描述 / Descriptions

TO-220F 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a TO-220F Plastic Package.

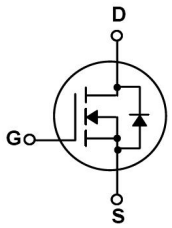
特征 / Features

低栅电荷,低反馈电容,开关速度快。
Low gate charge, low crss, fast switching.

用途 / Applications

用于高效 DC/DC 转换和功率开关。
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning

PIN1：G　　PIN 2：D　　PIN 3：S

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。See Marking Instructions.

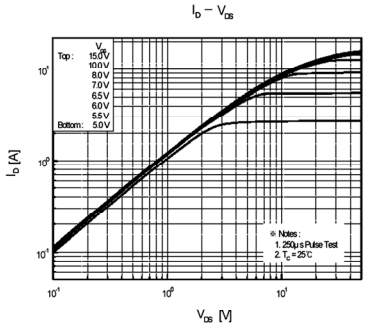
极限参数 / Absolute Maximum Ratings(Ta=25℃)

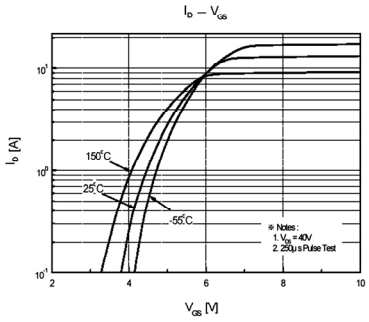
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	400	V
Drain Current	I_D(Tc=25℃)	6.0	A
Drain Current	I_D(Tc=100℃)	3.6	A
Drain Current - Pulsed	I_{DM}	24	A
Gate-Source Voltage	V_{GSS}	±30	V
Avalanche Current	I_{AR}	6.0	A
Single Pulsed Avalanche Energy	E_{AS}	390	mJ
Repetitive Avalanche Energy	E_{AR}	8.75	mJ
Power Dissipation	P_D(Tc=25℃)	38	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃

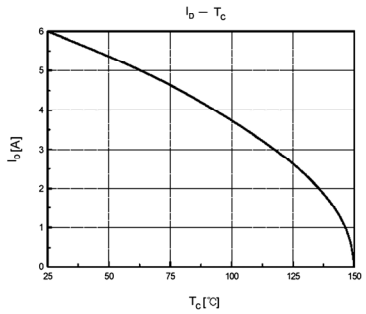
电性能参数 / Electrical Characteristics(Ta=25℃)

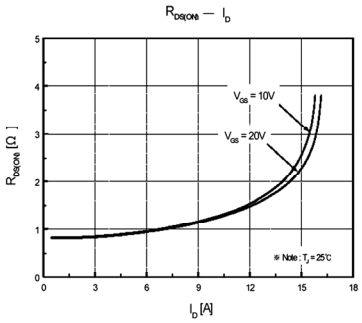
参数 Parameter	符号 Symbol	测试条件 Test Conditions		最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	400			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=400V	V_{GS}=0V			10	μA
		V_{DS}=320V	T_C=125℃			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±30V	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=3.0A		0.78	0.95	S
Forward Transconductance	g_{FS}	V_{DS}=40V	I_D=3.0A		4.5		Ω
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=6.0A			1.5	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		670	870	pF
Output Capacitance	C_{oss}				95	125	
Reverse Transfer Capacitance	C_{rss}				16	21	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=200V R_G=25Ω	I_D=6.0A		20	50	ns
Turn-On Rise Time	t_r				50	110	
Turn-Off Delay Time	$t_{d(off)}$				90	190	
Turn-Off Fall Time	t_f				55	120	

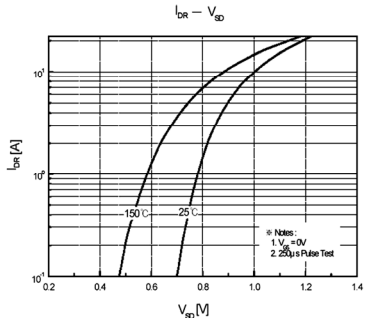
电参数曲线图 / Electrical Characteristic Curve

