

200V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

I_D	18A
V_{DSS}	200V
R_{DS(on)}-typ(@V_{GS}=10V)	<140mΩ(Type:110mΩ)

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

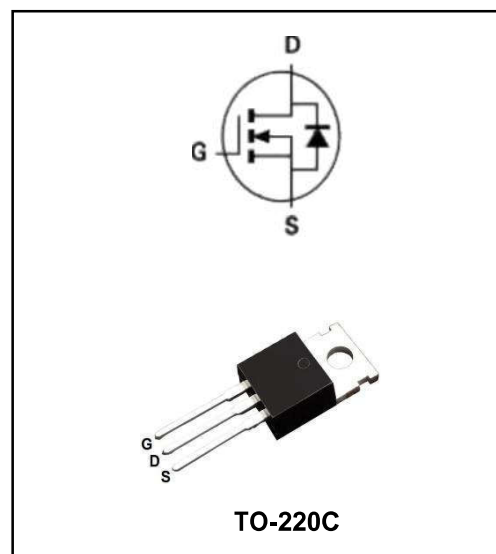
- Battery protection
- Load switch
- Uninterruptible power supply

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

Product Specification Classification

Part Number	Package	Marking	Pack
YFW18N20AC	TO-220C	YFW 18N20AC XXXXX	1000PCS/box



Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	± 30	V
Continue Drain Current	I_D	18	A
Pulsed Drain Current (Note1)	I_{DM}	72	A
Power Dissipation	P_D	100	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	500	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	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 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

