

BRMJD31CDP

Rev.B .May.-2018

描述 / Descriptions

TO-252 塑封封 NPN 半导体三极管。Silicon NPN transistor in a TO-252 Plastic Package.

特征 / Features

$BV_{CEO} > 100V$;

$I_C = 3A$ high Continuous Collector Current;

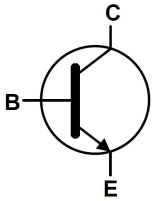
$I_{CM} = 5A$ Peak Pulse Current;

用途 / Applications

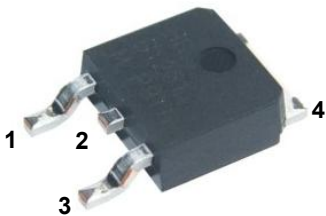
Power Switching or Amplification Applications

电源开关或放大应用。

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.

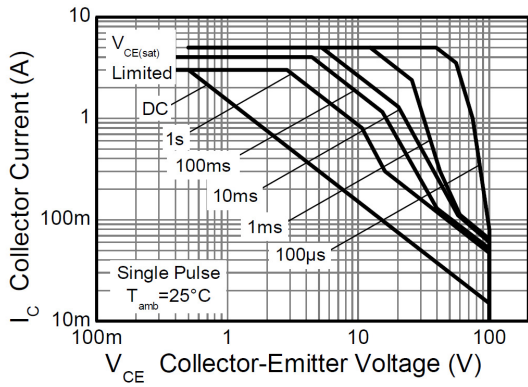
极限参数 / Absolute Maximum Ratings(Ta=25°C)

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}	100	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	3	A
Peak Pulse Collector Current	I_{CM}	5	A
Continuous Base Current	I_B	1	A
Power Dissipation	P_D	1.6	W
Power Dissipation (Tc=25°C)	P_D	15	W
Junction-to-Ambient	$R_{\theta JA}$	78	°C/W
Junction-to-Case	$R_{\theta JC}$	8.3	°C/W

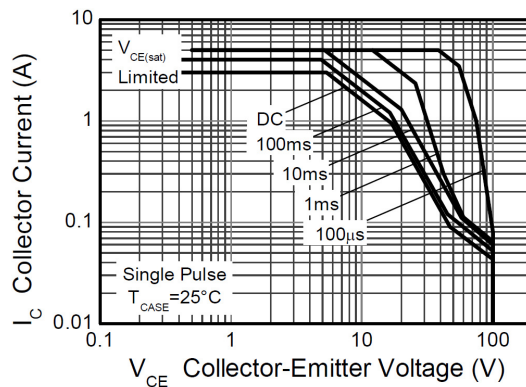
电性能参数 / Electrical Characteristics(Ta=25°C)

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}	$I_C=30mA$ $I_B=0$	100			V
Collector Cut-off Current	I_{CEO}	$V_{CB} = 60V$ $I_B=0$			1	μA
Collector Cut-off Current	I_{CES}	$V_{CE}=100V$ $V_{EB}=0$			1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5V$ $I_C=0$			1	μA
Collector-Emitter Saturation Voltage (Note 10)	$V_{CE(sat)}$	$I_C=4.0A$ $I_B=0.4A$			1.2	V
Base-Emitter Turn-On Voltage (Note 10)	$V_{BE(on)}$	$I_C=3A$ $V_{CE}=4V$			1.8	V
DC Current Gain (Note 10)	h_{FE}	$V_{CE}=4V$ $I_C=1A$	70			
		$V_{CE}=4V$ $I_C=3A$	20		70	
Current Signal Current Gain	H_{fe}	$V_{CE}=10V$ $I_C=0.5A$ $f=1KHz$	20			
Current Gain-Bandwidth Product	f_T	$I_C=500Ma$ $V_{CE}=10V$ $f = 1MHz$	3.0			MHz

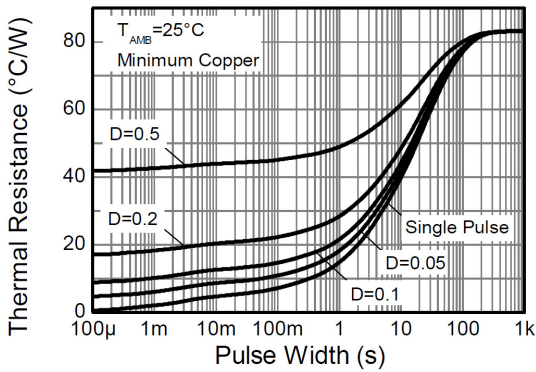
电参数曲线图 / Electrical Characteristic Curve



