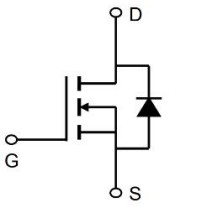
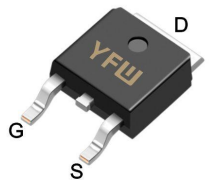
100V N-CHANNEL ENHANCEMENTMODE MOSFET

MAIN CHARACTERISTICS

I_D	120A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	＜6mΩ(Typ:4.6mΩ)





TO-252

Application

- YFW-SGT technology
- Battery protection
- Load switch
- Uninterruptible power supply

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	120	A
Pulsed Drain Current (Note1)	I_{DM}	300	A
Power Dissipation	P_D	148	W
Single Pulse Avalanche Energy	E_{AS}	130	mJ
Operation and storage temperature	T_{STG}, T_J	-55 to +150	°C
Thermal Resistance, Junction-case(Note 2)	$R_{\theta JC}$	0.84	°C/W
Thermal Resistance, Junction-ambient	$R_{\theta JA}$	62	°C/W

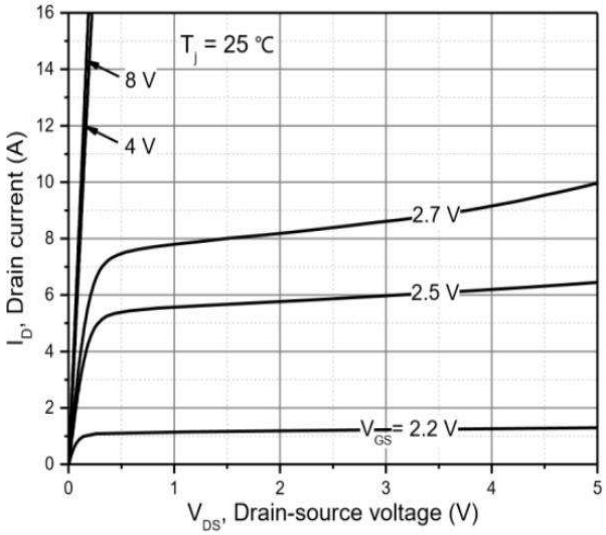
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

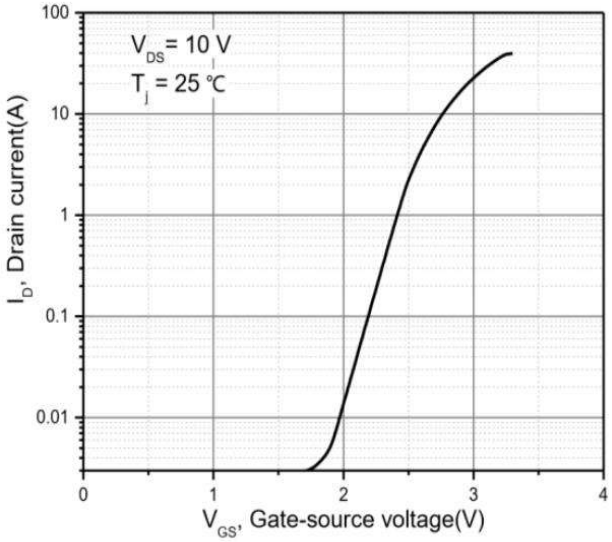
Maximum Ratings at Tc=25°C unless otherwise specified

