

BRMJD44RA

Rev.A Apr.-2024

描述 / Descriptions

TO-220 塑封封装 NPN 半导体三极管。
Silicon NPN transistor in a TO-220 Plastic Package.

特征 / Features

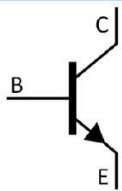
与 BRMJD45RA 互补，无卤产品。
Complement to BRMJD45RA, HF Product.

用途 / Applications

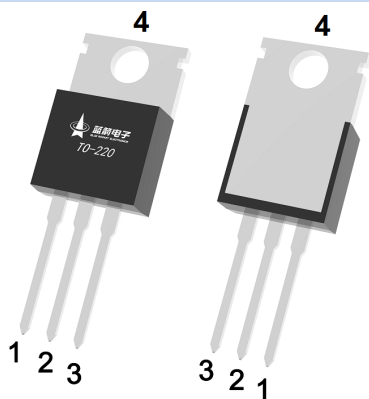
这些功率晶体管可用作通用功率放大和开关，例如开关调节器、转换器和功率放大器等应用中的输出或驱动级。

These power transistors can be used as general purpose power amplification and switching such as output or driver stages in applications such as switching regulators, converters and power amplifiers.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Base PIN 2、4 : Collector PIN 3 : Emitter

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°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V _{CBO}	100	V
Collector to Emitter Voltage	V _{CEO}	80	V
Emitter to Base Voltage	V _{EBO}	5.0	V
Collector Current - Continuous	I _C	10	A
Peak Collector Current	I _{CM}	20	A
Collector Power Dissipation	P _C (T _c =25°C)	70	W
	P _C	2.0	W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C
Thermal Resistance, Junction-to-Ambient	R _{θJA}	62.5	°C/W
Thermal Resistance, Junction-to-Case	R _{θJC}	1.8	°C/W

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

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
Collector to Emitter Breakdown Voltage	V _{CEO}	I _C =30mA I _B =0	80			V
Collector Cut-Off Current	I _{CES}	V _{CE} =80V I _B =0			10	μA
Emitter Cut-Off Current	I _{EBO}	V _{EB} =5.0V I _C =0			10	μA
DC Current Gain	h _{FE(1)}	V _{CE} =1.0V I _C =2.0A	60		250	
	h _{FE(2)}	V _{CE} =1.0V I _C =4.0A	40			
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =8.0A I _B =0.4A			1.0	V
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C =8.0A I _B =0.8A			1.5	V
Collector output capacitance	C _{ob}	V _{CB} =10V f=1.0MHz I _E =0		90		pF
Gain Bandwidth Product	f _T	I _C = 0.5 A, V _{CE} = 10 V f = 20 MHz		50		MHz

