IRFP3205

Rev.E Mar.-2016

蓝箭电子
BLUE ROCKET ELECTRONICS
DATA SHEET

描述 / Descriptions

TO-3P 塑封封装 N 沟 MOS 场效应管。N-Channel MOSFET in a TO-3P Plastic Package.

特征 / Features

阻抗低，开关速度快。

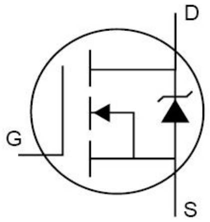
Low On-Resistance, fast switching.

用途 / Applications

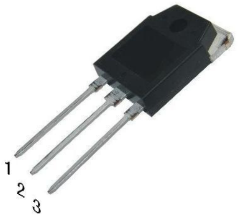
用于高功率 DC/DC 转换和功率开关。

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：Gate PIN 2：Drain PIN 3：Source

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℃)

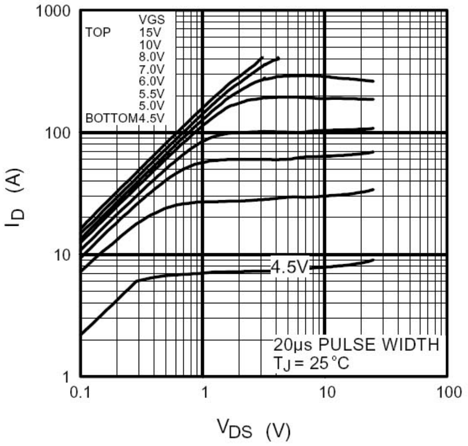
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	55	V
Continuous Drain Current	$I_D(T_c=25℃)$	110	A
Continuous Drain Current	$I_D(T_c=100℃)$	80	A
Pulsed Drain Current	I_{DM}	390	A
Gate-to-Source Voltage	V_{GSS}	±20	V
Avalanche Current	I_{AR}	62	A
Single Pulse Avalanche Energy	E_{AS}	1050	mJ
Repetitive Avalanche Energy	E_{AR}	20	mJ
Power Dissipation	$P_D(T_c=25℃)$	320	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃

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

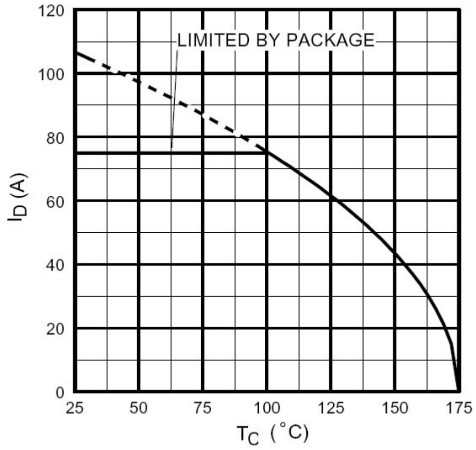
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-to-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	55			V
Drain-to-Source Leakage Current	I_{DSS}	V_{DS}=55V V_{GS}=0V			25	μA
		V_{DS}=44V V_{GS}=0V T_C=150℃			250	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=62A			8	mΩ
Forward Transconductance	g_{FS}	V_{DS}=25V I_D=62A	44			S
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=62A			1.3	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz		3247		pF
Output Capacitance	C_{oss}			781		
Reverse Transfer Capacitance	C_{rss}			211		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=28V I_D=62A R_G=4.5Ω		14		ns
Rise Time	t_r			101		
Turn-Off Delay Time	$t_{d(off)}$			50		
Fall Time	t_f			65		

