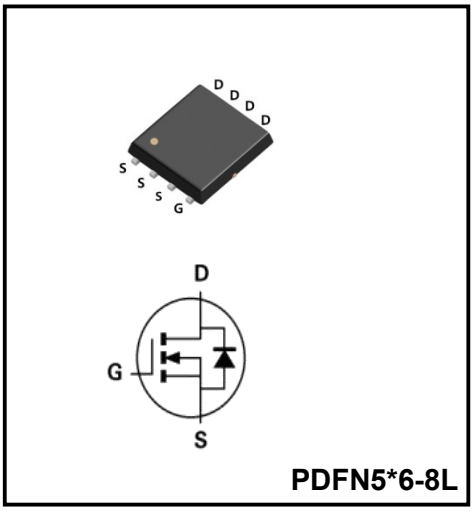
30V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

I_D	100A
V_{DSS}	30V
R_{DSON}-typ(@V_{GS}=10V)	<3.8mΩ **(Type:3mΩ)**



FEATURES

Adopt advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

- Battery protection
- Load switch
- Uninterruptible power supply

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℃ maximum,10s per JESD 22-B106

Product Specification Classification

Part Number	Package	Marking	Pack
YFW100N03NF	PDFN5*6-8L	YFW 100N03NF XXXXX	5000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	100	A
Pulsed Drain Current (Note1)	I_{DM}	300	A
Power Dissipation	P_D	85	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	52	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.1	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62	°C/W

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

Electrical Characteristics at Tc=25°C unless otherwise specified

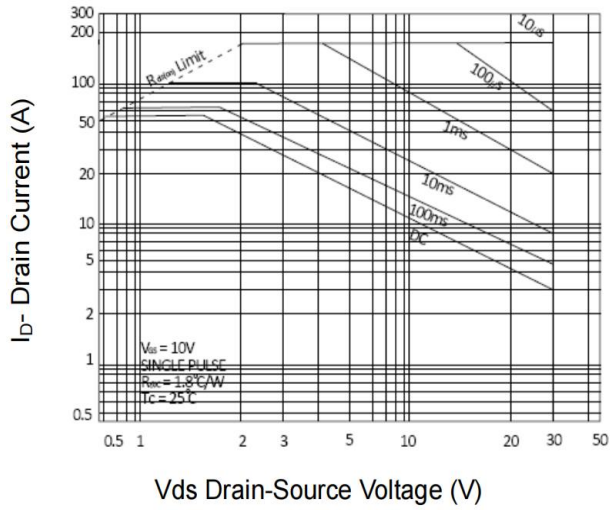
Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	30	-	-	V
Drain-Source Leakage Current	V_{DS} = 30 V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	1	-	2.5	V
Drain-Source On-State Resistance	VGS=10V, ID=30A	RDS(on)	-	3	3.8	mΩ
	VGS=4.5V, ID=20A		-	5	8	mΩ
Forward Transconductance	V_{DS} = 5 V, I_D = 10 A	gfs	20	-	-	S
Input Capacitance	VDS=15V , VGS=0V , f=1MHz	C_{iss}	-	2200	-	pF
Output Capacitance		C_{oss}	-	311	-	pF
Reverse Transfer Capacitance		C_{rss}	-	210	-	pF
Turn-on Delay Time(Note2)	VDD=15V , VGS=10V , RG=3Ω ID=30A	$t_{d(ON)}$	-	20	-	ns
Rise Time(Note2)		t_r	-	15	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	60	-	ns
Fall Time(Note2)		t_f	-	10	-	ns
Total Gate Charge(Note2)	VDS=15V , VGS=10V , ID=30A	Q_G	-	51	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	14	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	11	-	nC

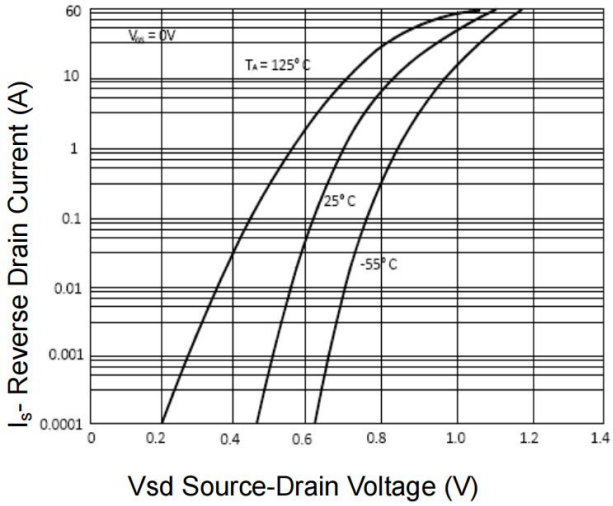
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

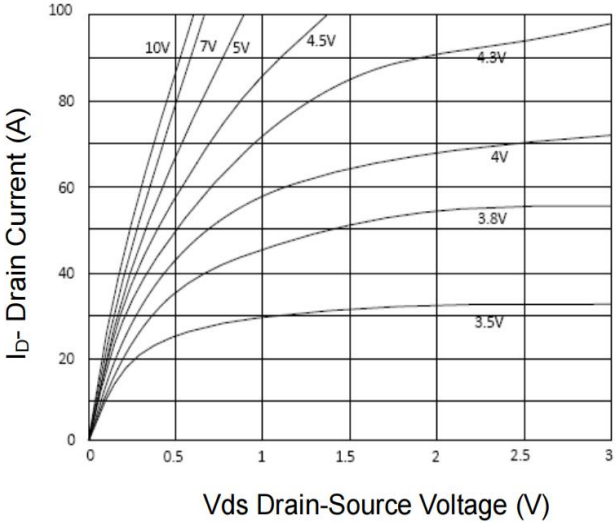
Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	100	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	300	A
Drain-Source Diode Forward Voltage	VGS=0V , IS=1A , TJ=25℃	V_{SD}	-	-	1.2	V