电参数曲线图 / Electrical Characteristic Curve

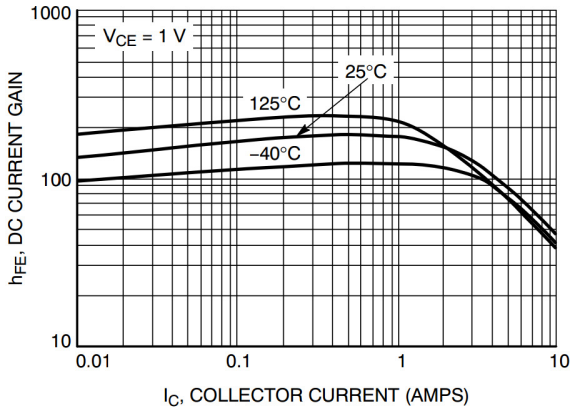


Figure 1. DC Current Gain

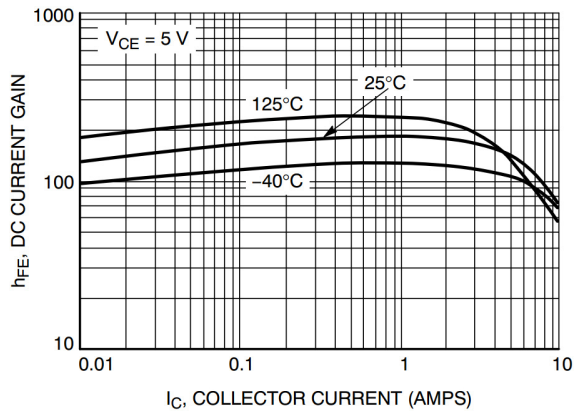


Figure 2. DC Current Gain

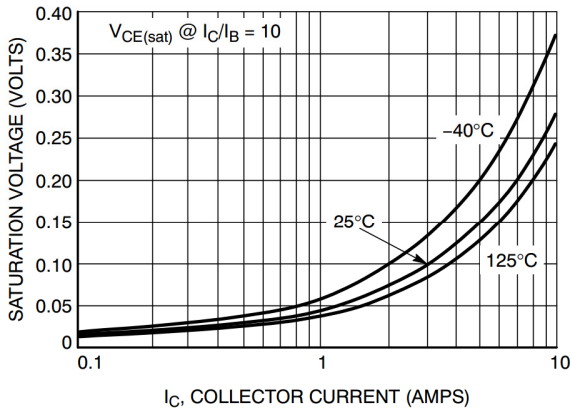


Figure 3. ON-Voltage

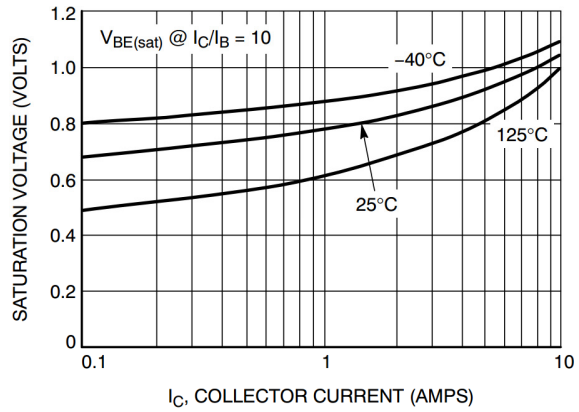


Figure 4. ON-Voltage

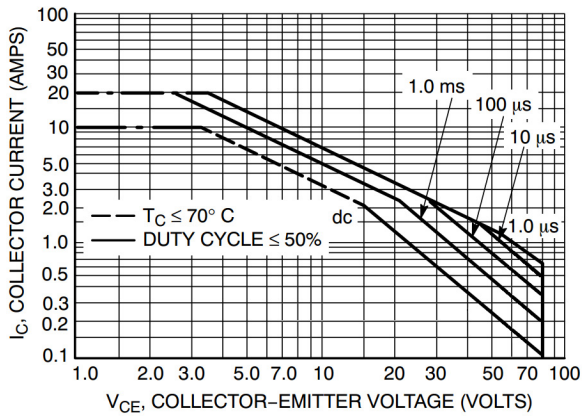


Figure 5. Maximum Rated Forward Bias Safe Operating Area

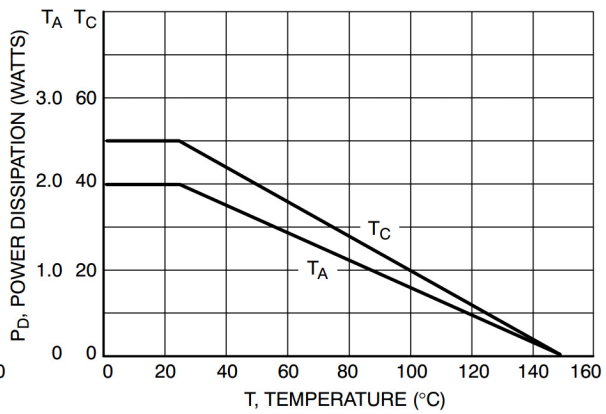
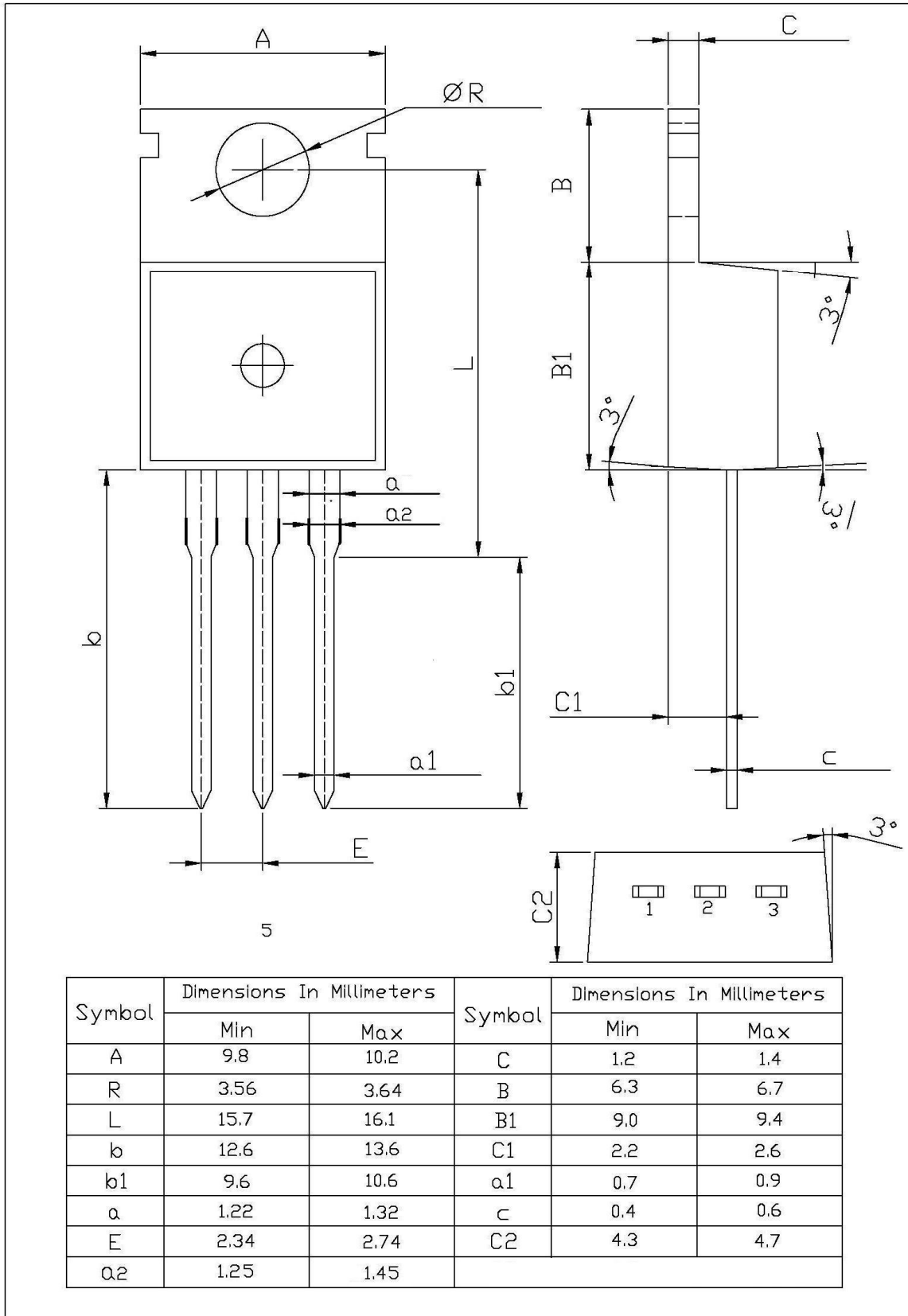


