



## NPN MJE 系列晶体管/MJE SERIES TRANSISTORS

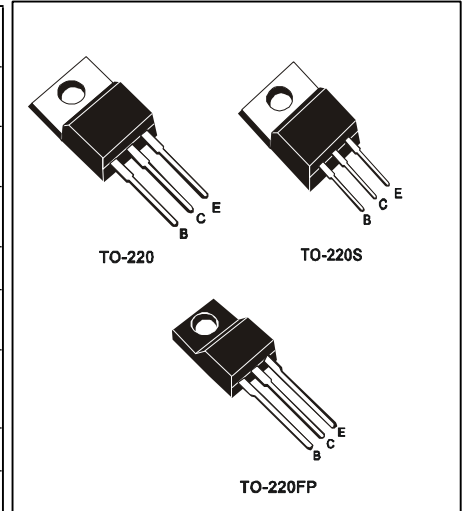
## MJE13007M

- 特点: 耐高压 开关速度快 安全工作区宽 符合 RoHS 规范
- FEATURES: ■HIGH VOLTAGE CAPABILITY ■HIGH SPEED SWITCHING ■WIDE SOA ■RoHS COMPLIANT
- 应用: 节能灯 电子镇流器 电子变压器 开关电源
- APPLICATION: ■FLUORESCENT LAMP ■ELECTRONIC BALLAST ■ELECTRONIC TRANSFORMER  
■SWITCH MODE POWER SUPPLY

### ●最大额定值 (Tc=25°C)

### ●Absolute Maximum Ratings (Tc=25°C) TO-220/220S/220FP

| 参数<br>PARAMETER                        | 符号<br>SYMBOL     | 额定值<br>VALUE   | 单位<br>UNIT |
|----------------------------------------|------------------|----------------|------------|
| 集电极-基极电压<br>Collector-Base Voltage     | V <sub>CBO</sub> | 700            | V          |
| 集电极-发射极电压<br>Collector-Emitter Voltage | V <sub>CEO</sub> | 400            | V          |
| 发射极-基极电压<br>Emitter-Base Voltage       | V <sub>EBO</sub> | 9              | V          |
| 集电极电流/Collector Current                | I <sub>C</sub>   | 8              | A          |
| 集电极峰值电流<br>Collector Peak Current      | I <sub>CM</sub>  | 16             | A          |
| 集电极耗散功率<br>Total Power Dissipation     | P <sub>tot</sub> | TO-220/220S:85 | W          |
|                                        |                  | TO-220FP:45    |            |
| 最高工作温度/Junction Temperature            | T <sub>j</sub>   | 150            | °C         |
| 贮存温度/Storage Temperature               | T <sub>stg</sub> | -65-150        | °C         |



