

# TIP41/41A/41B/41C

**SemiHow**  
Know-How for Semiconductor

# TIP41/41A/41B/41C

## Medium Power Linear Switching Applications

- Complement to TIP42/42A/42B/42C

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| CHARACTERISTICS                                 | SYMBOL    | RATING  | UNIT             |
|---|-----------|---------|------------------|
| Collector-Base Voltage : TIP41                  | $V_{CBO}$ | 40      | V                |
| : TIP41A  |           | 60      | V                |
| : TIP41B  |           | 80      | V                |
| : TIP41C  |           | 100     | V                |
| Collector-Emitter Voltage : TIP41               | $V_{CEO}$ | 40      | V                |
| : TIP41A  |           | 60      | V                |
| : TIP41B  |           | 80      | V                |
| : TIP41C  |           | 100     | V                |
| Emitter-Base Voltage                            | $V_{EBO}$ | 5       | V                |
| Collector Current(DC)                           | $I_C$     | 6       | A                |
| Collector Current(Pulse)                        | $I_{CP}$  | 10      | A                |
| Base Current                                    | $I_B$     | 2       | A                |
| Collector Dissipation( $T_a=25^\circ\text{C}$ ) | $P_C$     | 2       | W                |
| Collector Dissipation( $T_c=25^\circ\text{C}$ ) | $P_C$     | 65      | W                |
| Junction Temperature                            | $T_J$     | 150     | $^\circ\text{C}$ |
| Storage Temperature                             | $T_{STG}$ | -65~150 | $^\circ\text{C}$ |

### NPN Epitaxial Silicon Darlington Transistor

TO-220  
1. Base  
2. Collector  
3. Emitter

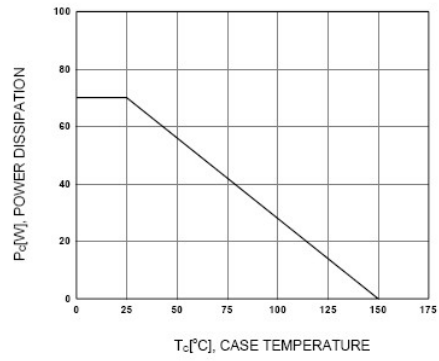
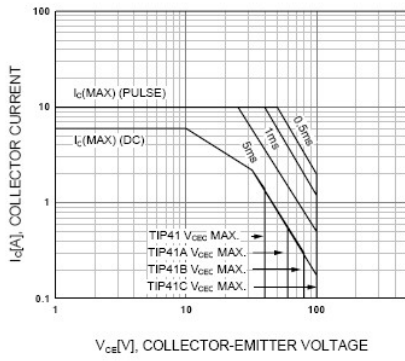
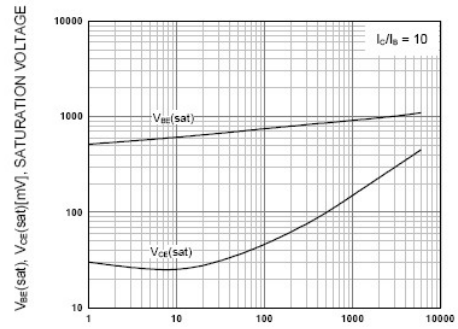
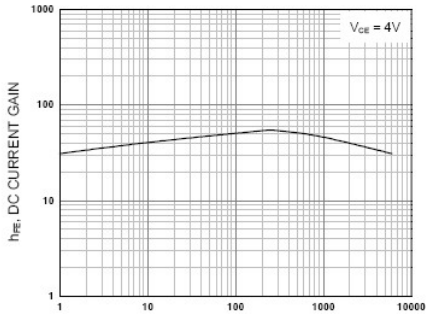


### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| CHARACTERISTICS   | SYMBOL         | Test Condition                                       | Min | Max | Unit          |
|---|----------------|--|-----|-----|---------------|
| Collector-Emitter Sustaining Voltage<br>: TIP41<br>: TIP41A<br>: TIP41B<br>: TIP41C | $V_{CEO(SUS)}$ | $I_C=30\text{mA}, I_B=0$                             | 40  |     | V             |
|   |                |  | 60  |     | V             |
|   |                |  | 80  |     | V             |
|   |                |  | 100 |     | V             |
| Collector Cut-off Current<br>: TIP41/41A<br>: TIP41B/41C                            | $I_{CEO}$      | $V_{CE}=30\text{V}, I_B=0$                           |     | 0.7 | mA            |
|   |                | $V_{CE}=60\text{V}, I_B=0$                           |     | 0.7 | mA            |
| Collector Cut-off Current<br>: TIP41<br>: TIP41A<br>: TIP41B<br>: TIP41C            | $I_{CES}$      | $V_{CE}=40\text{V}, V_{EB}=0$                        |     | 400 | $\mu\text{A}$ |
|   |                | $V_{CE}=60\text{V}, V_{EB}=0$                        |     | 400 | $\mu\text{A}$ |
|   |                | $V_{CE}=80\text{V}, V_{EB}=0$                        |     | 400 | $\mu\text{A}$ |
|   |                | $V_{CE}=100\text{V}, V_{EB}=0$                       |     | 400 | $\mu\text{A}$ |
| Emitter Cut-off 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 ON Voltage  | $V_{BE(on)}$   | $V_{CE}=4\text{V}, I_C=6\text{A}$                    |     | 2.0 | V             |
| Output Capacitance  | $f_T$          | $V_{CE}=10\text{V}, I_C=500\text{mA}, f=1\text{MHz}$ | 3.0 |     | MHz           |

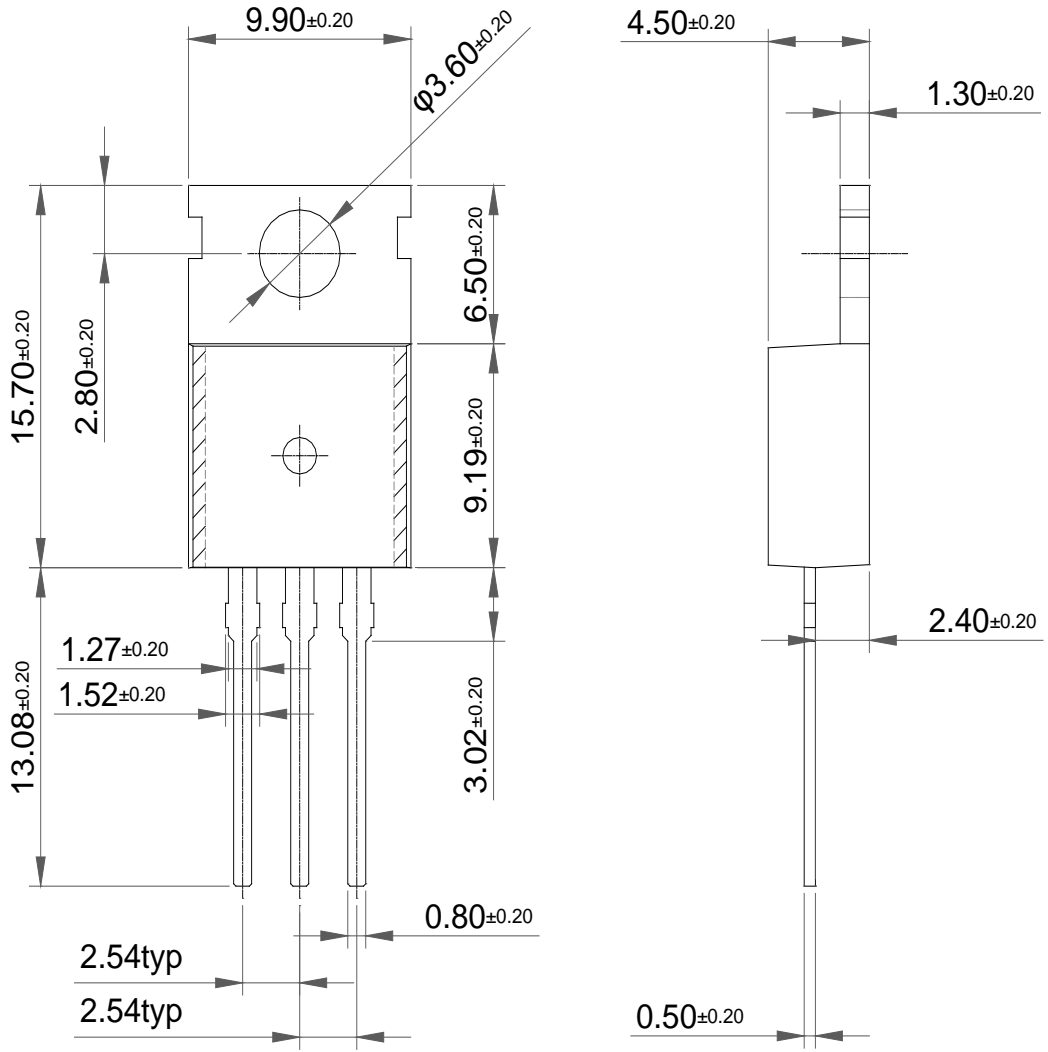
\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Characteristics



