

## TO-220 Plastic-Encapsulate Transistors

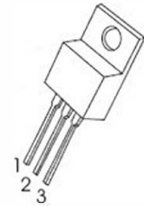
### **TIP41/41A/41B/41C** TRANSISTOR (NPN)

#### **FEATURES**

Medium Power Linear Switching Applications

#### **TO-220**

1. BASE
2. COLLECTOR
3. EMITTER



#### **MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                        | TIP41    | TIP41A | TIP41B | TIP41C | Unit                 |
|-----------------|--------------------------------------------------|----------|--------|--------|--------|----------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | 40       | 60     | 80     | 100    | V                    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 40       | 60     | 80     | 100    | V                    |
| $V_{EBO}$       | Emitter-Base Voltage                             | 5        |        |        |        | V                    |
| $I_C$           | Collector Current -Continuous                    | 6        |        |        |        | A                    |
| $P_C$           | Collector Power Dissipation                      | 2        |        |        |        | W                    |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 62.5     |        |        |        | $^{\circ}\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 |        |        |        | $^{\circ}\text{C}$   |

#### **ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                                                                  | Symbol         | Test conditions                                                                                                                       | Min                   | Max | Unit |
|----------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----|------|
| Collector-base breakdown voltage<br>TIP41<br>TIP41A<br>TIP41B<br>TIP41C    | $V_{(BR)CBO}$  | $I_C = 1\text{mA}, I_E = 0$                                                                                                           | 40<br>60<br>80<br>100 |     | V    |
| Collector-emitter breakdown voltage<br>TIP41<br>TIP41A<br>TIP41B<br>TIP41C | $V_{CEO(sus)}$ | $I_C = 30\text{mA}, I_B = 0$                                                                                                          | 40<br>60<br>80<br>100 |     | V    |
| Emitter-base breakdown voltage                                             | $V_{(BR)EBO}$  | $I_E = 1\text{mA}, I_C = 0$                                                                                                           | 5                     |     | V    |
| Collector cut-off current<br>TIP41<br>TIP41A<br>TIP41B<br>TIP41C           | $I_{CBO}$      | $V_{CB} = 40\text{V}, I_E = 0$<br>$V_{CB} = 60\text{V}, I_E = 0$<br>$V_{CB} = 80\text{V}, I_E = 0$<br>$V_{CB} = 100\text{V}, I_E = 0$ |                       | 0.4 | mA   |
| Collector cut-off current<br>TIP41/41A<br>TIP41B/41C                       | $I_{CEO}$      | $V_{CE} = 30\text{V}, I_B = 0$<br>$V_{CE} = 60\text{V}, I_B = 0$                                                                      |                       | 0.7 | mA   |
| Emitter cut-off current                                                    | $I_{EBO}$      | $V_{EB} = 5\text{V}, I_C = 0$                                                                                                         |                       | 1   | mA   |
| DC current gain                                                            | $h_{FE(1)}$    | $V_{CE} = 4\text{V}, I_C = 0.3\text{A}$                                                                                               | 30                    |     |      |
|                                                                            | $h_{FE(2)}$    | $V_{CE} = 4\text{V}, I_C = 3\text{A}$                                                                                                 | 15                    | 75  |      |
| Collector-emitter saturation voltage                                       | $V_{CE(sat)}$  | $I_C = 6\text{A}, I_B = 0.6\text{A}$                                                                                                  |                       | 1.5 | V    |
| Base-emitter voltage                                                       | $V_{BE(on)}$   | $V_{CE} = 4\text{V}, I_C = 6\text{A}$                                                                                                 |                       | 2   | V    |
| Transition frequency                                                       | $f_T$          | $V_{CE} = 10\text{V}, I_C = 0.5\text{A}$<br>$f = 1\text{MHz}$                                                                         | 3                     |     | MHz  |