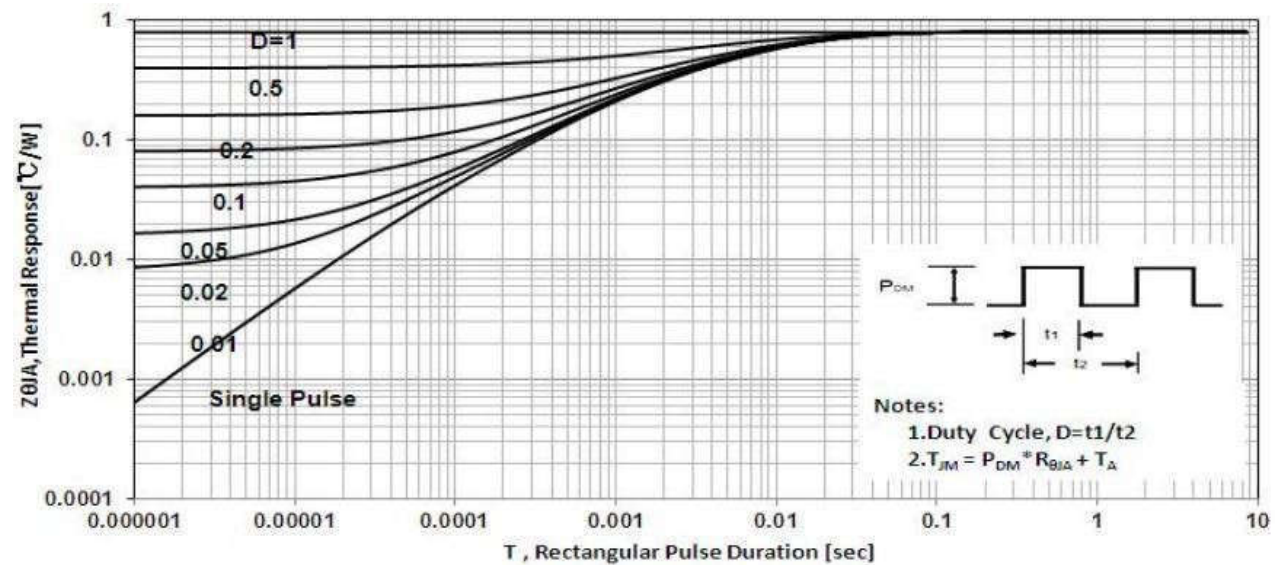
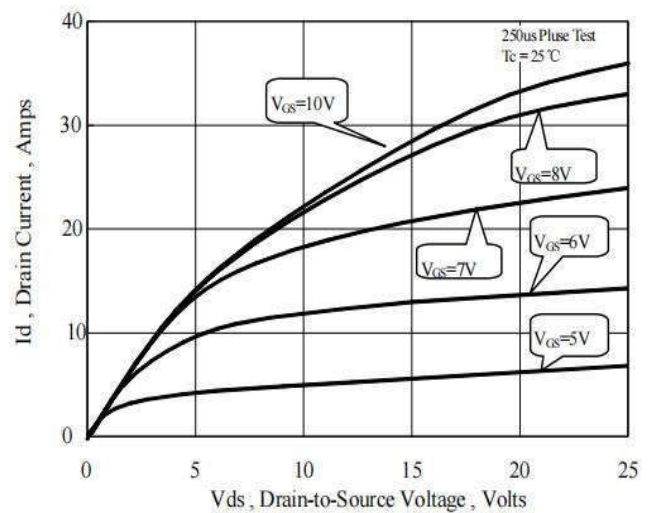
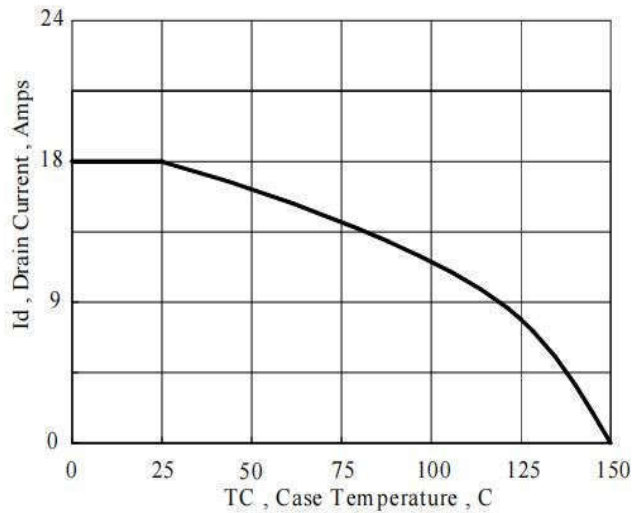
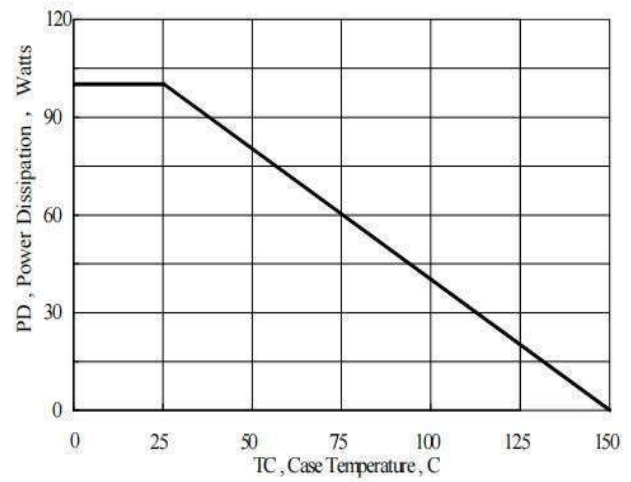
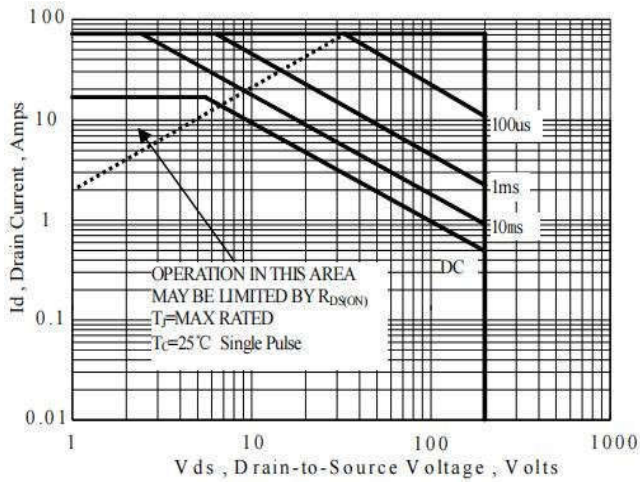
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	BV_{DSS}	200	-	-	V
Drain-Source Leakage Current	$V_{DS} = 200 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance (Note 3)	$V_{GS} = 10 \text{ V}, I_D = 9 \text{ A}$	$R_{DS(on)}$	-	110	140	m Ω
Input Capacitance	$V_{DS}=25 \text{ V}, V_{GS}=0 \text{ V}, f=1\text{MHz}$	C_{iss}	-	1135	-	pF
Output Capacitance		C_{oss}	-	180	-	pF
Reverse Transfer Capacitance		C_{rss}	-	15.8	-	pF
Turn-on Delay Time(Note2)	$V_{DD}=100 \text{ V}, R_G=10 \Omega, I_D=18 \text{ A}$	$t_{d(ON)}$	-	18.8	-	ns
Rise Time(Note2)		t_r	-	32	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	35	-	ns
Fall Time(Note2)		t_f	-	8	-	ns
Total Gate Charge(Note2)	$V_{DS}=16 \text{ V}, V_{GS}=10 \text{ V}, I_D=18 \text{ A}$	Q_G	-	20	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	7	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	7.3	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

