

**Silicon PNP Power Transistors**

**BD176 BD178 BD180**

**DESCRIPTION**

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With TO-126 package

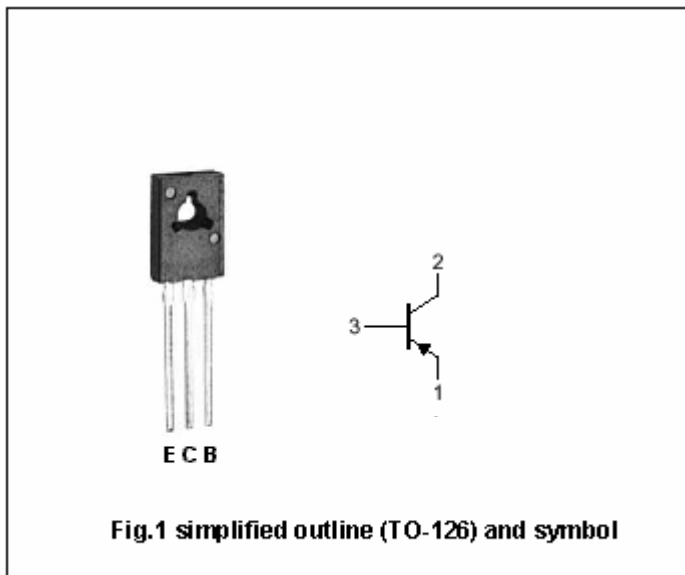
·Complement to type BD175 /177 /179

**APPLICATIONS**

·For medium power linear and switching applications

**PINNING**

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



**Absolute maximum ratings (Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BD176	-45	V
		BD178	-60	
		BD180	-80	
V <sub>CEO</sub>	Collector-emitter voltage	BD176	-45	V
		BD178	-60	
		BD180	-80	
V <sub>EBO</sub>	Emitter -base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current (DC)		-3	A
I <sub>CM</sub>	Collector current-Peak		-7	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	30	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

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## BD176 BD178 BD180

## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-1A; I <sub>B</sub> =-0.1A			-0.8	V	
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =-1A; V <sub>CE</sub> =-2V			-1.3	V	
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	BD176	I <sub>C</sub> =-0.1A; I <sub>B</sub> =0			V	
		BD178					-45
		BD180					-60
I <sub>CBO</sub>	Collector cut-off current	BD176	V <sub>CB</sub> =-45V; I <sub>E</sub> =0			μA	
		BD178					V <sub>CB</sub> =-60V; I <sub>E</sub> =0
		BD180					V <sub>CB</sub> =-80V; I <sub>E</sub> =0
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-1	mA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-150mA; V <sub>CE</sub> =-2V	40		250		
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-2V	15				
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-250mA; V <sub>CE</sub> =-10V	3			MHz	

◆ h<sub>FE-1</sub> Classifications

6	10	16
40-100	63-160	100-250

□ classification 16 :only BD176

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PACKAGE OUTLINE

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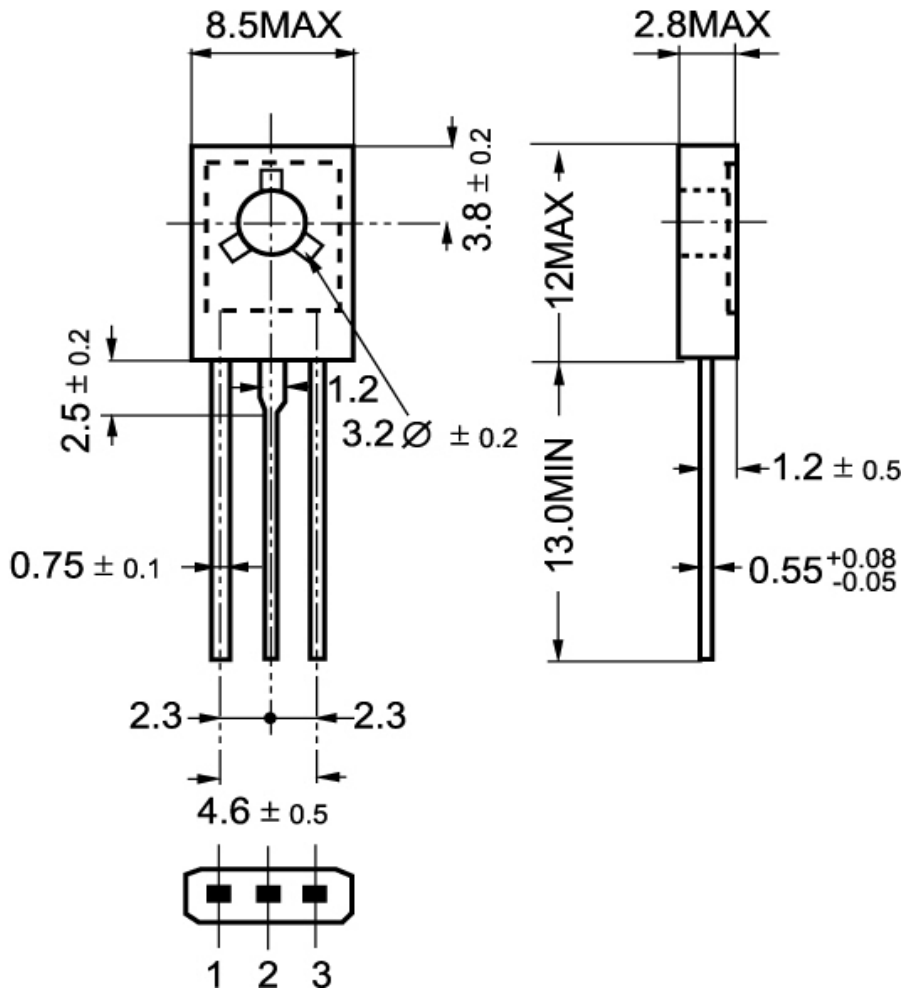


Fig.2 Outline dimensions