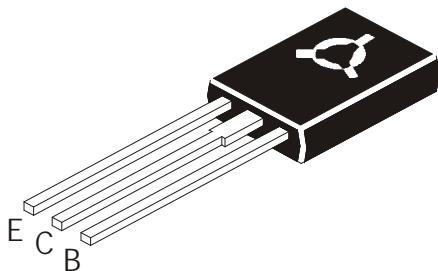


## NPN PLASTIC POWER DARLINGTON TRANSISTORS

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	$V_{EBO}$	5.0					V
Collector Current	$I_C$	4.0					A
Base Current	$I_B$	0.1					A
Total Power Dissipation@ $T_a=25^\circ\text{C}$	$P_D$	1.25					W
Derate above $25^\circ\text{C}$		10					mW/ $^\circ\text{C}$
Total Power Dissipation@ $T_c=25^\circ\text{C}$	$P_D$	40					W
Derate above $25^\circ\text{C}$		0.32					W / $^\circ\text{C}$
Operating & Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to + 150					$^\circ\text{C}$

### THERMAL RESISTANCE

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

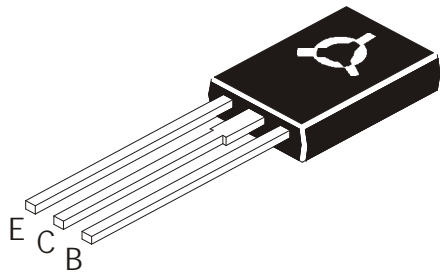
### ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Voltage	$V_{CEO}^*$	$I_C=50\text{mA}, I_B=0$ 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	$\mu\text{A}$ mA
	$I_{CBO}$	$V_{CB}=\text{rated } V_{CBO}, I_E=0$ $T_c=100^\circ\text{C}$		2.0	
Emitter cut off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$		2.0	mA

NPN PLASTIC POWER DARLINGTON TRANSISTORS

BD675, BD675A  
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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		

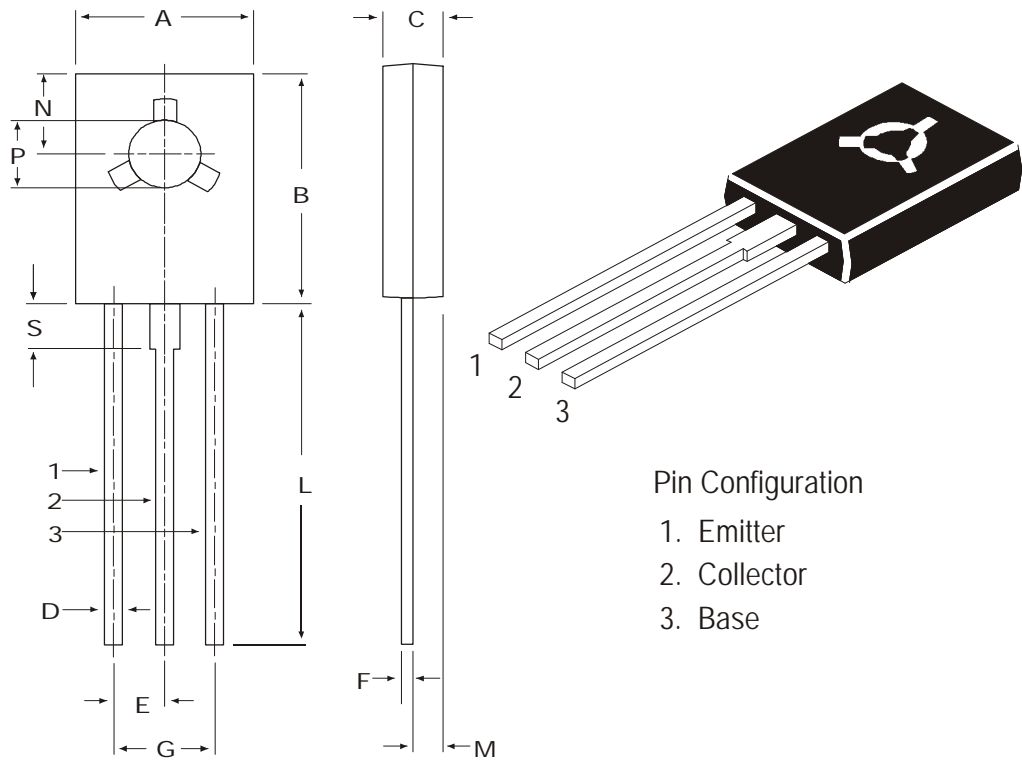
Pulse test: Pulse Width  $\leq 300ms$  ; Duty cycle  $\leq 2\%$ .

BD675\_683 Rev\_2 101002E

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

TO126  
Plastic Package

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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