

/ Descriptions

TO-220 N MOS N-CHANNEL MOSFET in a TO-220 Plastic Package.

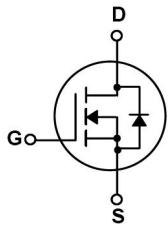
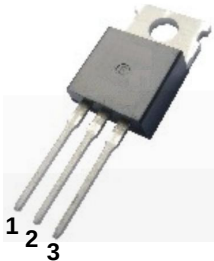
/ Features

Low gate charge, low crss, fast switching.

/ Applications

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

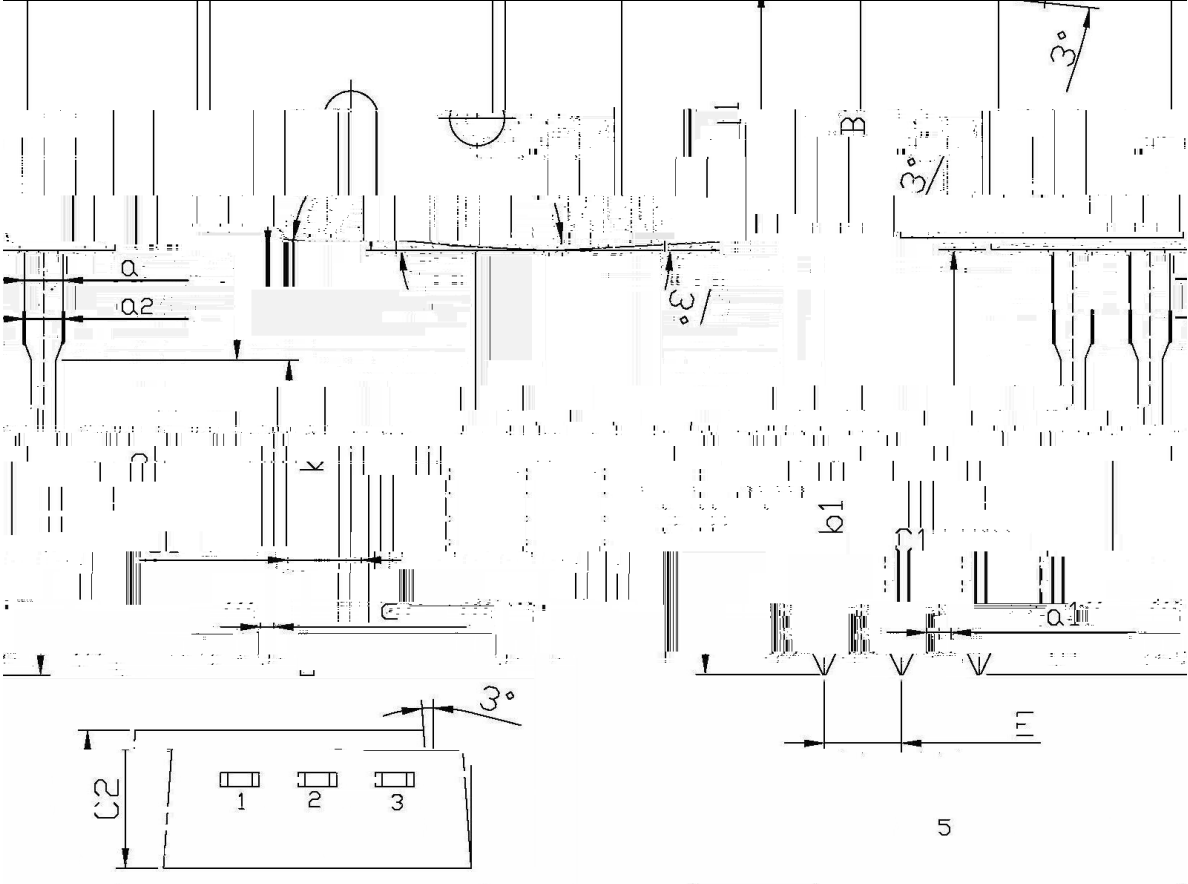
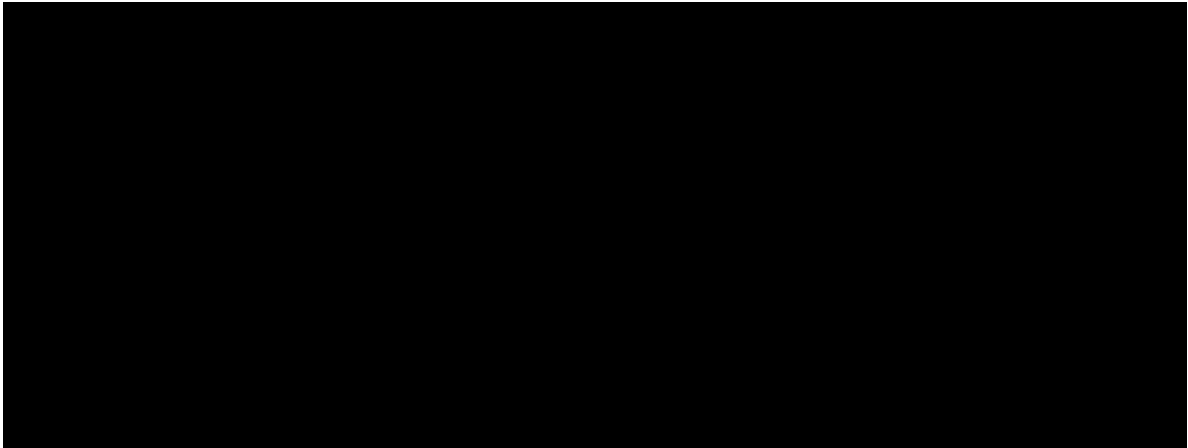
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	$I_D(T_C=25^{\circ}C)$	5.0	A
	$I_D(T_C=100^{\circ}C)$	3.0	A
Pulsed Drain Current	I_{DM}	20	A
Gate-Source Voltage	V_{GSS}	± 30	V
Avalanche Current	I_{AR}	5	A
Single Pulsed Avalanche Energy	E_{AS}	292	mJ
Repetitive Avalanche Energy	E_{AR}	8.75	mJ
Total Power Dissipation	$P_D(T_C=25^{\circ}C)$	87.5	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

