

## Silicon NPN Power Transistors

BD683

## DESCRIPTION

www.datasheet4u.com

- With TO-126 package
- Complement to type BD684
- DARLINGTON

## APPLICATIONS

- For audio and video applications

## PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector;connected to mounting base
3	Base

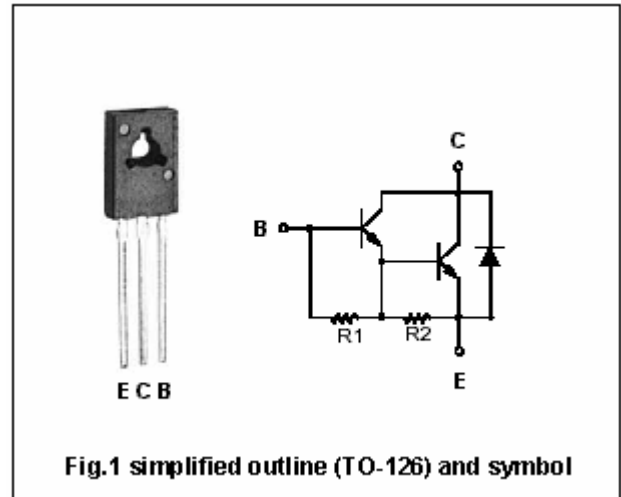


Fig.1 simplified outline (TO-126) and symbol

## Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	140	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	120	V
V <sub>EBO</sub>	Emitter -base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		4	A
I <sub>CM</sub>	Collector current-Peak		6	A
I <sub>BM</sub>	Base current-Peak		0.1	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	40	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-mb</sub>	Thermal resistance, junction to mounting base	3.12	K/W

## Silicon NPN Power Transistors

BD683

## CHARACTERISTICS

www.datasheet4u.com

 $T_j=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=1.5\text{A}; I_B=6\text{mA}$			2.5	V
$V_{BE}$	Base-emitter on voltage	$I_C=1.5\text{A}; V_{CE}=3\text{V}$			2.5	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=120\text{V}; I_E=0$			0.2	mA
$I_{CEO}$	Collector cut-off current	$V_{CE}=60\text{V}; I_B=0$			0.2	mA
$I_{EBO}$	Emitter cut-off current	$V_{EB}=5\text{V}; I_C=0$			5	mA
$h_{FE-1}$	DC current gain	$I_C=500\text{mA}; V_{CE}=3\text{V}$		2200		
$h_{FE-2}$	DC current gain	$I_C=1.5\text{A}; V_{CE}=3\text{V}$	750			
$h_{FE-3}$	DC current gain	$I_C=4\text{A}; V_{CE}=3\text{V}$		1500		
$t_{on}$	Turn-on time	$I_C=1.5\text{A}; I_{B1}=-I_{B2}=6\text{mA}$ $V_{CC}=30\text{V}$		0.8	2	$\mu\text{s}$
$t_{off}$	Turn-off time			4.5	8	$\mu\text{s}$

PACKAGE OUTLINE

www.datasheet4u.com

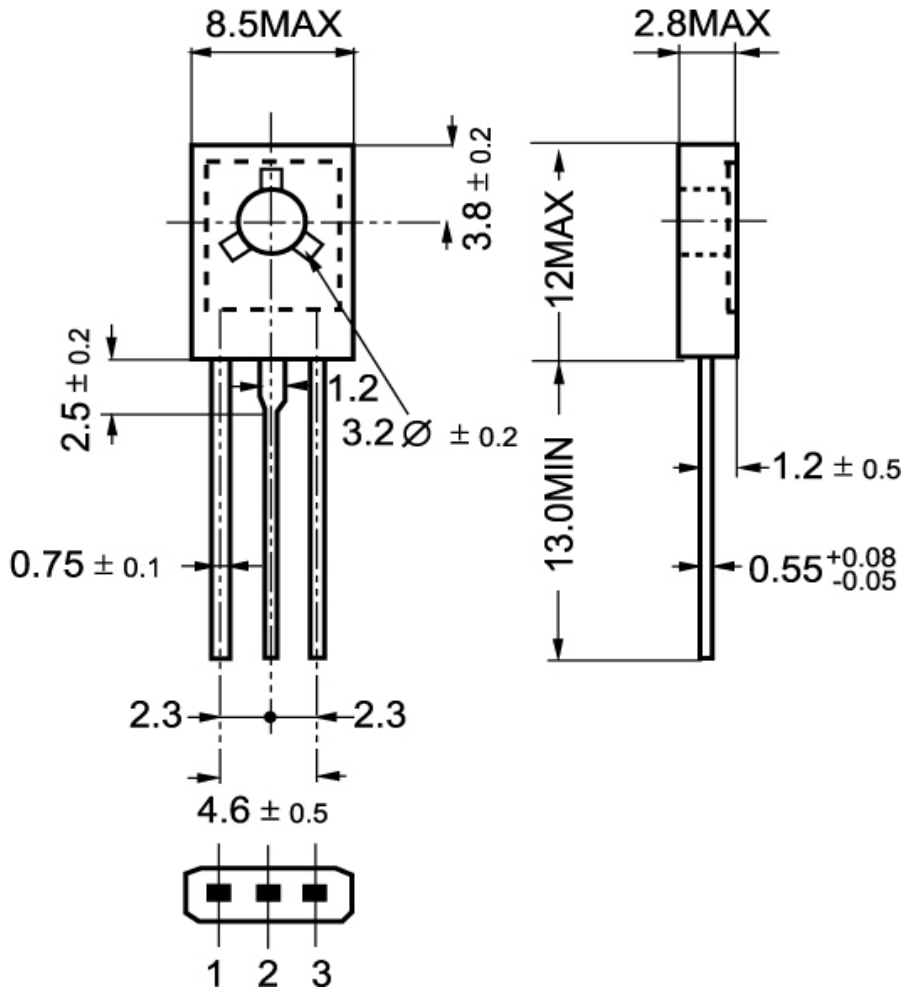


Fig.2 Outline dimensions