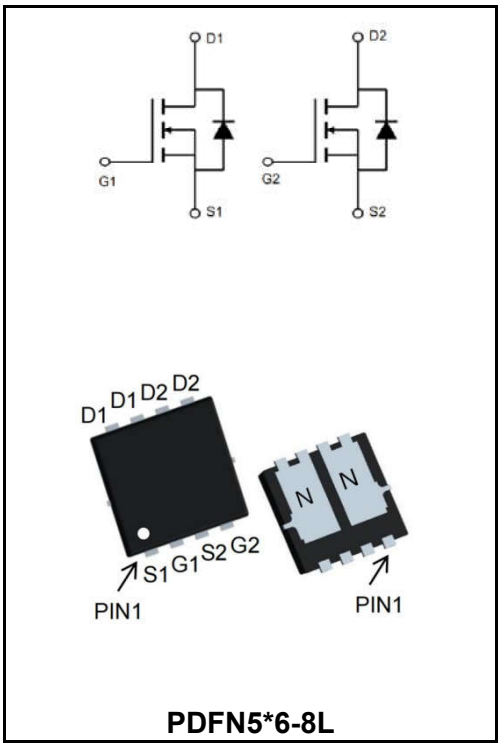
60V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	70A
V_{DSS}	60V
R_{DSON}-typ(@V_{GS}=10V)	< 10mΩ(Type:7.5 mΩ)



PDFN5*6-8L

Features

♦YFW-SGT technology

lead-free ROHS

Application

♦Battery protection
♦Load switch
♦Uninterruptible power supply

Product Specification Classification

Part Number	Package	Marking	Pack
YFWG70H06NF	PDFN5*6-8L	YFW 70H06NF XXXXX	5000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	VDS	60	V
Gate - Source Voltage	VGS	±20	V
Continuous Drain Current @T_A=25℃	I_D	70	A
Continuous Drain Current @T_A=70℃	I_D	45	A
Pulsed Drain Current	I_{DM}	280	A
Power dissipation @T_A=25℃	P_D	60	W
Single Pulse Avalanche Energy	E_{AS}	30	mJ
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Thermal Resistance ,Junction-Case	$R_{\theta JC}$	2.1	°C/W
Thermal resistance, junction-ambient5)	$R_{\theta JA}$	25	°C/W

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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	B_{VDSS}	60	68	-	V
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.2	1.5	2.5	V
Drain-source on-state resistance	V_{GS}=10V, I_D=20A	$R_{DS(ON)}$	-	7.5	10	mΩ
	V_{GS}=4.5V, I_D=10A		-	10	13	
Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Drain-Source Leakage Current	V_{DS}=60V, V_{GS}=0V	I_{DSS}	-	-	1	uA
Input Capacitance	V_{GS}=0V V_{DS}=50V *f*=100 kHz	C_{iss}	-	1182.1		pF
Output Capacitance		C_{oss}	-	199.5		
Reverse Transfer Capacitance		C_{rss}	-	4.1		
Turn-on delay time	V_{GS}=10V V_{DD} =50V R_G = 2Ω I_D= 10A	$t_{d(on)}$	-	17.9	-	ns
Rise Time		T_r	-	4.0	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	34.9	-	
Fall Time		t_f	-	5.5	-	
Total Gate Charge	I_D=10A V_{DS}=50V V_{GS}=10V	Q_g	-	18.4	-	nC
Gate-Source Charge		Q_{gs}	-	3.3	-	
Gate-Drain Charge		Q_{gd}	-	3.1	-	
Gate plateau voltage		Vplateau		2.8		V
Diode forward current	VGS<Vth	I_S		-	60	A
Pulsed Source Current		I_{SP}		-	180	
Diode Forward Voltage	I_S=20A , V_{GS}=0V	V_{SD}	-	-	1.3	V
Reverse Recovery Time	I_S=10A , dI/dt=100A/μs	t_{rr}	-	41.8	-	nS
Reverse Recovery Charge		Q_{rr}	-	36.1	-	nC
Peak reverse recovery current		I_{rrm}		1.4		A

Note
1、Calculated continuous current based on maximum allowable junction temperature.
2、Repetitive rating; pulse width limited by max. junction temperature.
3、Pd is based on max. junction temperature, using junction-case thermal resistance.
4、V_{DD}=50 V, R_G=50 Ω, L=0.3 Mh , starting Tj=25 ℃.
5、The value of RθJA is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with Ta=25 ℃.

