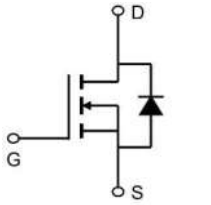
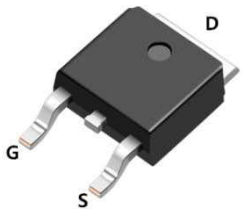
100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

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





TO-252

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFW120N10AD	TO-252	YFW 120N10AD XXXXX	2500PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

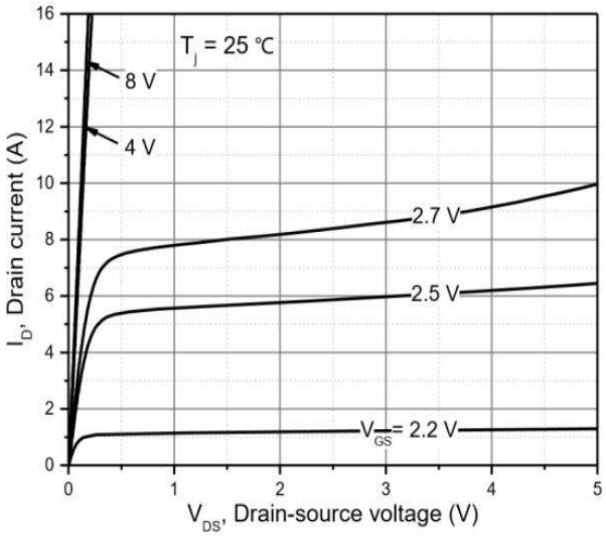
Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	120	A
Pulsed Drain Current(Note1)	I_{DM}	300	A
Power Dissipation	P_D	148	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	130	mJ
Operating Temperature Range	T_J	150	°C
Storage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

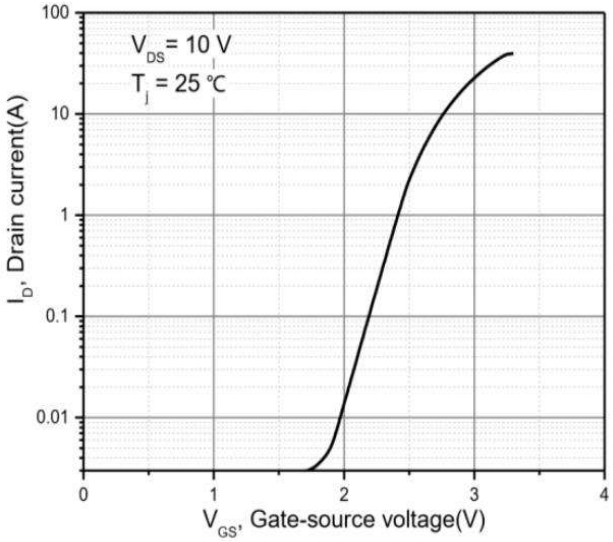
Maximum Ratings at Tc=25°C unless otherwise specified

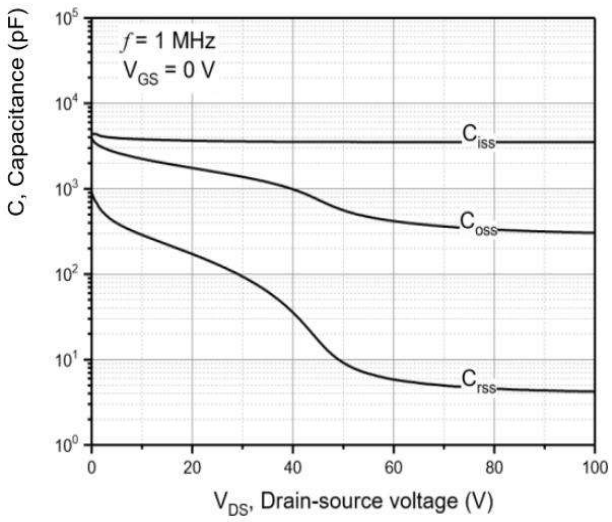
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	V_{DS}=100V , V_{GS}=0V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	1	-	3	V
Drain-Source on- State Resistance note3	V_{GS}=10V, I_D=1A	$R_{DS(ON)}$	-	4.6	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	-	
Turn-on delay time(Note2)	V_{DS}=50V I_D=10A R_G=2Ω V_{GS}=10V	$t_{d(on)}$	-	22.5	-	ns
Rise Time(Note2)		T_r	-	8.6	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	66.6	-	
Fall Time(Note2)		t_f	-	42.1	-	
Total Gate Charge(Note2)	V_{DS}=50V V_{GS}=10V I_D=10A	Q_g	-	65.7	-	nC
Gate-to Source Charge(Note2)		Q_{gs}	-	8.4	-	
Gate to Drain Charge(Note2)		Q_{gd}	-	12.2	-	
Maximun Body-Diode Continuous Current		I_S	-	-	120	A
Drain-Source Diode Forward Voltage	V_{GS}=0V , I_S=30A , T_J=25℃	V_{SD}	-	-	1.3	V
Reverse Recovery Time(Note2)	T_J = 25℃, I_S=10A di / dt = 1000 A/μs	t_{rr}	-	67	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	160	-	nC
Peak reverse recovery current		I_{rrm}	-	3.9	-	A

