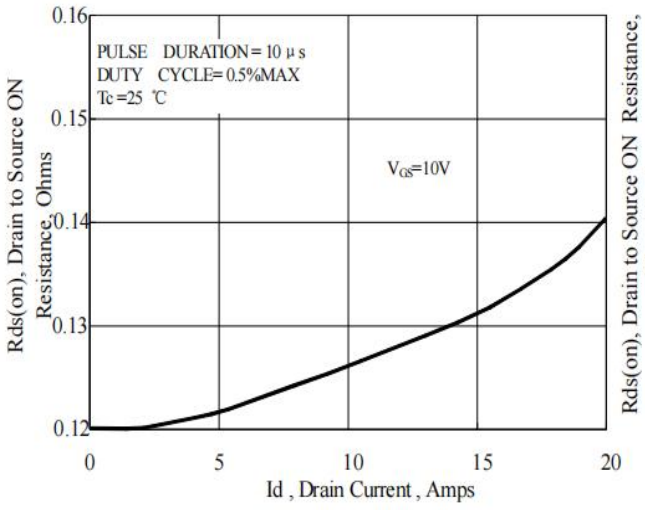


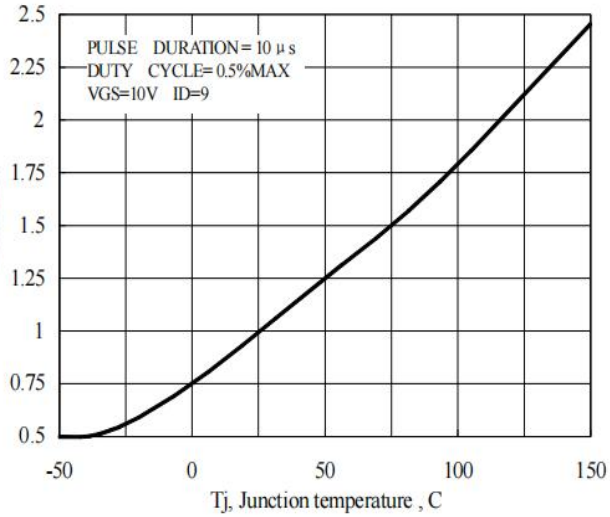


Ratings and Characteristic Curves

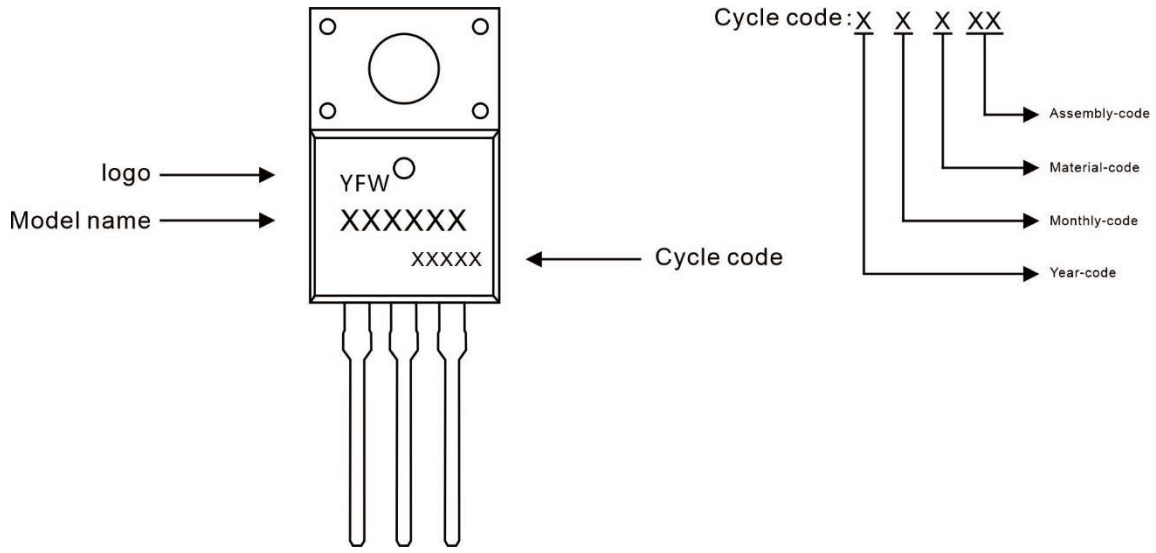








Marking Diagram

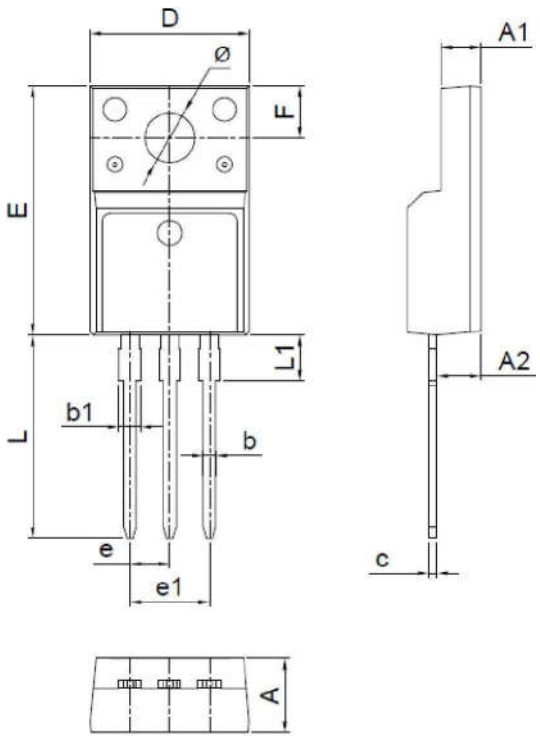


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW18N20AF	TO-220F	0.06oz(1.74g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220F



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.44	0.049	0.057
c	0.40	0.60	0.016	0.024
D	10.00	10.32	0.394	0.406
E	15.75	16.05	0.620	0.632
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	3.10	3.5	0.122	0.138
L	13.50	13.90	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130

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