

100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

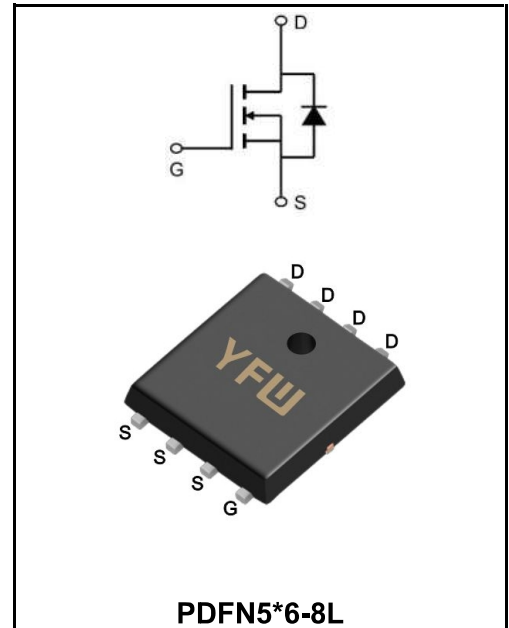
I_D	120A
V_{DSS}	100V
R_{DS(on)}-typ(@V_{GS}=10V)	<5.6mΩ(Type:4.5 mΩ)

APPLICATIONS

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

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°C maximum, 10s per JESD 22-B106



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}	520	A
Single Pulse Avalanche Energy (Note1)	E_{AS}	750	mJ
Total Power Dissipation	P_D	210	W
Storage Temperature Range	T_{STG}	-55 to +175	°C
Operating Junction Temperature Range	T_J	175	°C
Thermal Resistance, Junction to Ambient	R_{θJA}	55	°C/W
Thermal Resistance, Junction to Case	R_{θJC}	0.71	°C/W

