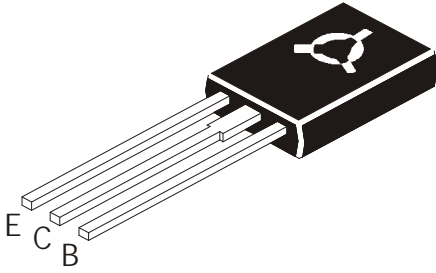


NPN PLASTIC POWER DARLINGTON TRANSISTORS

**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 @ $T_a=25^\circ\text{C}$ Derate above 25°C	P_D	1.25 10					W mW/ °C
Total Power Dissipation @ $T_c=25^\circ\text{C}$ Derate above 25°C	P_D	40 0.32					W 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
Junction to Ambient in free air	$R_{th(j-a)}$	100	°C/W

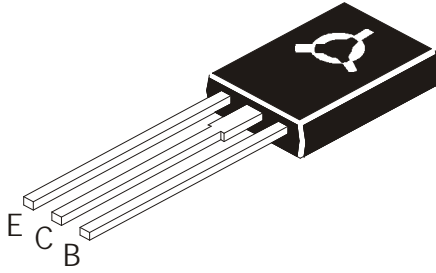
ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

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} I_{CBO}	$V_{CE}=\text{half rated } V_{CEO}, I_B=0$ $V_{CB}=\text{rated } V_{CBO}, I_E=0$ $V_{CB}=\text{rated } V_{CBO}, I_E=0$ $T_C=100^\circ\text{C}$		500 0.2 2.0	μA mA
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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TO126
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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		

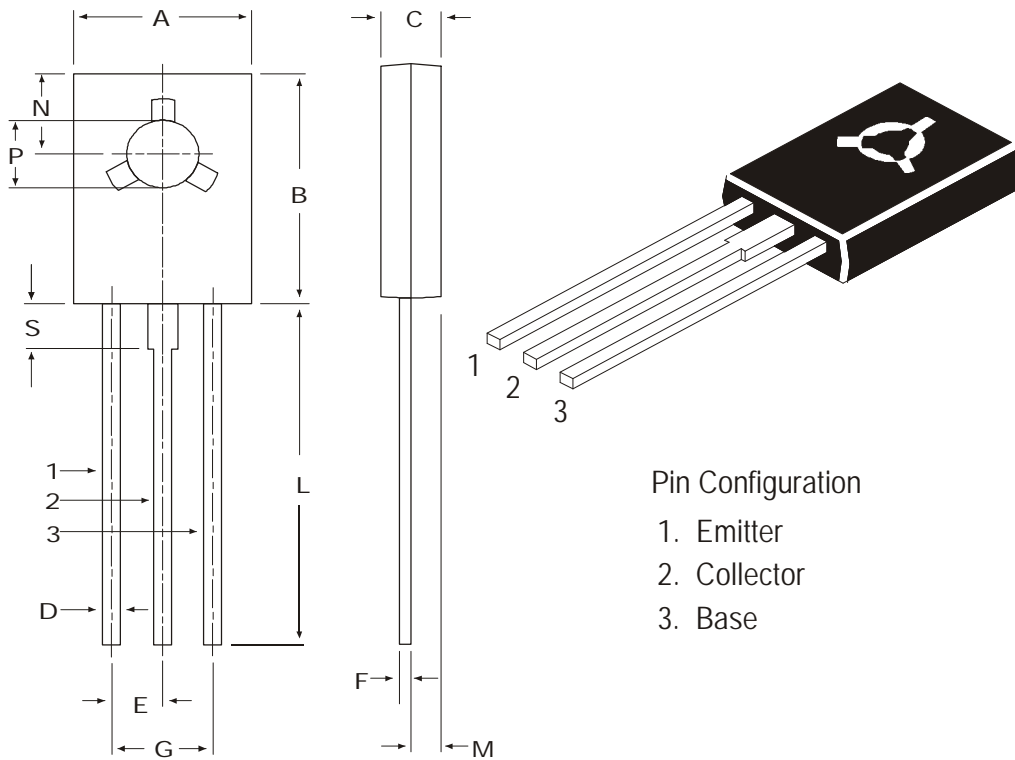
Pulse test: Pulse Width $\leq 300ms$; Duty cycle $\leq 2\%$.

BD675_683 Rev_2 101002E

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

**TO126
Plastic Package**

TO-126 (SOT-32) Plastic Package



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.

Pin Configuration

- 1. Emitter
- 2. Collector
- 3. Base

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

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