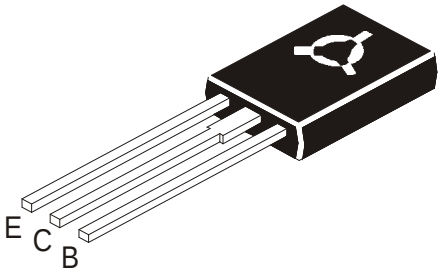
Continental Device India Limited

An ISO/TS 16949 and ISO 9001 Certified Company

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°C	P_D	1.25					W
Derate above 25ºC		10					mW/ ºC
Total Power Dissipation@ T_c=25°C	P_D	40					W
Derate above 25ºC		0.32					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)

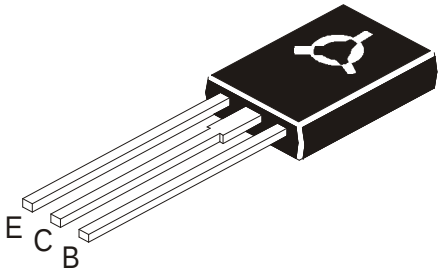
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Voltage	V_{CEO}*	I_C =50mA, I_B =0			
		BD675/BD675A	45		V
		BD677/BD677A	60		
		BD679/BD679A	80		
		BD681	100		
		BD683	120		
Collector-Cut off Current	I_{CEO}	V_{CE}=half rated V_{CEO}, I_B=0		500	µA
	I_{CBO}	V_{CB} =rated V_{CBO}, I_E=0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

BD675_683 Rev_2 101002E

NPN PLASTIC POWER DARLINGTON TRANSISTORS

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

TO126
Plastic Package

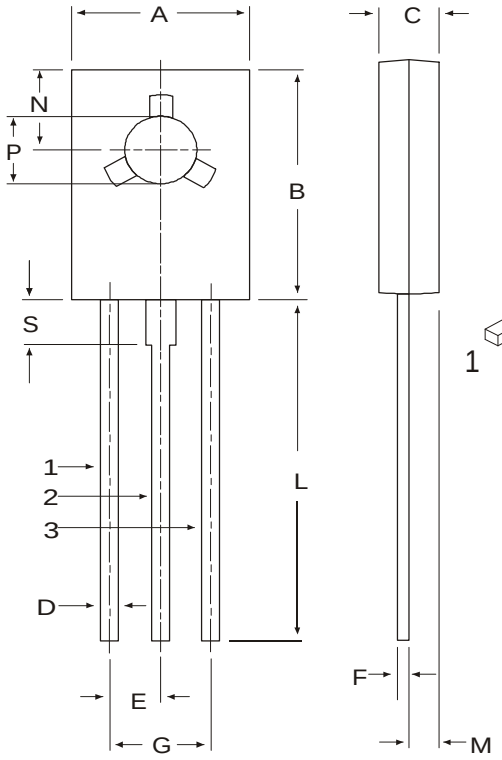


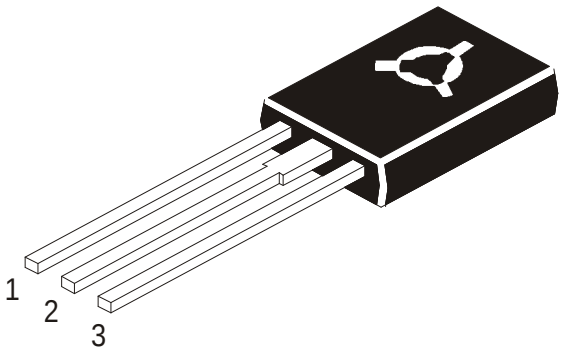
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Saturation voltage					
NON A	$V_{CE(sat)}$*	I_C=1.5A, I_B=6mA		2.5	V
A	$V_{CE(sat)}$*	I_C=2.0A, I_B=8mA		2.8	
Base Emitter On Voltage					
NON A	$V_{BE(on)}$*	I_C=1.5A,V_{CE} =3V		2.5	V
A		I_C=2A,V_{CE} =3V		2.5	
DC Current Gain					
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 ≤ 300μs ; Duty cycle ≤ 2%.

BD675_683 Rev_2 101002E

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

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.

CDIL is a registered Trademark of
Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-112579 5290, 5141 1119
email@cdil.com www.cdilsemi.com