/ Electrical Characteristics(Ta=25)

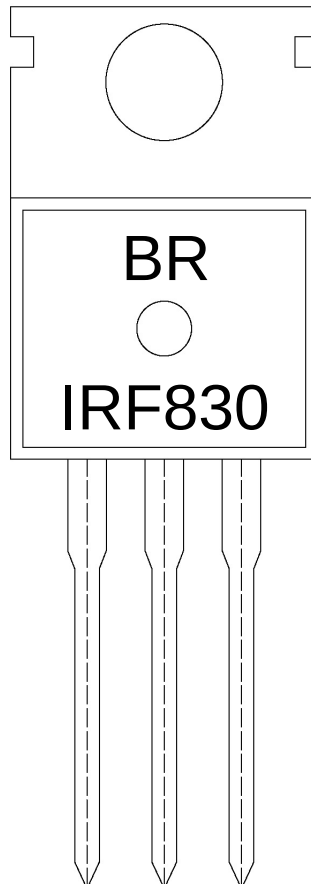
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	500			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=500V$ $V_{GS}=0V$			10	μA
		$V_{DS}=400V$ $T_C=125^{\circ}C$			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.5A$		1.15	1.4	Ω
Forward Transconductance	g_{FS}	$V_{DS}=40V$ $I_D=2.5A$		4.2		S
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=5.0A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		680	900	pF
Output Capacitance	C_{oss}			85	110	
Reverse Transfer Capacitance	C_{rss}			15	20	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V$ $I_D=5.0A$ $R_G=25\Omega$		20	50	ns
Turn-On Rise Time	t_r			40	90	
Turn-Off Delay Time	$t_{d(off)}$			90	190	
Turn-Off Fall Time	t_f			45	100	

/ Package Dimensions



Dimensions in Millimeters				Dimensions in Millimeters			
Symbol	Min	Max	Typ	Symbol	Min	Max	Typ
	9.8	10.2			1.2	1.4	
	3.56	3.64			6.3	6.7	
	15.7	16.1			19.0	19.4	
	12.6	13.6			2.2	2.6	
	9.6	10.6			0.7	0.9	
	6.8	7.2			2.71	2.74	
	1.25	1.45					

/ Marking Instructions



BR

IRF830

Note:

BR: Company Code

IRF830: Product Type.

****: Lot No. Code, code change with Lot No.