电参数曲线图 / Electrical Characteristic Curve

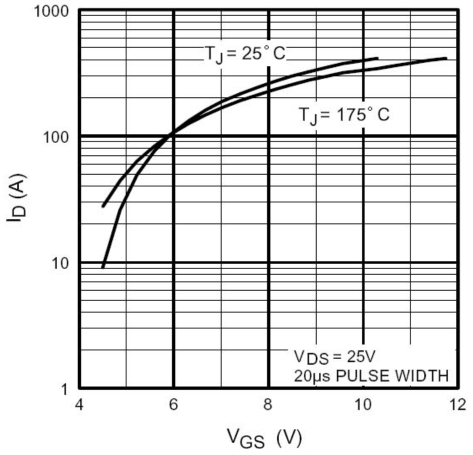
I_D — V_{DS}



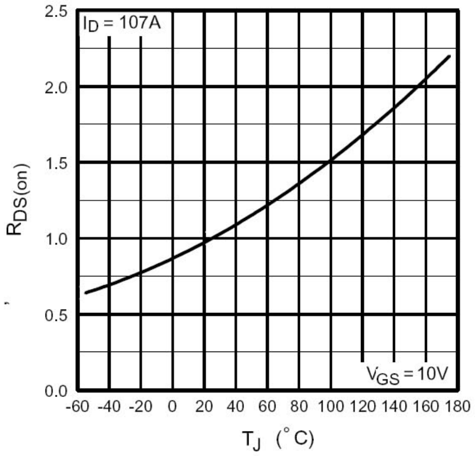
I_D — T_C



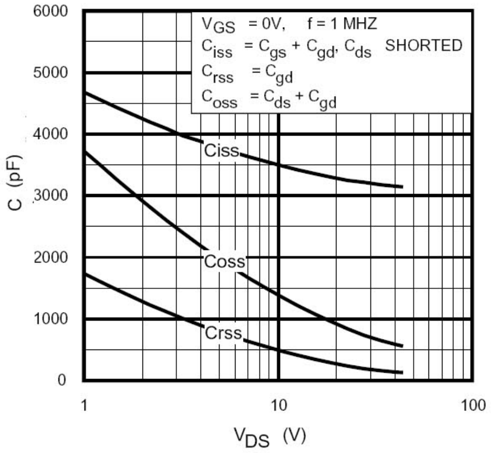
I_D — V_{GS}



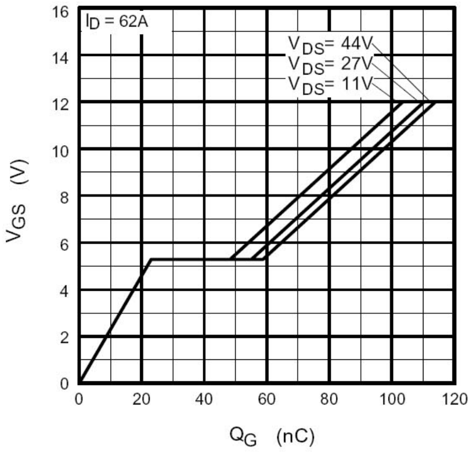
$R_{DS(on)}$ — T_J



C — V_{DS}

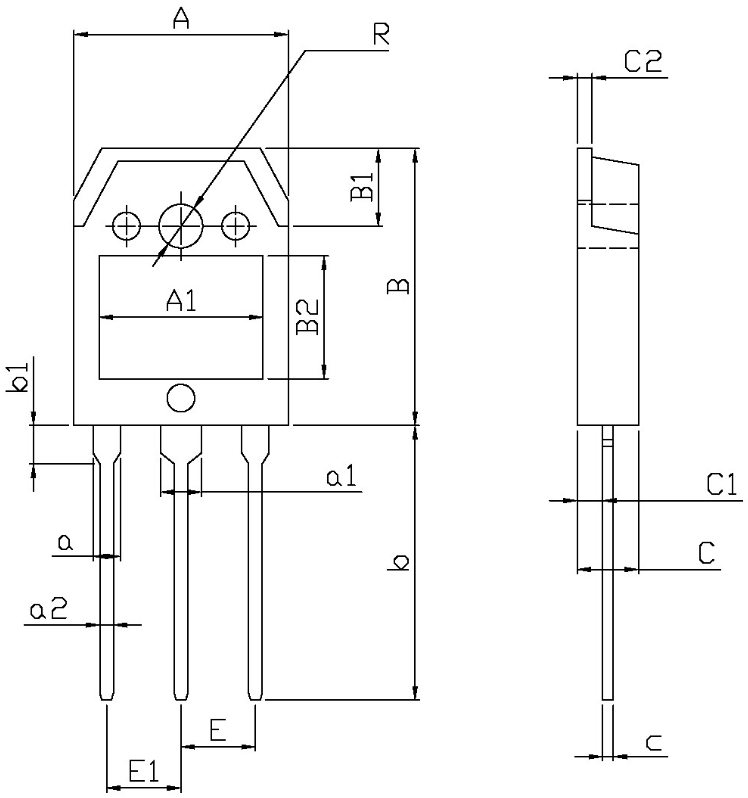


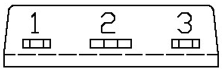
V_{GS} — Q_G



外形尺寸图 / Package Dimensions

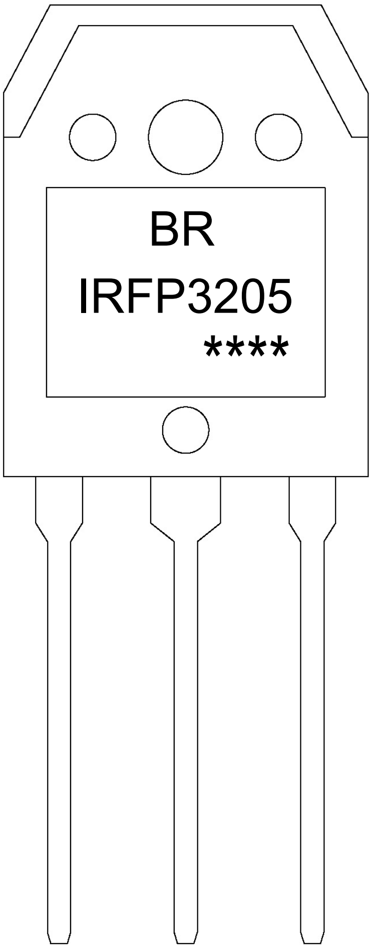
TO-3P   单位：mm





Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	15.4	16.0	a2	0.8	1.2