Figure 6. Power Derating

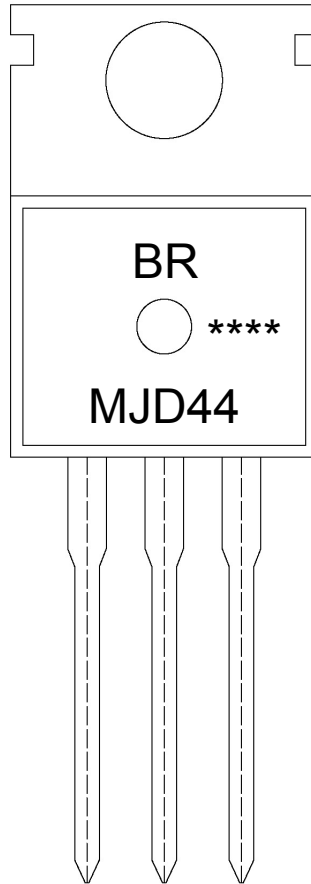
外形尺寸图 / Package Dimensions

T□-220

单位: mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

****： 为生产批号代码，随生产批号变化

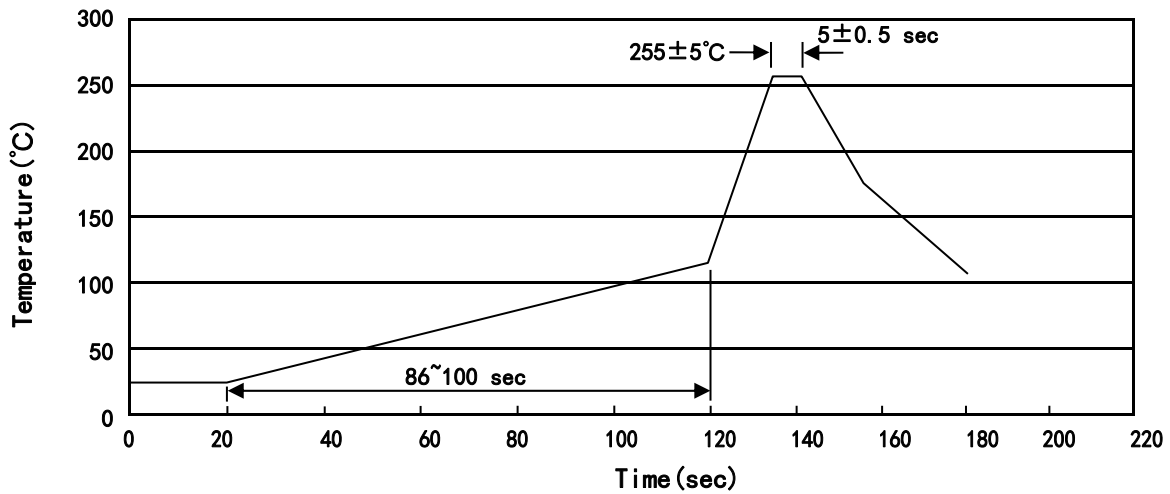
MJD44： 为型号代码

Note:

BR: Company Code

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

MJD44: Product Type Code

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°C，时间 60~90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

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

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

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