**EN:** This Datasheet/Document is presented by the manufacturer.

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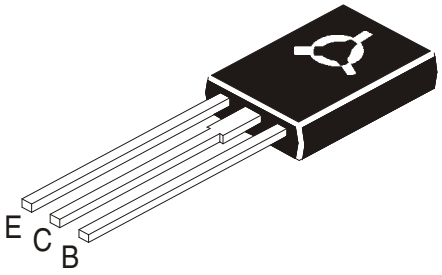
Continental Device India Limited

An ISO/TS16949 and ISO 9001 Certified Company

# PNP PLASTIC POWER DARLINGTON TRANSISTORS

**BD676, BD676A**
**BD678, BD678A**
**BD680, BD680A**
**BD682, BD684**

**TO126**
**Plastic Package**




## Complementary BD675, 675A, 677, 677A, 679, 679A, 681 & 683

### ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION | SYMBOL | BD676<br>BD676A | 678<br>678A | 680<br>680A | 682 | 684 | UNITS |
|---|---|---|---|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 45 | 60 | 80 | 100 | 120 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 45 | 60 | 80 | 100 | 120 | V |
| Emitter Base Voltage | $V_{EBO}$ | 5.0 | | | | | V |
| Collector Current | $I_C$ | 4.0 | | | | | A |
| Base Current | $I_B$ | 0.1 | | | | | A |
| Total Power Dissipation@ $T_a$=25°C<br>Derate above 25ºC | $P_D$ | 1.25<br>10 | | | | | W<br>mW/ ºC |
| Total Power Dissipation@ $T_c$=25ºC<br>Derate above 25ºC | $P_D$ | 40<br>0.32 | | | | | W<br>W / ºC |
| Operating & Storage Junction Temperature Range | $T_j, T_{stg}$ | - 55 to + 150 | | | | | ºC |

### THERMAL RESISTANCE

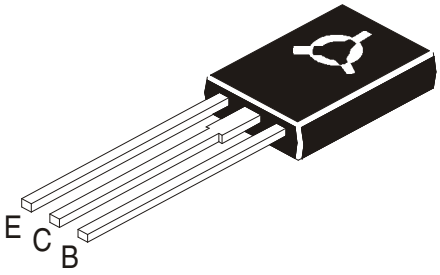
| | | | |
|---|---|---|---|
| From Junction to case | $R_{th(j-c)}$ | 3.13 | ºC/W |
| Junction to Ambient in free air | $R_{th\ (j-a)}$ | 100 | ºC/W |

### ELECTRICAL CHARACTERISTICS (Tc=25ºC unless specified otherwise)

| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | MAX | UNITS |
|---|---|---|---|---|---|
| Collector Emitter Voltage | $V_{CEO}$* | $I_C$ =50mA, $I_B$ =0 | | | |
| | | **BD676/BD676A** | 45 | | V |
| | | **BD678/BD678A** | 60 | | |
| | | **BD680/BD680A** | 80 | | |
| | | **BD682** | 100 | | |
| | | **BD684** | 120 | | |
| Collector-Cut Off Current | $I_{CEO}$ | $V_{CE}$=half rated $V_{CEO}$, $I_B$=0 | | 500 | µA |
| | $I_{CBO}$ | $V_{CB}$ =rated $V_{CBO}$, $I_E$=0 | | 0.2 | mA |
| | $I_{CBO}$ | $V_{CB}$ =rated $V_{CBO}$, $I_E$=0<br>$T_C$=100°C | | 2.0 | |
| Emitter cut Off Current | $I_{EBO}$ | $V_{EB}$ =5V, $I_C$ =0 | | 2.0 | mA |

