

100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

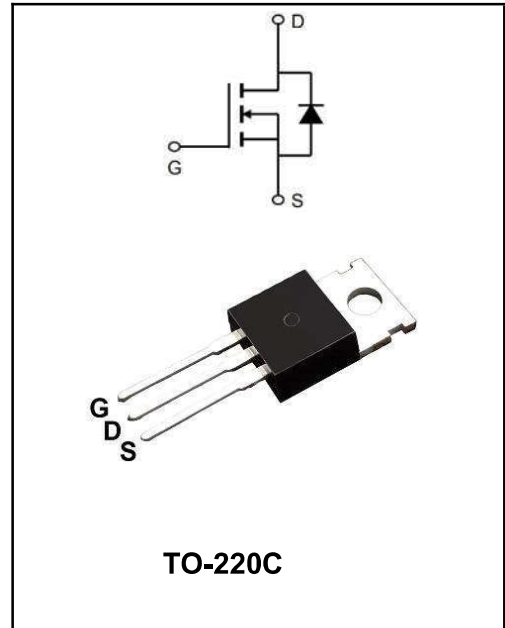
I_D	120A
V_{DSS}	100V
R_{DS(on)-typ(@V_{GS}=10V)}	<3.8mΩ (Type:2.95 mΩ)

Features

◆ YFW-SGT technology

Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply



Product Specification Classification

Part Number	Package	Marking	Pack
YFWG120N10AC	TO-220C	YFW 120N10AC XXXXX	1000PCS/Tape

Maximum Ratings at T_c=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous drain current ¹⁾ , T _c =25 °C	I_D	120	A
Pulsed drain current ²⁾ , T _c =25 °C	I_{D, pulse}	520	A
Power dissipation ³⁾ , T _c =25 °C	P_D	210	W
Single Pulse Avalanche Energy ⁵⁾	E_{AS}	750	mJ
Operation and storage temperature	T_{STG}, T_J	-55 to +150	°C
Thermal Resistance, Junction-case	R_{θJC}	0.71	°C/W
Thermal Resistance, Junction-ambient ⁴⁾	R_{θJA}	55	°C/W

