# BD682 PNP TO-126 Plastic-Encapsulate Transistors

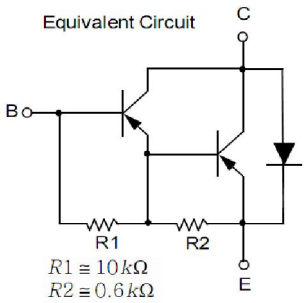
## Applications

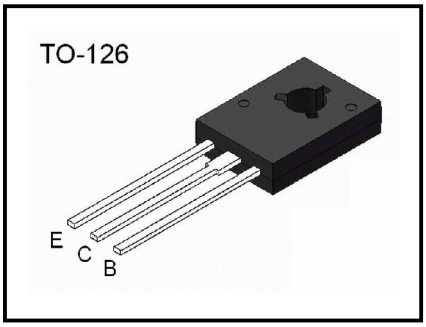
• Medium Power Linear and Switching

## Features

• Medium Power Darlington TR

• Complement to BD681




## Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector-base voltage | $BV_{CBO}$ | -100 | V |
| Collector-emitter voltage | $BV_{CEO}$ | -100 | V |
| Emitter-base voltage | $BV_{EBO}$ | -5 | V |
| Collector current (DC) | $I_C$ | -4 | A |
| Collector current (Pulse) | $I_{CP}$ | -6 | A |
| Collector Power Dissipation | $P_C$ | 35 | W |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature | $T_{stg}$ | -65～150 | °C |

## Electrical Characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $BV_{CBO}$ | $I_C$ = -100μA, $I_E$ = 0 | -100 | | | V |
| Collector-emitter breakdown voltage | $BV_{CEO}$ | $I_C$ = -10mA, $I_B$ = 0 | -100 | | | V |
| Emitter-base breakdown voltage | $BV_{EBO}$ | $I_E$ = -100μA, $I_C$ = 0 | -5 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$ = -100V, $I_E$ = 0 | | | -200 | μA |
| Collector cut-off current | $I_{CEO}$ | $V_{CE}$ = -100V, $I_B$ = 0 | | | -500 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$ = -5V, $I_C$ = 0 | | | -2 | mA |
| DC current gain* | $h_{FE}$ | $V_{CE}$ = -3V, $I_C$ = -1.5A | 750 | | | |
| Collector-emitter saturation voltage* | $V_{CE(sat)}$ | $I_C$ = -1.5A, $I_B$ = -30mA | | | -2.5 | V |
| Base-emitter saturation voltage* | $V_{BE(on)}$ | $V_{CE}$= -3V, $I_C$= -1.5A | | | -2.5 | V |