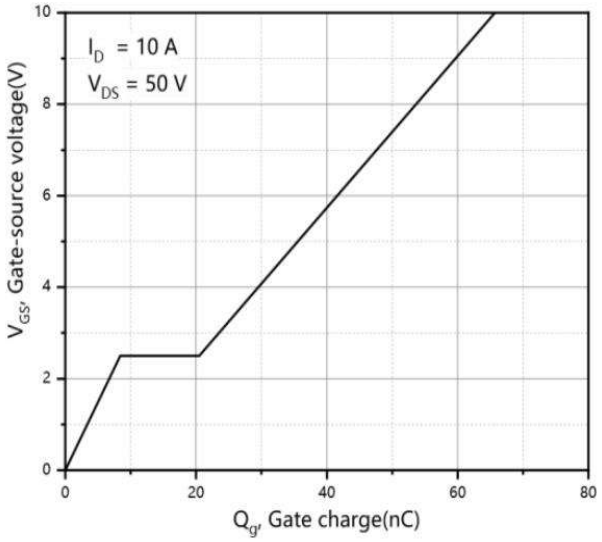
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

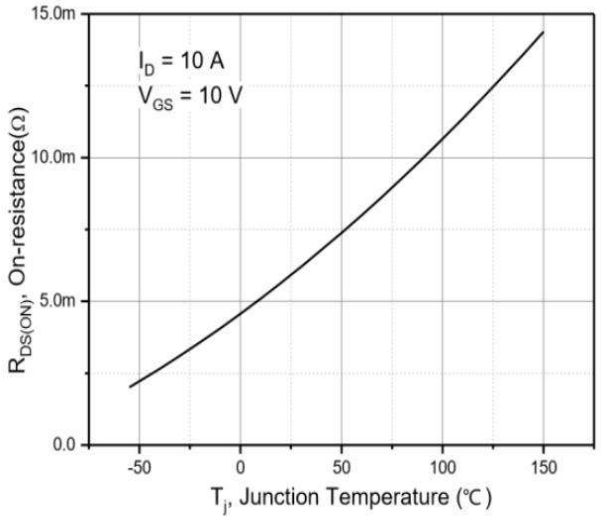
Ratings and Characteristic Curves

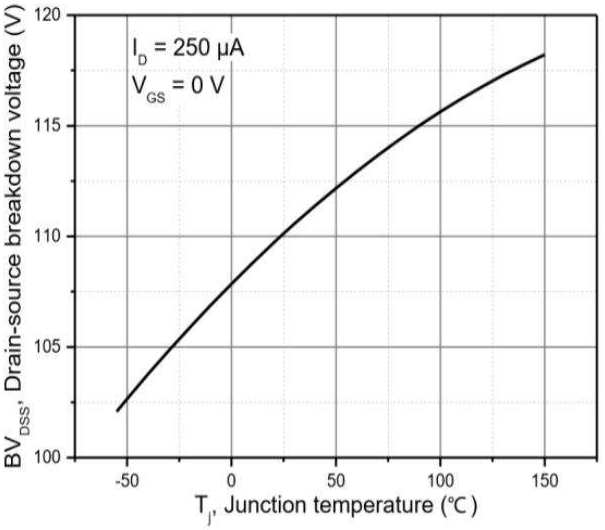




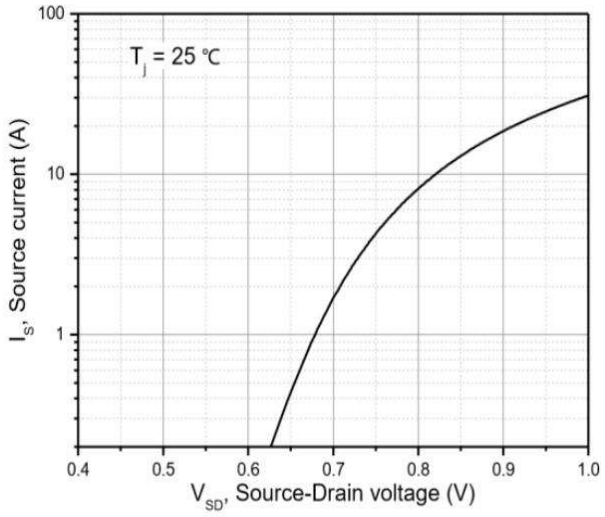


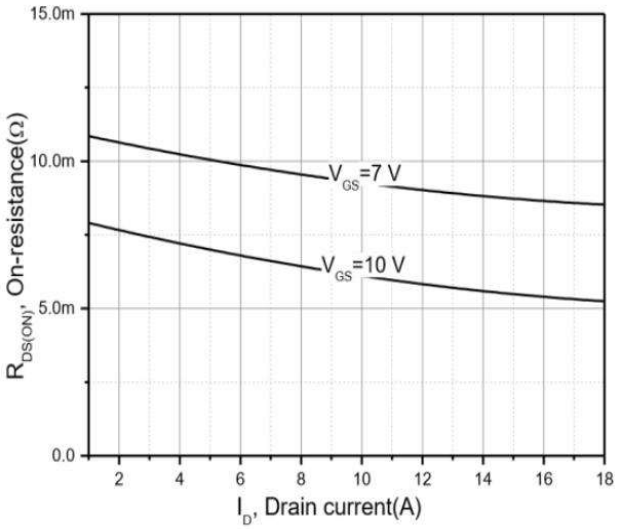


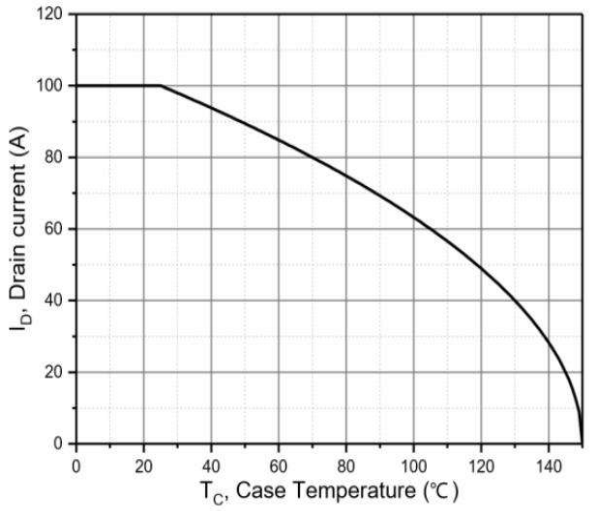


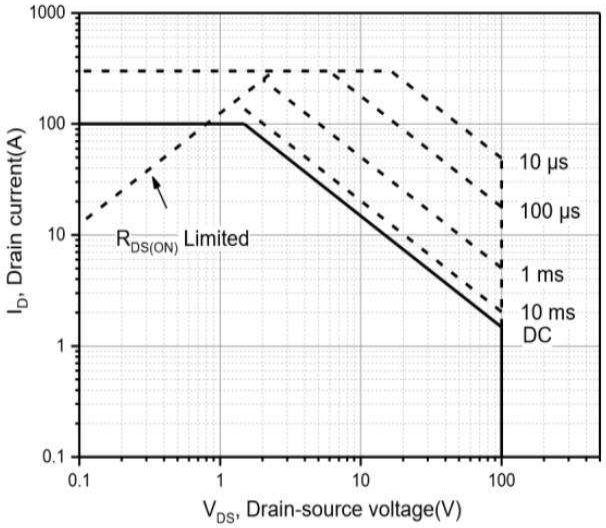


