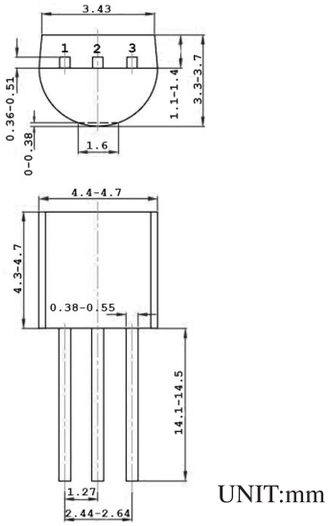
**TRANSISTOR (NPN)** **Plastic-Encapsulate Transistor**

## FEATURES

- Switching and amplification in high voltage applications such as telephony
- Low current (max. 600mA)
- High voltage (max. 160V)

## TO-92

1. EMITTER
2. BASE
3. COLLECTOR




UNIT:mm

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

### MAXIMUM RATINGS

| Parameters | Symbols | Value | UNITS |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 160 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 140 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 6 | V |
| Collector Current - Continuous | $I_C$ | 0.6 | A |
| Collector Dissipation | $P_C$ | 0.625 | W |
| Junction and Storage Temperature | $T_J$, $T_{stg}$ | -55~+150 | ℃ |

### ELECTRICAL CHARACTERISTICS

| Parameters | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=100μA, $I_E$=0 | 160 | | | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $I_B$=0 | 140 | | | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0 | 6 | | | V |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=180V, $I_E$=0 | | | 0.1 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=4V, $I_C$=0 | | | 0.1 | μA |
| DC Current Gain | $h_{FE(1)}$<br>$h_{FE(2)}$<br>$h_{FE(3)}$ | $V_{CE}$=5V, $I_C$=1mA<br>$V_{CE}$=5V, $I_C$=10mA<br>$V_{CE}$=5V, $I_C$=50mA | 60<br>60<br>20 | | 250 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=10mA, $I_B$=1mA<br>$I_C$=50mA, $I_B$=5mA | | | 0.15<br>0.25 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=10mA, $I_B$=1mA<br>$I_C$=50mA, $I_B$=5mA | | | 1<br>1.2 | V |
| Transition Frequency | $f_T$ | $V_{CE}$=10V, $I_C$=10mA, f=100MHz | 100 | | | MHz |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$=10V, $I_E$=0, f=1MHz | | | 6 | pF |
| Noise Figure | NF | $V_{CE}$=5V, $I_C$=0.25mA, f=1KHz, Rs=1kΩ | | | 10 | dB |