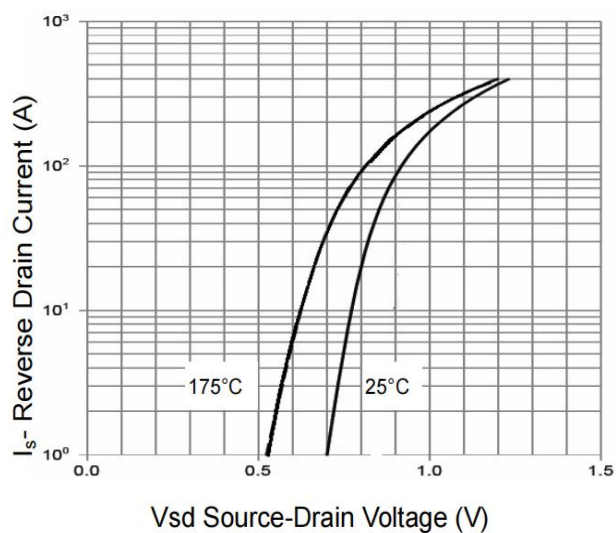
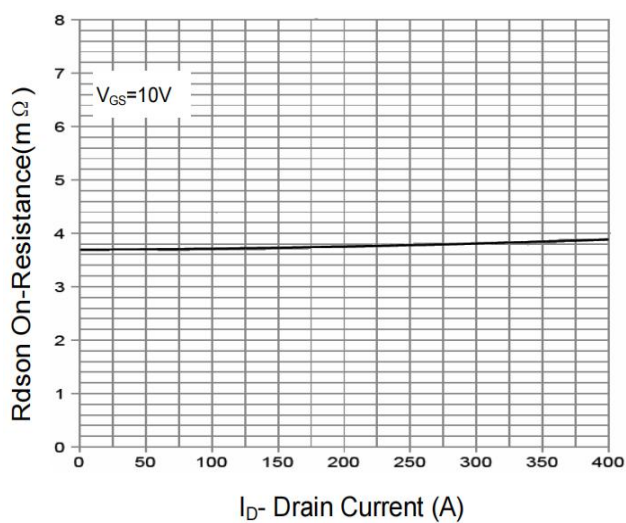
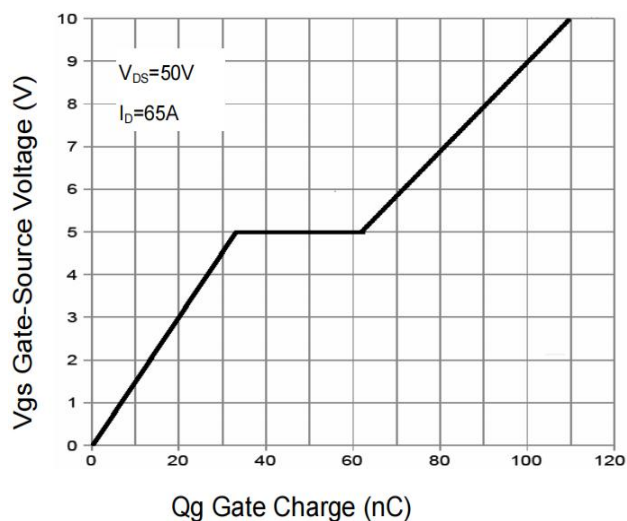
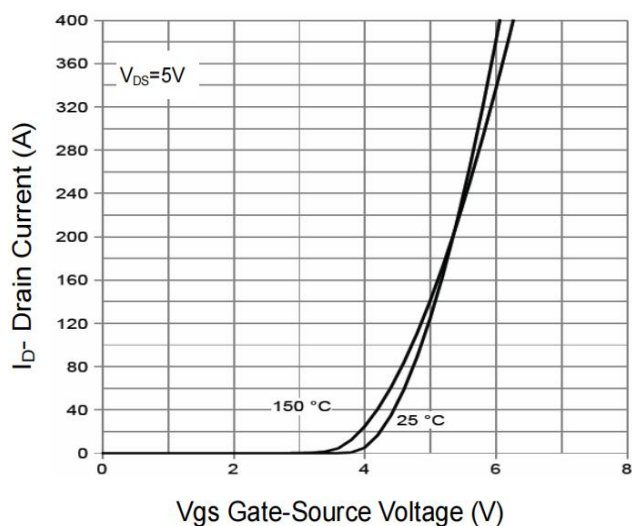
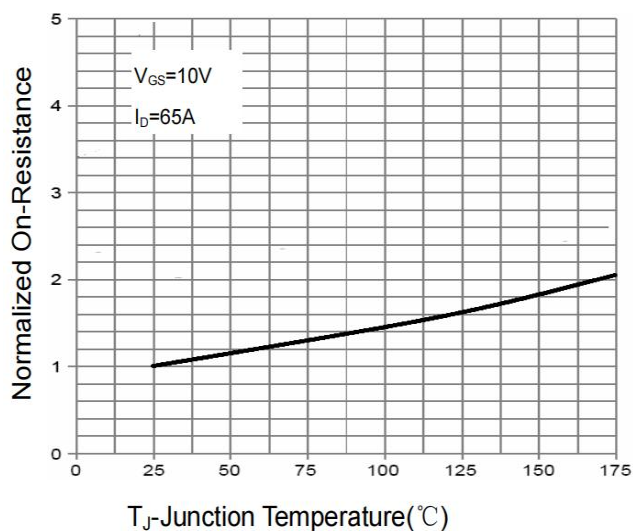
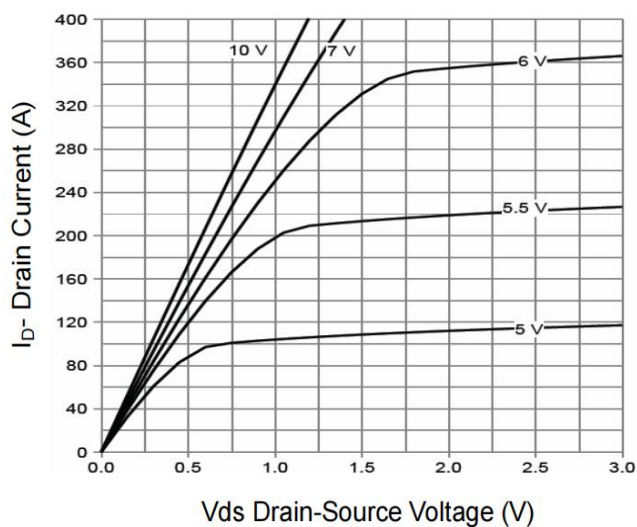
Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

