

**Silicon NPN Power Transistors**

**BD135 BD137 BD139**

**DESCRIPTION**

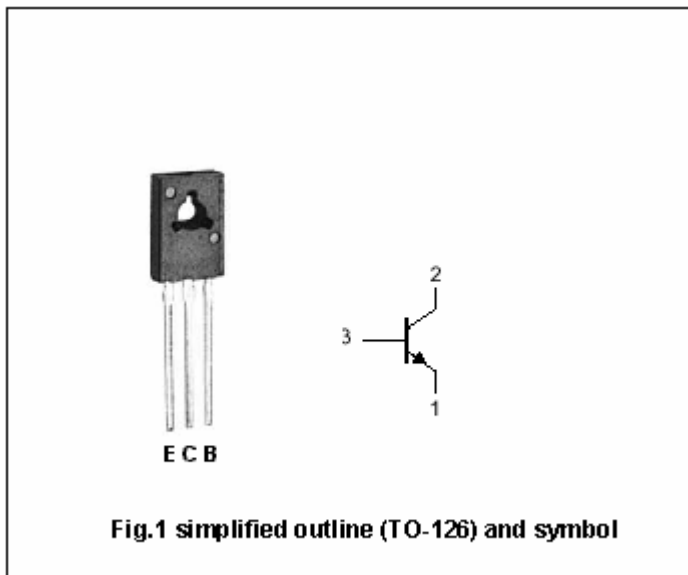
- With TO-126 package
- High current
- Complement to type BD136/138/140

**APPLICATIONS**

- Driver stages in high-fidelity amplifiers and television circuits

**PINNING**

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



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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BD135	45	V
		BD137	60	
		BD139	100	
V <sub>CEO</sub>	Collector-emitter voltage	BD135	45	V
		BD137	60	
		BD139	100	
V <sub>EBO</sub>	Emitter -base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		1.5	A
I <sub>CM</sub>	Collector current-Peak		2	A
I <sub>BM</sub>	Base current-Peak		1	A
P <sub>t</sub>	Total power dissipation	T <sub>mb</sub> 70	8	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-65~150	
T <sub>amb</sub>	Operating ambient temperature		-65~150	

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-a</sub>	Thermal resistance from junction to ambient	100	K/W
R <sub>th j-mb</sub>	Thermal resistance from junction to mounting base	10	K/W

## Silicon NPN Power Transistors

## BD135 BD137 BD139

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =0.5A; I <sub>B</sub> =50mA			0.5	V
V <sub>BE</sub>	Base-emitter voltage	I <sub>C</sub> =500mA; V <sub>CE</sub> =2V			1.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =30V; I <sub>E</sub> =0			100	nA
		V <sub>CB</sub> =30V; I <sub>E</sub> =0 T <sub>j</sub> =125			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			100	nA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =5mA; V <sub>CE</sub> =2V	40			
h <sub>FE-2</sub>	DC current gain BD135-10;BD137-10;BD139-10 BD135-16;BD137-16;BD139-16	I <sub>C</sub> =150mA; V <sub>CE</sub> =2V	63 63 100		250 160 250	
h <sub>FE-3</sub>	DC current gain	I <sub>C</sub> =500mA; V <sub>CE</sub> =2V	25			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =50mA; V <sub>CE</sub> =5V; f=100MHz		190		MHz

Silicon NPN Power Transistors

BD135 BD137 BD139

PACKAGE OUTLINE

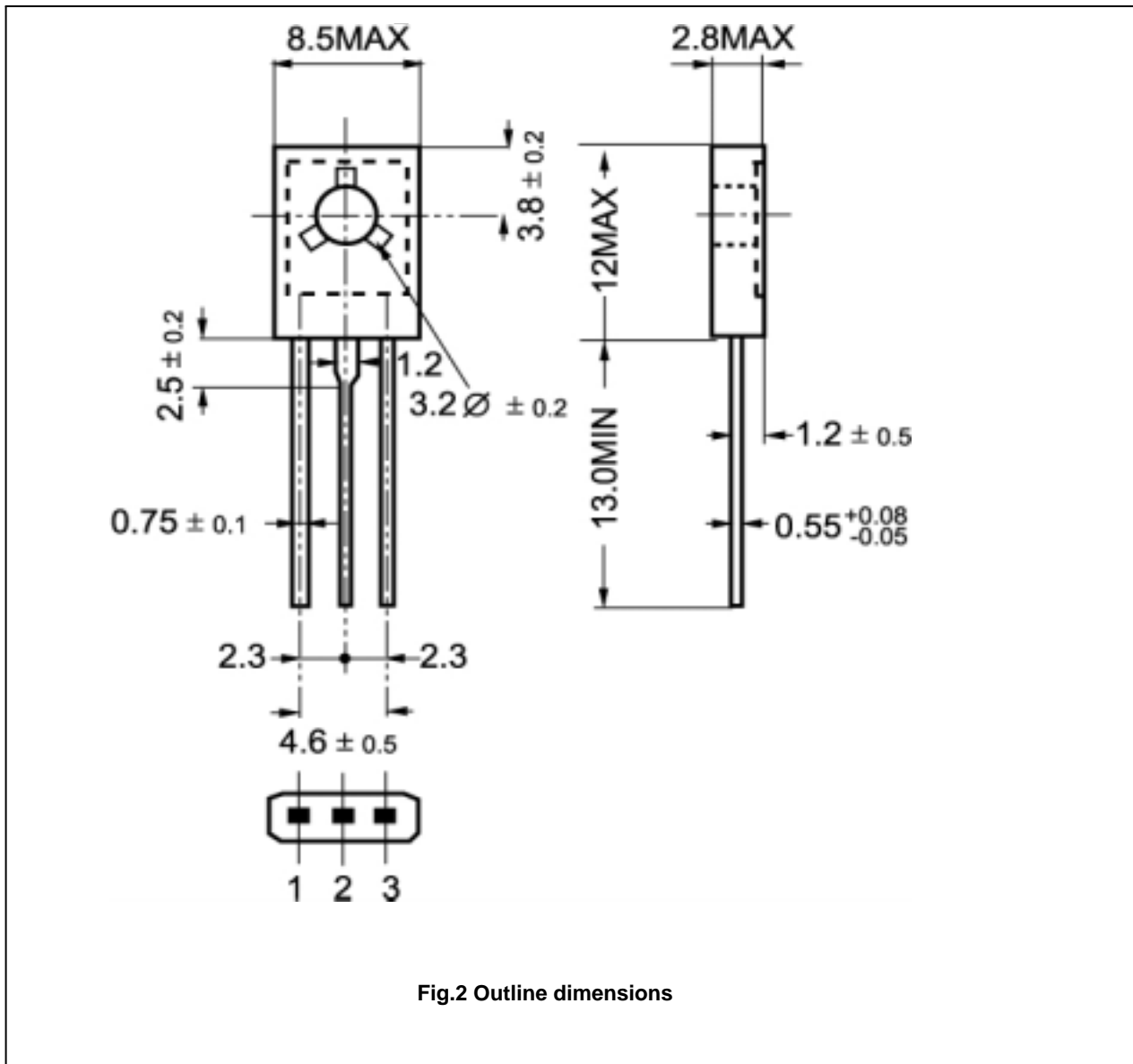


Fig.2 Outline dimensions