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Ratings and Characteristic Curves

Typical Characteristics

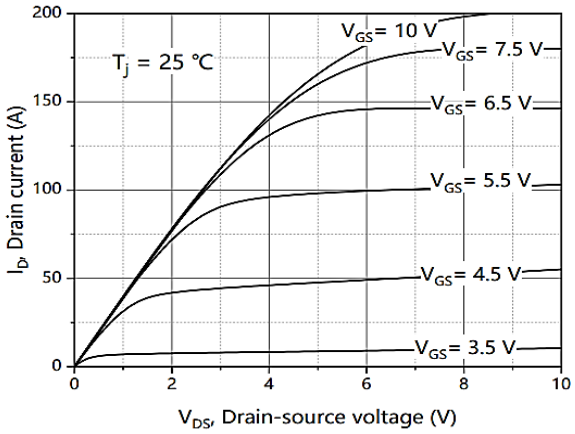


Figure 1. Typ. output characteristics

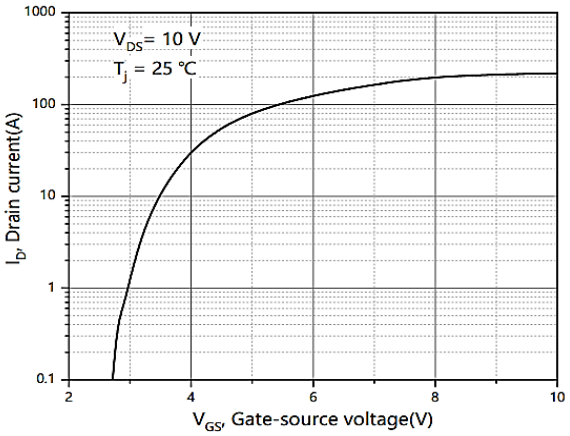


Figure 2. Typ. transfer characteristics

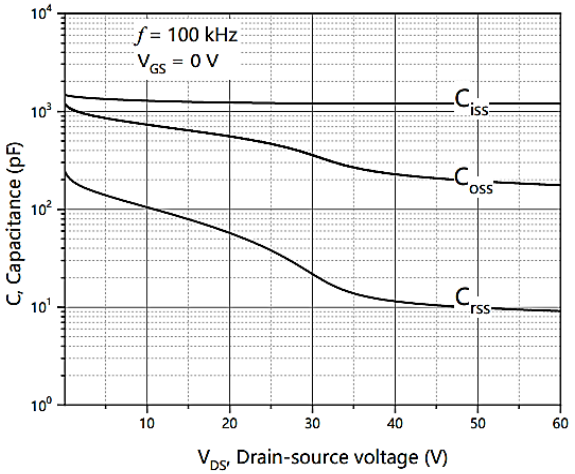


Figure 3. Typ. capacitances

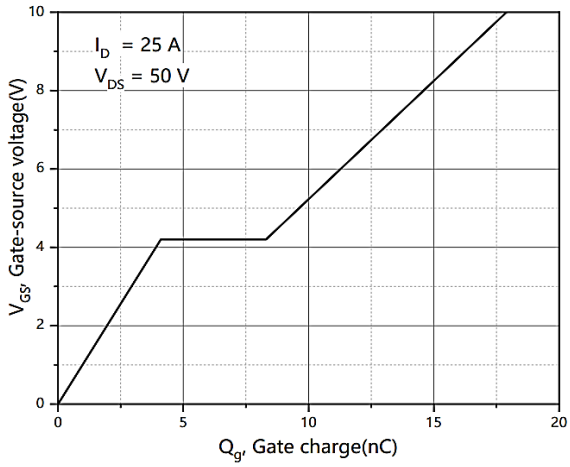


Figure 4. Typ. gate charge

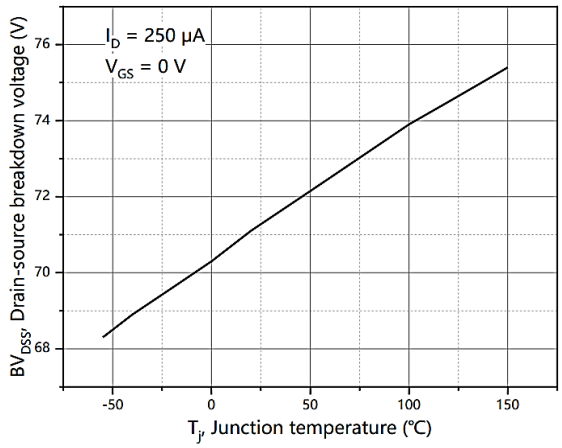


Figure 5. Drain-source breakdown voltage

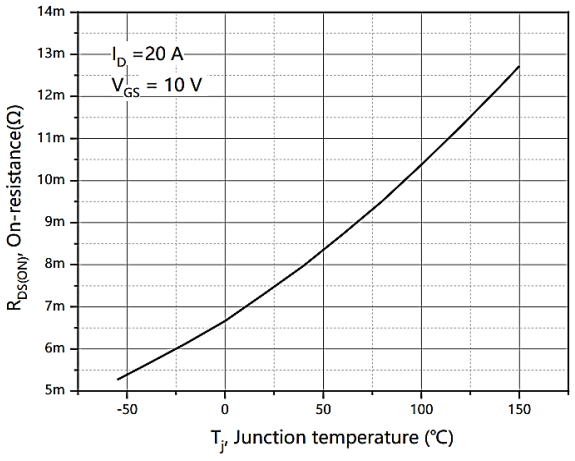


Figure 6. Drain-source on-state resistance

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Ratings and Characteristic Curves