### ●电特性 (Tc=25°C)

### ●Electronic Characteristics (Tc=25°C)

| 参数名称<br>CHARACTERISTICS                             | 符号<br>SYMBOL       | 测试条件<br>TEST CONDITION                                | 最小值<br>MIN | 最大值<br>MAX | 单位<br>UNIT |
|-----------------------------------------------------|--------------------|-------------------------------------------------------|------------|------------|------------|
| 集电极-基极截止电流<br>Collector-Base Cutoff Current         | I <sub>CBO</sub>   | V <sub>CB</sub> =700V                                 |            | 100        | μA         |
| 集电极-发射极截止电流<br>Collector-Emitter Cutoff Current     | I <sub>CEO</sub>   | V <sub>CE</sub> =400V, I <sub>B</sub> =0              |            | 250        | μA         |
| 集电极-基极电压<br>Collector-Base Voltage                  | V <sub>CBO</sub>   | I <sub>C</sub> =1mA, I <sub>E</sub> =0                | 700        |            | V          |
| 集电极-发射极电压<br>Collector-Emitter Voltage              | V <sub>CEO</sub>   | I <sub>C</sub> =10mA, I <sub>B</sub> =0               | 400        |            | V          |
| 发射极-基极电压<br>Emitter-Base Voltage                    | V <sub>EBO</sub>   | I <sub>E</sub> =1mA, I <sub>C</sub> =0                | 9          |            | V          |
| 集电极-发射极饱和电压<br>Collector-Emitter Saturation Voltage | V <sub>cesat</sub> | I <sub>C</sub> =2.0A, I <sub>B</sub> =0.4A            |            | 0.4        | V          |
|                                                     |                    | I <sub>C</sub> =8.0A, I <sub>B</sub> =2.0A            |            | 1.0        |            |
| 发射极-基极饱和电压<br>Base-Emitter Saturation Voltage       | V <sub>besat</sub> | I <sub>C</sub> =2A, I <sub>B</sub> =0.4A              |            | 1.2        | V          |
| 电流放大倍数<br>DC Current Gain                           | h <sub>FE</sub>    | V <sub>CE</sub> =5V, I <sub>C</sub> =10mA             | 7          |            |            |
|                                                     |                    | V <sub>CE</sub> =5V, I <sub>C</sub> =2.0A             | 10         | 40         |            |
|                                                     |                    | V <sub>CE</sub> =5V, I <sub>C</sub> =8A               | 5          |            |            |
| 贮存时间 Storage Time                                   | t <sub>s</sub>     | V <sub>CC</sub> =5V, I <sub>C</sub> =0.5A<br>(UI9600) | 3.0        | 7.0        | μs         |
| 下降时间 Falling Time                                   | t <sub>f</sub>     |                                                       |            | 0.30       |            |
| 特征频率 characteristic frequency                       | f <sub>r</sub>     | V <sub>ce</sub> =10V, I <sub>C</sub> =0.5A            | 4          |            | MHz        |

### ●订单信息/ORDERING INFORMATION:

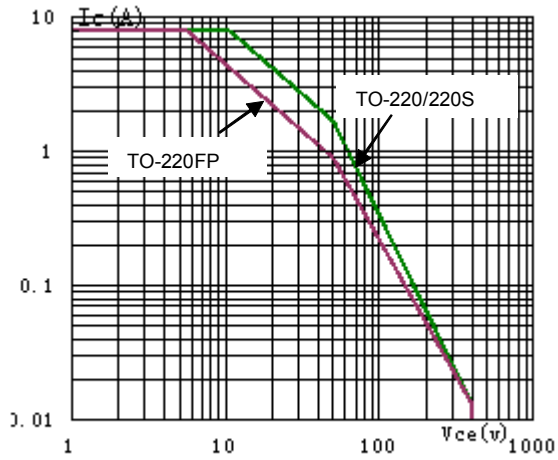
| 包装形式/PACKING                 | 订货编码/ORDERING CODE             |                          |
|------------------------------|--------------------------------|--------------------------|
|                              | 普通塑封料/ Normal Package Material | 无卤塑封料/Halogen Free       |
| TO-220 普通袋装/NORMAL PACKING   | MJE13007M TO-220               | MJE13007M TO-220-HF      |
| TO-220S 普通袋装/NORMAL PACKING  | MJE13007M TO-220S              | MJE13007M TO-220S-HF     |
| TO-220 条管装/TUBE PACKING      | MJE13007M TO-220-TU            | MJE13007M TO-220-TU-HF   |
| TO-220FP 普通袋装/NORMAL PACKING | MJE13007M TO-220FP             | MJE13007M TO-220FP-HF    |
| TO-220FP 条管装/TUBE PACKING    | MJE13007M TO-220FP-TU          | MJE13007M TO-220FP-TU-HF |



