# MJE13001C0

Rev.F Apr.-2017

蓝箭电子 BLUE ROCKET ELECTRONICS

DATA SHEET

## 描述 / Descriptions

SOT-23 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a SOT-23 Plastic Package.

## 特征 / Features

快速转换。

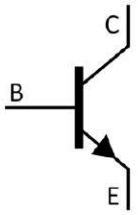
High Speed Switching

## 用途 / Applications

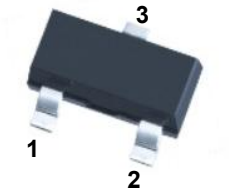
节能灯电路。

High frequency electronic lighting ballast applications.

## 内部等效电路 / Equivalent Circuit




## 引脚排列 / Pinning




PIN1：Base　　PIN 2：Emitter　　PIN 3：Collector

## 印章代码 / Marking

| Marking | H01C |
|---|---|

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

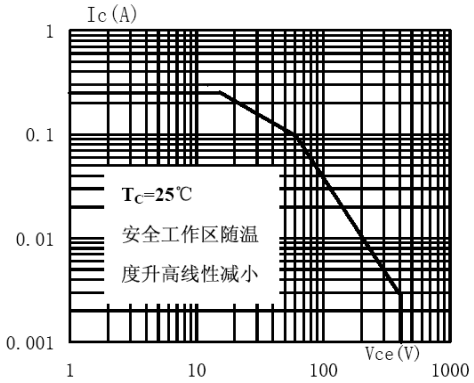
| 参数<br>Parameter | 符号<br>Symbol | 数值<br>Rating | 单位<br>Unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | 600 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 400 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 9.0 | V |
| Collector Current - Continuous | $I_C$ | 0.25 | A |
| Collector Power Dissipation | $P_C$ | 0.65 | W |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55～150 | ℃ |

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

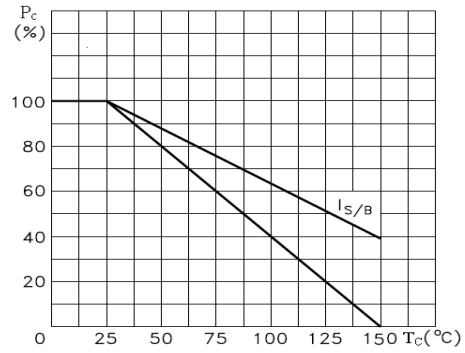
| 参数<br>Parameter | 符号<br>Symbol | 测试条件<br>Test Conditions | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|---|---|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | $I_C$=1mA $I_E$=0 | 600 | | | V |
| Collector-Emitter Voltage | $V_{CEO}$ | $I_C$=10mA $I_B$=0 | 400 | | | V |
| Emitter-Base Voltage | $V_{EBO}$ | $I_E$=1mA $I_C$=0 | 9.0 | | | V |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=600V $I_E$=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 | $h_{FE}$ | $V_{CE}$=20V $I_C$=20mA | 10 | | 40 | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=50mA $I_B$=10mA | | | 0.5 | V |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=100mA $I_B$=20mA | | | 0.6 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=100mA $I_B$=20mA | | | 1.2 | V |
| Transition Frequency | $f_T$ | $V_{CE}$=20V $I_C$=20mA<br>f=1.0MHz | 5.0 | | | MHz |
| Fall time | $t_s$ | $V_{CE}$=5V $I_C$=100mA<br>(UI9600) | | | 3 | μs |
| Storage time | $t_f$ | | | | 0.6 | μs |

## 电参数曲线图 / Electrical Characteristic Curve

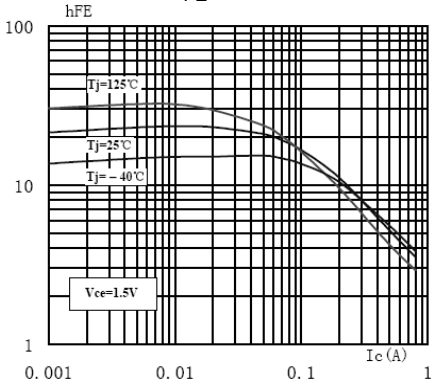
SOA(DC)



