

### 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

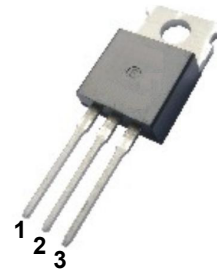
与 TIP42 互补。

Complement to TIP42.

### 用途 / Applications

用于中功率线性开关放大。

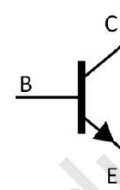
Medium power linear switching applications.



PIN1 : Base

PIN 2 : Collector

PIN 3 : Emitter

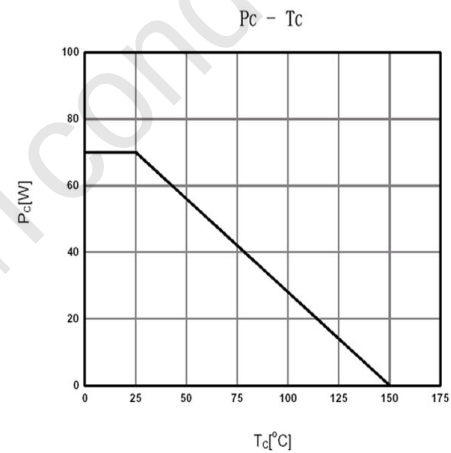
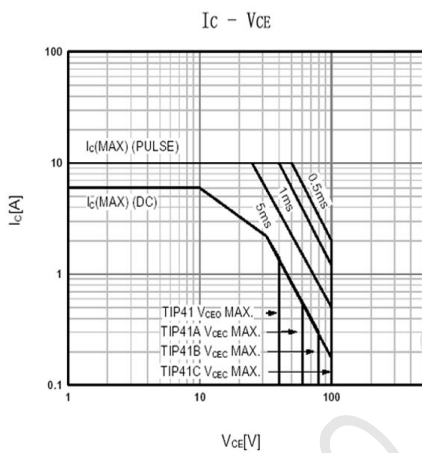
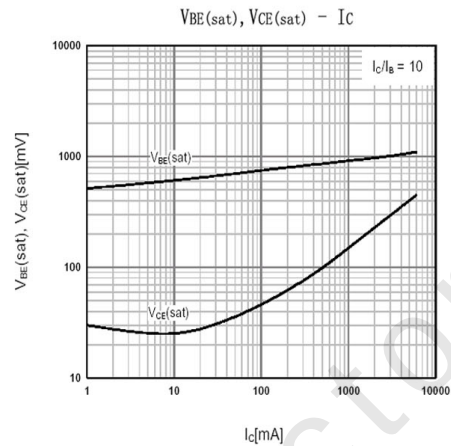
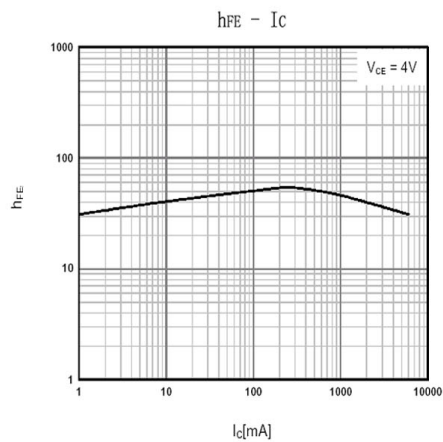


