


**DHA®**

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**TIP142/TIP147**

## Power Darlington Transistor

### Applications

Voltage regulator and Industrial applications

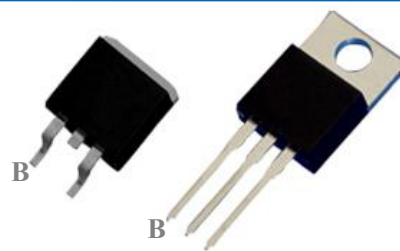
TIP142 (NPN), TIP147 (PNP)

### Features

- High DC current gain, Min  $h_{FE}=1000@V_{CE}=4V, I_C=5A$
- Shunt resistor connected between Base - Emitter
- Including freewheeling diodes

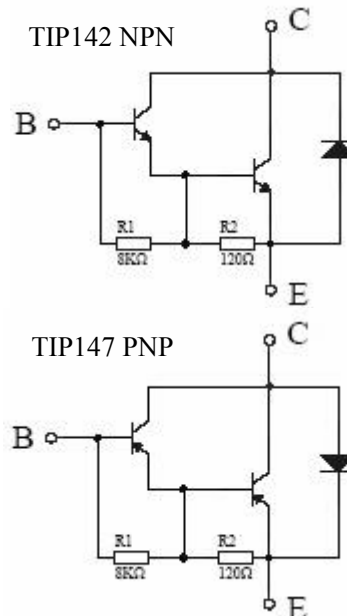
### Absolute Maximum Ratings

| Symbol            | Ratings                  | Units       |
|-------------------|--------------------------|-------------|
| $V_{CBO}$         | 100                      | V           |
| $V_{CEO}$         | 100                      | V           |
| $V_{EBO}$         | 5                        | V           |
| $I_C$             | 10                       | A           |
| $I_{CM}$          | 15                       | A           |
| $I_B$             | 0.5                      | A           |
| $P_C$ (Heat sink) | 80 ( $T_C=25^{\circ}C$ ) | W           |
| $T_J$             | 150                      | $^{\circ}C$ |
| $T_{stg}$         | -65~150                  | $^{\circ}C$ |



TO-263-2L

TO-220



Internal Equivalent Circuit

### Electrical Characteristics ( $T_a=25^{\circ}C$ )

| Symbol          | Test conditions                             | Min         | Typ  | Max        | Units   |
|-----------------|---------------------------------------------|-------------|------|------------|---------|
| $V_{CEO}$ (sus) | $I_C=30mA, I_B=0$                           | 200         |      |            | V       |
| $I_{CEO}$       | $V_{CE}=50V, I_B=0$                         |             |      | 2          | mA      |
| $I_{CBO}$       | $V_{CB}=100V, I_E=0$                        |             |      | 1          | mA      |
| $I_{EBO}$       | $V_{BE}=5V, I_C=0$                          |             |      | 2          | mA      |
| $h_{FE}$        | $V_{CE}=4V, I_C=5A$<br>$V_{CE}=4V, I_C=10A$ | 1000<br>500 |      |            |         |
| $V_{CE}$ (sat)  | $I_C=5A, I_B=10mA$<br>$I_C=10A, I_B=40mA$   |             |      | 2.0<br>3.0 | V<br>V  |
| $V_{BE}$ (sat)  | $I_C=10A, I_B=40mA$                         |             |      | 3.5        | V       |
| $V_{BE}$ (on)   | $V_{CE}=4V, I_C=10A$                        |             |      | 3.0        | V       |
| $t_d$           | $V_{CC}=30V, I_C=5A$                        |             | 0.15 |            | $\mu s$ |
| $t_r$           | $I_B=20mA, I_{B1}=I_{B2}$                   |             | 0.55 |            | $\mu s$ |
| $t_s$           |                                             |             | 2.5  |            | $\mu s$ |
| $t_f$           |                                             |             | 2.5  |            | $\mu s$ |