/ Descriptions

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

/ Features

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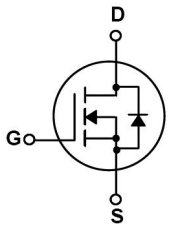
Low gate charge, low crss, fast switching.

/ Applications

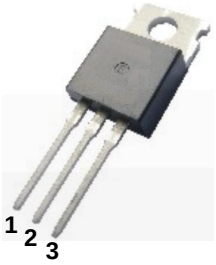
DC/DC

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.

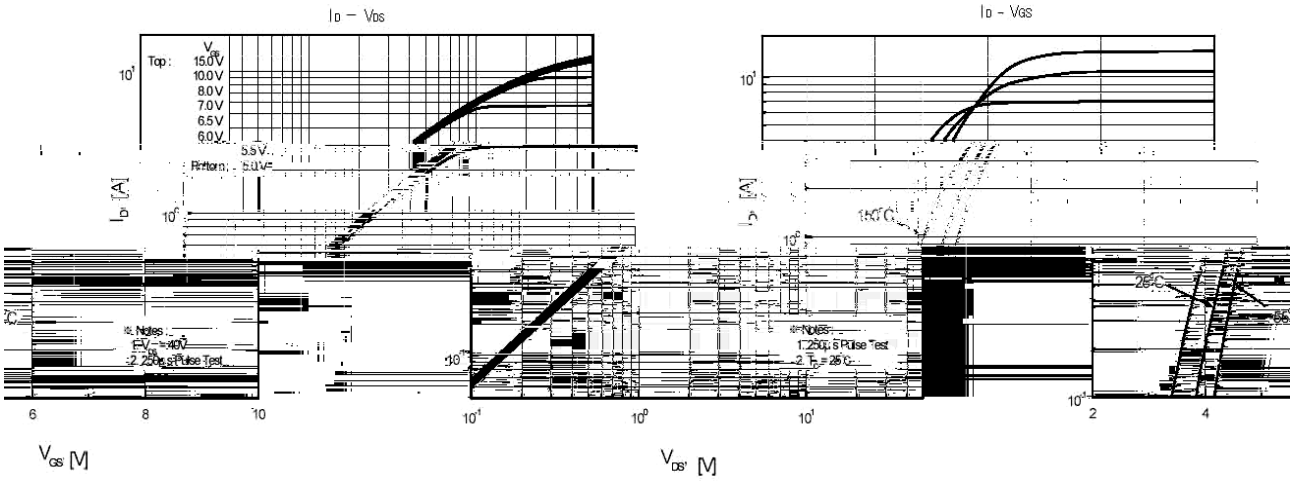
/ Absolute Maximum Ratings(Ta=25)

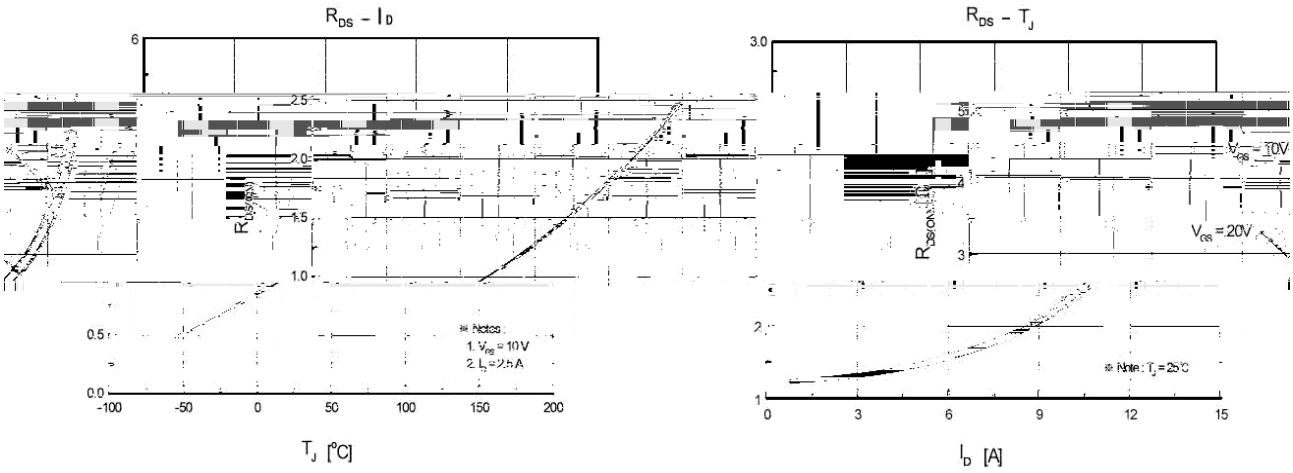
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	I_D(Tc=25℃)	5.0	A
	I_D(Tc=100℃)	3.0	A
Pulsed Drain Current	I_{DM}	20	A
Gate-Source Voltage	V_{GSS}	±30	V
Avalanche Current	I_{AR}	5	A
Single Pulsed Avalanche Energy	E_{AS}	292	mJ
Repetitive Avalanche Energy	E_{AR}	8.75	mJ
Total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