### 极限参数 / Absolute Maximum Ratings(Ta=25°C)

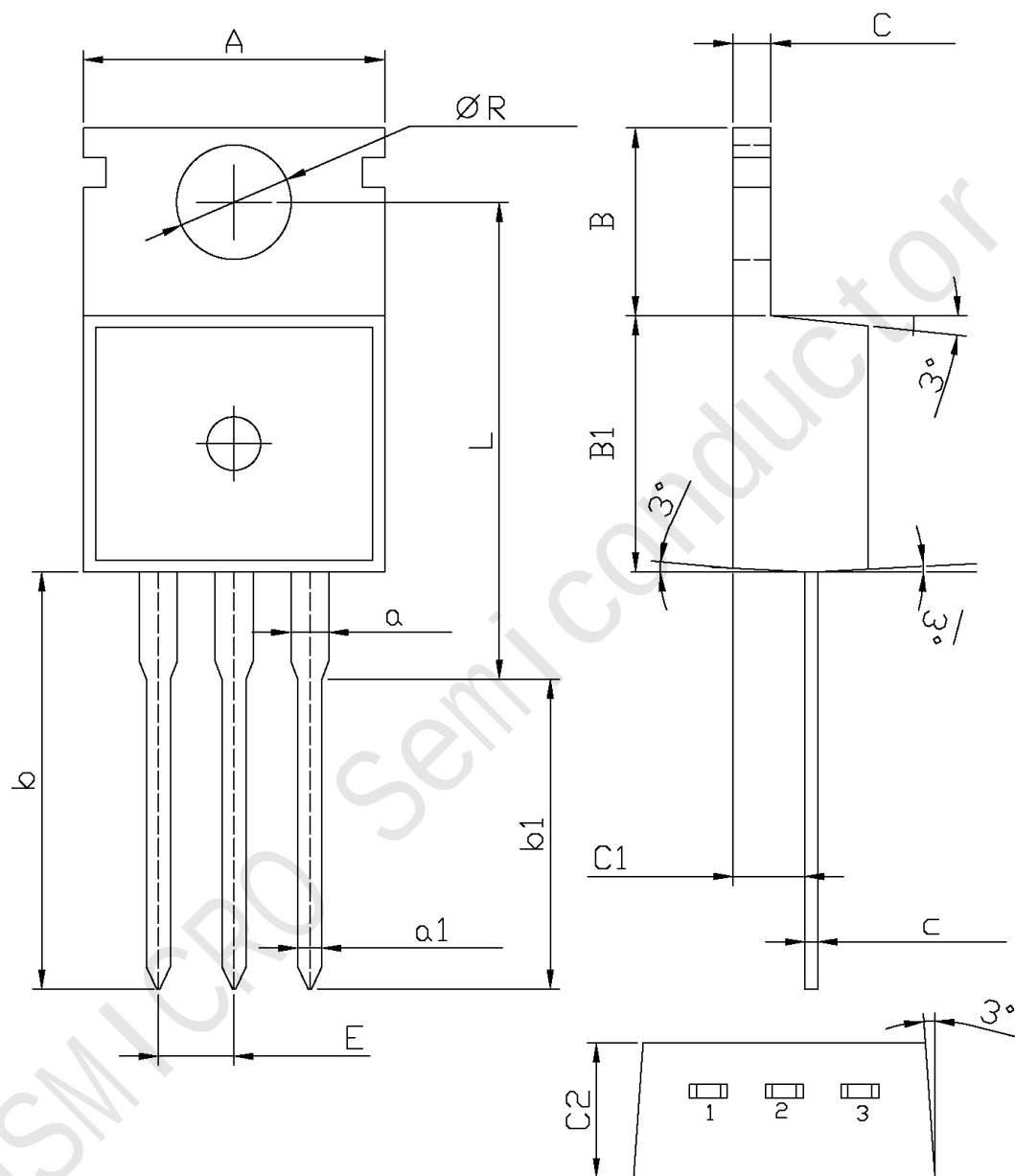
| 参数<br>Parameter                | 符号<br>Symbol                        | 数值<br>Rating |        |        |        | 单位<br>Unit |
|--------------------------------|-------------------------------------|--------------|--------|--------|--------|------------|
|                                |                                     | TIP41        | TIP41A | TIP41B | TIP41C |            |
| Collector to Base Voltage      | $V_{CBO}$                           | 40           | 60     | 80     | 100    | V          |
| Collector to Emitter Voltage   | $V_{CEO}$                           | 40           | 60     | 80     | 100    | V          |
| Emitter to Base Voltage        | $V_{EBO}$                           | 5            |        |        |        | V          |
| Collector Current - Continuous | $I_C$                               | 6            |        |        |        | A          |
| Peak Collector Current         | $I_{CP}$                            | 10           |        |        |        | A          |
| Base Current - Continuous      | $I_B$                               | 2            |        |        |        | A          |
| Collector Power Dissipation    | $P_C$                               | 2            |        |        |        | W          |
| Collector Power Dissipation    | $P_C$<br>( $T_c=25^\circ\text{C}$ ) | 65           |        |        |        | W          |
| Junction Temperature           | $T_J$                               | 150          |        |        |        | °C         |
| Storage Temperature Range      | $T_{sag}$                           | -55~150      |        |        |        | °C         |

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

| 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 to Emitter<br>Breakdown Voltage  | $V_{CEO}$     | TIP41                   | 40            |            |            | V          |
|                                            |               | TIP41A                  | 60            |            |            |            |
|                                            |               | TIP41B                  | 80            |            |            |            |
|                                            |               | TIP41C                  | 100           |            |            |            |
| Collector Cut-Off Current                  | $I_{CEO}$     | TIP41                   |               |            | 0.7        | mA         |
|                                            |               | TIP41A                  |               |            |            |            |
|                                            |               | TIP41B                  |               |            |            |            |
|                                            |               | TIP41C                  |               |            |            |            |
| Collector Cut-Off Current                  | $I_{CES}$     | TIP41                   | $V_{CE}=40V$  | $V_{EB}=0$ | 400        | $\mu A$    |
|                                            |               | TIP41A                  | $V_{CE}=60V$  | $V_{EB}=0$ |            |            |
|                                            |               | TIP41B                  | $V_{CE}=80V$  | $V_{EB}=0$ |            |            |
|                                            |               | TIP41C                  | $V_{CE}=100V$ | $V_{EB}=0$ |            |            |
| Emitter Cut-Off Current                    | $I_{EBO}$     | $V_{EB}=5V$             | $I_C=0$       |            | 1          | mA         |
| DC Current Gain                            | $h_{FE(1)}$   | $V_{CE}=4V$             | $I_C=3A$      | 15         | 75         |            |
|                                            | $h_{FE(2)}$   | $V_{CE}=4V$             | $I_C=0.3A$    | 30         |            |            |
| Collector to Emitter<br>Saturation Voltage | $V_{CE(sat)}$ | $I_C=6A$                | $I_B=0.6A$    |            | 1.5        | V          |
| Base to Emitter Voltage                    | $V_{BE}$      | $I_C=6A$                | $V_{CE}=4V$   |            | 2          | V          |
| Transition Frequency                       | $f_T$         | $V_{CE}=10V$            | $I_C=500mA$   | 3          |            | MHz        |

**电参数曲线图 / Electrical Characteristic Curve**


外形尺寸图 / Package Dimensions



| Symbol | Dimensions In Millimeters |      | Symbol | Dimensions In Millimeters |     |
|--------|---------------------------|------|--------|---------------------------|-----|
|        | Min                       | Max  |        | Min                       | Max |
| A      | 9.8                       | 10.2 | C      | 1.2                       | 1.4 |
| R      | 3.56                      | 3.64 | B      | 6.3                       | 6.7 |
| L      | 15.7                      | 16.1 | B1     | 9.0                       | 9.4 |
| b      | 12.6                      | 13.6 | C1     | 2.2                       | 2.6 |
| b1     | 9.6                       | 10.6 | a1     | 0.7                       | 0.9 |
| a      | 1.22                      | 1.32 | c      | 0.4                       | 0.6 |
| E      | 2.34                      | 2.74 | C2     | 4.3                       | 4.7 |