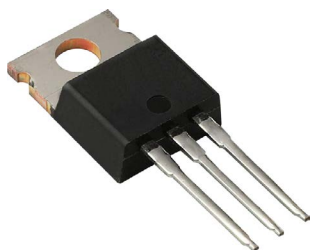


## Description

Designed for use in general purpose amplifier and switching application.

RoHS  
Compliant



## Features

- DC Current Gain  $-h_{FE} = 30(\text{Min}) @ I_C = 0.3\text{A}$
- Collector-Emitter Sustaining Voltage  
 $V_{CEO(\text{SUS})} = 60\text{V}(\text{Min.})$
- Complement to Type TIP42A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## Maximum Ratings

| Parameter                                              | Symbol    | Value       | Unit             |
|--------------------------------------------------------|-----------|-------------|------------------|
| Collector-Base Voltage                                 | $V_{CBO}$ | 60          | V                |
| Collector-Emitter Voltage                              | $V_{CEO}$ | 60          |                  |
| Emitter-Base Voltage                                   | $V_{EBO}$ | 5           |                  |
| Collector Current-Continuous                           | $I_C$     | 6           | A                |
| Collector Current-Peak                                 | $I_{CM}$  | 10          |                  |
| Base Current- Continuous                               | $I_B$     | 2           |                  |
| Collector Power Dissipation @ $T_C = 25^\circ\text{C}$ | $P_C$     | 65          | Watts            |
| Junction Temperature                                   | $T_J$     | 150         | $^\circ\text{C}$ |
| Storage Temperature                                    | $T_{STG}$ | -65 to +150 |                  |

## Thermal Characteristics

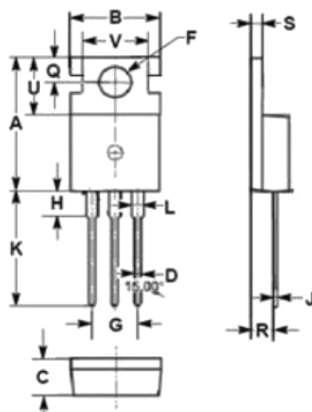
| Characteristic                      | Symbol        | Value | Unit               |
|-------------------------------------|---------------|-------|--------------------|
| Thermal Resistance Junction to Case | $R_{th\ j-c}$ | 1.67  | $^\circ\text{C/W}$ |

## Electrical Characteristics ( $T_C = 25^\circ\text{C}$ unless otherwise specified)

| Characteristic                                                              | Symbol                | Min. | Max. | Unit |
|-----------------------------------------------------------------------------|-----------------------|------|------|------|
| <b>Off Characteristics</b>                                                  |                       |      |      |      |
| Collector-Emitter Sustaining Voltage<br>( $I_C = 10\text{mA}$ , $I_B = 0$ ) | $V_{CEO(\text{SUS})}$ | 60   | -    | V    |
| Collector Cut-off Current<br>( $V_{CB} = 60\text{V}$ , $I_E = 0$ )          | $I_{CBO}$             |      | 0.4  | mA   |
| Collector Cut-off Current<br>( $V_{CE} = 30\text{V}$ , $I_B = 0$ )          | $I_{CEO}$             |      | 0.7  |      |
| Emitter Cut-off Current<br>$V_{EB} = 5\text{V}$ , $I_C = 0$                 | $I_{EBO}$             |      | 1    |      |

| Characteristic                                                    | Symbol                                     | Min.     | Max. | Unit |    |
|-------------------------------------------------------------------|--------------------------------------------|----------|------|------|----|
| On Characteristics                                                |                                            |          |      |      |    |
| DC Current Gain<br>(Ic= 0.3A, VCE=4A)<br>(Ic= 3A, VCE=4A)         | hFE                                        | 30<br>15 | 75   |      |    |
| Collector-Emitter Saturation Voltage<br>Ic = 6.0 A, IB = 600 mA ) | VCE(SAT)                                   | -        | 1.5  | V    |    |
| Base-Emitter On Voltage<br>(Ic= 6A, VCE=4A)                       | VBE(ON)                                    | -        | 2    |      |    |
| DYNAMIC CHARATERISTICS                                            |                                            |          |      |      |    |
| Current gain-Bandwidth product<br>Ic=0.5 A ,VCE =10 V             | fr                                         | 3        |      | MHz  |    |
| Switching Charateristics                                          |                                            |          |      |      |    |
| Turn-on Time                                                      | VBE(OFF)=4V, Ic=6A<br>IB1=-IB2=0.6A, RL=5Ω | tON      | -    | 0.6  | us |
| Turn-off Time                                                     |                                            | tOFF     | -    | 1    |    |

## Dimensions



PIN 1. Base  
2. Collector  
3. Emitter

| Dim | Min. | Max. |
|-----|------|------|
| A   | 15.5 | 15.9 |
| B   | 9.8  | 10.2 |
| C   | 4.2  | 4.5  |
| D   | 0.7  | 0.9  |
| F   | 3.4  | 3.7  |
| G   | 4.98 | 5.18 |
| H   | 2.68 | 2.9  |
| J   | 0.44 | 0.6  |
| K   | 12.8 | 13.4 |
| L   | 1.2  | 1.45 |
| O   | 2.7  | 2.9  |
| R   | 2.3  | 2.7  |
| S   | 1.29 | 1.35 |
| U   | 6.45 | 6.65 |
| V   | 8.66 | 8.86 |

## Part Number Table

| Description                           | Part Number |
|---------------------------------------|-------------|
| Transistor, NPN, 60V, 6A, 65W, TO-220 | TIP41A.     |

Dimensions : Millimetres

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