# TIP41 Series

NPN Power Transistors

**Descriptions**

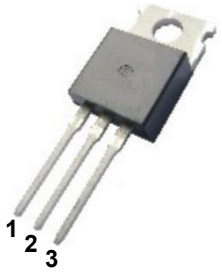
Epitaxial silicon NPN transistor in a TO-220 plastic package.

**Features**

Complement to TIP42.

**Applications**

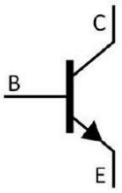
Medium power linear switching applications.




PIN1：Base PIN

2：CollectorPIN

3：Emitter




**Absolute Maximum Ratings(Ta=25℃)**

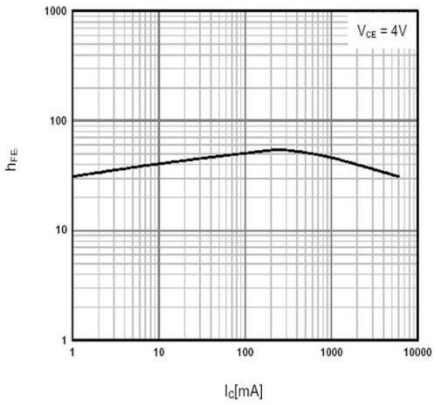
| Parameter | Symbol | Rating | | | | Unit |
|---|---|---|---|---|---|---|
| | | TIP41 | TIP41A | TIP41B | TIP41C | |
| Collector to Base Voltage | $V_{CBO}$ | 40 | 60 | 80 | 100 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 40 | 60 | 80 | 100 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 5 | | | | V |
| Collector Current - Continuous | $I_C$ | 6 | | | | A |
| Peak Collector Current | $I_{CP}$ | 10 | | | | A |
| Base Current - Continuous | $I_B$ | 2 | | | | A |
| Collector Power Dissipation | $P_C$ | 2 | | | | W |
| Collector Power Dissipation | $P_C$ ($T_c$=25℃) | 65 | | | | W |
| Junction Temperature | $T_j$ | 150 | | | | ℃ |
| Storage Temperature Range | Tsag | -55～150 | | | | ℃ |

**Electrical Characteristics(Ta=25℃)**

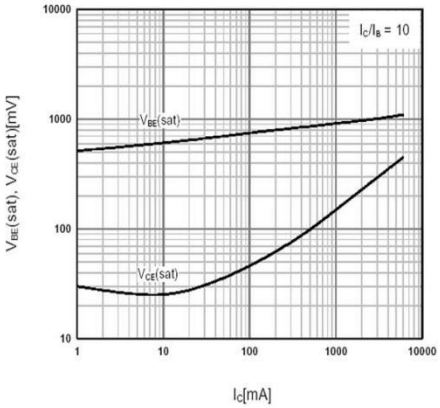
| Parameter | Symbol | | Test Conditions | Min | Type | Max | Unit |
|---|---|---|---|---|---|---|---|
| Collector to Emitter Breakdown Voltage | $V_{CEO}$ | TIP41 | $I_C$=30mA $I_B$=0 | 40 | | | V |
| | | TIP41A | | 60 | | | |
| | | TIP41B | | 80 | | | |
| | | TIP41C | | 100 | | | |
| Collector Cut-Off Current | $I_{CEO}$ | TIP41 TIP41A | $V_{CE}$=30V $I_B$=0 | | | 0.7 | mA |
| | | TIP41B TIP41C | $V_{CE}$=60V $I_B$=0 | | | | |
| Collector Cut-Off Current | $I_{CES}$ | TIP41 | $V_{CE}$=40V $V_{EB}$=0 | | | 400 | μA |
| | | TIP41A | $V_{CE}$=60V $V_{EB}$=0 | | | | |
| | | TIP41B | $V_{CE}$=80V $V_{EB}$=0 | | | | |
| | | TIP41C | $V_{CE}$=100V $V_{EB}$=0 | | | | |
| Emitter Cut-Off Current | $I_{EBO}$ | | $V_{EB}$=5V $I_C$=0 | | | 1 | mA |
| DC Current Gain | $h_{FE(1)}$ | | $V_{CE}$=4V $I_C$=3A | 15 | | 75 | |
| | $h_{FE(2)}$ | | $V_{CE}$=4V $I_C$=0.3A | 30 | | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | | $I_C$=6A $I_B$=0.6A | | | 1.5 | V |
| Base to Emitter Voltage | $V_{BE}$ | | $I_C$=6A $V_{CE}$=4V | | | 2 | V |
| Transition Frequency | $f_T$ | | $V_{CE}$=10V $I_C$=500mA | 3 | | | MHz |

