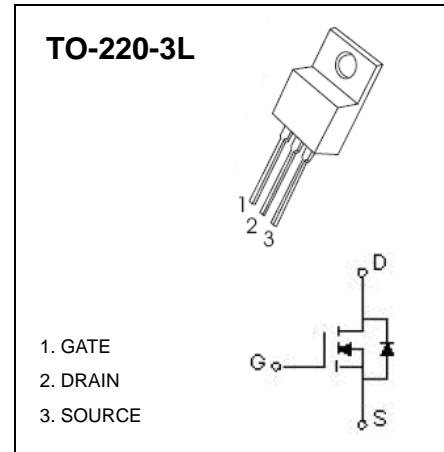


TO-220!' @Plastic-Encapsulate MOSFETS

IRF830 MOSFET(N-Channel)

FEATURES

- . Dynamic dv/dt Rating
- . Repetitive Avalanche Rated
- . Fast Switching
- . Ease of Paralleling
- . Simple Drive Requirement



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
I _D @T _C =25°C	Continuous Drain Current, V _{GS} @ 10 V	4.5	A
I _D @T _C =100°C	Continuous Drain Current, V _{GS} @ 10 V	2.9	A
I _{DM}	Pulsed Drain Current (note 1)	18	A
P _D	Power Dissipation	2	W
R _{θJA}	Thermal Resistance from Junction to Ambient	62.5	°C/W
V _{GS}	Gate-Source Voltage	±20	V
E _{AS}	Single Pulse Avalanche Energy (note2)	280	mJ
I _{AR}	Avalanche Current (note 1)	4.5	A
E _{AR}	Repetitive Avalanche Energy (note 1)	7.4	mJ
dv/dt	Peak Diode Recovery dv/dt (note 3)	3.5	V/ns
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