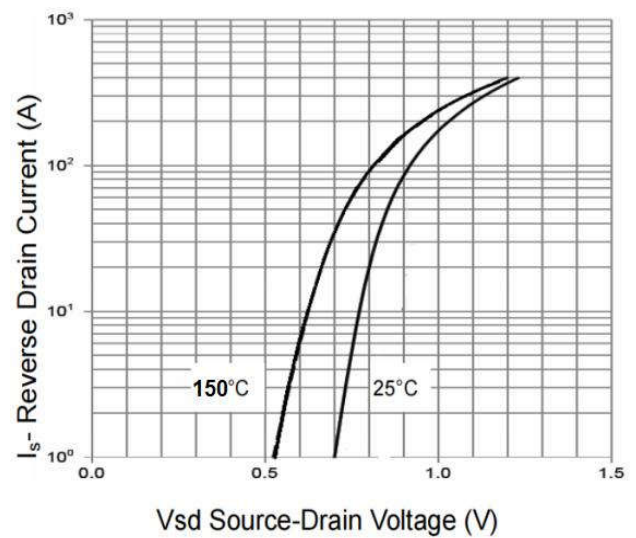
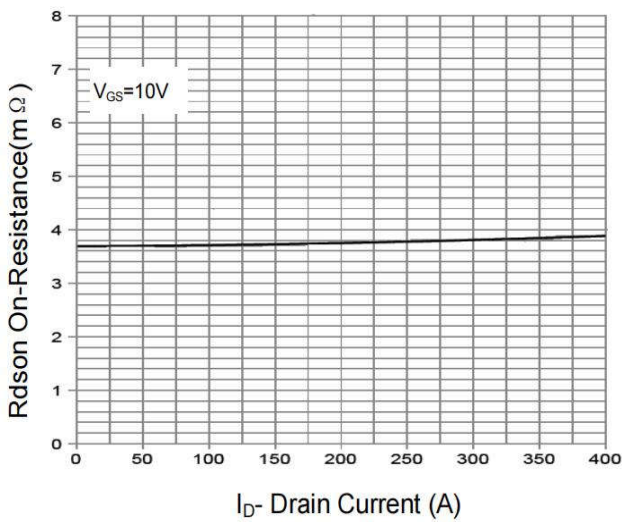
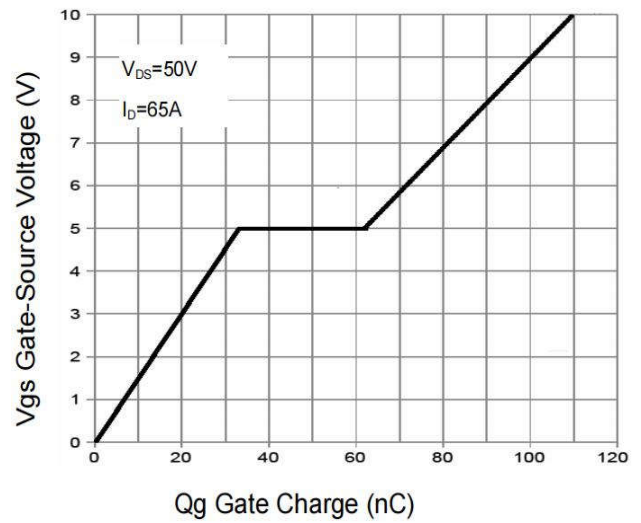
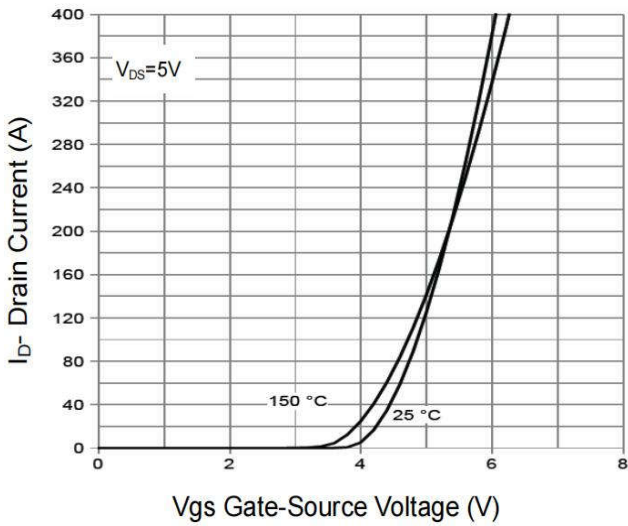
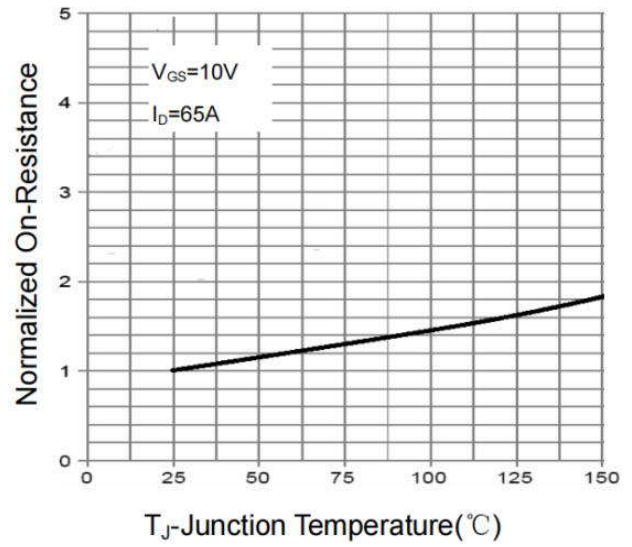
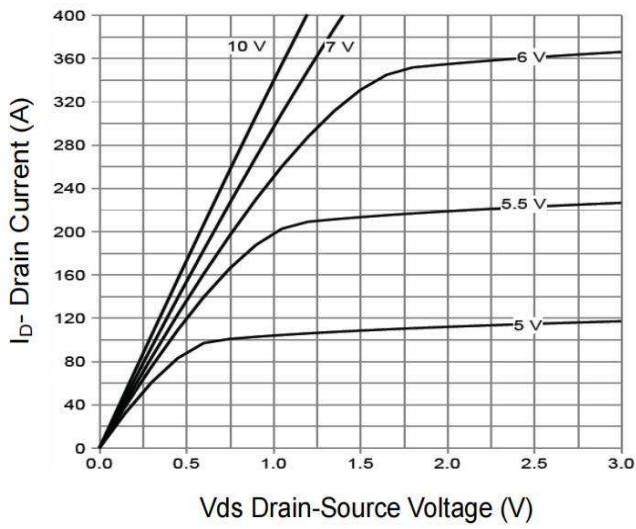
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