Package Dimension

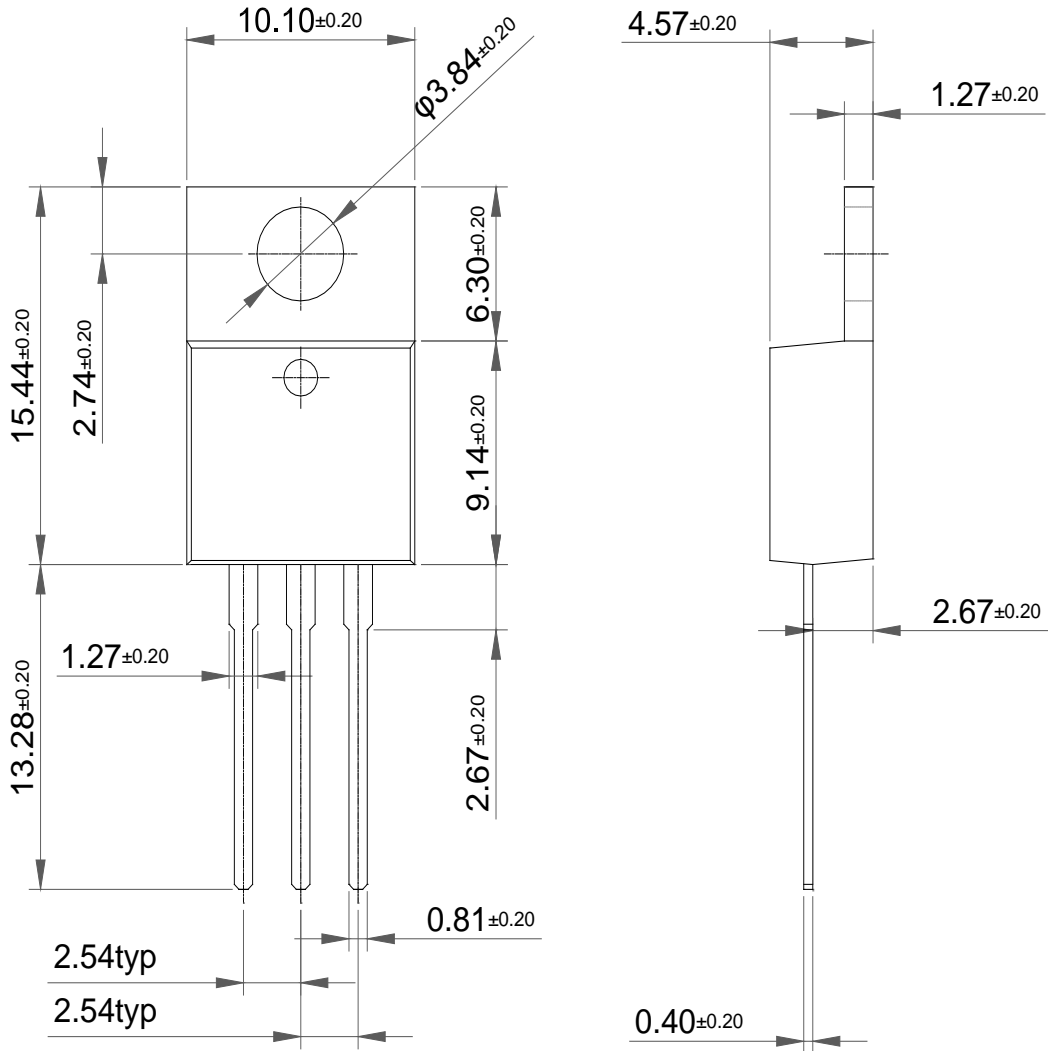
# TO-220 (A)



Dimensions in Millimeters

Package Dimension

TO-220 (B)



Dimensions in Millimeters