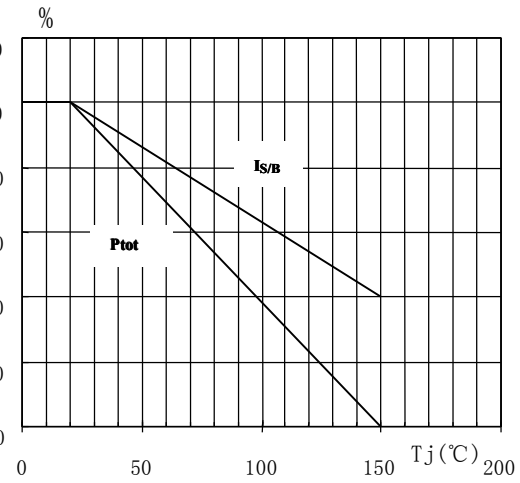
NPN MJE 系列晶体管/MJE SERIES TRANSISTORS

MJE13007M

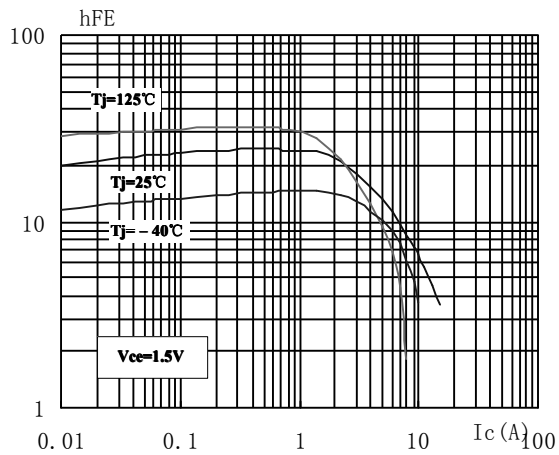
SOA (DC)