* Pulse test: Pulse Width ≤ 300μs , duty Cycle=1.5% Pulsed

## Typical Characteristics

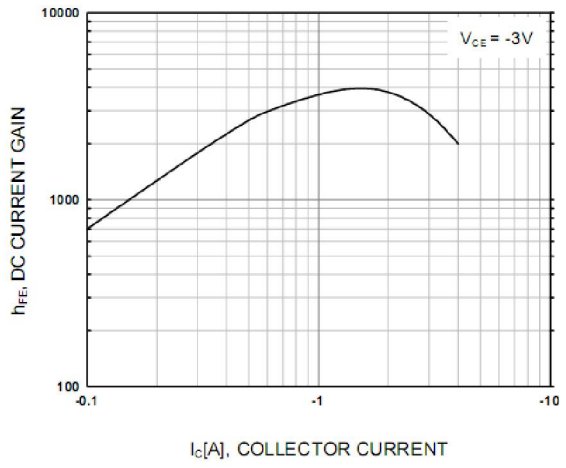



**Figure 1. DC current Gain**

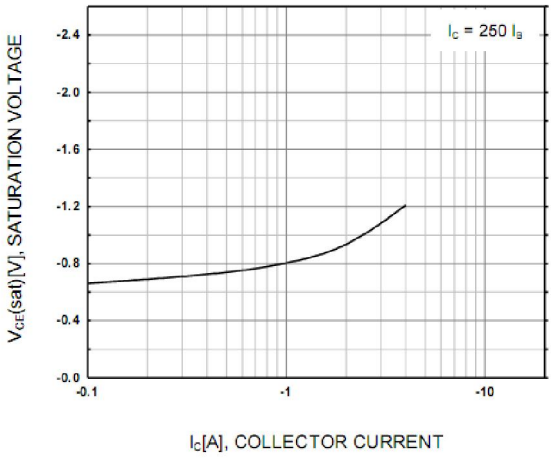



**Figure 2. Collector-Emitter Saturation Voltage**

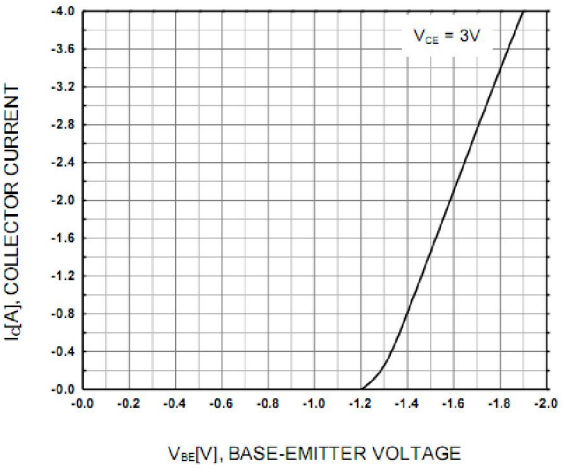



**Figure 3. Base-Emitter On Voltage**

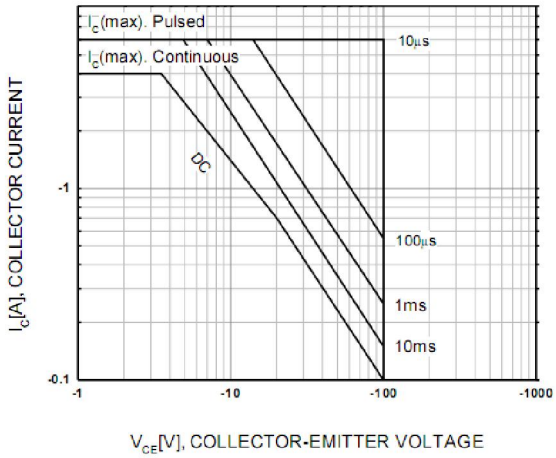



**Figure 4. Base-Emitter On Voltage**

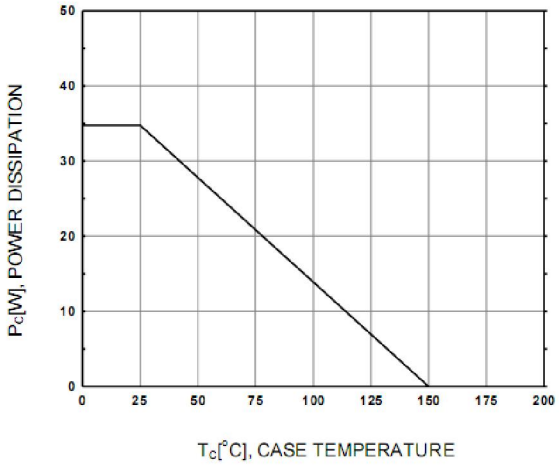
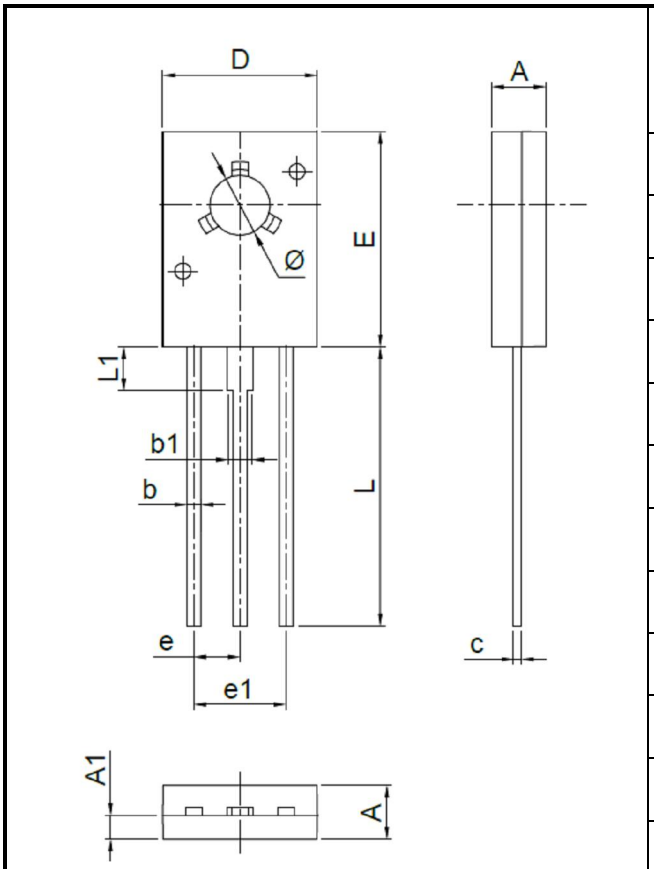



**Figure 5. Power Derating**

**Package Dimensions**




| Symbol | Millimeter | | Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 2.40 | 2.80 | 0.094 | 0.110 |
| A1 | 1.00 | 1.40 | 0.039 | 0.055 |
| b | 0.66 | 0.86 | 0.026 | 0.034 |
| b1 | 1.17 | 1.37 | 0.046 | 0.054 |
| c | 0.40 | 0.60 | 0.016 | 0.024 |
| D | 7.30 | 7.70 | 0.287 | 0.303 |
| E | 10.60 | 11.00 | 0.417 | 0.433 |
| e | 2.25 | 2.33 | 0.089 | 0.092 |
| e1 | 4.50 | 4.66 | 0.177 | 0.183 |
| L | 14.00 | 15.00 | 0.551 | 0.591 |
| L1 | 1.90 | 2.50 | 0.075 | 0.098 |
| Φ | 3.10 | 3.30 | 0.122 | 0.130 |