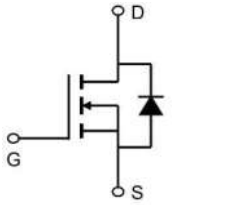
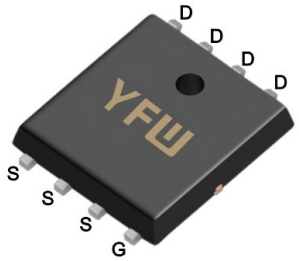
100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	110A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	< 6.0mΩ(Type:4.2 mΩ)





PDFN5*6-8L

Features

♦YFW-SGT technology

Application

♦DC/DC Converter
♦LED Backlighting
♦Power Management Switches

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
Continuous Drain Current, T_C=25℃	I_D	110	A
Pulsed Drain Current ,T_C=25℃	I_{DM}	380	A
Power Dissipation @T_C=25℃	P_D	113.6	W
Single Pulse Avalanche Energy4)	E_{AS}	205	mJ
Operation and storage temperature	T_{STG}, T_J	-55 to +150	°C
Thermal Resistance, Junction-case	$R_{\theta JC}$	1.1	°C/W
Thermal Resistance, Junction-ambient4)	$R_{\theta JA}$	58	°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	**VDSS**	100	-	-	**V**
Gate -Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	**I_{GSS}**	-	-	±100	**nA**
Zero Gate Voltage Drain Current	V_{DS} =100V, V_{GS} = 0V, T_J=25°C	**I_{DSS}**	-	-	1	**μA**
	V_{DS} =100V, V_{GS} = 0V,T_J=100°C		-	-	100	
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	**$V_{GS(th)}$**	1.2	1.8	2.5	**V**
Drain-Source on-Resistance [2]	V_{GS}=10V, I_D=20A	**$R_{DS(ON)}$**	-	4.2	6	**mΩ**
	V_{GS}=4.5V, I_D=15A		-	6.6	9	
Input Capacitance	V_{DS}=50V V_{GS}=0V f=1MHz	**C_{iss}**	-	4400	-	**pF**
Output Capacitance		**C_{oss}**	-	645	-	
Reverse Transfer Capacitance		**C_{rss}**	-	20	-	
Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	**R_g**	-	1.7	-	**Ω**
Total Gate Charge	V_{DS}=50V V_{GS}=10V I_D=20A	**Q_g**	-	75	-	**nC**
Gate-Source Charge		**Q_{gs}**	-	17	-	
Gate-Drain Charge		**Q_{gd}**	-	13	-	
Turn-on delay time	V_{GS}=10V V_{DS}=50V R_G=3Ω I_D=20A	**$t_{d(on)}$**	-	15.4	-	**ns**
Rise Time		**T_r**	-	13	-	
Turn-Off Delay Time		**$t_{d(OFF)}$**	-	34	-	
Fall Time		**t_f**	-	6.2	-	
Diode Forward Voltage [2]	V_{GS}=0V , I_F=20A	**V_{SD}**	-	-	1.2	**V**
Continuous Source Current[1.5]	V_G=V_D=0V , Force Current	**I_S**	-	-	95	**A**
Body Diode Reverse Recovery Time	I_F=20A, dI_{SD}/dt=100A/μs	**t_{rr}**	-	55	-	**ns**
Body Diode Reverse Recovery Charge		**Q_{rr}**	-	101	-	**nC**

Notes:
1、The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2、The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
3、The EAS data shows Max. rating . The test condition is VDD=50V, VGS=10V, L=0.4mH, IAS=32A
4、The power dissipation is limited by 150°C junction temperature
5、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Ratings and Characteristic Curves

