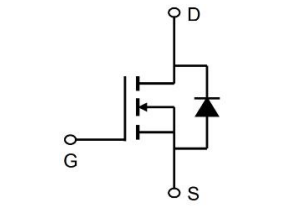
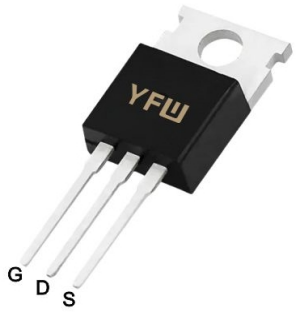
200V N-Channel Enhancement Mode MOSFET

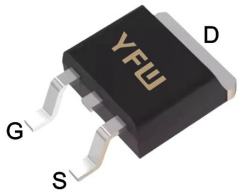
MAIN CHARACTERISTICS

I_D	34A
V_{DS}	200V
R_{DSON}-typ(@V_{GS}=10V)	＜90mΩ(Typ:65mΩ)





TO-220C



TO-263C

FEATURES

- Fast switching
- Improved dv/dt capability

APPLICATIONS

- Uninterruptible Power Supply(UPS)
- Power Factor Correction (PFC)

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	34	A
Pulsed Drain Current(note1)	I_{DM}	112	A
Power Dissipation	P_D	158	W
Single Pulse Avalanche Energy(note1)	E_{AS}	588	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction-to-case	$R_{\theta JC}$	0.79	°C/W
Thermal Resistance, Junction ambient	$R_{\theta JA}$	62.5	°C/W

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

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	200	-	-	V
Drain-Source Leakage Current	V_{DS} = 200 V, V_{GS} = 0 V	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 = 250 μA	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 17 A	$R_{DS(ON)}$	-	65	90	mΩ
Input Capacitance	V_{DS}=25 V V_{GS}=0V f=1MHz	C_{iss}	-	2400	-	pF
Output Capacitance		C_{oss}	-	430	-	
Reverse Transfer Capacitance		C_{rss}	-	55	-	
Turn-on Delay Time(Note2)	V_{DD}=100 V V_{GS}=10V R_G=25 Ω I_D=34A	$t_{d(on)}$	-	40	-	ns
Rise Time(Note2)		T_r	-	280	-	
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	125	-	
Fall Time(Note2)		t_f	-	115	-	
Total Gate Charge(Note2)	V_{DS}=160V V_{GS}=10V I_D=34A	Q_g	-	60	-	nC
Gate to Source Charge(Note2)		Q_{gs}	-	17	-	
Gate to Drain Charge(Note2)		Q_{gd}	-	27	-	
Maximun Body-Diode Continuous Current		I_S	-	-	34	A
Maximum Pulsed Current (Body Diode)		I_{SM}	-	-	112	A
Drain-Source Diode Forward Voltage	V_{GS}=0V , I_S=34A , T_J=25℃	V_{SD}	-	-	1.4	V
Reverse Recovery Time(Note2)	T_J = 25℃, I_F= 34A di / dt = 100 A/μs	t_{rr}	-	150	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	0.95	-	μC