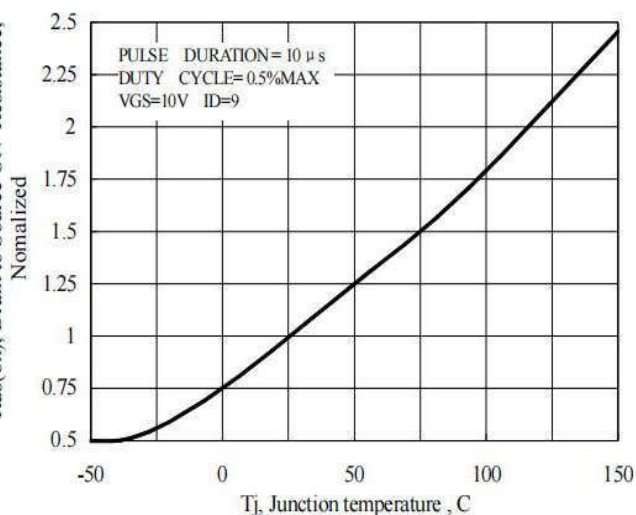
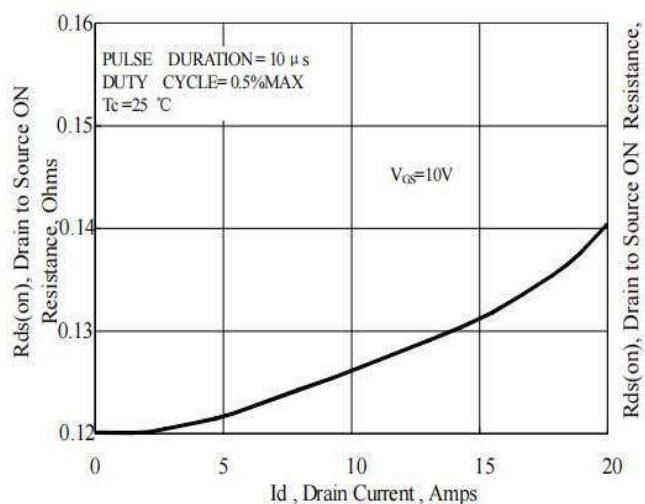
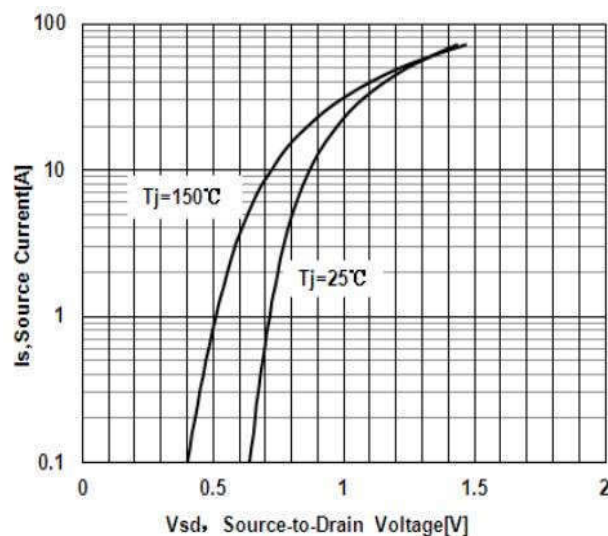
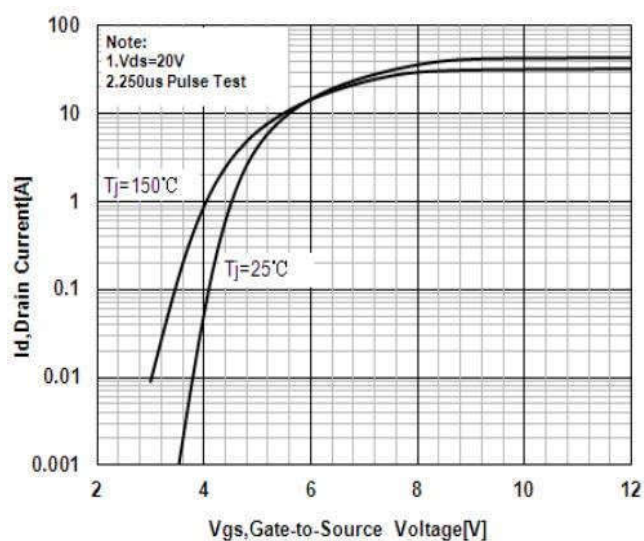
Characteristics	Test Condition	Symbo	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	18	A
Maximum Pulsed Current (Body Diode)		I_{SM}	-	-	72	A
Drain-Source Diode Forward Voltage	$V_{GS}=0 \text{ V}, I_S=18 \text{ A}, T_J=25^\circ\text{C}$	V_{SD}	-	-	1.5	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ\text{C}, I_F = 18 \text{ A}$ $di / dt = 100 \text{ A}/\mu\text{s}$	t_{rr}	-	187	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	924	-	nC

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

RATINGS AND CHARACTERISTIC CURVES



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Package Outline Dimensions millimeters

TO-220C

