



PNP BD676/A - BD678/A - BD680/A - BD682/A

SILICON DARLINGTON POWER TRANSISTORS

The BD676/A-BD678/A-BD680/A-BD682/A are PNP

They are eptaxial-base transistors in monolithic Darlington circuit for audio and video applications.

They are mounted in Jedec TO-126 plastic package.

NPN complements are BD675/A-BD677/A-BD679/A-BD681/A .

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$-V_{CEO}$	Collector-Emitter Voltage	BD676/A	45	V
		BD678/A	60	
		BD680/A	80	
		BD682/A	100	
$-V_{CBO}$	Collector-Base Voltage	BD676/A	45	V
		BD678/A	60	
		BD680/A	80	
		BD682/A	100	
$-V_{EBO}$	Emitter-Base Voltage		5	V
$-I_C$	Collector Current	$-I_C$	4	A
		$-I_{CM}$	6	
$-I_B$	Base current (peak value)	$-I_{BM}$	0.1	A
P_T	Total power Dissipation	@ $T_{mb} = 25^\circ\text{C}$	40	Watts
T_J	Junction Temperature		150	$^\circ\text{C}$
T_{Stg}	Storage Temperature		-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-mb}	Thermal Resistance, Junction to mouting base	3.12	K/W
R_{thJ-a}	Thermal Resistance, Junction to ambient in free air	100	K/W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

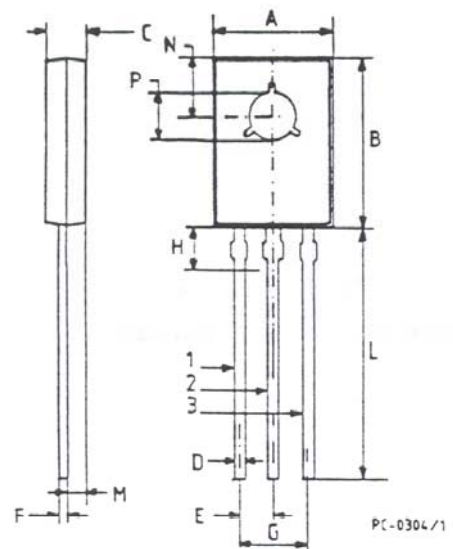
Symbol	Ratings	Test Condition(s)		Min	Typ	M _x	Unit
-I_{CBO}	Collector cut-off current	I _E =0 , -V _{CB} = -V _{CBOMAX} =45 V	BD676/A	-	-	0,2	mA
		I _E =0 , -V _{CB} = -V _{CBOMAX} =60 V	BD678/A	-	-	0,2	
		I _E =0 , -V _{CB} = -V _{CBOMAX} =80 V	BD680/A	-	-	0,2	
		I _E =0 , -V _{CB} = -V _{CBOMAX} =100 V	BD682/A	-	-	0,2	
		I _E =0 , -V _{CB} = -½V _{CBOMAX} = 45 V, T _J = 150°C	BD676/A	-	-	2	
		I _E =0 , -V _{CB} = -½V _{CBOMAX} = 60V T _J = 150°C	BD678/A	-	-	2	
		I _E =0 , -V _{CB} = -½V _{CBOMAX} = 80V T _J = 150°C	BD680/A	-	-	2	
		I _E =0 , -V _{CB} = -½V _{CBOMAX} = 100V T _J = 150°C	BD682/A	-	-	2	
-I_{CEO}	Collector cut-off current	I _B =0 , -V _{CE} = -½V _{CEOMAX}	BD676/A	-	-	0,5	mA
			BD678/A	-	-	0,5	
			BD680/A	-	-	0,5	
			BD682/A	-	-	0,5	
-I_{EBO}	Emitter cut-offcurrent	I _C =0, -V _{EB} =5 V		-	-	5	mA
-V_{CEO(SUS)}	Collector-Emitter sustaining Voltage	I _B =0 , -I _C =50 mA	BD676/A	45	V	-	V
			BD678/A	60		-	
			BD680/A	80		-	
			BD682/A	100		-	
-V_{CE(SAT)}	Collector-Emitter saturation Voltage	BD676,BD678,BD680,BD682 -I _C =1.5 A, -I _B =30 mA (BD675 ; -I _C =2 A)		-	-	2,5	V
		BD676A,BD678A,BD680A,BD682A -I _C =2 A, -I _B =40 mA		-	-	2.8	
h_{FE}	DC Current Gain	BD676,BD678,BD680,BD682 -V _{CE} =3 V, -I _C =500 mA		-	2200	-	
		BD676,BD678,BD680,BD682 -V _{CE} =3 V, -I _C =1,5 A	750		-	-	
		BD676,BD678,BD680,BD682 -V _{CE} =3 V, -I _C =4 A	-	650		-	
		BD676A,BD678A,BD680A,BD682A -V _{CE} =3 V, -I _C =2 A	750		-	-	
		BD676,BD678,BD680,BD682 -V _{CE} =3 V, -I _C =1,5 A	-	-	2,5	V	
BD676A,BD678A,BD680A,BD682A -V _{CE} =3 V, -I _C =2 A	-	-	2.5				
h_{fe}	Small signal current gain	-V _{CE} =3 V, -I _C =1,5 A, f= 1 MHz	10	-	-		
f_{hfe}	Ut-off frequency	-V _{CE} =3 V, -I _C =1,5 A	-	60	-	kHz	
V_F	Diode forward voltage	I _F =1,5 A	-	1,5	-	V	
-I_(SB)	Second-breakdown collector current	-V _{CE} =50 V, t _p = 20ms,non rep., without heatsink	0,8	-	-	A	
t_{on}	Turn-on time	-I _{con} = 1,5A, -I _{bon} = I _{boff} = 6mA,	-	0,3	1.5	µs	
t_{off}	Turn-off time		-	1,5	5		

1. Measured under pulse conditions :t_p <300µs, δ <2%.
2. V_{BE} decreases by about 3,6 mV/K with increasing temperature.

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MECHANICAL DATA CASE TO-126

	DIMENSIONS			
	mm		inches	
	min	max	min	max
A	7.4	7.8	0.295	0.307
B	10.5	10.8	0.413	0.425
C	2.4	2.7	0.094	0.106
D	0.7	0.9	0.027	0.035
E	2.2 typ.		0.087 typ.	
F	0.49	0.75	0.019	0.029
G	4.4 typ.		0.173 typ.	
H	2.54 typ.		0.100 typ.	
L	15.7 typ.		0.618 typ.	
M	1.2 typ.		0.047 typ.	
N	3.8 typ.		0.149 typ.	
P	3.0	3.2	0.118	0.126



Pin 1 :	Emitter
Pin 2 :	Collector
Case :	Base