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

Ratings and Characteristic Curves

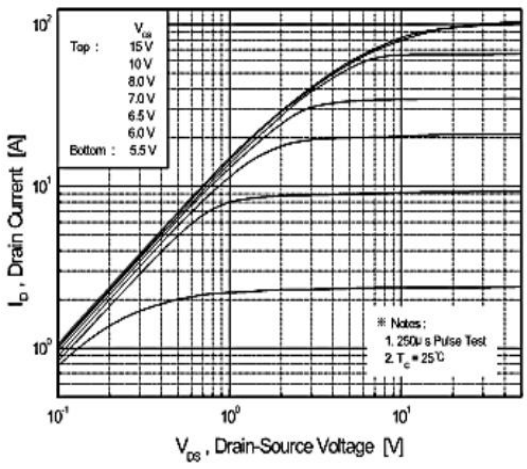


Figure 1. On-Region Characteristics

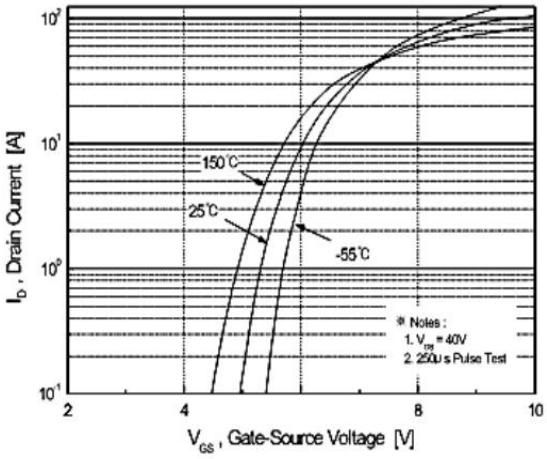


Figure 2. Transfer Characteristics

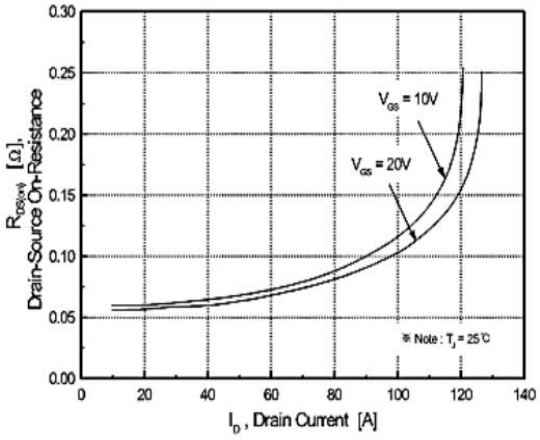


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

