

Silicon PNP Power Transistors

TIP42/42A/42B/42C

DESCRIPTION

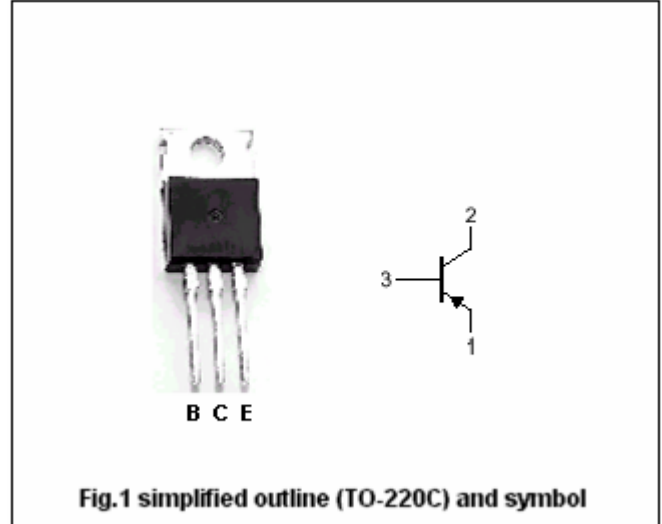
- With TO-220C package
- Complement to type TIP41/41A/41B/41C

APPLICATIONS

- For medium power linear switching applications

PINNING

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

**ABSOLUTE MAXIMUM RATINGS(T_c=25 °C)**

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|-----------------------|---------|------|
| V _{CBO} | Collector-base voltage | TIP42 | -40 | V |
| | | TIP42A | -60 | |
| | | TIP42B | -80 | |
| | | TIP42C | -100 | |
| V _{CEO} | Collector-emitter voltage | TIP42 | -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 °C | 65 | W |
| | | T _a =25 °C | 2 | |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -65~150 | °C |