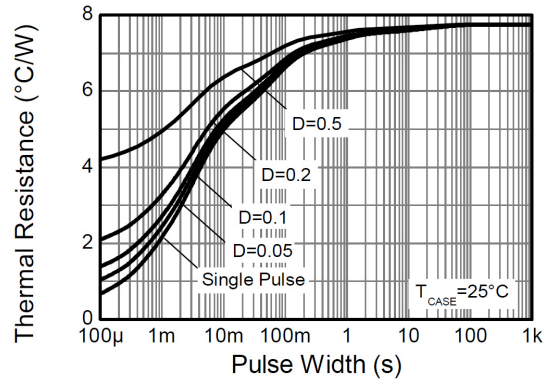
Safe Operating Area



Safe Operating Area



Transient Thermal Impedance



Transient Thermal Impedance

电参数曲线图 / Electrical Characteristic Curve

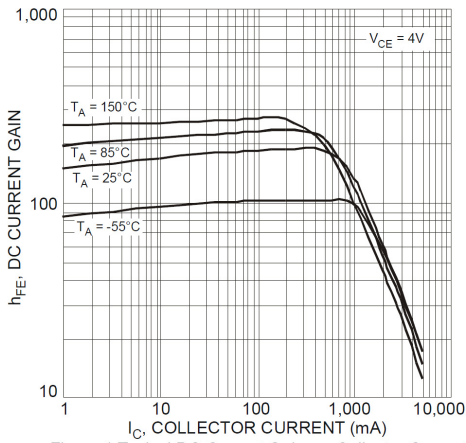


Figure 1 Typical DC Current Gain vs. Collector Current

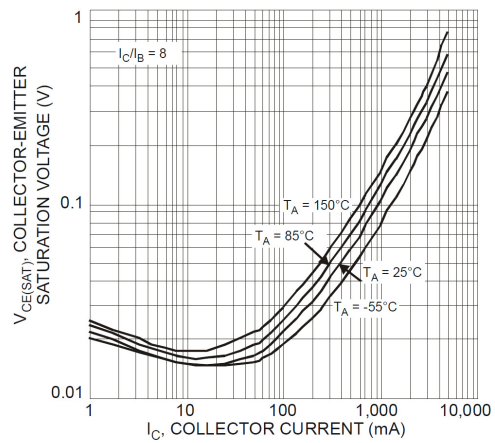


Figure 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

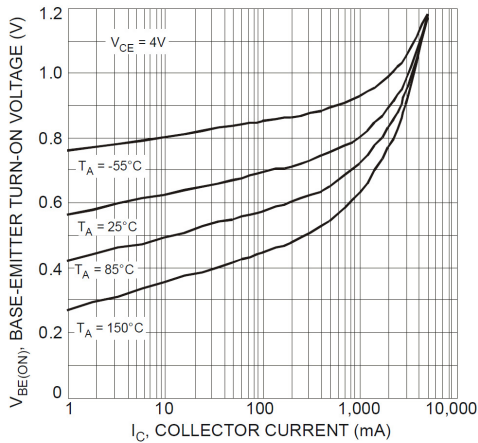


Figure 3 Typical Base-Emitter Turn-On Voltage vs. Collector Current

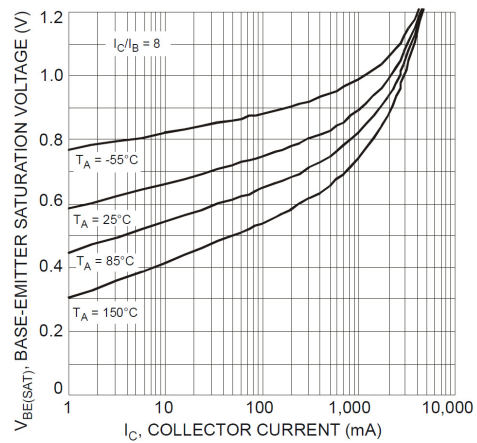
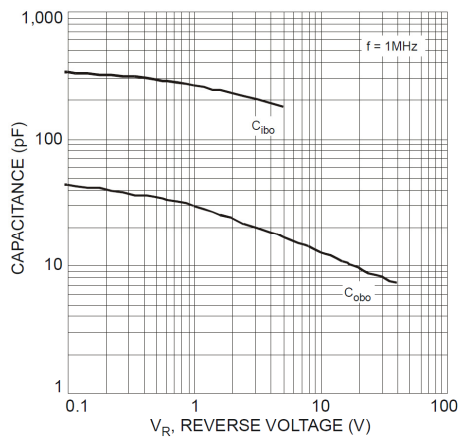
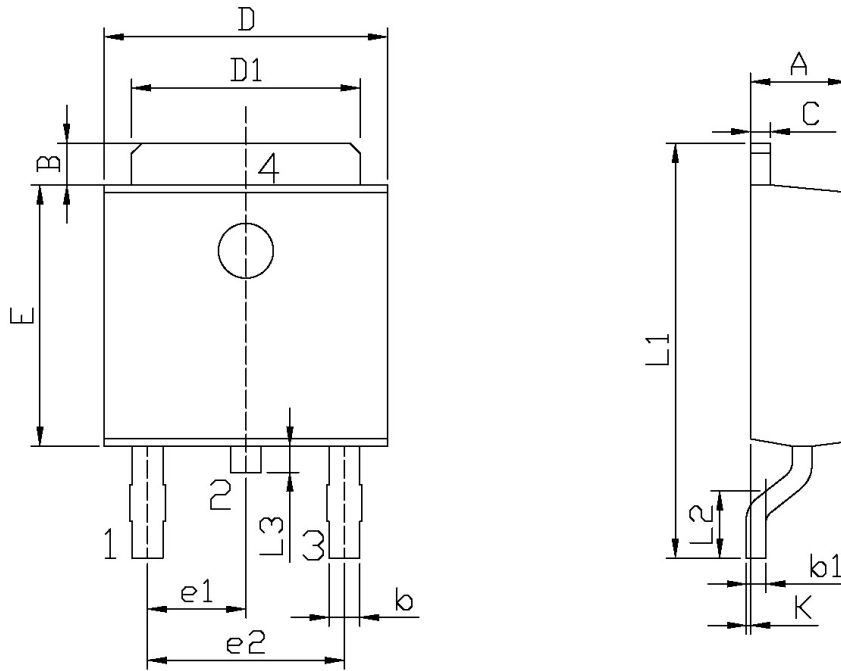