Maximum Ratings at Tc=25°C unless otherwise specified

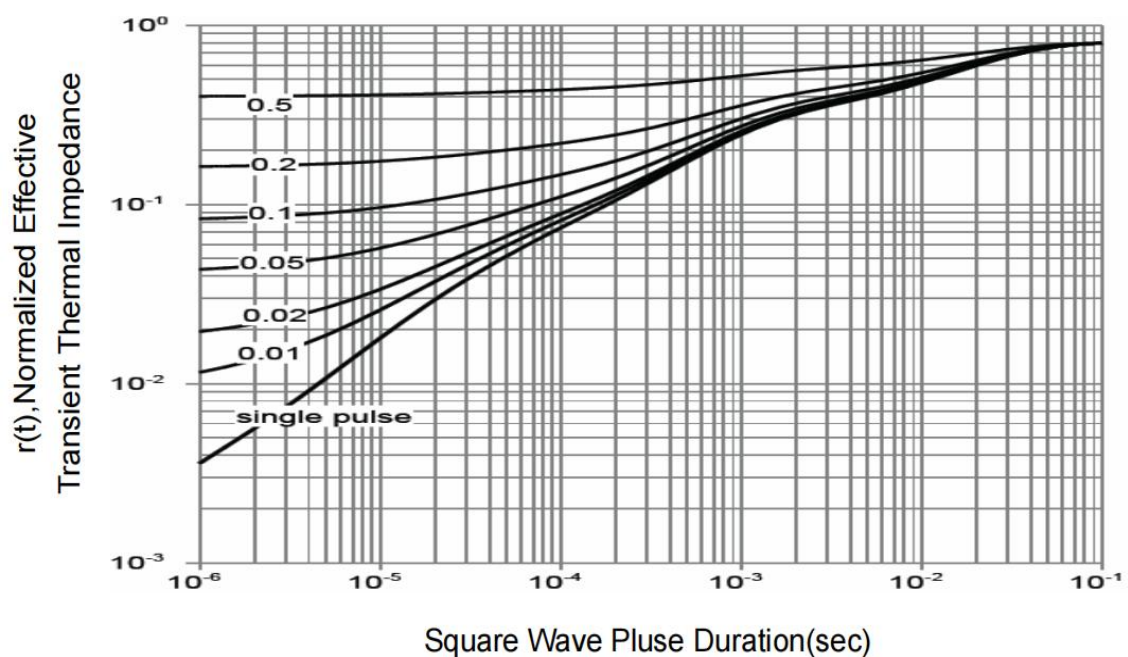
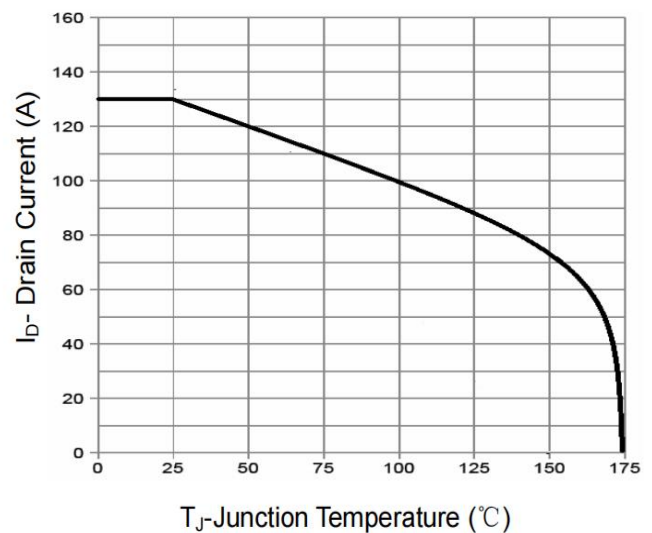
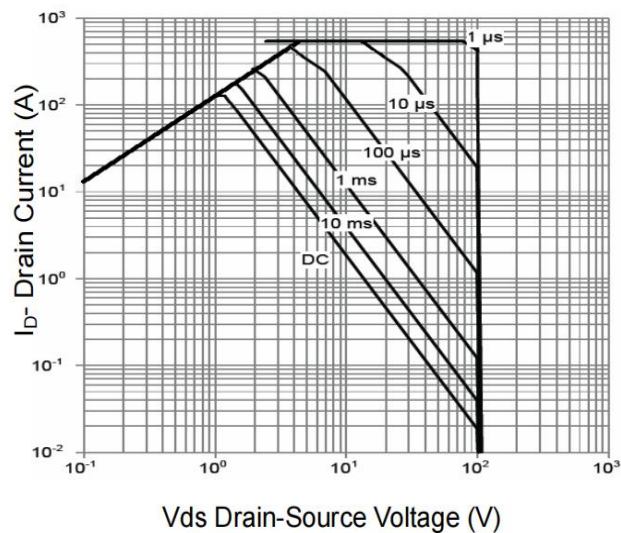
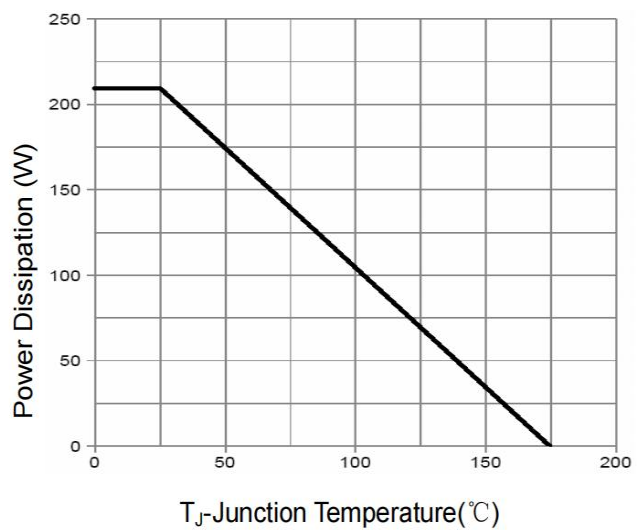
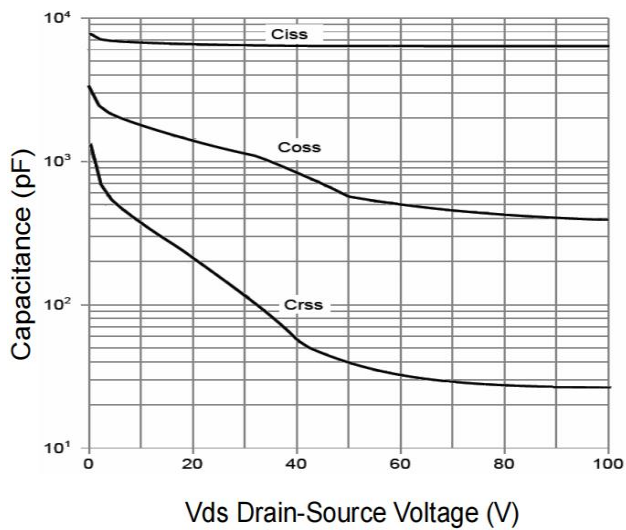
Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	100	-	-	V
Gate Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Drain-Source Leakage Current	$V_{DS} = 100V, V_{GS} = 0V$	I_{DSS}	-	-	1	μA
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	2.0	-	4.0	V
Drain-Source on-Resistance 4	$V_{GS}=10V, I_D=20A$	$R_{DS(ON)}$	-	4.5	5.6	m Ω
Forward Transconductance4	$V_{DS}=5V, I_D=65A$	g_{fs}	-	130	-	S
Input Capacitance	$V_{DS}=50V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	4350	-	pF
Output Capacitance		C_{oss}	-	2150	-	
Reverse Transfer Capacitance		C_{rss}	-	220	-	
Gate Resistance	$f=1MHz$	R_g	-	1.3	-	Ω
Total Gate Charge	$V_{GS}=10V$ $V_{DS}=50V$ $I_D=65A$	Q_g	-	110	-	nC
Gate-Source Charge		Q_{gs}	-	33	-	
Gate-Drain Charge		Q_{gd}	-	30	-	
Turn-on delay time	$V_{GS}=10V$ $V_{DD}=50V$ $R_G=3\Omega$ $I_D=65A$	$t_{d(on)}$	-	23	-	ns
Rise Time		T_r	-	15	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	48	-	
Fall Time		t_f	-	16	-	
Body Diode Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F= 65A$ $di / dt = 100 A/\mu s$	t_{rr}	-	70	-	ns
Body Diode Reverse Recovery Charge(Note2)		Q_{rr}	-	117	-	nC
Diode Forward Voltage	$V_{GS}=0V, I_S=40A, T_J=25^\circ C$	V_{SD}	-	0.86	1.2	V
Continuous Source Current		I_S	-	-	120	A