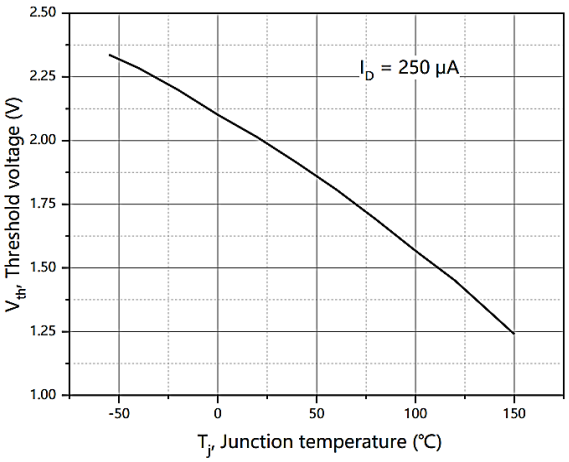


Figure 7. Threshold voltage

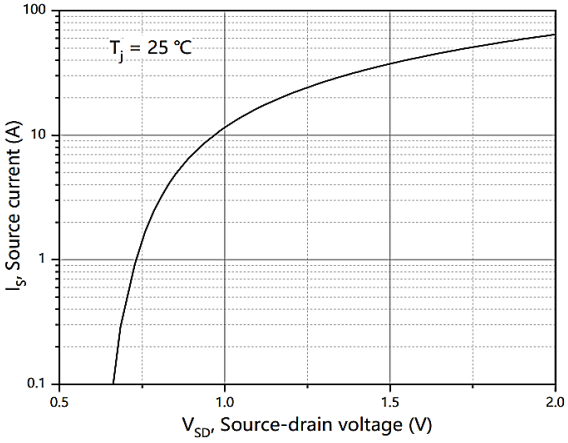


Figure 8. Forward characteristic of body diode

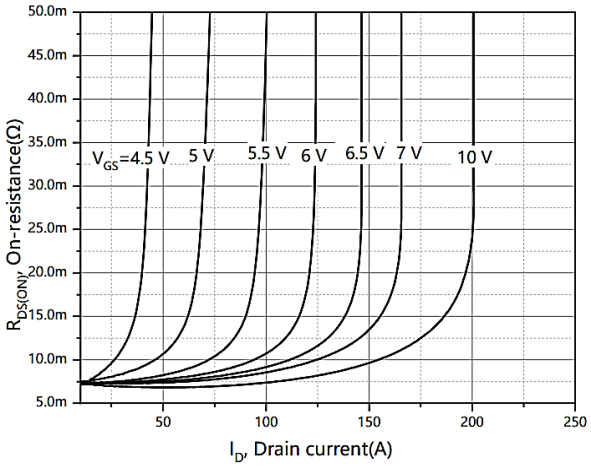


Figure 9. Drain-source on-state resistance

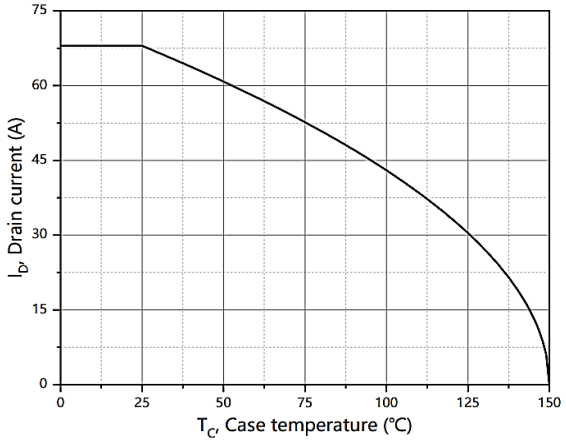


Figure 10. Drain current

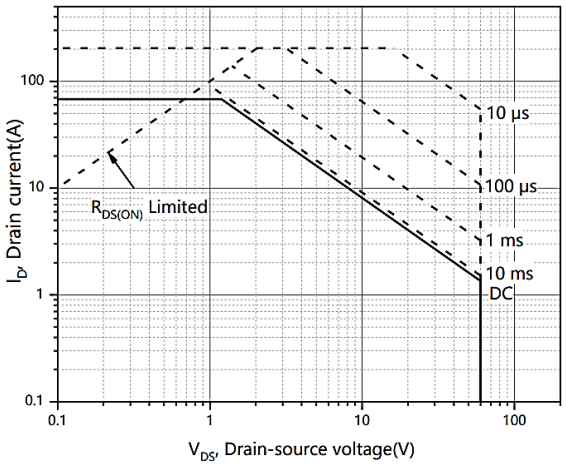


Figure 11. Safe operation area T_C=25 ℃

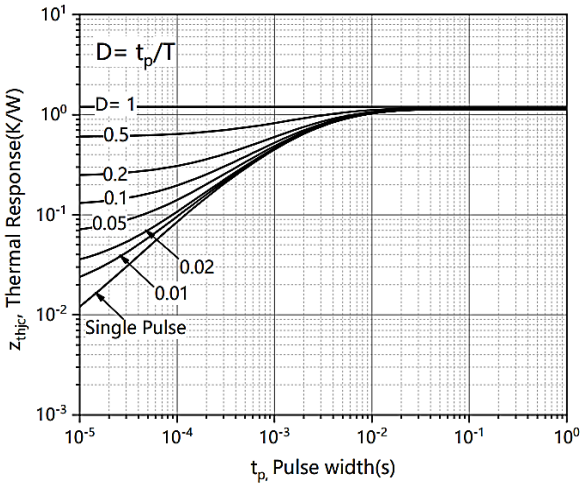
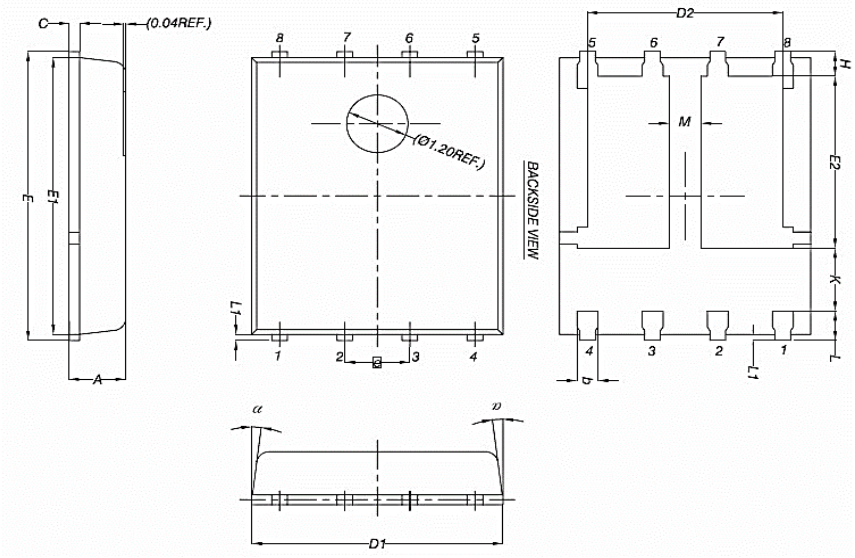


Figure 12. Max. transient thermal impedance

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Package Outline Dimensions Millimeters

PDFN5*6-8L



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.90	1.00	1.10
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96
E	5.90	6.00	6.10
E1	5.70	3.30	3.45
E2	3.38	3.05	3.20
e	1.27BSC		
H	0.41	0.51	0.61
K	1.10	--	--
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
M	0.50	--	--
a	0°	--	12°

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