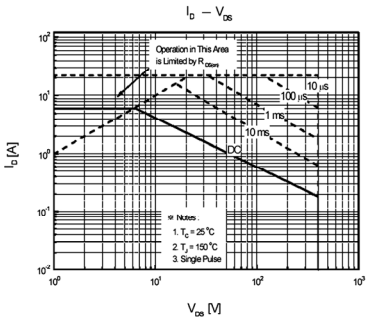


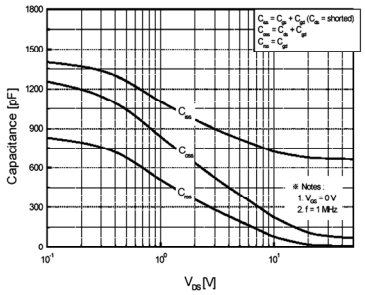


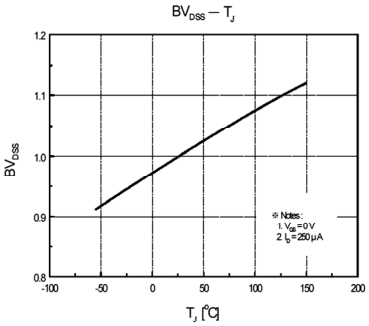


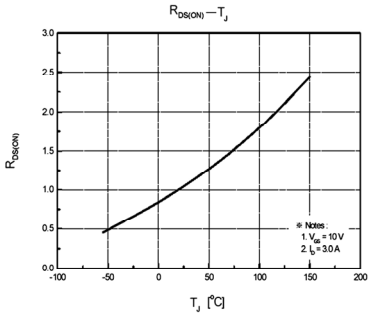






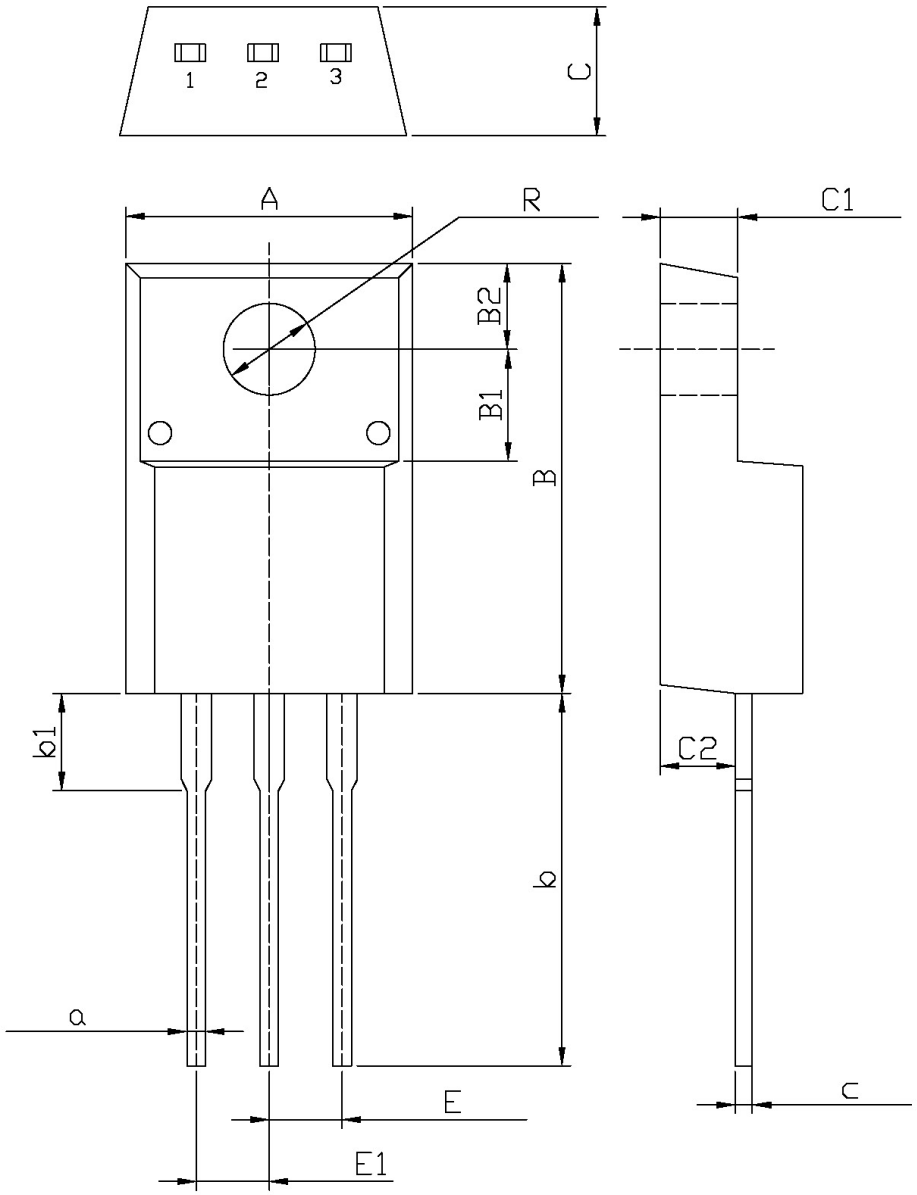






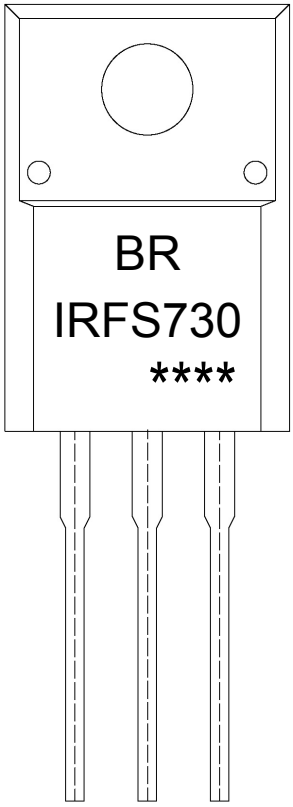
外形尺寸图 / Package Dimensions

TO-220F 单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.3	4.7	b1	2.9	3.9
A	9.7	10.3	a	0.55	0.75
B	14.7	15.3	E	2.29	2.79
B1	3.8	4.0	E1	2.29	2.79
B2	2.9	3.1	C1	2.5	2.9
R	3.0	3.4	C2	2.5	2.7
b	12.5	13.5	c	0.5	0.7

印章说明 / Marking Instructions