Ratings and Characteristic Curves



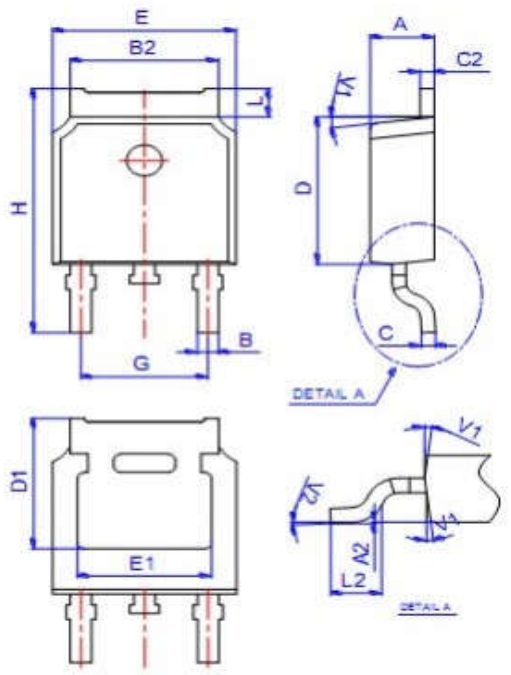






Package Outline Dimensions Millimeters

TO-252



Dim.	Min.	Typ.	Max.
A	2.10	-	2.50
A2	0	-	0.10
B	0.66	-	0.86
B2	5.18	-	5.48
C	0.40	-	0.60
C2	0.44	-	0.58
D	5.90	-	6.30
D1	5.30REF		
E	6.40	-	6.80
E1	4.63	-	-
G	4.47	-	4.67
H	9.50	-	10.70
L	1.09	-	1.21
L2	1.35	-	1.65
V1	-	7°	-
V2	0°	-	6°

All Dimensions in millimeter