## Electrical Characteristic Curve

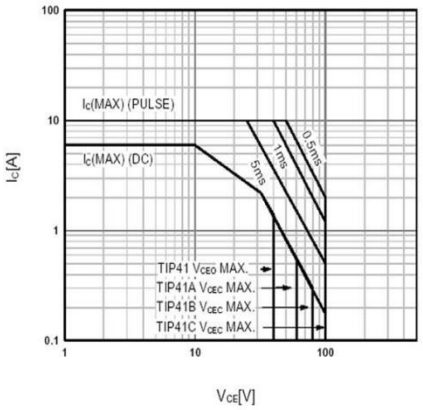
hFE – Ic



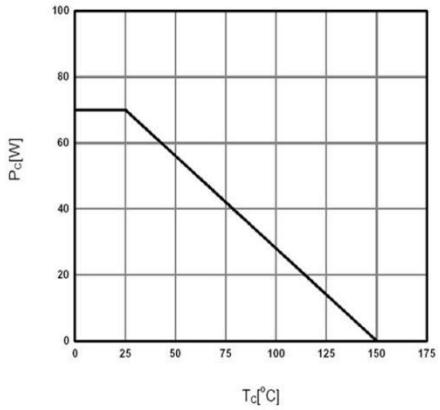

VBE(sat), VCE(sat) – Ic



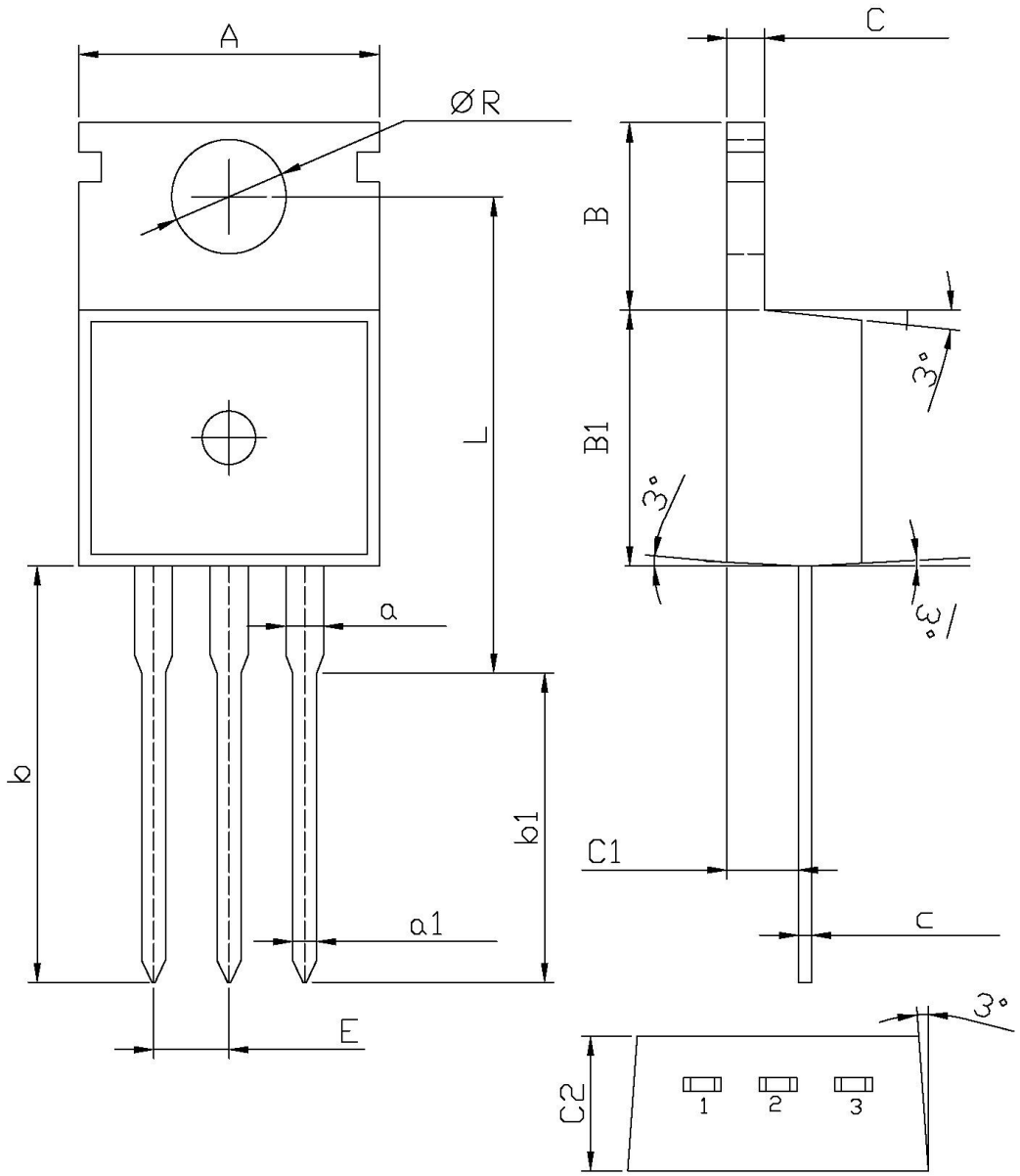

Ic – VCE




PC – TC



**Package Dimensions**




| Symbol | Dimensions In Millimeters | | Symbol | Dimensions In Millimeters | |
|---|---|---|---|---|---|
| | Min | Max | | Min | Max |
| A | 9.8 | 10.2 | C | 1.2 | 1.4 |
| R | 3.56 | 3.64 | B | 6.3 | 6.7 |
| L | 15.7 | 16.1 | B1 | 9.0 | 9.4 |
| b | 12.6 | 13.6 | C1 | 2.2 | 2.6 |
| b1 | 9.6 | 10.6 | a1 | 0.7 | 0.9 |
| a | 1.22 | 1.32 | c | 0.4 | 0.6 |
| E | 2.34 | 2.74 | C2 | 4.3 | 4.7 |