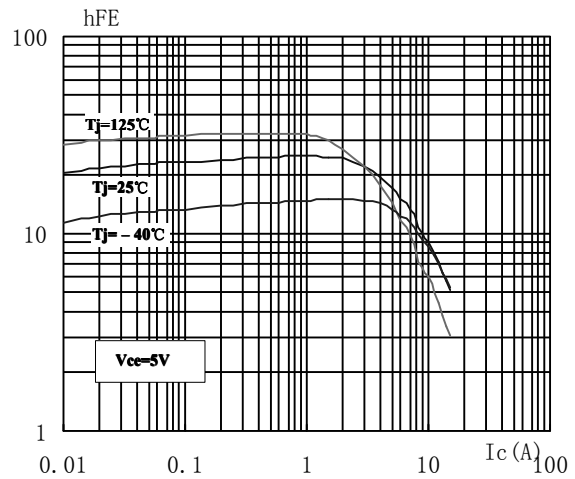
$P_{tot} \propto T_j$



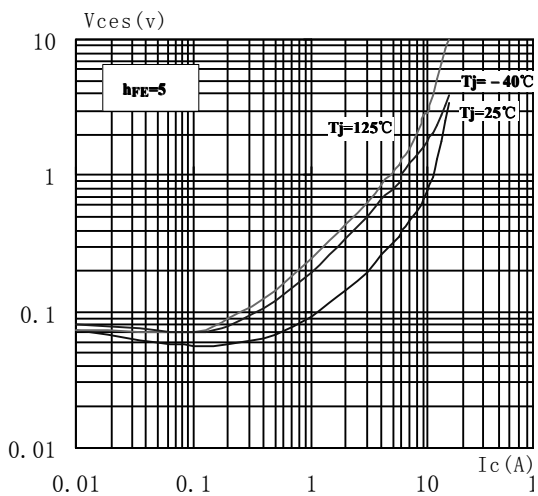
$h_{FE} - I_c$



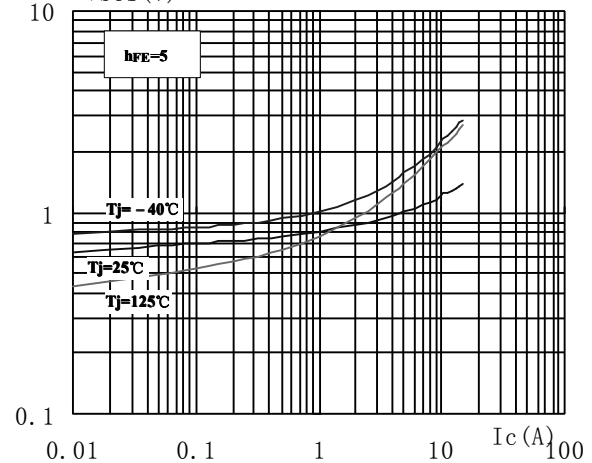
$h_{FE} - I_c$



$V_{ces} - I_c$



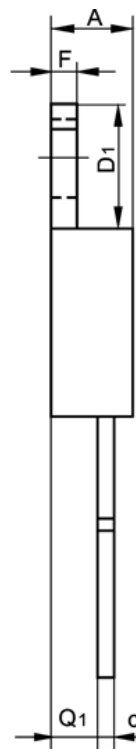
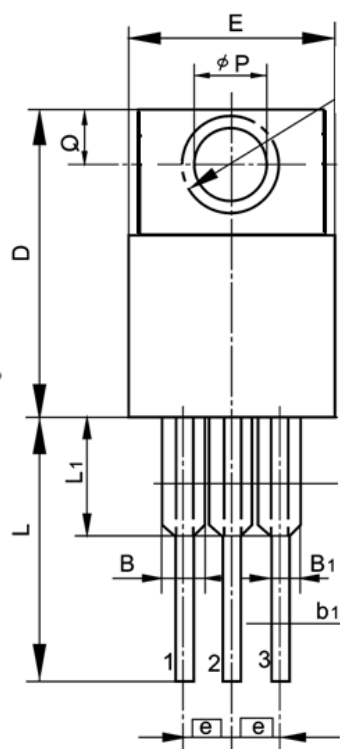
$V_{bes} - I_c$



## TO-220 封装机械尺寸 TO-220 MECHANICAL DATA

单位：毫米/UNIT: mm

| 符号<br>SYMBOL | 最小值<br>min | 典型值<br>nom | 最大值<br>max | 符号<br>SYMBOL | 最小值<br>min | 典型值<br>nom | 最大值<br>max |
|--------------|------------|------------|------------|--------------|------------|------------|------------|
| A            | 4.00       |            | 4.80       | E            | 9.90       |            | 10.70      |
| B            | 1.20       |            | 1.50       | e            |            | 2.54       |            |
| B1           | 1.00       |            | 1.40       | F            | 1.10       |            | 1.45       |
| b1           | 0.65       |            | 1.00       | L            | 12.50      |            | 14.50      |
| c            | 0.35       |            | 0.75       | L1           | 3.00       | 3.50       | 4.00       |
| D            | 15.00      |            | 16.50      | Q            | 2.50       |            | 3.00       |
| D1           | 5.90       |            | 6.90       | Q1           | 2.00       |            | 3.00       |
|              |            |            |            | φ P          | 3.60       |            | 3.90       |





## TO-220S 封装机械尺寸

### TO-220S MECHANICAL DATA

单位：毫米/UNIT: mm

| 符号<br>SYMBOL | 最小值<br>min | 典型值<br>nom | 最大值<br>max | 符号<br>SYMBOL | 最小值<br>min | 典型值<br>nom | 最大值<br>max |
|--------------|------------|------------|------------|--------------|------------|------------|------------|
| A            | 4.00       |            | 4.80       | E            | 9.90       |            | 10.70      |
| B            | 1.27       |            | 1.50       | e            |            | 2.54       |            |
| B1           |            |            | 1.40       | F            | 1.20       |            | 1.45       |
| b1           | 0.75       |            | 1.00       | L            | 3.20       |            | 3.80       |
| c            | 0.38       |            | 0.75       | L1           |            |            | 3.50       |
| D            | 15.00      |            | 16.5       | φP           | 3.60       |            | 3.90       |
| D1           | 5.90       |            | 6.60       | Q            | 2.50       |            | 3.00       |
|              |            |            |            | Q1           | 2.00       |            | 3.00       |