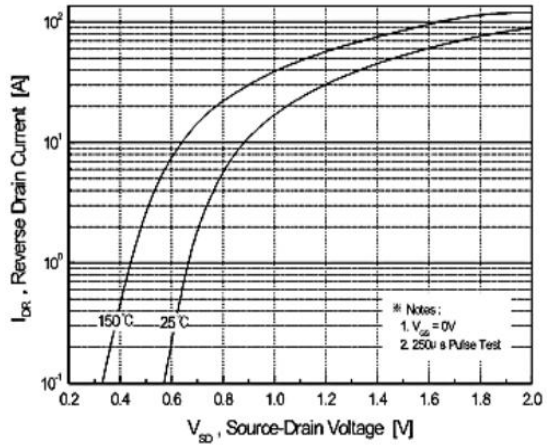


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

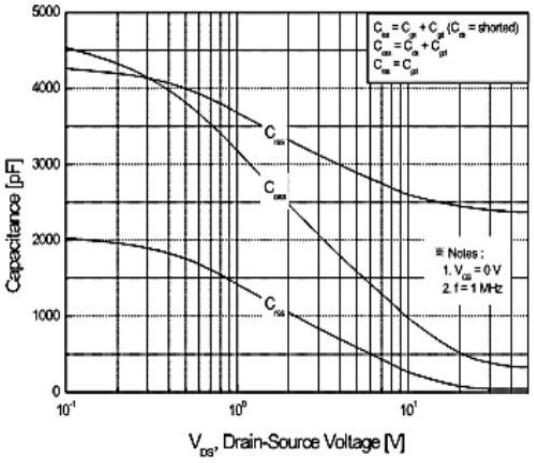


Figure 5. Capacitance Characteristics

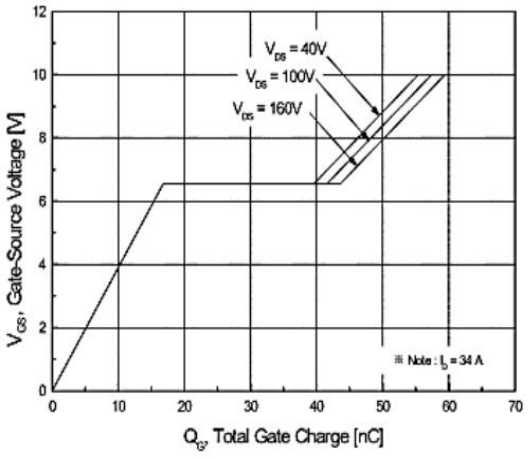


Figure 6. Gate Charge Characteristics

Ratings and Characteristic Curves

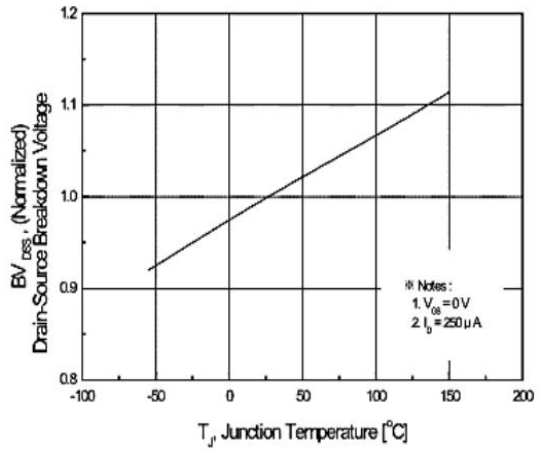


Figure 7. Breakdown Voltage Variation vs. Temperature

