## DESCRIPTION

·With TO-220C package

·Complement to type TIP41/41A/41B/41C

## APPLICATIONS

·For medium power linear switching applications

## PINNING

| PIN | DESCRIPTION |
|---|---|
| 1 | Emitter |
| 2 | Collector;connected to mounting base |
| 3 | Base |

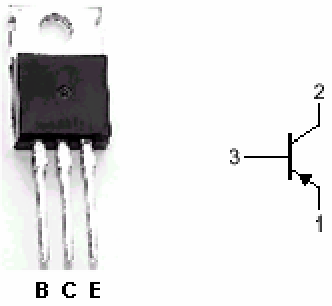

Fig.1 simplified outline (TO-220C) and symbol

## ABSOLUTE MAXIMUM RATINGS($T_C$=25□)

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | TIP42 | Open emitter | -40 | V |
| | | TIP42A | | -60 | |
| | | TIP42B | | -80 | |
| | | TIP42C | | -100 | |
| $V_{CEO}$ | Collector-emitter voltage | TIP42 | Open base | -40 | V |
| | | TIP42A | | -60 | |
| | | TIP42B | | -80 | |
| | | TIP42C | | -100 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | -5 | V |
| $I_C$ | Collector current (DC) | | | -6 | A |
| $I_{CM}$ | Collector current-Pulse | | | -10 | A |
| $I_B$ | Base current | | | -2 | A |
| $P_C$ | Collector power dissipation | | $T_C$=25□ | 65 | W |
| | | | $T_a$=25□ | 2 | |
| $T_j$ | Junction temperature | | | 150 | □ |
| $T_{stg}$ | Storage temperature | | | -65~150 | □ |

## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | TIP42 | $I_C$=30mA; $I_B$=0 | -40 | | | V |
| | | TIP42A | | -60 | | | |
| | | TIP42B | | -80 | | | |
| | | TIP42C | | -100 | | | |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | | $I_C$=-6A ;$I_B$=-0.6A | | | -1.5 | V |
| $V_{BE}$ | Base-emitter on voltage | | $I_C$=-6A ; $V_{CE}$=-4V | | | -2.0 | V |
| $I_{CES}$ | Collector cut-off current | TIP42 | $V_{CE}$=-40V; $V_{EB}$=0 | | | -0.4 | mA |
| | | TIP42A | $V_{CE}$=-60V; $V_{EB}$=0 | | | | |
| | | TIP42B | $V_{CE}$=-80V; $V_{EB}$=0 | | | | |
| | | TIP42C | $V_{CE}$=-100V; $V_{EB}$=0 | | | | |
| $I_{CEO}$ | Collector cut-off current | TIP41/41A | $V_{CE}$=-30V; $I_B$=0 | | | -0.7 | mA |
| | | TIP41B/41C | $V_{CE}$=-60V; $I_B$=0 | | | | |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=-5V; $I_C$=0 | | | -1.0 | mA |
| $h_{FE-1}$ | DC current gain | | $I_C$=-0.3A ; $V_{CE}$=-4V | 30 | | | |
| $h_{FE-2}$ | DC current gain | | $I_C$=-3A ; $V_{CE}$=-4V | 15 | | 75 | |
| $f_T$ | Transition frequency | | $I_C$=-0.5A ; $V_{CE}$=-10V | 3 | | | MHz |