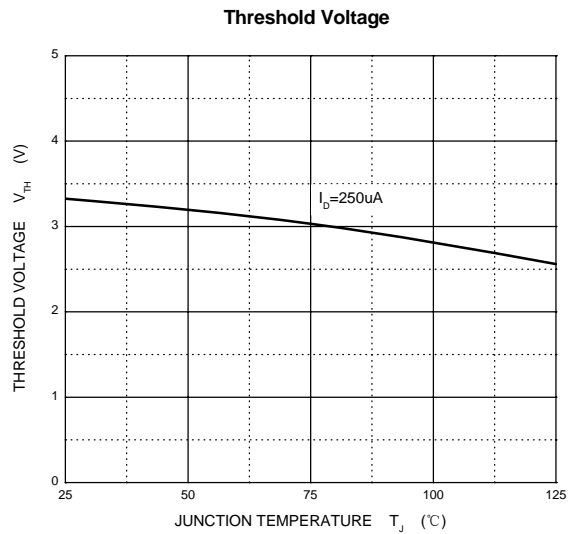
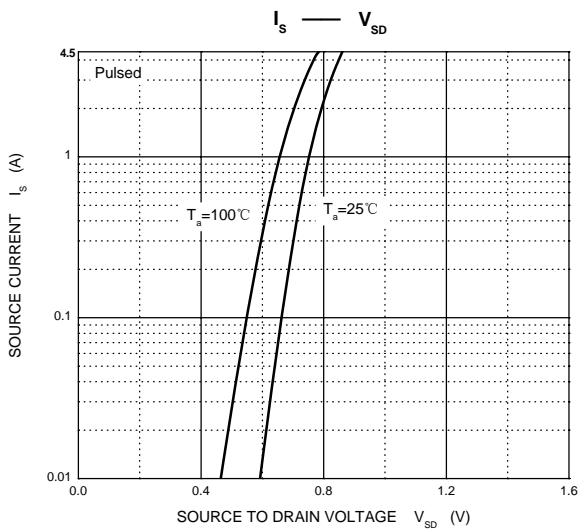
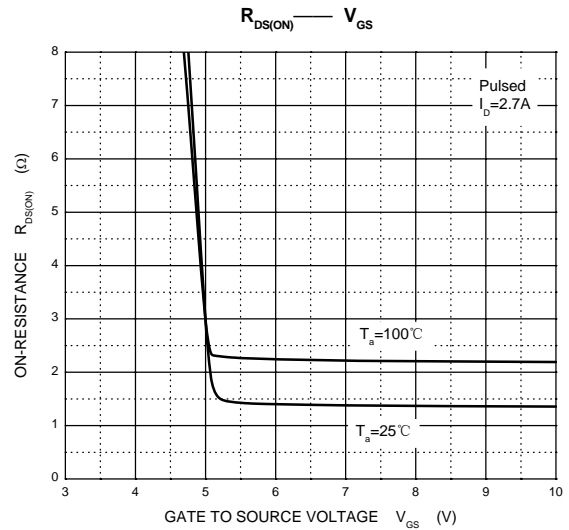
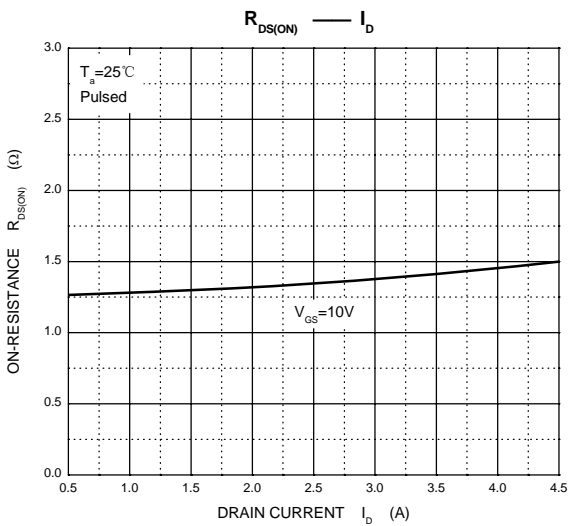
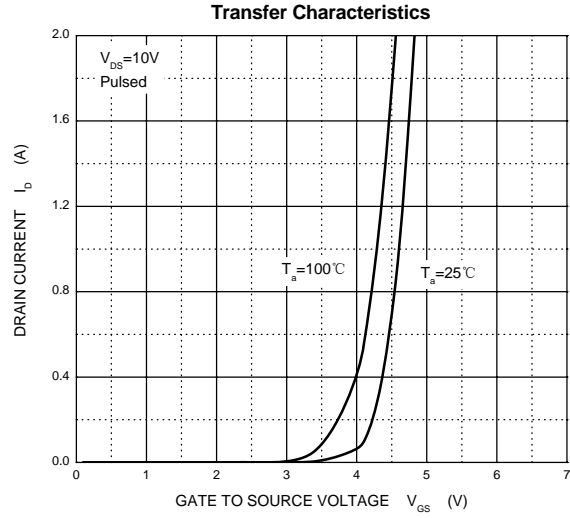
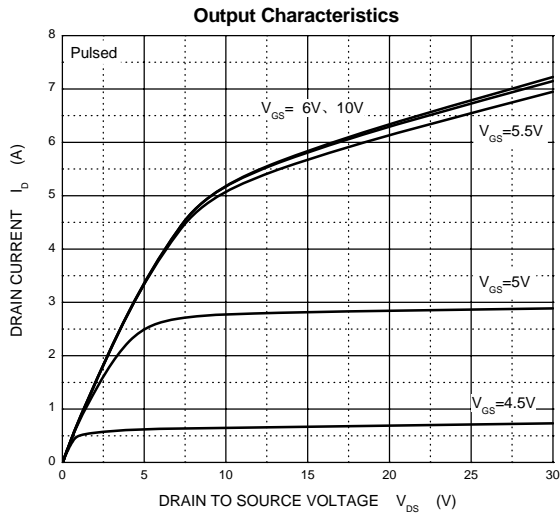
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	500			V
Gate-threshold voltage	$V_{(GS)th}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	
Gate-body leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=500V, V_{GS}=0V$			25	μA
Drain-source on-resistance (note 4)	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.7A$ (note 4)			1.5	Ω
Forward transconductance (note 4)	g_{fs}	$V_{DS}=50V, I_D=2.7A$ (note 4)	2.5			S
Diode forward voltage	V_{SD}	$I_S=4.5A, V_{GS}=0V$			1.6	V
Total gate charge	Q_g	$V_{DS}=400V, V_{GS}=10V, I_D=3.1A$			38	nC
Gate-source charge	Q_{gs}				5.0	
Gate-drain charge	Q_{gd}				22	
Input capacitance (note 5)	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		610		pF
Output capacitance (note 5)	C_{oss}			160		
Reverse transfer capacitance (note 5)	C_{rss}			68		
Turn-on delay time (note 4,5)	$t_{d(on)}$	$V_{DD}=250V, R_D=79\Omega,$ $I_D=3.1A, R_G=12\Omega$		8.2		nS
Rise time (note 4,5)	t_r			16		nS
Turn-off delay time (note 4,5)	$t_{d(off)}$			42		nS
Fall time (note 4,5)	t_f			16		nS