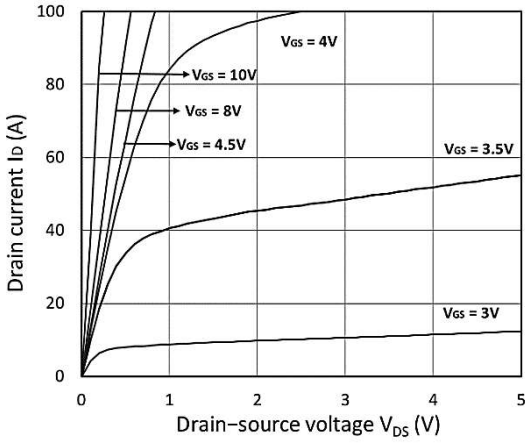


Figure 1. Output Characteristics

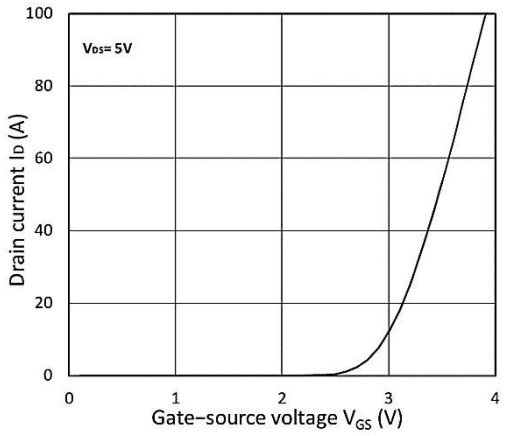


Figure 2. Transfer Characteristics

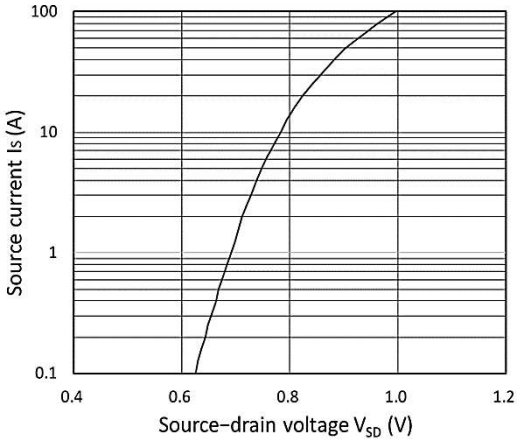


Figure 3. Forward Characteristics of Reverse

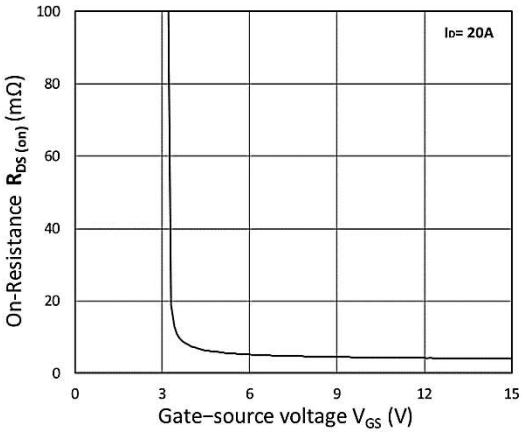


Figure 4. RDS(ON) vs. VGS

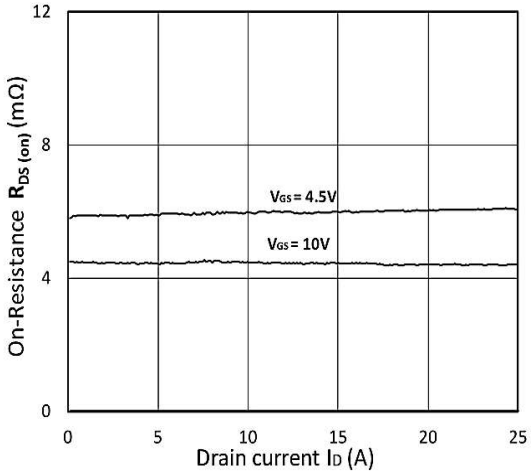


Figure 5. R DS(ON) vs. I D