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CHARACTERISTICS

T_j=25 °C 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 |

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PACKAGE OUTLINE

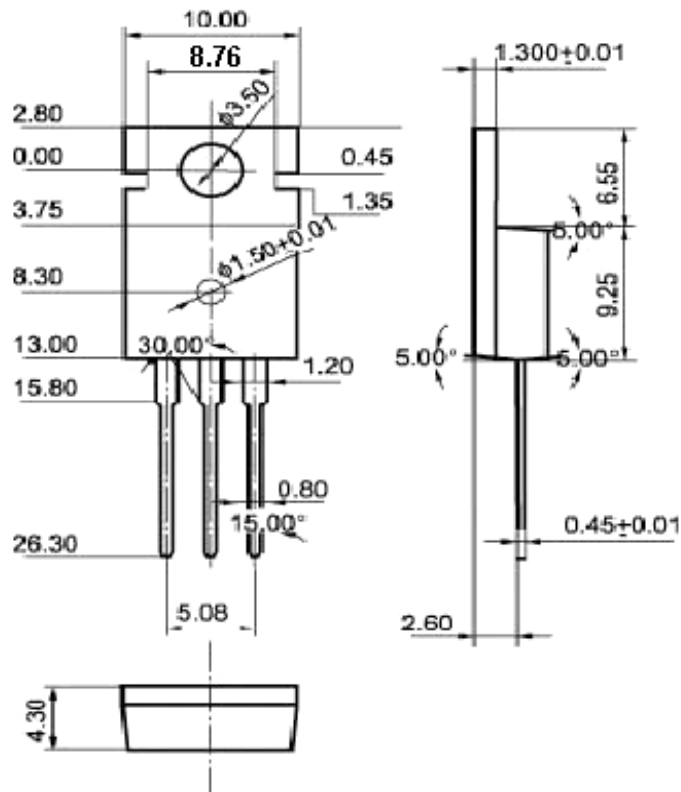


Fig.2 Outline dimensions

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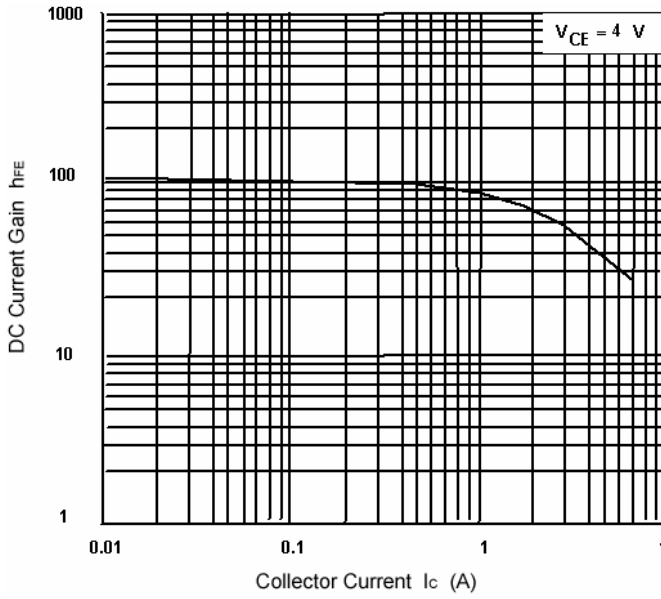


Fig.3 DC current Gain

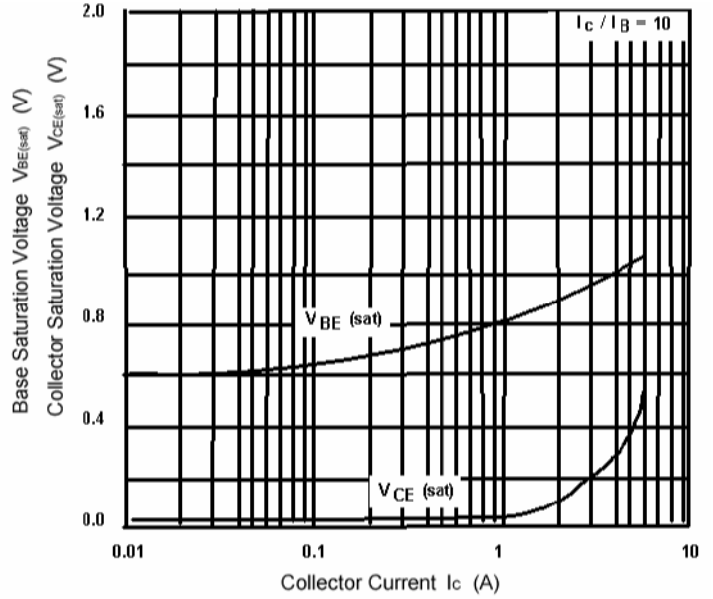


Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

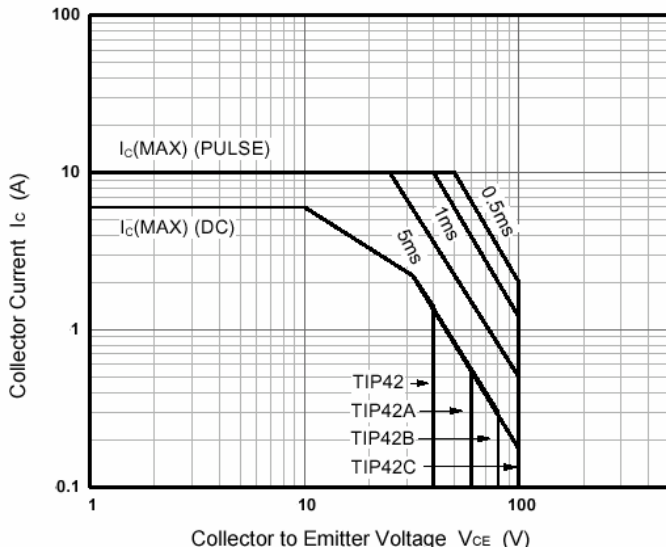


Fig.5 Safe Operating Area