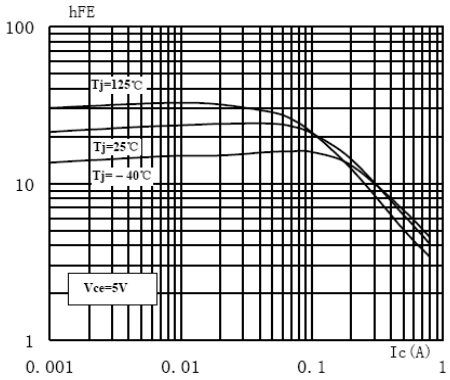

$P_C$-$T_C$



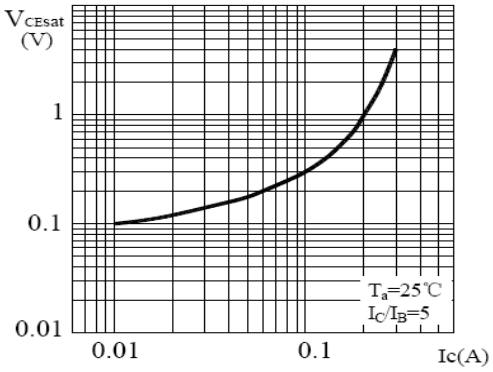

$h_{FE}$-Ic



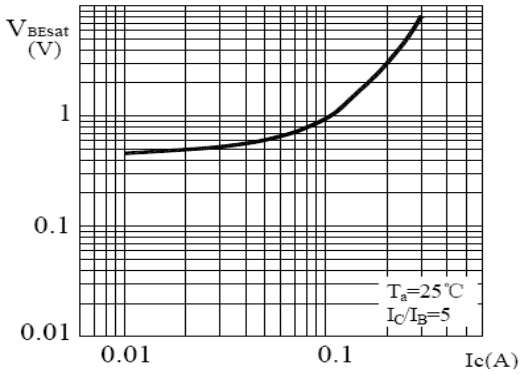

$h_{FE}$-Ic



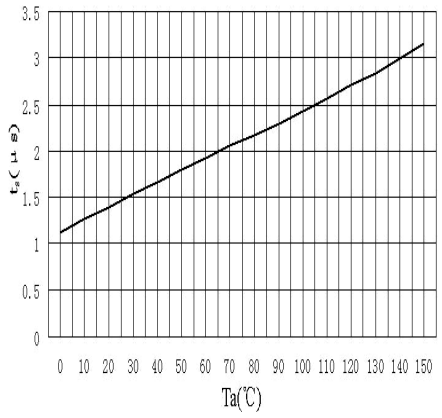

Vces-$I_C$



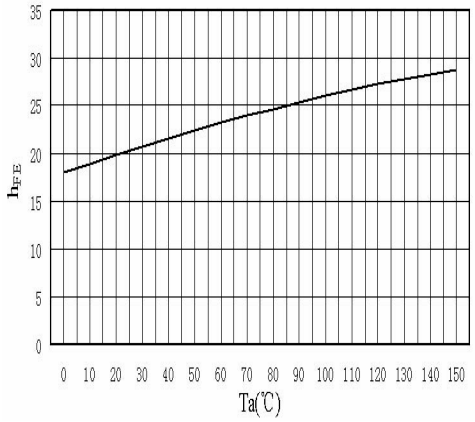

Vbes-$I_C$




$t_S$-Ta



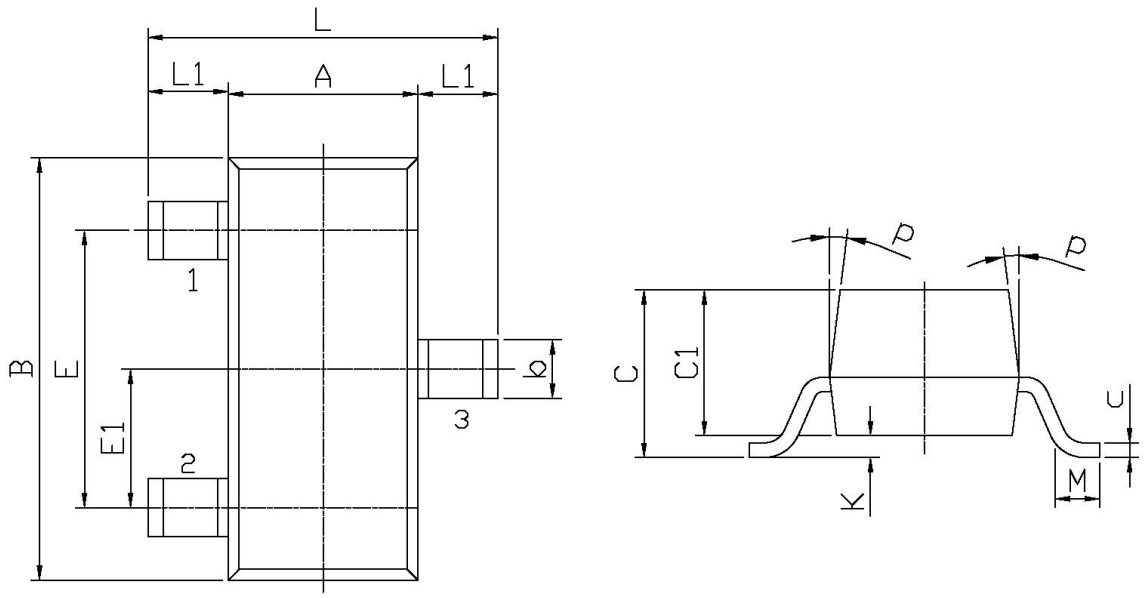

$h_{FE}$-Ta



## 外形尺寸图 / Package Dimensions

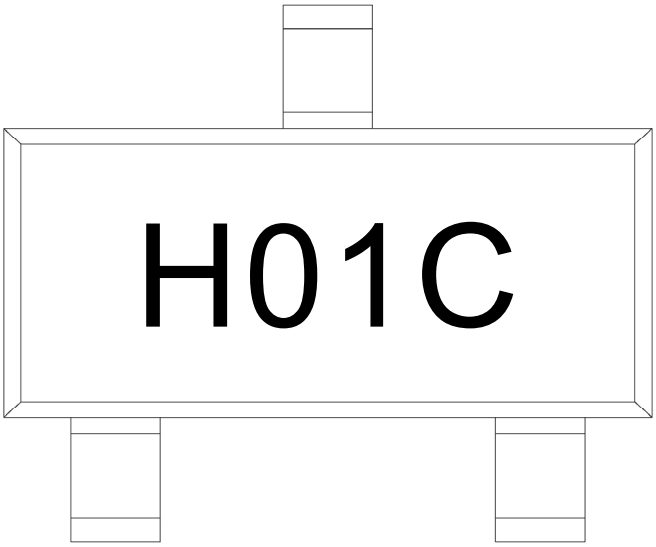
SOT-23

单位：mm




| Symbol | Dimensions In Millmeters | | Symbol | Dimensions In Millmeters | |
|---|---|---|---|---|---|
| | Min | Max | | Min | Max |
| L | 2.2 | 2.7 | C | 1.30Max | |
| L1 | 0.45 | 0.65 | C1 | 0.90 | 1.20 |