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

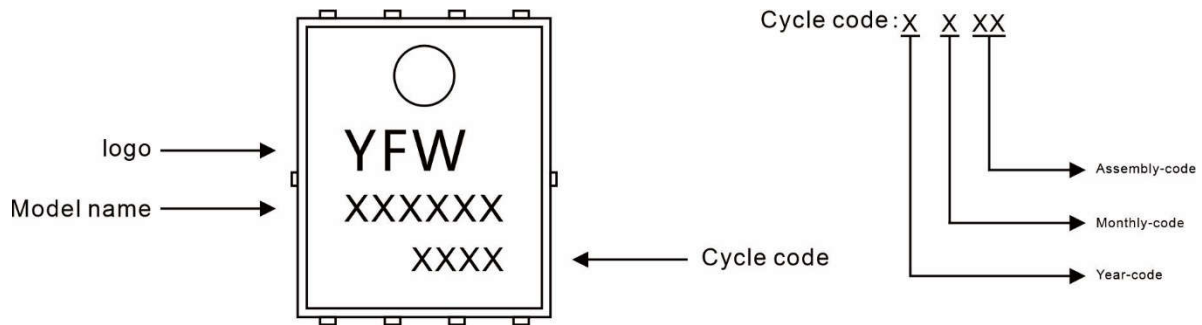
Ratings and Characteristic Curves



Ratings and Characteristic Curves



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWG120N10NF	PDFN5*6-8L	0.0032oz(0.093g)	5000pcs/reel	10000pcs/box 50000pcs/Carton

Package Dimensions

PDFN5*6-8L

Dim	Millimeter		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.2	35	45
A2	0.204	0.304	8	12
b	0.4ref.		16ref.	
b1	0.2	0.4	8	16
D	5.0	5.3	197	209
D1	4.84	5.24	191	206
E	5.95	6.35	234	250
E1	3.275	3.675	129	145
E2	5.69	6.09	224	232
e	1.27typ.		50typ.	
K	1.29typ.		51typ.	
L	0.585	0.785	23	27
L1	0.7typ.		28typ.	

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