

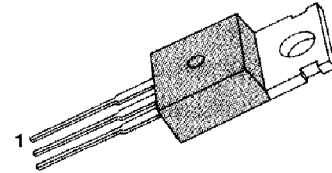
**MEDIUM POWER LINEAR
SWITCHING APPLICATIONS**

- Complement to TIP41/41A/41B/41C

ABSOLUTE MAXIMUM RATINGS

| Characteristic | Symbol | Rating | Unit |
|--|-----------|-----------|------------------|
| Collector Emitter Voltage : TIP42 | V_{CBO} | -40 | V |
| : TIP42A | | -60 | V |
| : TIP42B | | -80 | V |
| : TIP42C | | -100 | V |
| Collector Emitter Voltage : TIP42 | V_{CEO} | -40 | V |
| : TIP42A | | -60 | V |
| : TIP42B | | -80 | V |
| : TIP42C | | -100 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current (DC) | I_C | -6 | A |
| Collector Current (Pulse) | I_C | -10 | A |
| Base Current | I_B | -2 | A |
| Collector Dissipation ($T_C=25^\circ\text{C}$) | P_C | 65 | W |
| Collector Dissipation ($T_A=25^\circ\text{C}$) | P_C | 2 | W |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -65 ~ 150 | $^\circ\text{C}$ |

TO-220



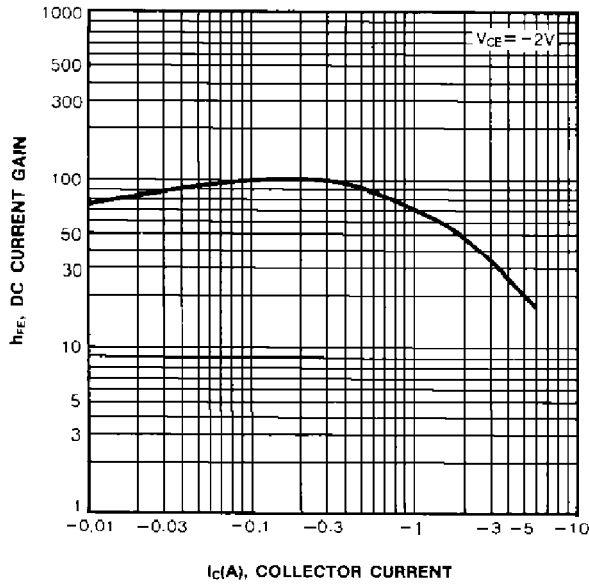
1.Base 2.Collector 3.Emitter

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

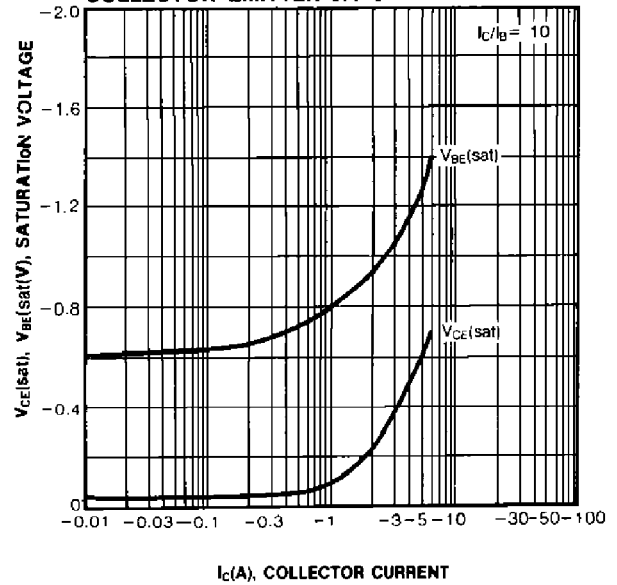
| Characteristic | Symbol | Test Conditions | Min | Max | Unit |
|---|-----------------|--|------|------|---------------|
| *Collector Emitter Sustaining Voltage : TIP42 | $BV_{CEO(sus)}$ | $I_C = -30\text{mA}, I_B = 0$ | -40 | | V |
| : TIP42A | | | -60 | | V |
| : TIP42B | | | -80 | | V |
| : TIP42C | | | -100 | | V |
| Collector Cutoff Current : TIP42/42A | I_{CEO} | $V_{CE} = -30\text{V}, I_B = 0$ | | -0.7 | mA |
| : TIP42B/42C | | $V_{CE} = -60\text{V}, I_B = 0$ | | -0.7 | mA |
| Collector Cutoff Current : TIP42 | I_{CES} | $V_{CE} = -40\text{V}, V_{EB} = 0$ | | -400 | μA |
| : TIP42A | | $V_{CE} = -60\text{V}, V_{EB} = 0$ | | -400 | μA |
| : TIP42B | | $V_{CE} = -80\text{V}, V_{EB} = 0$ | | -400 | μA |
| : TIP42C | | $V_{CE} = -100\text{V}, V_{EB} = 0$ | | -400 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -5\text{V}, I_C = 0$ | | -1 | mA |
| *DC Current Gain | h_{FE} | $V_{CE} = -4\text{V}, I_C = -0.3\text{A}$ | 30 | | |
| | | $V_{CE} = -4\text{V}, I_C = -3\text{A}$ | 15 | 75 | |
| *Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -6\text{A}, I_B = -600\text{mA}$ | | -1.5 | V |
| *Base-Emitter Saturation Voltage | $V_{BE(on)}$ | $V_{CE} = -4\text{V}, I_C = -6\text{A}$ | | -2.0 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE} = -10\text{V}, I_C = -500\text{mA}$ $f = 1\text{MHz}$ | 3.0 | | MHz |

* Pulse Test : $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

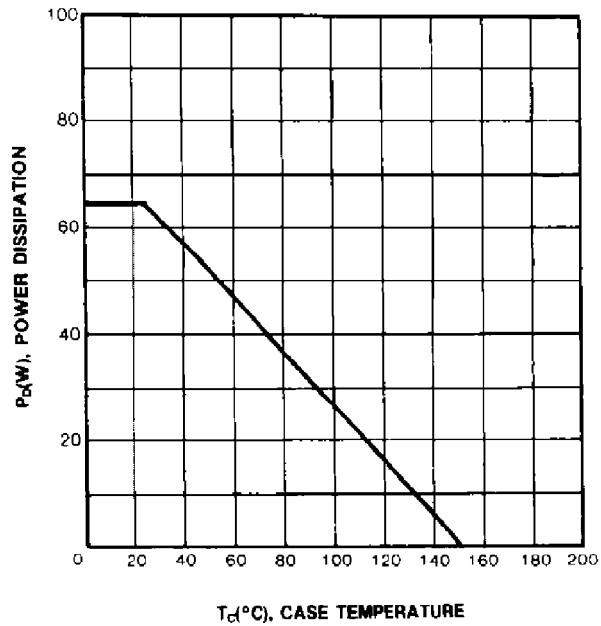
DC CURRENT GAIN



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



POWER DERATING



SAFE OPERATING AREA