| A | 1.15 | 1.50 | c | 0.05 | 0.20 |
| B | 2.70 | 3.10 | K | 0 | 0.10 |
| E | 1.70 | 2.10 | M | 0.20MIN | |
| E1 | 0.85 | 1.05 | P | 7° | |
| b | 0.35 | 0.55 | | | |

## 印章说明 / Marking Instructions




说明：

H： 为公司代码

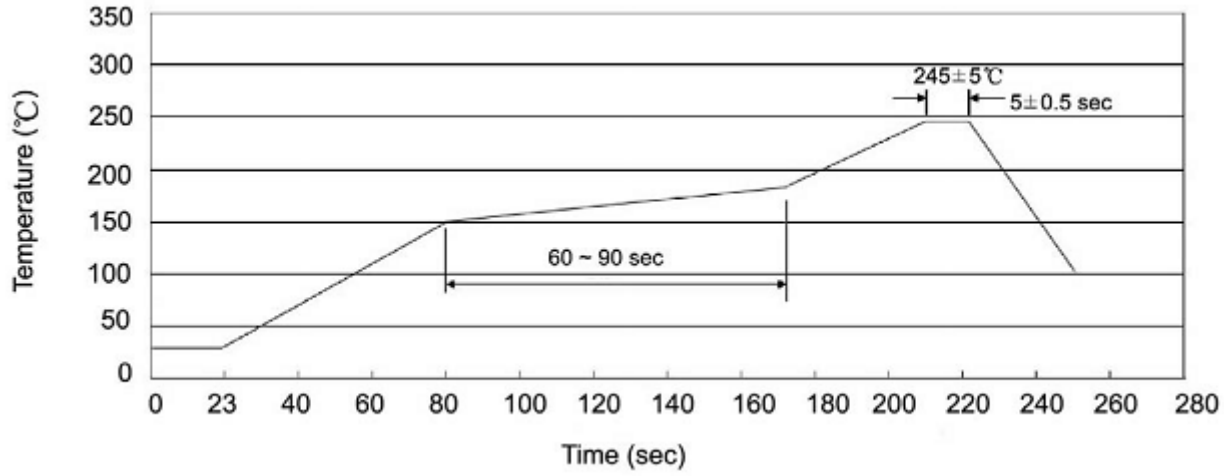
01C： 为型号代码

Note:

H: Company Code.

01C: Product Type.

## 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 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: $mm^3$) | | |
|---|---|---|---|---|---|---|---|---|
| | 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 |
| SOT-23 | 3,000 | 10 | 30,000 | 6 | 180,000 | 7″ ×8 | 180×120×180 | 390×385×205 |

## 使用说明 / Notices