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

SILICON DARLINGTON POWER TRANSISTORS

The BD676/A-BD678/A-BD680/A-BD682/A are PNP transistors mounted in Jedec TO-126 plastic package.
They are eptaxial-base transistors in monolithic Darlington circuit for audio and video applications.
NPN complements are BD675/A-BD677/A-BD679/A-BD681/A
Compliance to RoHS.

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°C		40	W
T_J	*Junction Temperature*		150	°C
T_{Stg}	Storage Temperature		-65 to +150	°C

THERMAL CHARACTERISTICS

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

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

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$-I_{CBO}$	Collector cut-off current	I_E=0 , $-V_{CB}$= - 45 V	BD676/A	-	-	0,2	mA
		I_E=0 , $-V_{CB}$= - 60 V	BD678/A	-	-	0,2	
		I_E=0 , $-V_{CB}$= - 80 V	BD680/A	-	-	0,2	
		I_E=0 , $-V_{CB}$= - 100 V	BD682/A	-	-	0,2	
		I_E=0 , $-V_{CB}$= - 45V, T_j= 150°C	BD676/A	-	-	2	
		I_E=0 , $-V_{CB}$= - 60V, T_j= 150°C	BD678/A	-	-	2	
		I_E=0 , $-V_{CB}$= - 80V, T_j= 150°C	BD680/A	-	-	2	
		I_E=0 , $-V_{CB}$= - 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 sustaning 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		-	-	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	-	-	
$-V_{BE}$	Base-Emitter Voltage(1&2)	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

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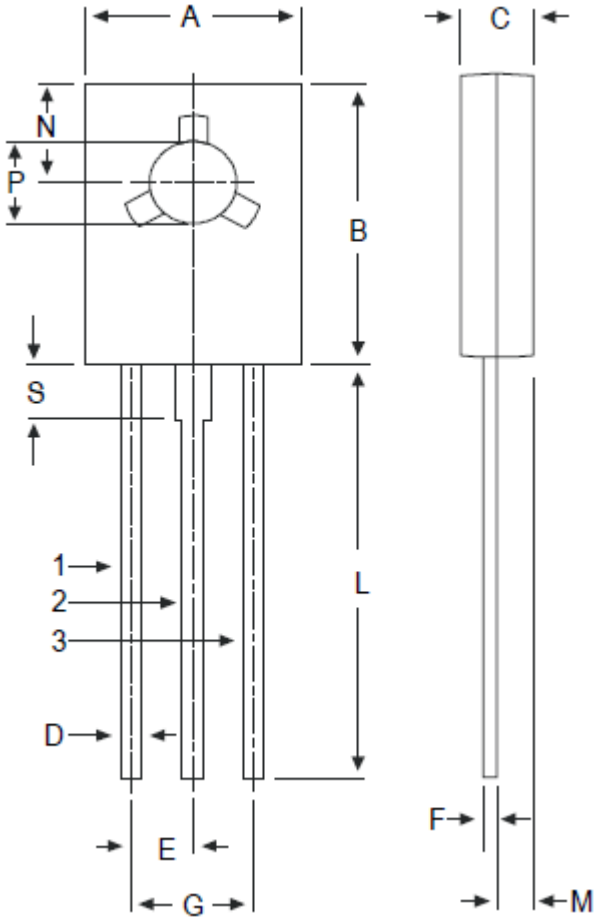
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
t_{on}	Turn-on time	$-I_{con}$= 1,5A, $-I_{bon}$= I_{boff}= 6mA,	-	0,3	1.5	µs
t_{off}	Turn-off time		-	1,5	5	

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

MECHANICAL DATA CASE TO-126

	DIMENSIONS	
	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	4.4 typ.	
L	15.7 typ.	
M	1.27 typ.	
N	3.75 typ.	
P	3.0	3.2
S	2.54 typ.	



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

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