MJE13007VB

Rev.A May.-2016

描述 / Descriptions

TO-263 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a TO-263 Plastic Package.

特征 / Features

耐压高,开关速度快。

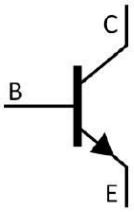
High voltage capability, high speed switching.

用途 / Applications

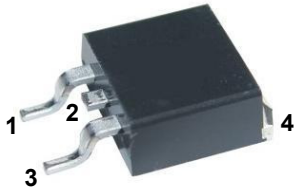
用于高频电子照明电路、开关及开关电源。

High frequency electronic lighting, switching power supply applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



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

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℃)

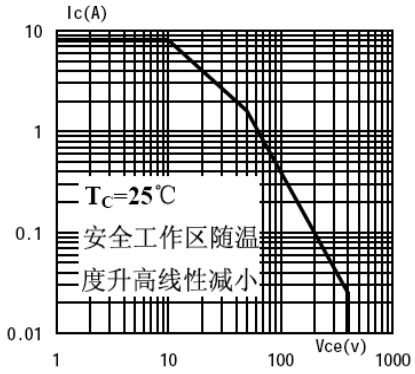
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	700	V
Collector to Emitter Voltage	V_{CEO}	400	V
Emitter to Base Voltage	V_{EBO}	9.0	V
Collector Current - Continuous	I_C	8.0	A
Collector Current - Pulse	I_{CP}	16	A
Base Current - Continuous	I_B	4.0	A
Collector Power Dissipation	P_C	2	W
Collector Power Dissipation	P_C(Tc=25℃)	80	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

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

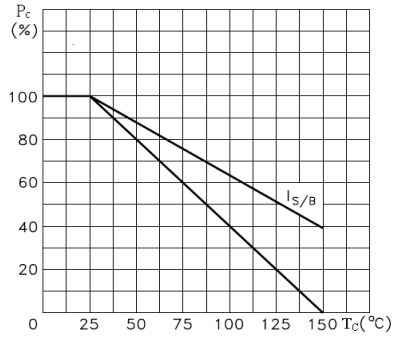
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=1mA I_E=0	700			V
Collector Cut-Off Current	V_{CEO}	I_C=10mA I_B=0	400			V
Emitter Base Cut-Off Current	V_{EBO}	I_E=1mA I_C=0	9.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=700V I_E=0			0.1	mA
Collector cut-off current	I_{CEO}	V_{CE}=400V I_B=0			0.1	mA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=9.0V I_C=0			0.1	mA
DC Current Gain	$h_{FE(1)}$	V_{CE}=5.0V I_C=2.0A	10		40	
	$h_{FE(2)}$	V_{CE}=5.0V I_C=5.0A	5.0		30	
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	I_C=5.0A I_B=1.0A			0.9	V
	$V_{CE(sat)(2)}$	I_C=2.0A I_B=0.4A			0.6	V
	$V_{CE(sat)(3)}$	I_C=8.0A I_B=2.0A			2.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)(1)}$	I_C=5.0A I_B=1.0A			1.5	V
	$V_{BE(sat)(2)}$	I_C=2.0A I_B=0.4A			1.1	V
Output Capacitance	C_{ob}	V_{CB}=10V f=1MHz		110		pF
Transition Frequency	f_T	V_{CE}=10V I_C=0.5A f=1MHz	8			MHz
Fall time	t_f	V_{CE}=5V I_C=0.5A (UI9600)			0.6	μs
Storage time	t_S		3		9	μs

电参数曲线图 / Electrical Characteristic Curve

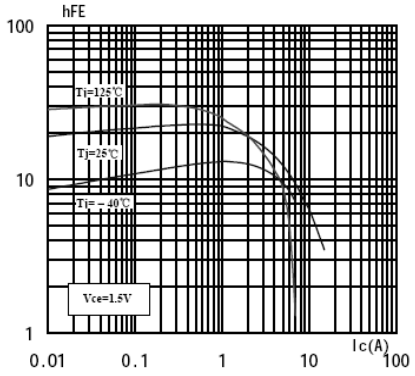
SOA(DC)