Maximum Ratings at Tc=25°C unless otherwise specified

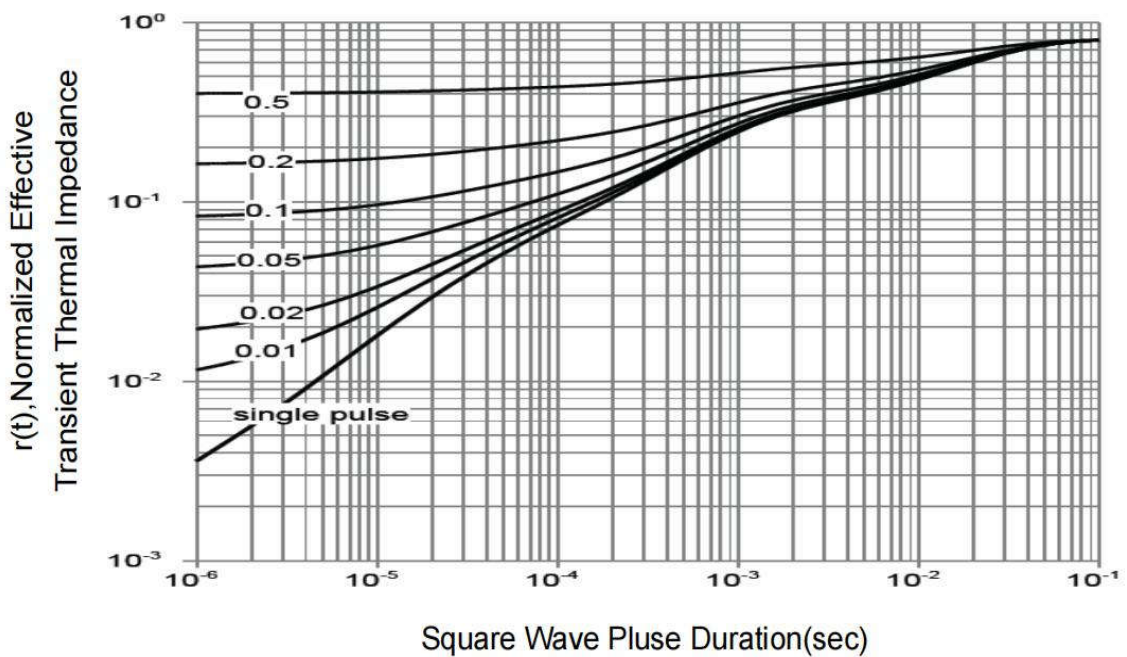
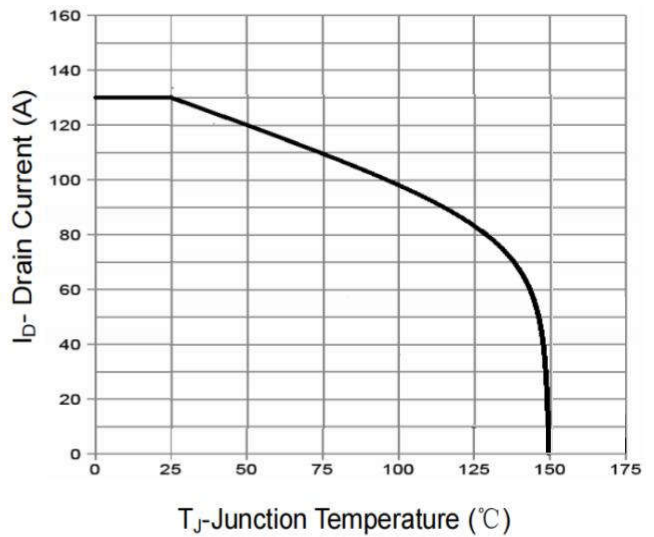
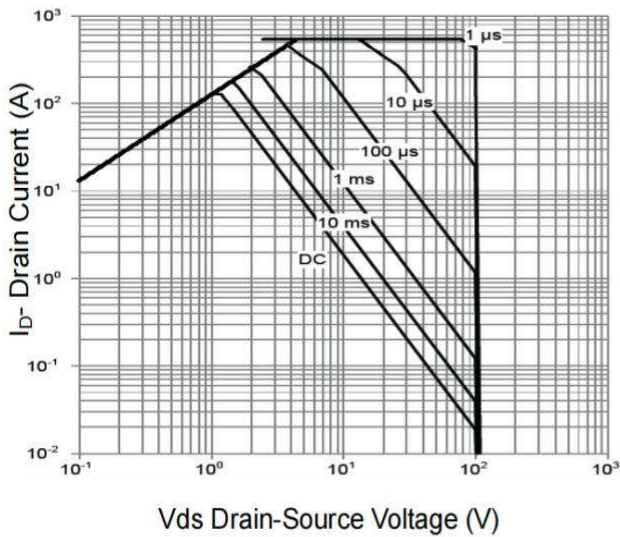
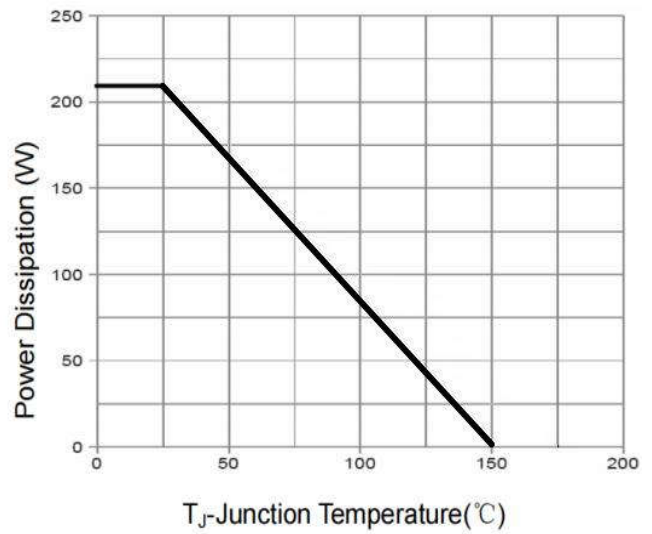
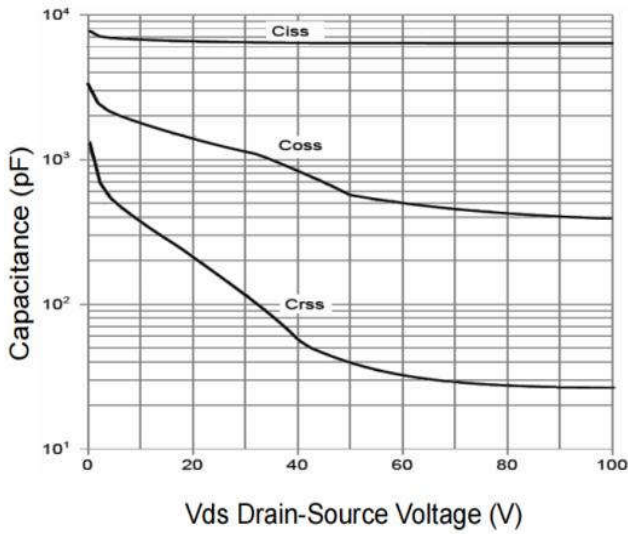
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	100	-	-	V
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	2	-	4	V
Drain-source on-state resistance	$V_{GS}=10V, I_D=30A$	$R_{DS(on)}$	-	2.95	3.8	mΩ
Gate-Source Leakage Current	$V_{GS}=\pm 20V$	I_{GSS}	-	-	±100	nA
Drain-Source Leakage Current	$V_{DS}=100V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Input Capacitance	$V_{GS}=0V$ $V_{DS}=50V$ $f=1MHz$	C_{iss}	-	6300	-	pF
Output Capacitance		C_{oss}	-	560	-	
Reverse Transfer Capacitance		C_{rss}	-	40	-	
Turn-on delay time	$V_{GS}=10V$ $V_{DS}=50V$ $R_G=3\Omega$ $I_D=60A$	$t_{d(on)}$	-	23	-	ns
Rise Time		T_r	-	15	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	48	-	