## PACKAGE OUTLINE

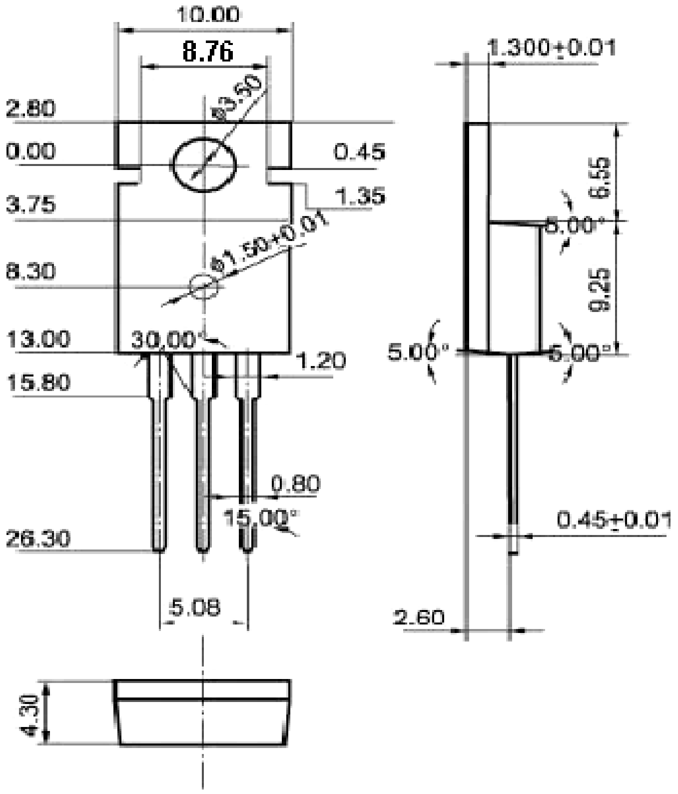

Fig.2 Outline dimensions

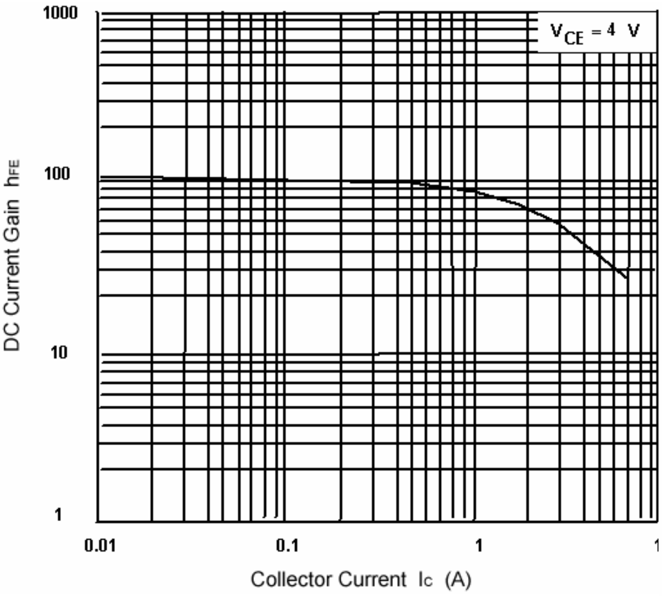

Fig.3 DC current Gain

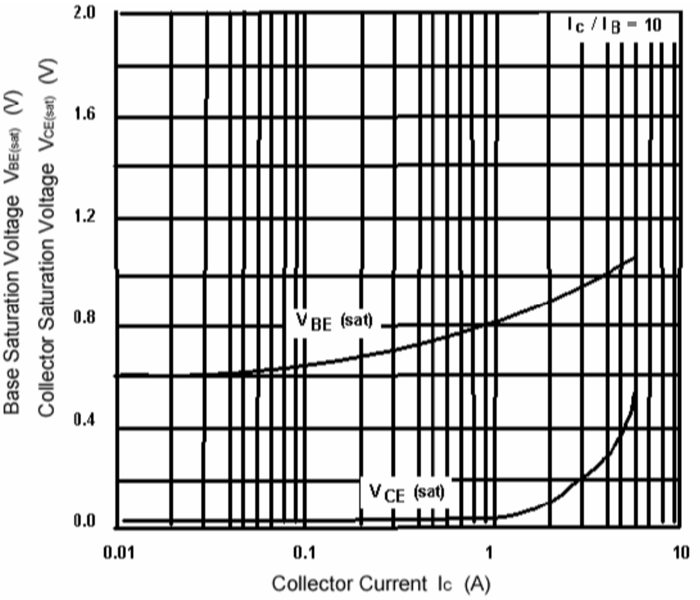

Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

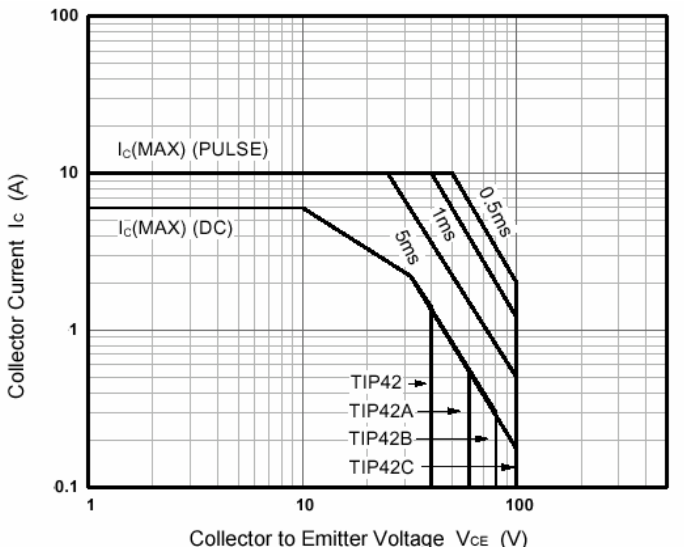

Fig.5 Safe Operating Area