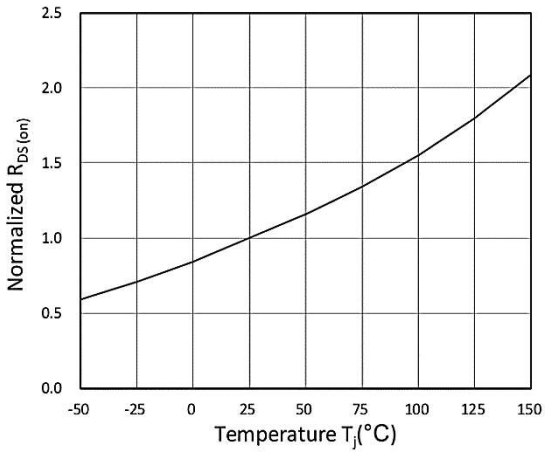


Figure 6. Normalized R DS(on) vs. Temperature

Ratings and Characteristic Curves

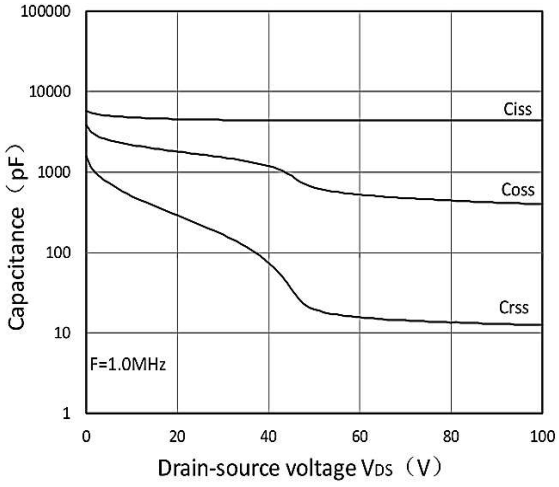


Figure 7. Capacitance Characteristics

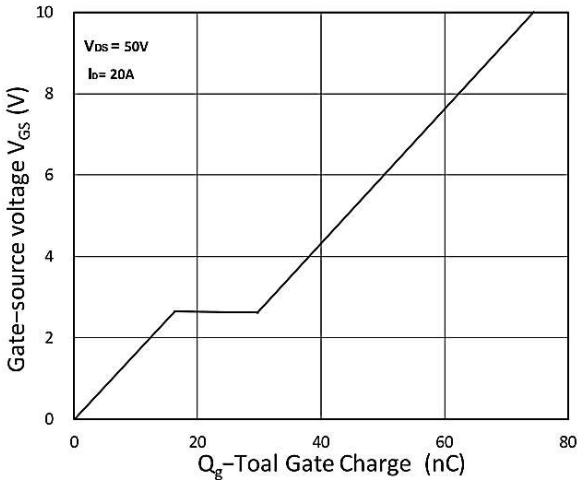


Figure 8. Gate Charge Characteristics

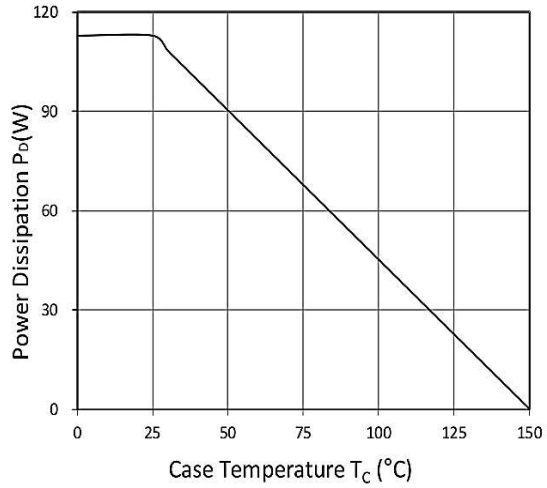


Figure 9. Power Dissipation

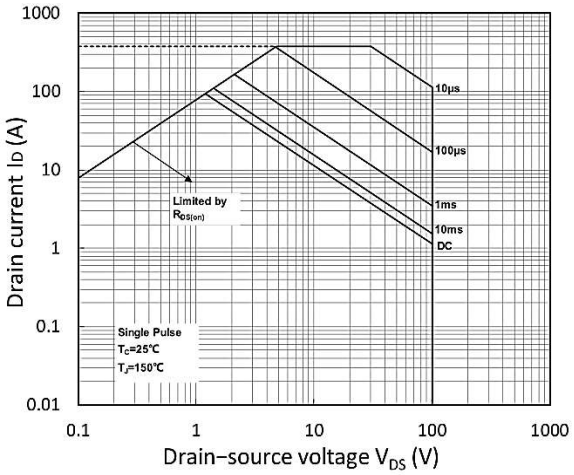