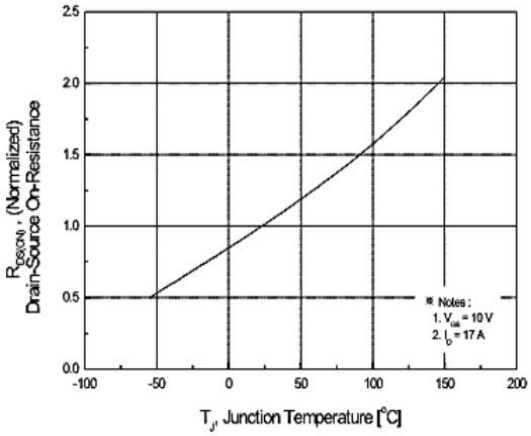


Figure 8. On-Resistance Variation vs. Temperature

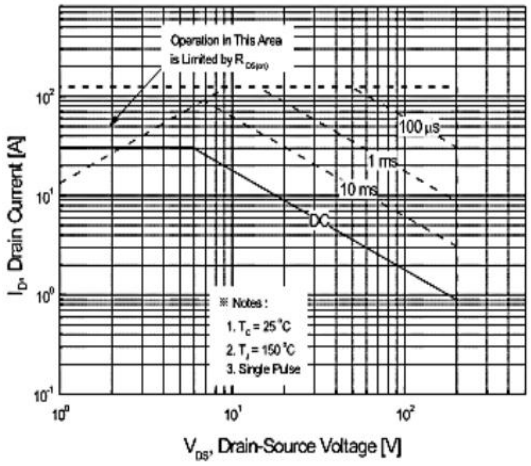


Figure 9. Maximum Safe Operating Area

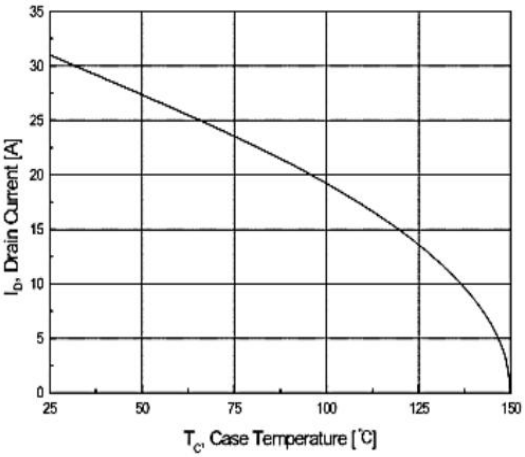


Figure 10. Maximum Drain Current vs. Case Temperature

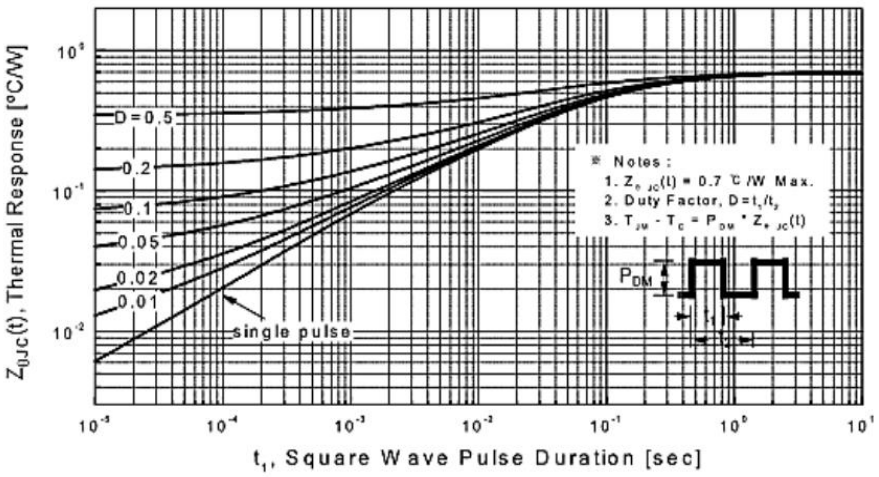
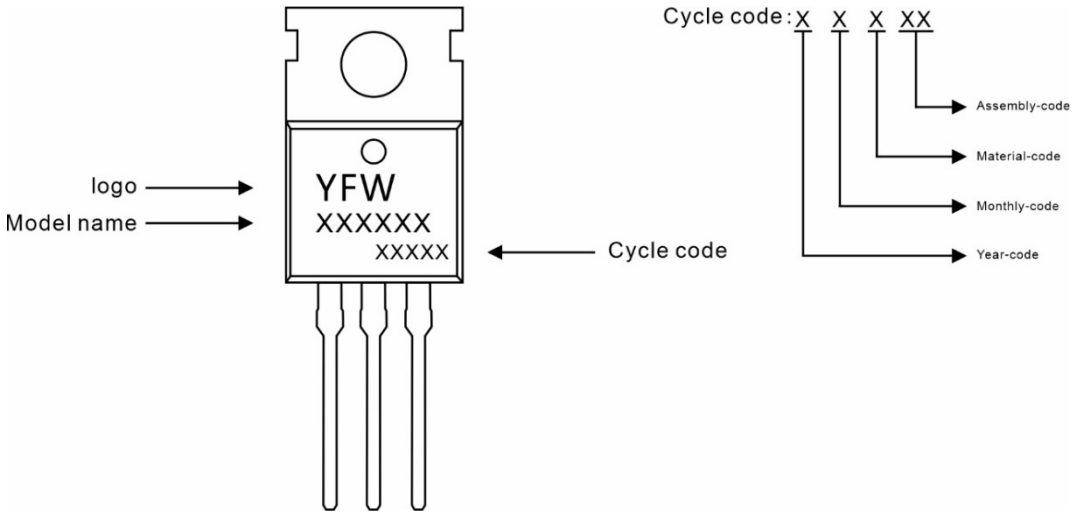