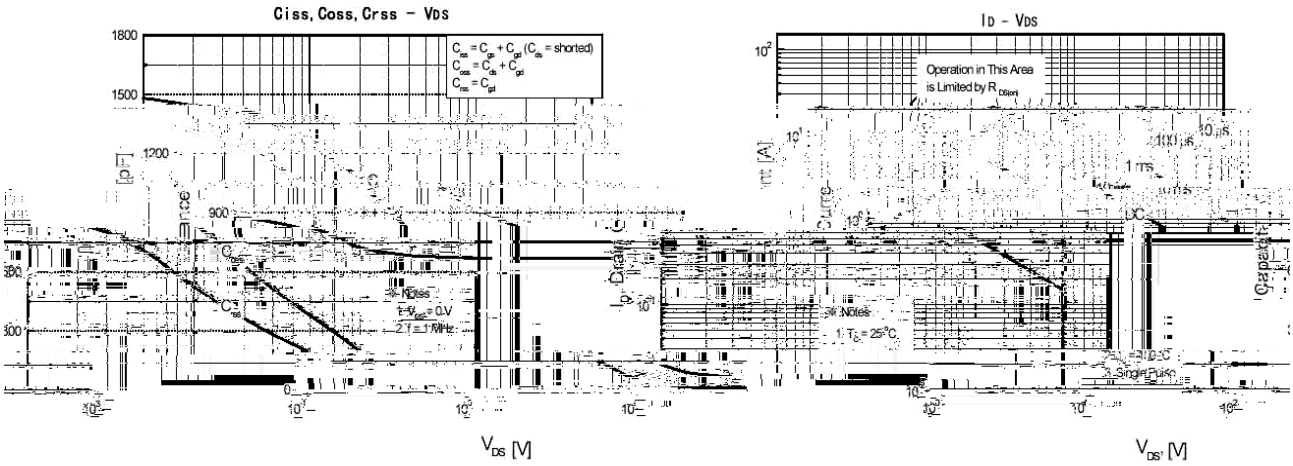
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	V_{GS}=0V	I_D=250μA	500			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V	V_{GS}=0V			10	μA
		V_{DS}=400V	T_C=125℃			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±30V	V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	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 f=1.0MHz	V_{GS}=0V		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 R_G=25Ω	I_D=5.0A		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	