Fall Time		t_f	-	16	-	
Total Gate Charge	$I_D=60A$ $V_{DS}=50V$ $V_{GS}=10V$	Q_g	-	110	-	nC
Gate-Source Charge		Q_{gs}	-	33	-	
Gate-Drain Charge		Q_{gd}	-	30	-	
Diode forward current	$V_{GS}<V_{th}$	I_S	-	-	120	A
Diode Forward Voltage	$I_S=30A, V_{GS}=0V$	V_{SD}	-	0.86	1.2	V
Reverse Recovery Time	$I_S=60A, di/dt=100A/\mu s$	t_{rr}	-	70	-	ns
Reverse Recovery Charge		Q_{rr}	-	117	-	nC

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

Ratings and Characteristic Curves



Ratings and Characteristic Curves



Package Outline Dimensions Millimeters

TO-220C

	Dim.	Min.	Max.
	A	9.8	10.2
	A2	4.8	5.2
	C	4.35	4.65
	C1	1.45	1.05
	D	0.65	0.95
	E	3.45	3.75
	F	2.85	3.15
	G	6.4	6.8
	H	0.35	0.65
	J	28.68	28.98
	K	2.8	3.2
	M	1.15	1.45
	N	Typical 2.54	
	P	2.2	2.6
	Q	9	9.4
	S	0.15	0.35
	U	2.65	2.95
DIA	宽 1.50 ± 0.10		
	深 0.50 MAX		
All Dimensions in millimeter			

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