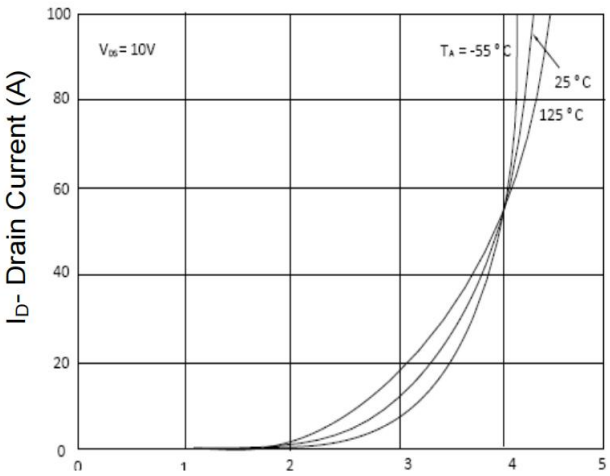
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

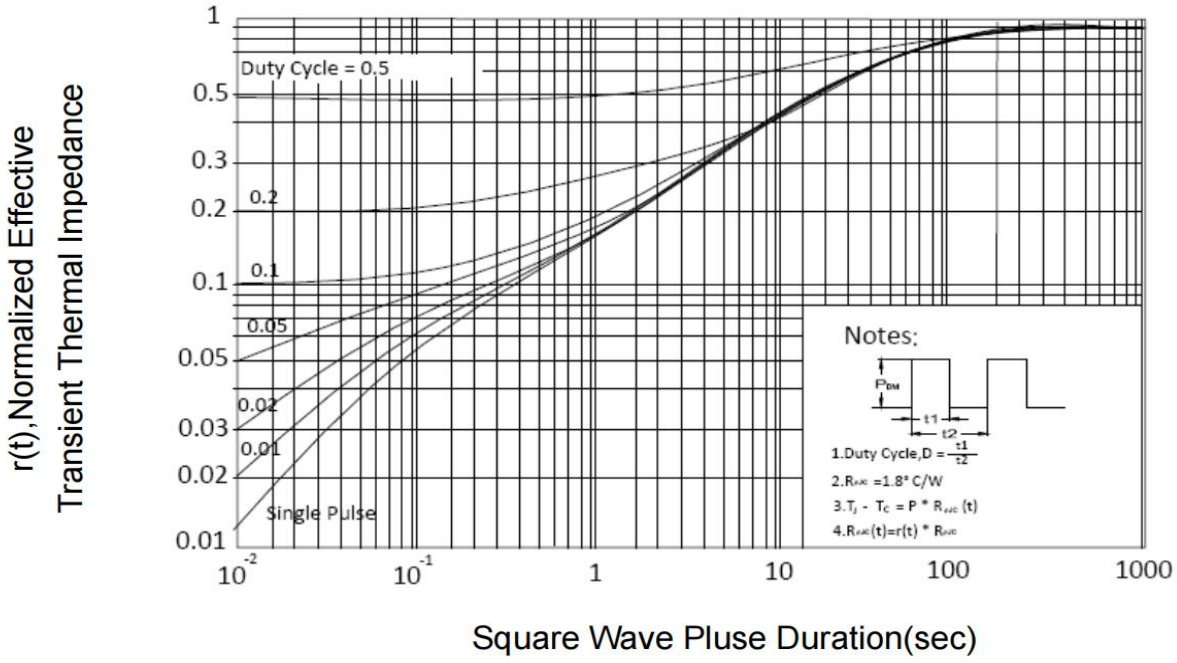
RATINGS AND CHARACTERISTIC CURVES





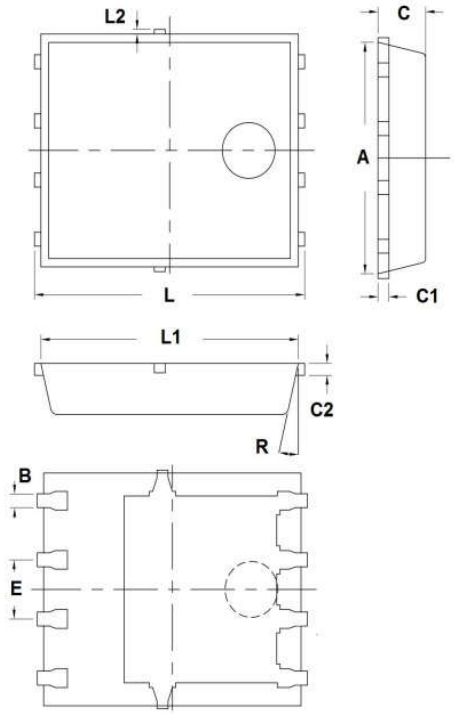






Package Outline Dimensions millimeters

PDFN5*6-8L



Dim.	Min.	Max.
A	4.8	5.2
B	0.25	0.35
C	1	1.2
C1	Typ 0.254	
C2	Typ 0.254	
E	Typ 1.27	
L	6	6.3
L1	5.7	6
L2	MAX 0.2	
R	Typ 13°	

All Dimensions in millimeter