## 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.

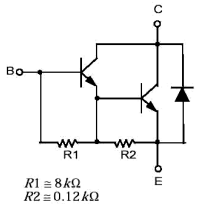
## 特征 / Features

基极-发射极设有独立的电阻、直流增益高、与 TIP147T 配对。
Monolithic construction with built in base-emitter shunt resistors, High DC current gain complement to TIP147T.

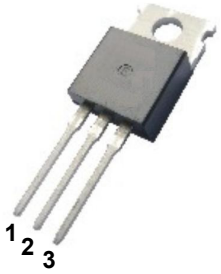
## 用途 / Applications

用于工业仪器的线性开关转换。
Linear and switching industrial equipment.

## 内部等效电路 / Equivalent Circuit




## 引脚排列 / Pinning




PIN1：Base　　PIN 2：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℃)

| 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 | $V_{EBO}$ | 5 | V |
| Collector Current - Continuous | $I_C$ | 10 | A |
| Peak Collector Current | $I_{CP}$ | 15 | A |
| Base Current - Continuous | $I_B$ | 0.5 | A |
| Collector Power Dissipation | $P_C(T_C=25℃)$ | 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 Emitter Breakdown Voltage | $V_{CEO}$ | $I_C$=30mA $I_B$=0 | 100 | | | V |
| Collector Cut-Off Current | $I_{CEO}$ | $V_{CE}$=50V $I_B$=0 | | | 2 | mA |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=100V $I_E$=0 | | | 1 | mA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=5V $I_C$=0 | | | 2 | mA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=4V $I_C$=5A | 1000 | | | |
| | $h_{FE(2)}$ | $V_{CE}$=4V $I_C$=10A | 500 | | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)(1)}$ | $I_C$=5A $I_B$=10mA | | | 2 | V |
| | $V_{CE(sat)(2)}$ | $I_C$=10A $I_B$=40mA | | | 3 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=10A $I_B$=40mA | | | 3.5 | V |
| Base to Emitter Voltage | $V_{BE}$ | $V_{CE}$=4V $I_C$=10A | | | 3 | V |
| Delay Time | $t_D$ | $V_{CC}$=30V $I_C$=5A $I_{B1}$=20mA $I_{B2}$=20mA $R_L$=6Ω | | 0.15 | | μs |
| Rise Time | $t_R$ | | | 0.55 | | μs |
| Storage Time | $t_{STG}$ | | | 2.5 | | μs |
| Fall Time | $t_F$ | | | 2.5 | | μs |