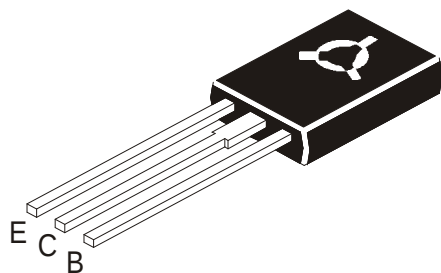


NPN PLASTIC POWER DARLINGTON TRANSISTORS



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°C		10					mW/ $^\circ\text{C}$
Total Power Dissipation@ $T_c=25^\circ\text{C}$	P_D	40					W
Derate above 25°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	$^\circ\text{C/W}$

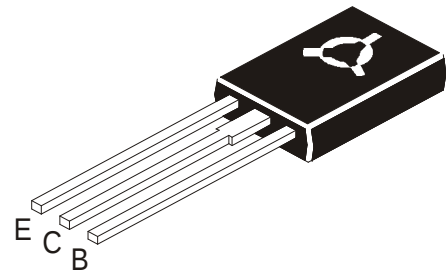
ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$ unless specified otherwise)

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	μA 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
BD677, BD677A
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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		

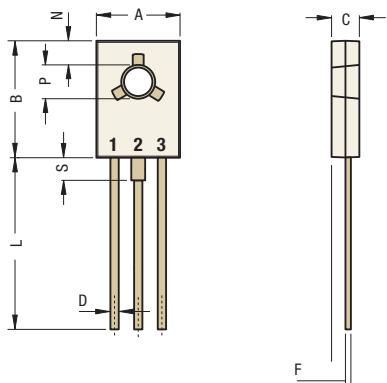
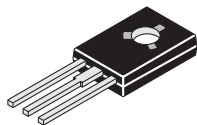
Pulse test: Pulse Width $\leq 300ms$; Duty cycle $\leq 2\%$.

BD675_683 Rev_2 101002E

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

TO126
Plastic Package

TO-126
Leaded Plastic
Package

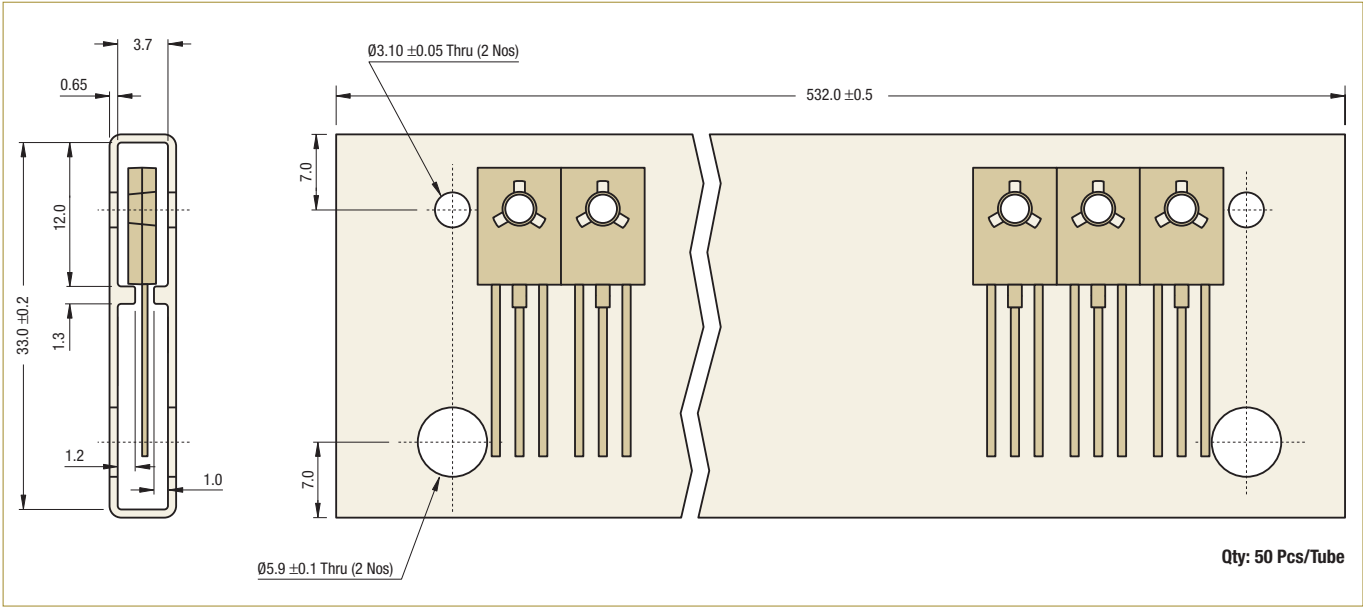


DIM	Min	Max
A	7.12	8.38
B	10.16	11.43
C	2.29	3.04
D	0.64	0.88
E	2.040	2.285
F	0.39	0.63

DIM	Min	Max
G	4.07	5.08
L	15.00	16.63
M	0.89	1.65
N	3.31	4.44
P	2.54	3.30
S	—	2.54

Pin Configurations
Pin 1: Emitter Pin 2: Collector Pin 3: Base

TO-126 Series Packaging Tube



Packaging Specifications ...

T & A: Tape and Ammo Pack; T & R: Tape and Reel; Bulk: Loose in Poly Bags; Tube: Tube and Carton; K: 1,000

Package / Case Type	Packaging Type	Std. Packing	Inner Carton			Outer Carton		
			Qty	Size L x W x H (cm)	Gross Weight (Kg)	Qty	Size L x W x H (cm)	Gross Weight (Kg)
TO-126	Bulk	2,000	2K	19 x 19 x 8	1.4	20K	46 x 38 x 22	15.6
	Tube	1,000 (50 pcs/tube)	1K	55 x 8 x 10	1.5	10K	55 x 35 x 27	16.3

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's 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 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).

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