Figure 4 Typical Base-Emitter Saturation Voltage vs. Collector Current



外形尺寸图 / Package Dimensions

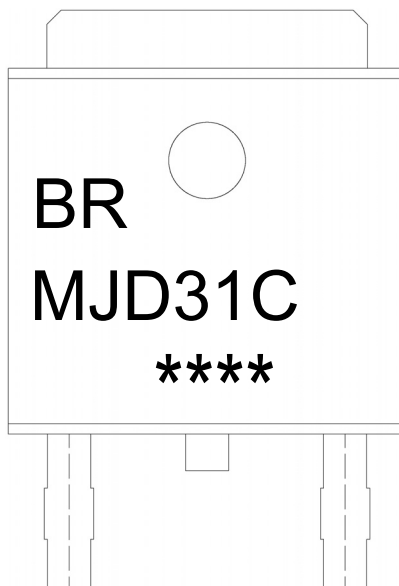


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.50	0.70	e2	4.43	4.73
b1	0.45	0.55	L1	9.45	9.95
C	0.45	0.55	L2	1.25	1.75
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

TO-252

印章说明 / Marking Instructions



说明：

BR： 为公司代码

MJD31C： 为产品型号

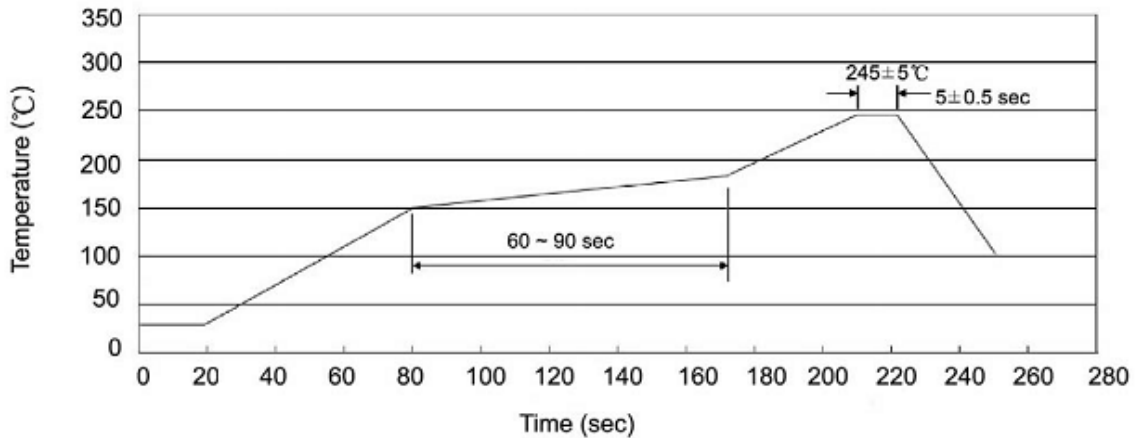
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

MJD31C: Product Type.

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

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)


说明：

- 1、预热温度 150~180°C，时间 60~90sec;
- 2、峰值温度 245±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:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±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：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13" ×12	360×360×50	380×335×366

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-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

使用说明 / Notices