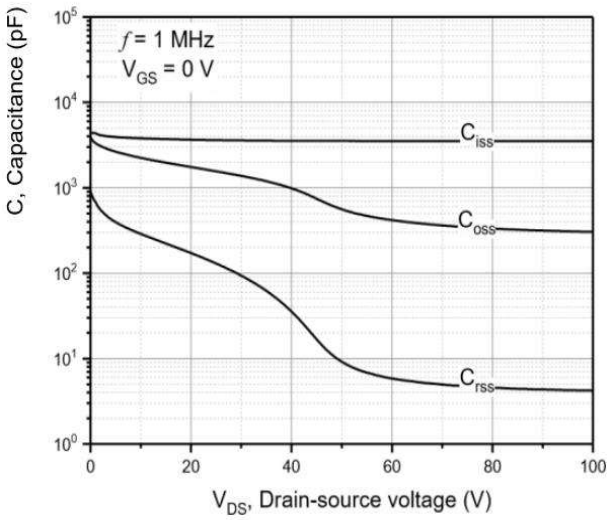
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	100	-	-	V
Gate Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Drain-Source Leakage Current	V_{DS} = 100 V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	1	-	3	V
Drain-Source on-Resistance	V_{GS}=10V, I_D=20A	$R_{DS(ON)}$	-	4.5	5.6	mΩ
	V_{GS}=4.5V, I_D=1A			6.3	9	
Input Capacitance	V_{DS}=50V V_{GS}=0V f=1MHz	C_{iss}	-	3530	-	pF
Output Capacitance		C_{oss}	-	560.1	-	
Reverse Transfer Capacitance		C_{rss}	-	9	-	
Total Gate Charge	V_{GS}=10V V_{DS}=50V I_D=10A	Q_g	-	65.7	-	nC
Gate-Source Charge		Q_{gs}	-	8.4	-	
Gate-Drain Charge		Q_{gd}	-	12.2	-	
Turn-on delay time	V_{GS}=10V V_{DD}=50V I_D=10A RG=2Ω	$t_{d(on)}$	-	22.5	-	ns
Rise Time		T_r	-	8.6	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	66.6	-	
Fall Time		t_f	-	42.1	-	
Continuous Source Current		I_S	-	-	120	A
Diode Forward Voltage	V_{GS}=0V , I_S=30A , T_J=25℃	V_{SD}	-	-	1.3	V
Body Diode Reverse Recovery Time(Note2)	T_J = 25℃, I_S= 10A di / dt = 100 A/μs	t_{rr}	-	67	-	ns
Body Diode Reverse Recovery Charge(Note2)		Q_{rr}	-	160	-	nC
Peak reverse recovery current		Irm		3.9		A

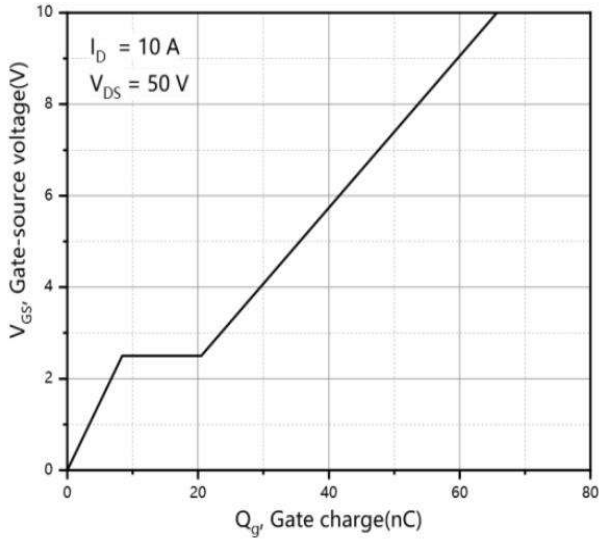
Note2:Pulse test: 300 us pulse width, 2 % duty cycle