Figure 11. Transient Thermal Response Curve

Marking Diagram

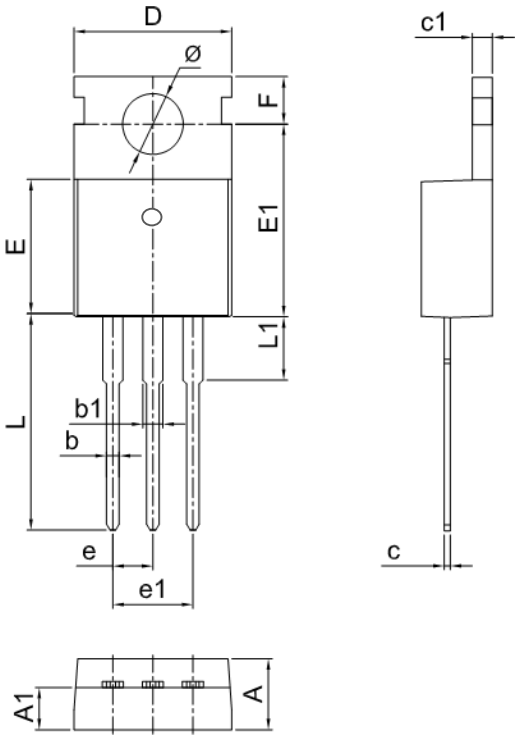


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW34N20AC	TO-220C	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

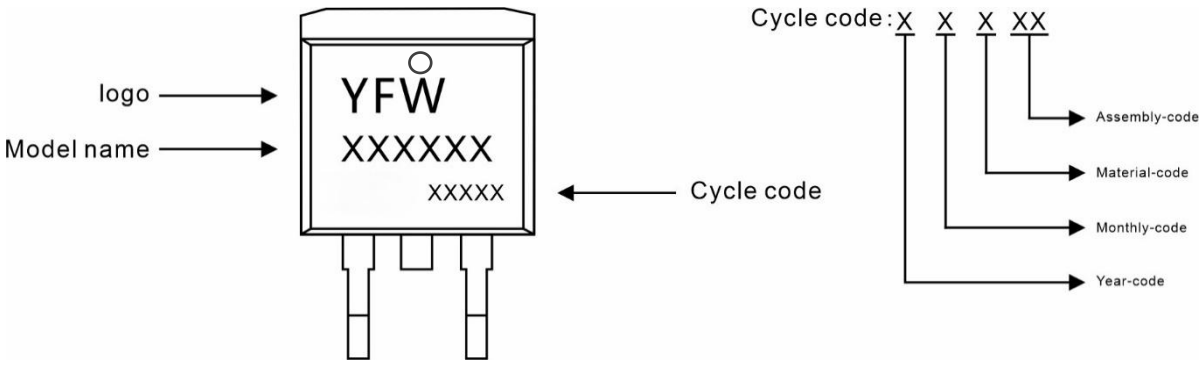
Package Dimensions

TO-220C



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.34	4.67	0.171	0.184
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.30	0.50	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
E1	12.00	12.50	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	13.20	13.80	0.520	0.543
L1	3.80	4.20	0.150	0.165
Φ	3.60	3.96	0.142	0.156

Marking Diagram

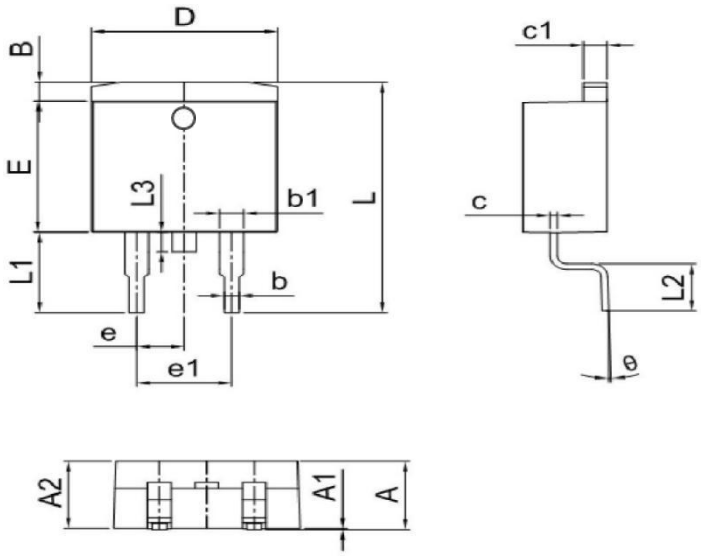


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFW34N20ASC	TO-263C	0.04oz(1.16g)	800pcs/reel	1600pcs/box 8000pcs/Carton

Package Dimensions

TO-263C



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

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