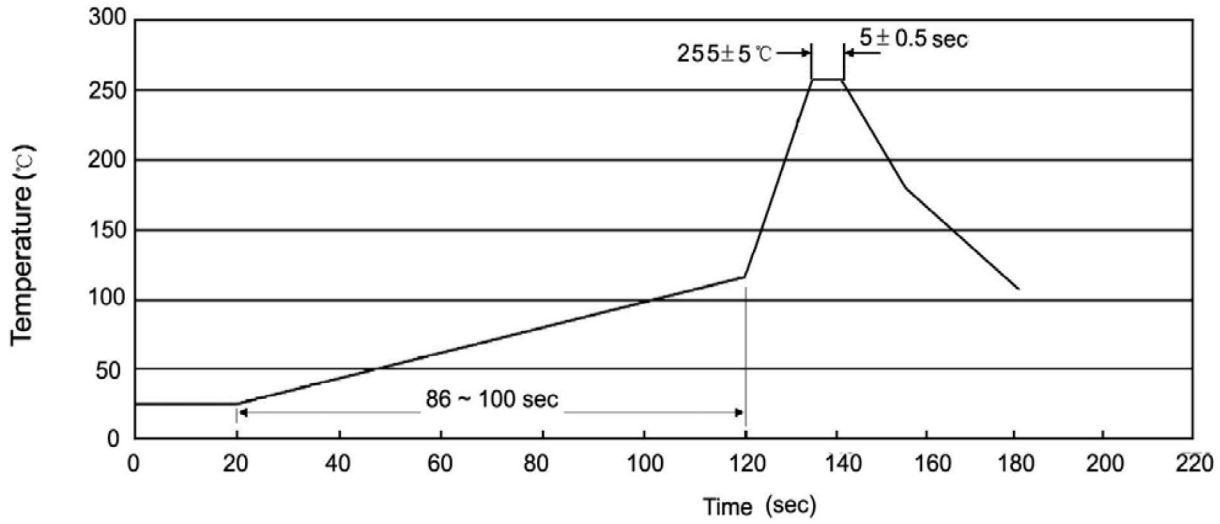
说明：

BR：	为公司代码
IRFS730：	为型号代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code
IRFS730:	Product Type.
****:	Lot No. Code, code change with Lot No.

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明：

1、预热温度 25～150℃，时间 60～90sec;

2、峰值温度 255±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:25~150℃, Time:60~90sec.

2.Peak Temp.:255±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：270±5℃　　时间：10±1 sec.

Temp.:270±5℃　　Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

使用说明 / Notices