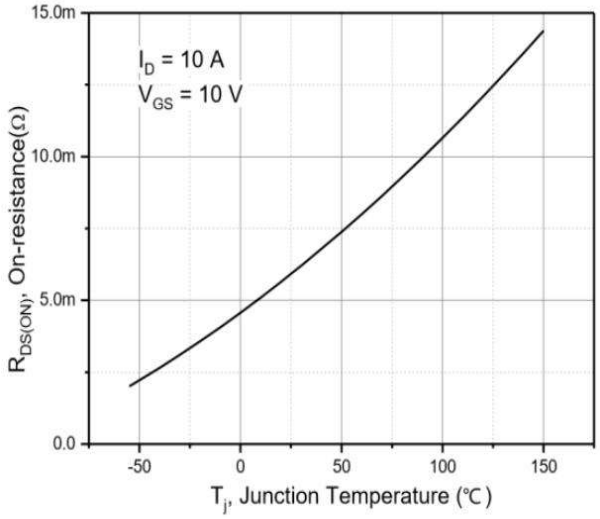
Ratings and Characteristic Curves

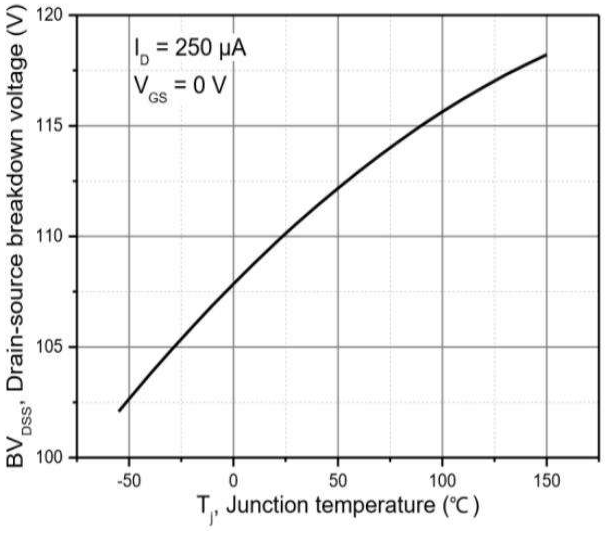




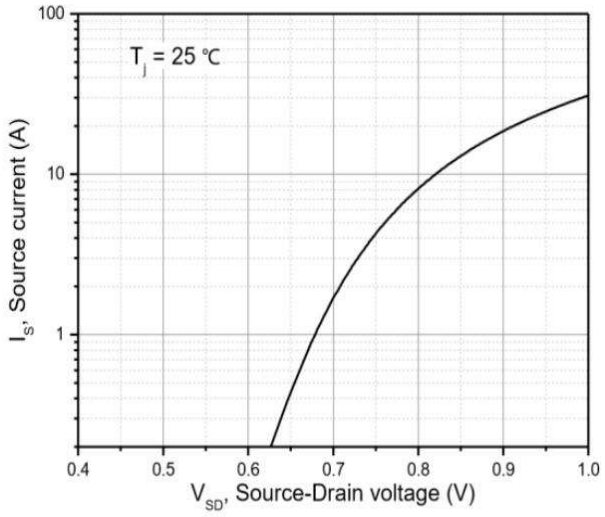


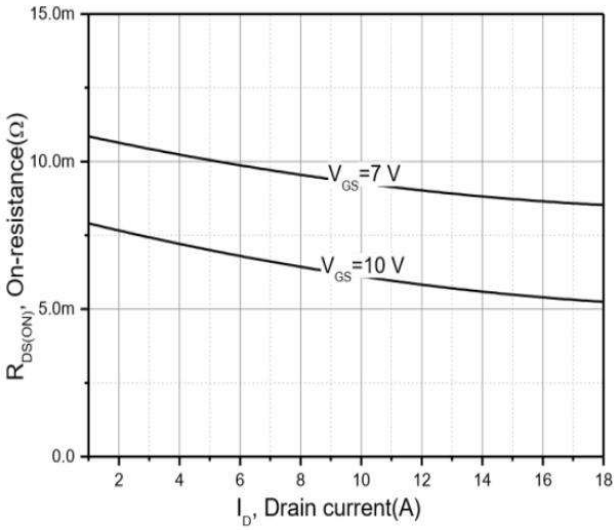


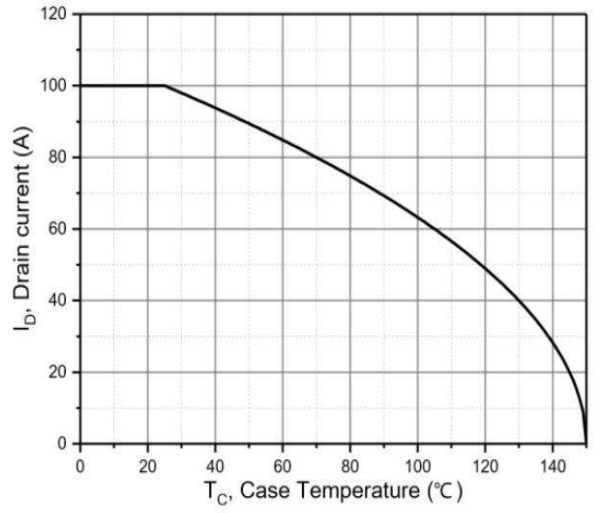


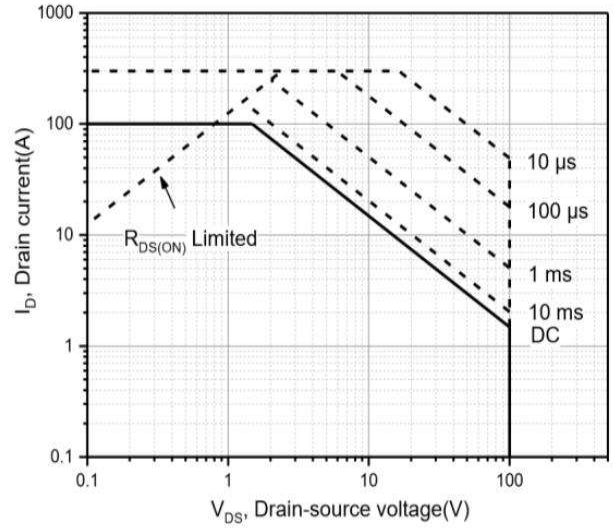


Ratings and Characteristic Curves

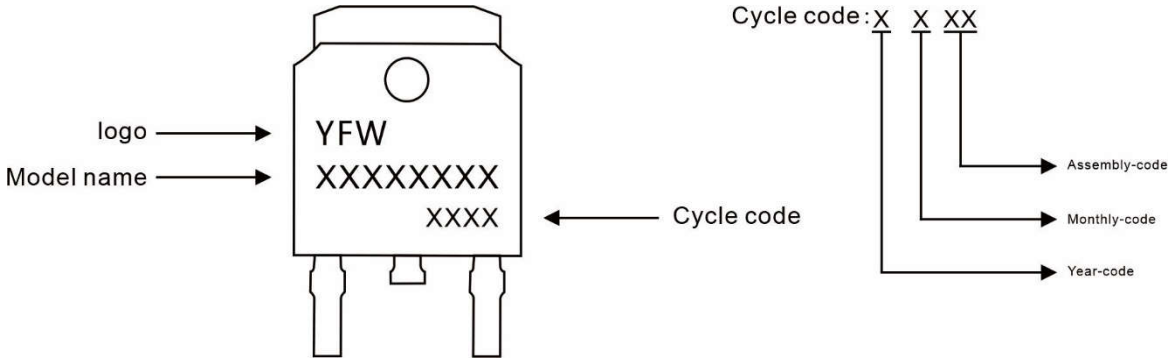