Figure10. Safe Operating Area

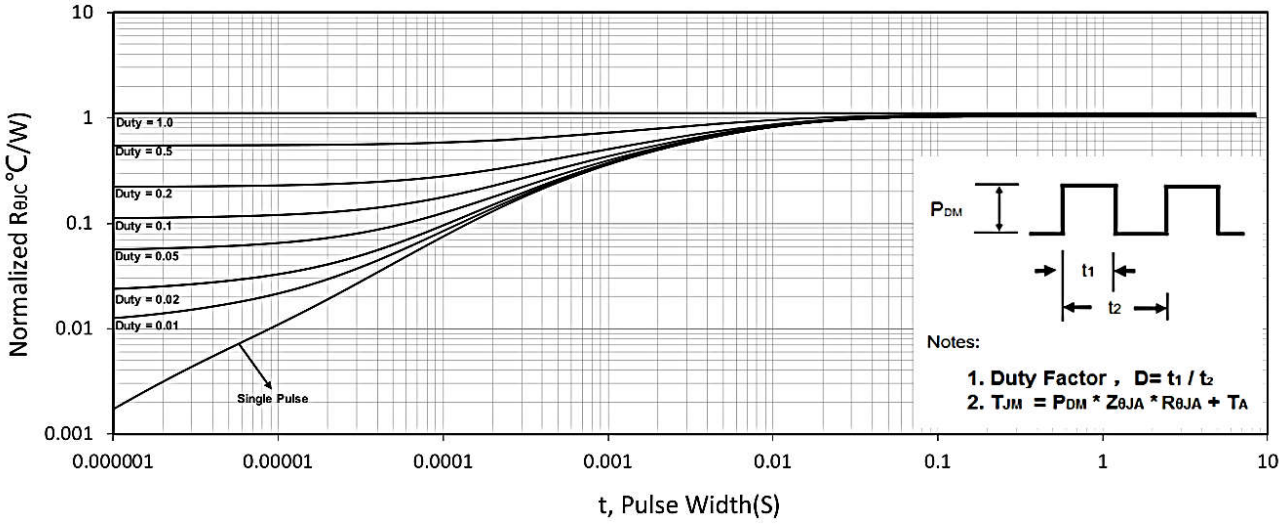
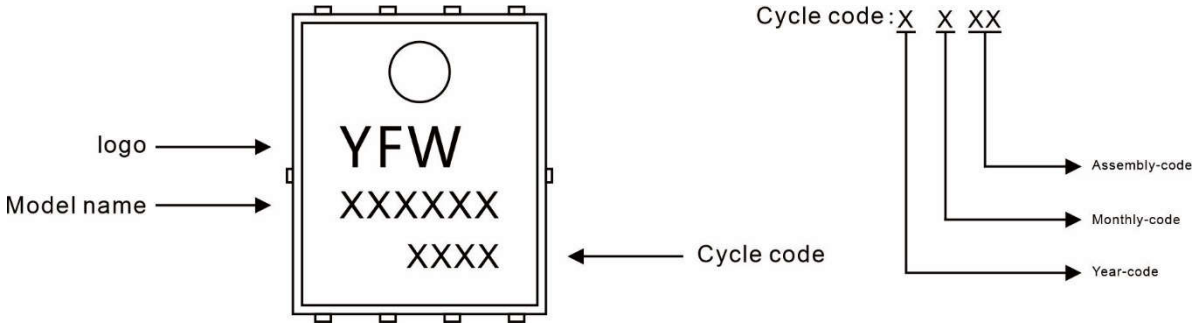


Figure 11. Normalized Maximum Transient Thermal Impedance

Marking Diagram

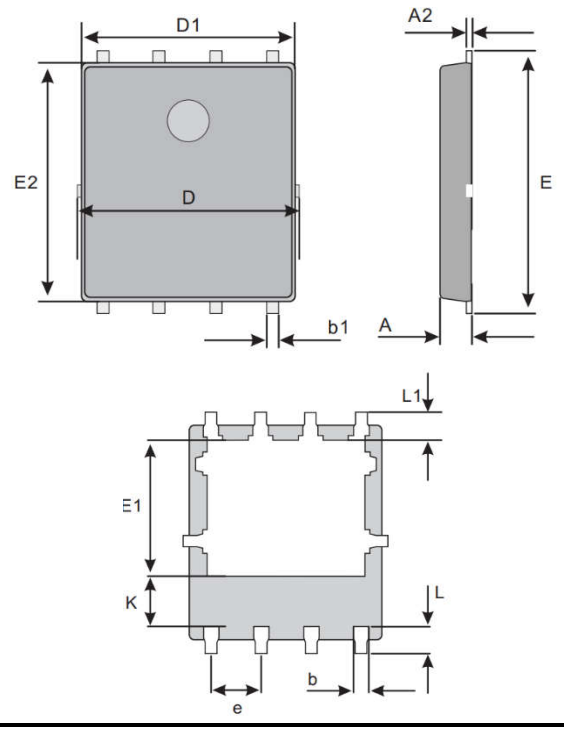


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWG110N10NF	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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