## PNP PLASTIC POWER DARLINGTON TRANSISTORS

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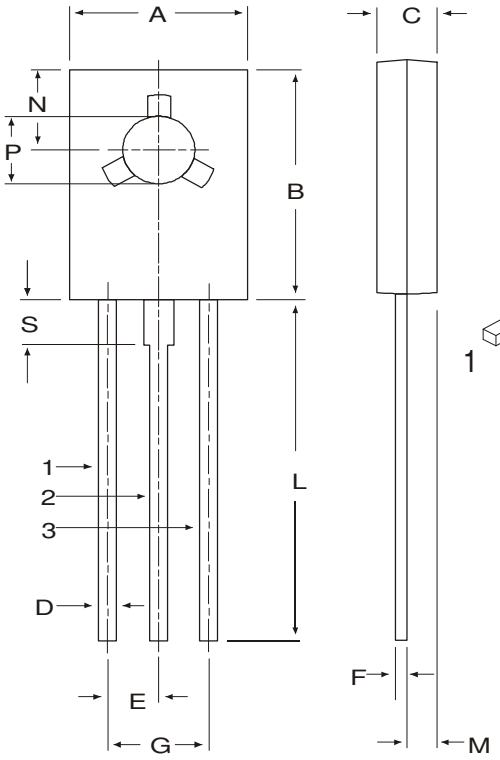

**TO126**
**Plastic Package**

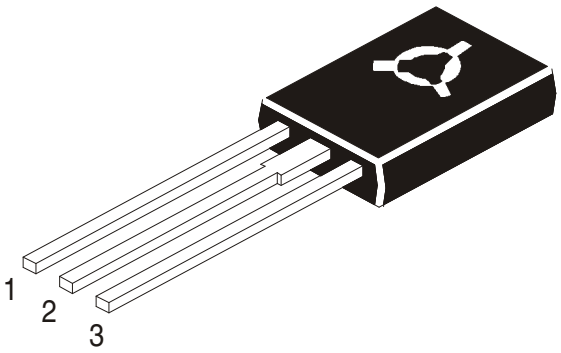
**ELECTRICAL CHARACTERISTICS (Tc=25ºC unless specified otherwise)**

| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | MAX | UNITS |
|---|---|---|---|---|---|
| **Collector Emitter Saturation voltage** | | | | | |
| **NON A** | $V_{CE(sat)}$* | $I_C$=1.5A, $I_B$=6mA | | 2.5 | V |
| **A** | | $I_C$=2.0A, $I_B$=8mA | | 2.8 | |
| **Base Emitter On Voltage** | | | | | |
| **NON A** | $V_{BE(on)}$* | $I_C$=1.5A,$V_{CE}$ =3V | | 2.5 | V |
| **A** | | $I_C$=2A,$V_{CE}$ =3V | | 2.5 | |
| **DC Current Gain** | | | | | |
| **NON A** | $h_{FE}$* | $I_C$=1.5A,$V_{CE}$=3V | 750 | | |
| **A** | | $I_C$=2A,$V_{CE}$=3V | 750 | | |
| **Small signal Current Gain** | $\|h_{fe}\|$ | $I_C$=1.5A, $V_{CE}$=3V f=1MHz | 1.0 | | |

**Pulse test: Pulse Width ≤ 300μs ; Duty cycle ≤ 2%.**

## TO-126 (SOT-32) Plastic Package




Pin Configuration

1. Emitter
2. Collector
3. Base

| DIM | MIN | MAX |
|---|---|---|
| A | 7.4 | 7.8 |
| B | 10.5 | 10.8 |
| C | 2.4 | 2.7 |
| D | 0.7 | 0.9 |
| E | 2.25 TYP. | |
| F | 0.49 | 0.75 |
| G | 4.5 TYP. | |
| L | 15.7 TYP. | |
| M | 1.27 TYP. | |
| N | 3.75 TYP. | |
| P | 3.0 | 3.2 |
| S | 2.5 TYP. | |

All diminsions in mm.

## Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|---|---|---|---|---|---|---|---|
| | **Details** | **Net Weight/ Qty** | **Size** | **Qty** | **Size** | **Qty** | **Gr Wt** |
| **TO-126 Bulk** | **500 pcs/polybag** | **340 gm/500 pcs** | **3" x 7.5" x 7.5"** | **2K** | **17" x 15" x 13.5"** | **32K** | **31 kgs** |
| **TO-126 Tube** | **50 pcs/tube** | **73 gm/50 pcs** | **3" x 3.7" x 21.5"** | **1K** | **19" x 19" x 19"** | **10K** | **15 kgs** |

## Disclaimer

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