R	3.1	3.5	E	5.45	
B	19.8	20.8	E1	5.45	
B1	5.5	5.9	C	4.3	4.7
B2	9.0		C1	1.2	1.6
A1	12.0		C2	1.4	1.6
b	19.6	20.6	c	0.5	0.7
b1	3.0	3.4			
a	1.8	2.2			
a1	2.8	3.2			

印章说明 / Marking Instructions



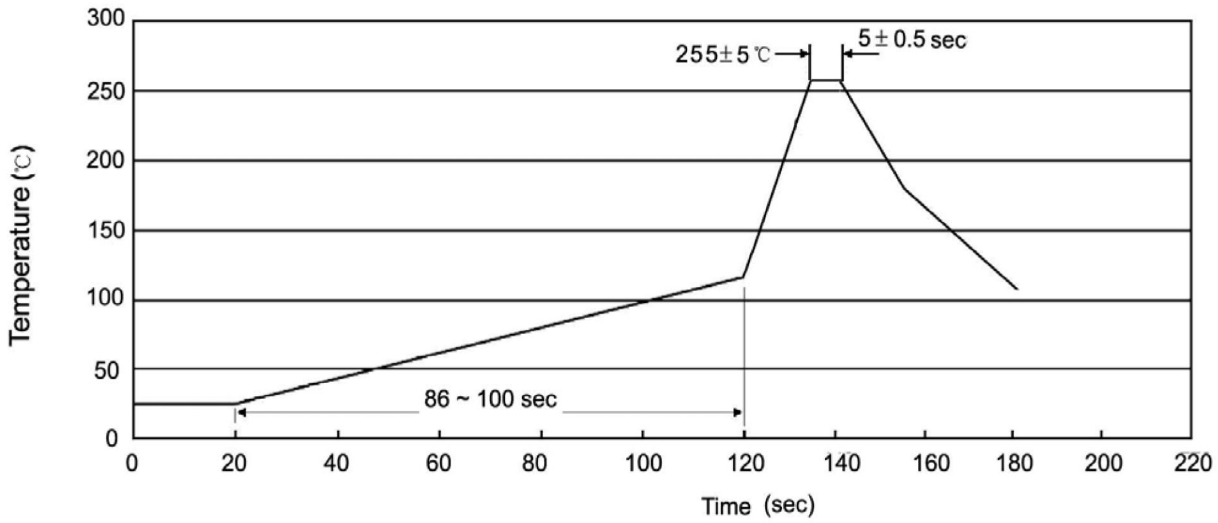
说明：

BR:	为公司代码
IRFP3205：	为产品型号
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code.
IRFP3205:	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.

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-3P	30	15	450	5	2250	497.5×46×8	555×164×50	575×290×180

使用说明 / Notices