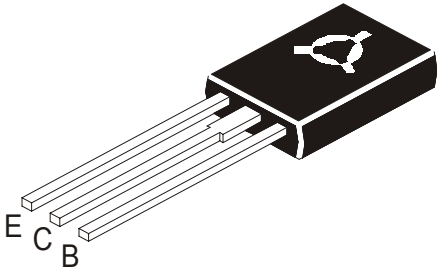


NPN PLASTIC POWER DARLINGTON TRANSISTORS

**BD675, BD675A
BD677, BD677A
BD679, BD679A
BD681, BD683**



**TO126
Plastic Package**

Complementary BD676, 676A, 678, 678A, 680, 680A, 682 & 684

ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION | SYMBOL | BD675 BD675A | 677 677A | 679 679A | 681 | 683 | 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 | | | | | V |
| Collector Current | I_C | 4 | | | | | A |
| Base Current | I_B | 0.1 | | | | | A |
| Total Power Dissipation@ Tc=25 °C | P_D | 40 | | | | | W |
| Derate above 25°C | | 0.32 | | | | | W / °C |
| Operating & Storage Junction Temperature Range | T_j, T_{stg} | - 55 to + 150 | | | | | °C |

THERMAL RESISTANCE

| | | | | |
|-----------------------|---------------|------|--|------|
| From Junction to case | $R_{th(j-c)}$ | 3.13 | | °C/W |
|-----------------------|---------------|------|--|------|

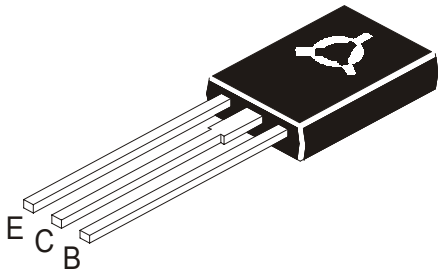
ELECTRICAL CHARACTERISTICS (Tc=25°C unless specified otherwise)

| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | MAX | UNITS |
|---------------------------|------------------------|--|------------------------------|------------|---------------|
| Collector Emitter Voltage | V_{CEO}^* | $I_C = 50mA, I_B = 0$ BD675/BD675A BD677/BD677A BD679/BD679A BD681 BD683 | 45 60 80 100 120 | | V |
| Collector-Cut off Current | I_{CEO} I_{CBO} | $V_{CE} = \text{half rated } V_{CEO}, I_B = 0$ $V_{CB} = \text{rated } V_{CBO}, I_E = 0$ | | 500 0.2 | μA mA |
| | I_{CBO} | $V_{CB} = \text{rated } V_{CBO}, I_E = 0$ $T_C = 100^\circ C$ | | 2.0 | |
| Emitter cut off Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | | 2.0 | mA |

NPN PLASTIC POWER DARLINGTON TRANSISTORS

BD675, BD675A
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TO126
 Plastic Package



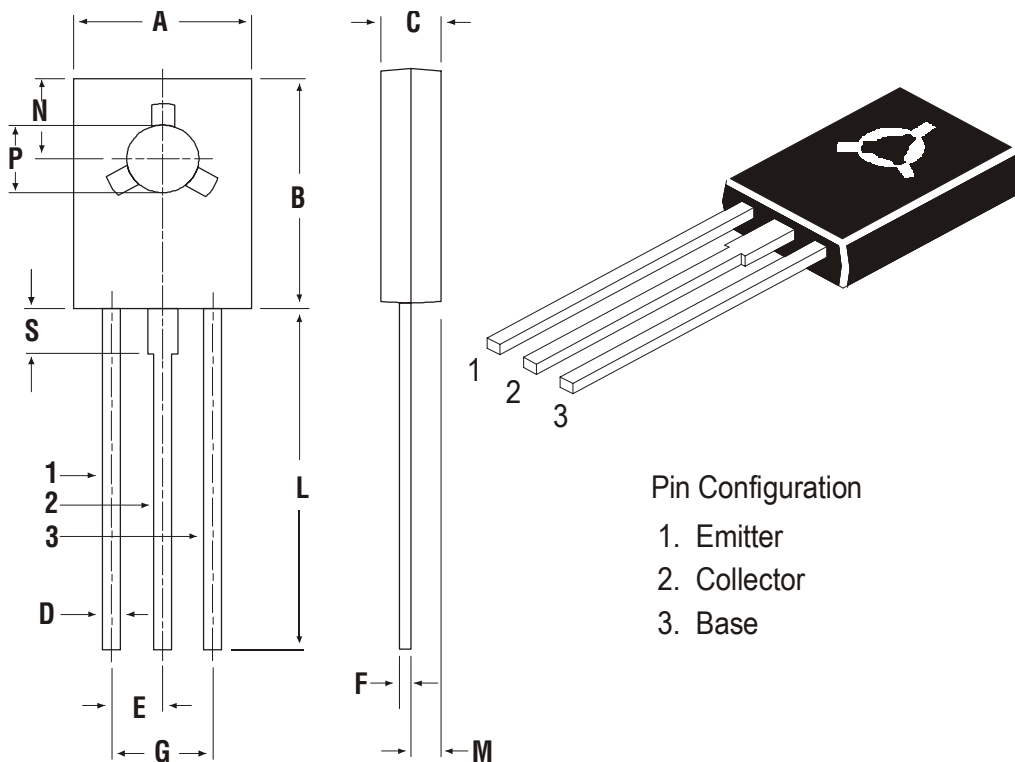
| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | MAX | UNITS |
|--------------------------------------|------------|-----------------------------------|-----------------------|-----|-------|
| Collector Emitter Saturation voltage | NON A | $V_{CE(sat)}^*$ | $I_C=1.5A, I_B=6mA$ | 2.5 | V |
| | A | $V_{CE(sat)}^*$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

Pulse test: Pulse Width $\leq 300\mu s$; Duty cycle $\leq 2\%$.

BD675, BD675A
 BD677, BD677A
 BD679, BD679A
 BD681, BD683

TO126
 Plastic Package

TO-126 (SOT-32) Plastic Package



| 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 dimensions 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 |