Marking Diagram

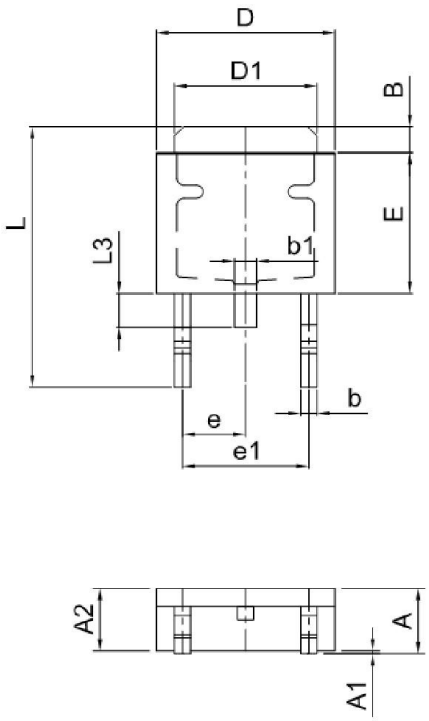


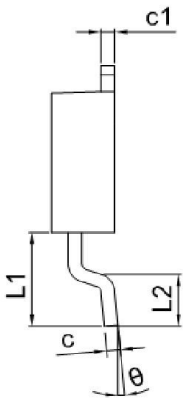
Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWG120N10AD	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

Package Dimensions

TO-252





Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

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