Notes:

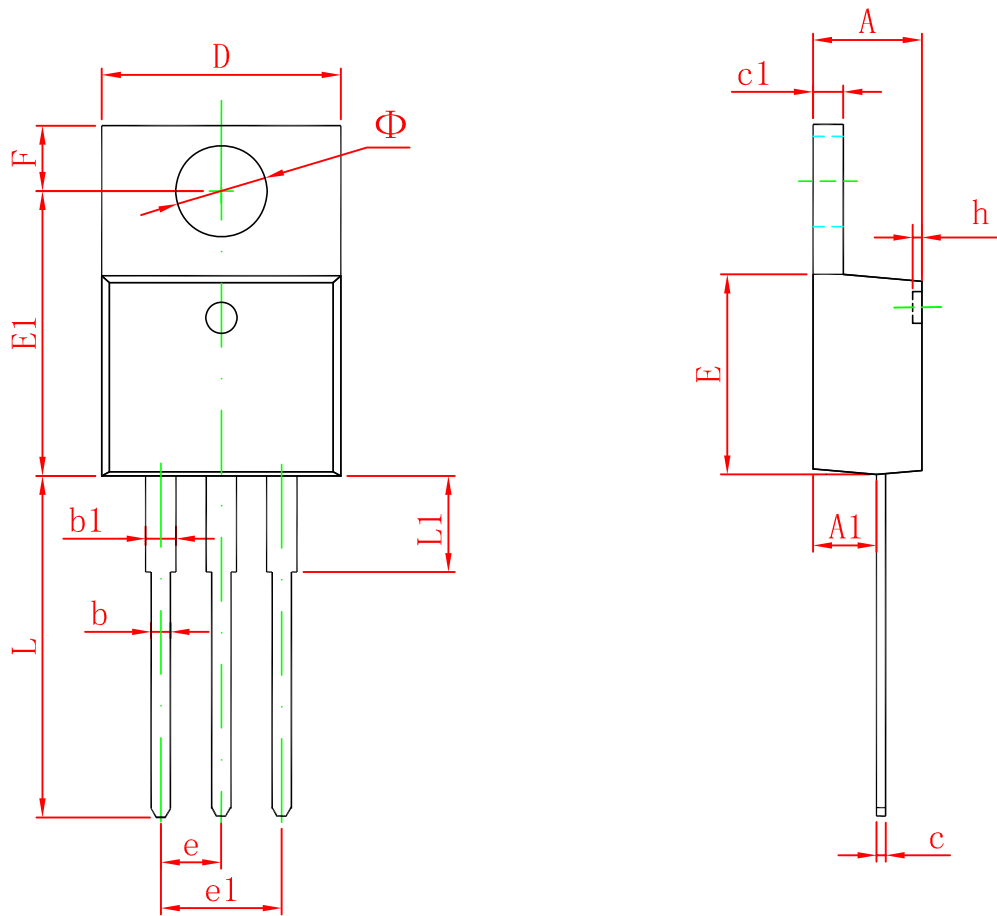
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. $L = 24mH, I_{AS} = 4.5A, V_{DD} = 50V, R_G = 25\Omega$ Starting $T_J = 25^\circ C$.
3. $I_{SD} = 4.5A, di/dt = 300A/\mu s, V_{DD} = V_{(BR)DSS}$, Starting $T_J = 25^\circ C$.
4. Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.
5. These parameters have no way to verify.

Typical Characteristics

IRF830



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155