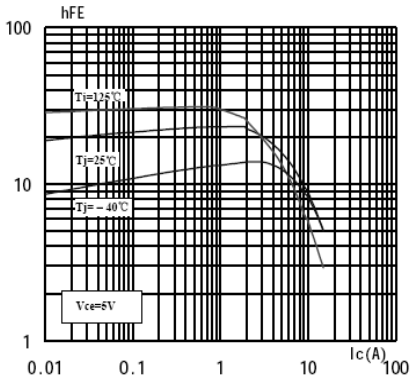
P_C-T_C



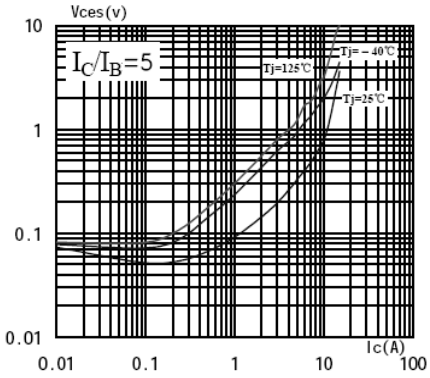
h_{FE}-Ic



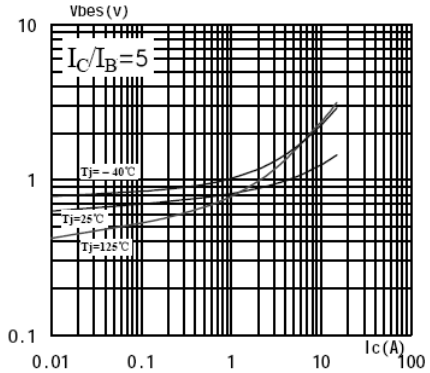
h_{FE}-Ic



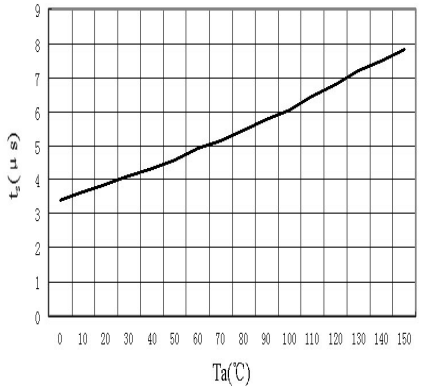
Vces-I_C



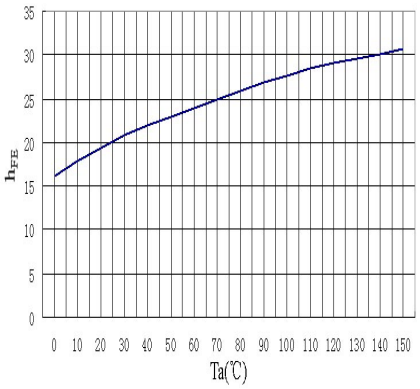
Vbes-I_C



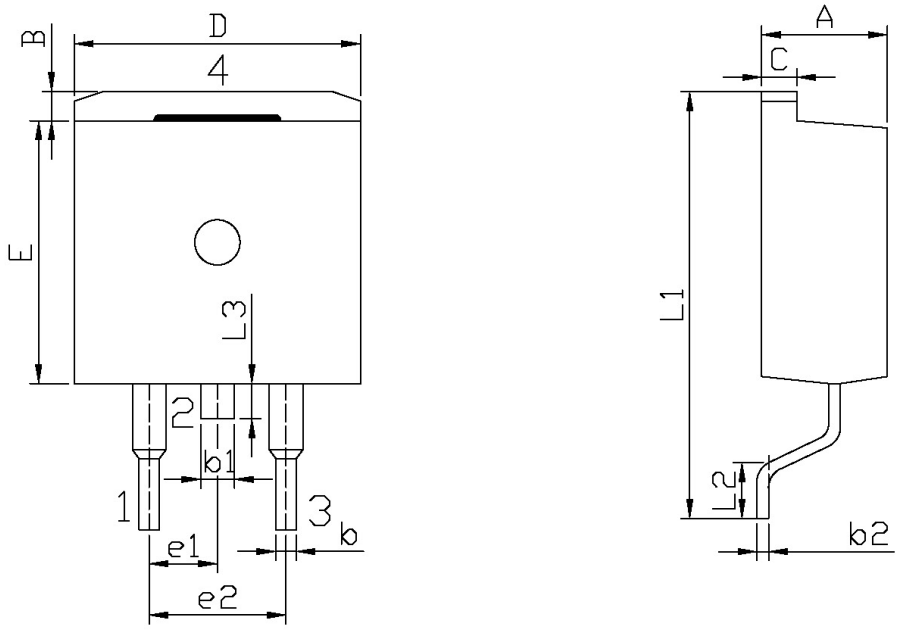
t_S-Ta



h_{FE}-Ta



外形尺寸图 / Package Dimensions

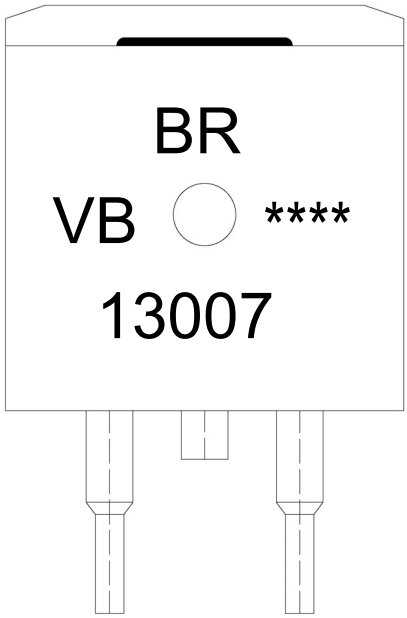


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.30	4.70	E	9.00	9.40
B	1.00	1.40	e1	2.34	2.74
b	0.70	0.90	e2	4.88	5.28
b1	1.15	1.35	L1	15.00	16.00
b2	0.40	0.60	L2	2.24	2.84
C	1.20	1.40	L3	1.20	1.60
D	9.80	10.20			

TO-263

印章说明 / Marking Instructions



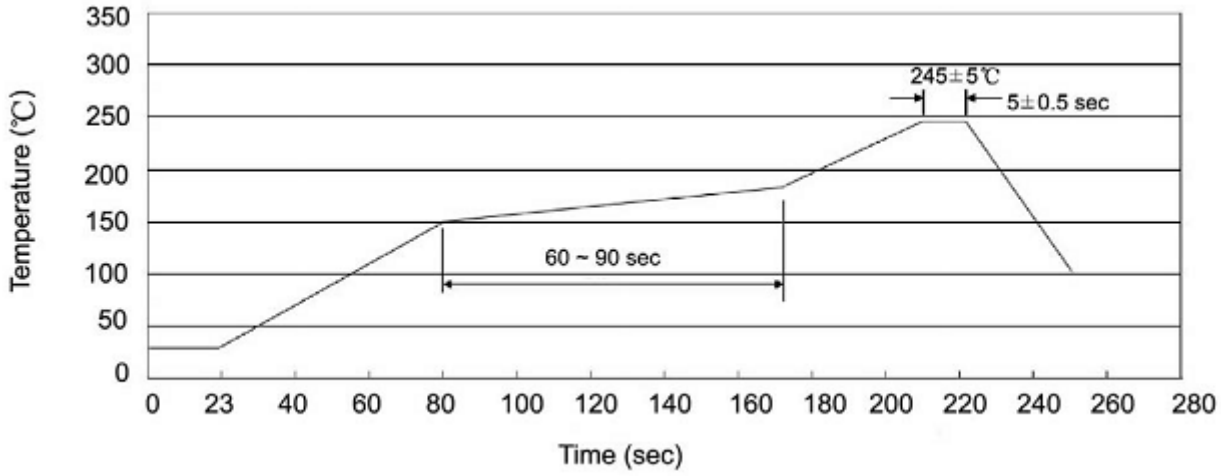
说明：

BR：	为公司代码
13007：	为型号代码
VB:	为规格代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code
13007：	Product Type Code.
VB:	Specification Code
****:	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 245±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.:245±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：260±5℃ 时间：10±1 sec. Temp.:260±5℃ 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: mm³)		
	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-263	800	1	800	5	4,000	13″ ×24	360×360×50	385×257×392

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm³)		
	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-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

使用说明 / Notices