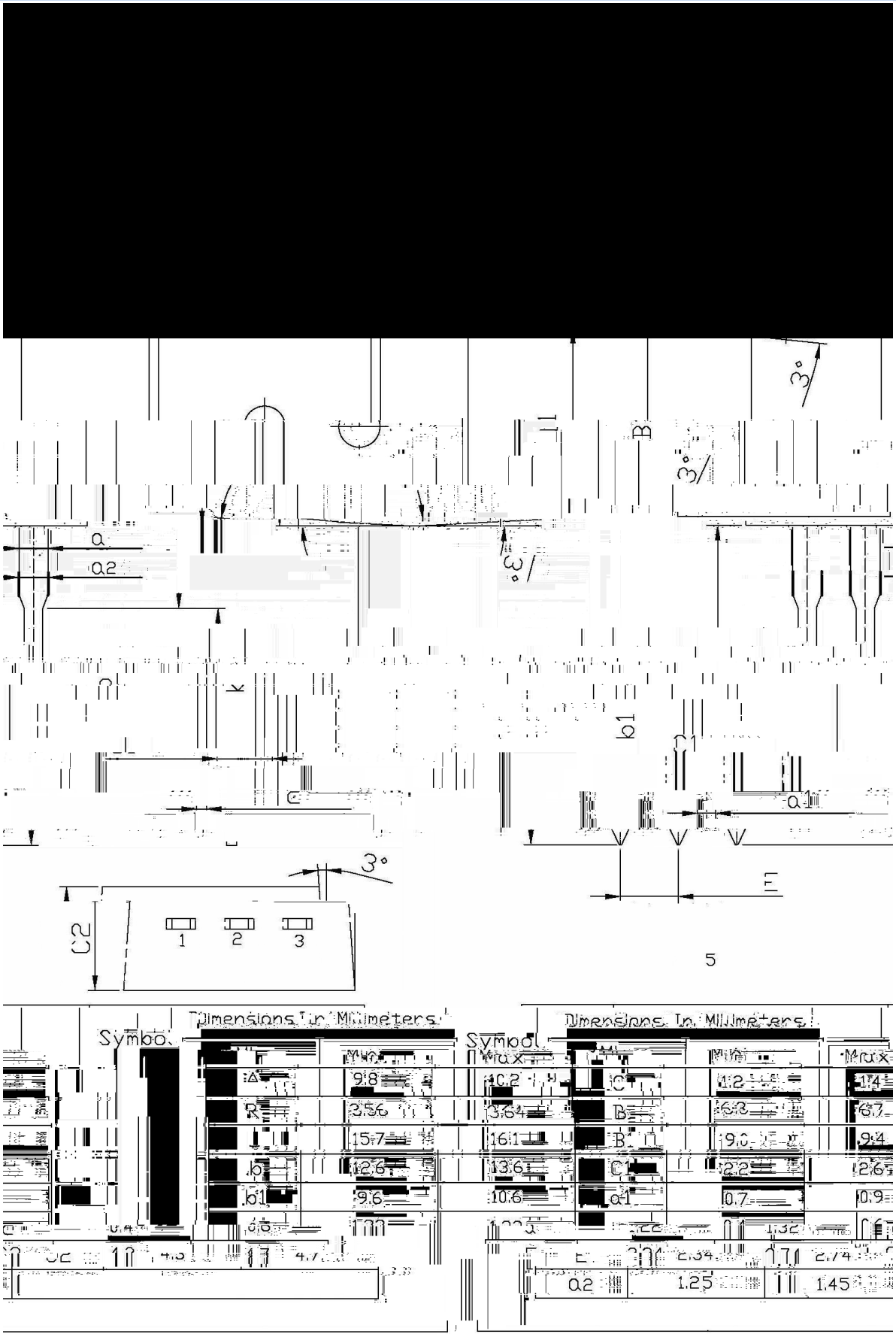
/ Electrical Characteristic Curve



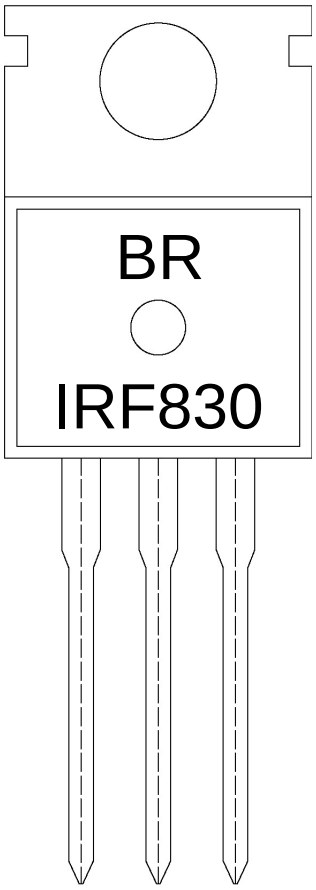




/ Package Dimensions



/ Marking Instructions



BR

IRF830

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Note:

BR:	Company Code
IRF830:	Product Type.
****:	Lot No. Code, code change with Lot No.