

**Silicon NPN Power Transistors**

**BDX87C**

**DESCRIPTION**

- With TO-3 package
- Complement to type BDX88C
- DARLINGTON

**APPLICATIONS**

- Designed for use in power linear and switching application.

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

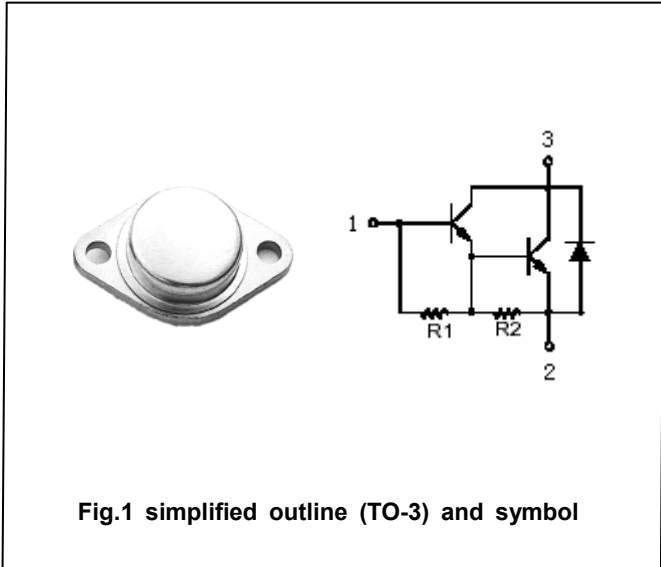


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	100	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	100	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		12	A
I <sub>CM</sub>	Collector current(peak)		18	A
I <sub>B</sub>	Base current		0.2	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	120	W
T <sub>j</sub>	Max. operating Junction temperature		200	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance from junction to case	1.45	°C/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	100			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =6A ; I <sub>B</sub> =24mA			2.0	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =12A ; I <sub>B</sub> =120mA			3.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =12A ; I <sub>B</sub> =120mA			4.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =6A ; V <sub>CE</sub> =3V			2.8	V
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =3V	1000			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =6A ; V <sub>CE</sub> =3V	750		18000	
h <sub>FE-3</sub>	DC current gain	I <sub>C</sub> =12A ; V <sub>CE</sub> =3V	100			
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =100V; I <sub>E</sub> =0 T <sub>C</sub> =150 °C			0.5 5.0	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =50V; I <sub>B</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1.0	mA
V <sub>F-1</sub>	Diode forward voltage	I <sub>F</sub> =3A			1.8	V
V <sub>F-2</sub>	Diode forward voltage	I <sub>F</sub> =8A		2.5		V

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PACKAGE OUTLINE

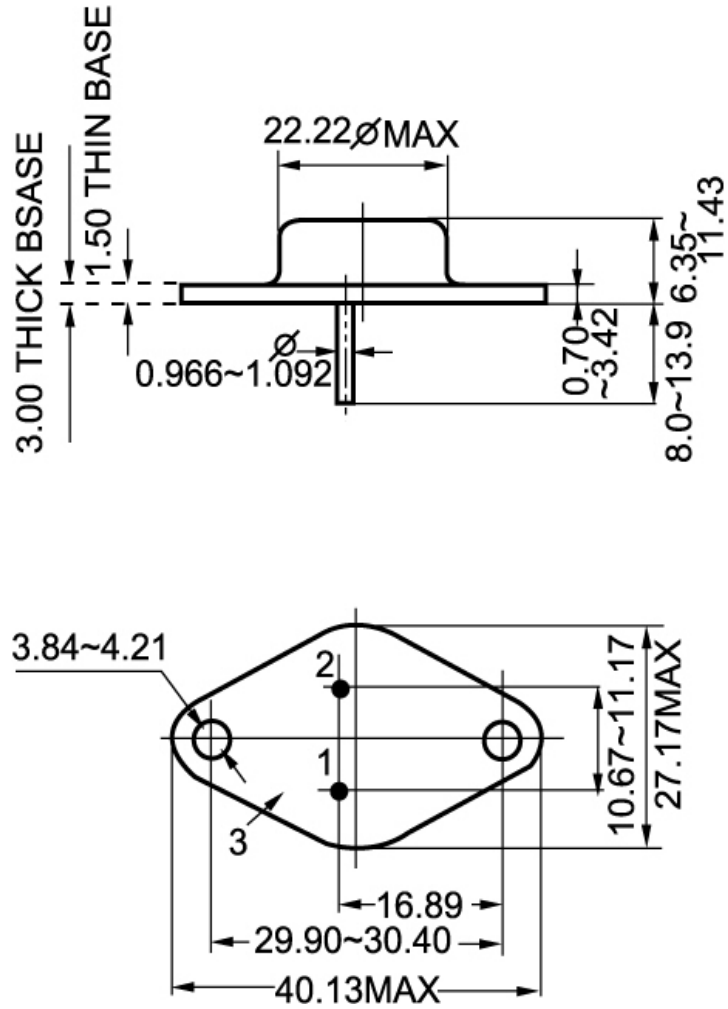


Fig.2 Outline dimensions