

## Silicon PNP Power Transistors

## BD746/A/B/C

## DESCRIPTION

- With TO-3PN package
- Complement to type BD745/A/B/C
- High current capability
- High power dissipation

## APPLICATIONS

- For use in power linear and switching applications

## PINNING

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

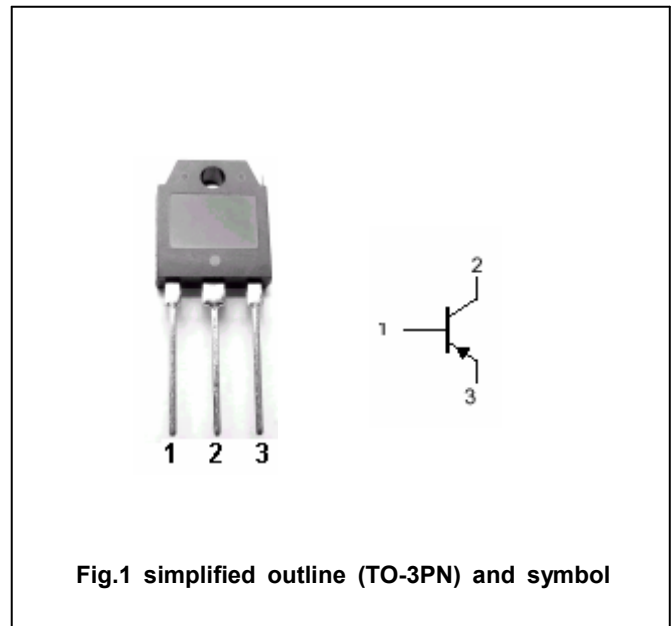


Fig.1 simplified outline (TO-3PN) and symbol

## Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</sub>	Collector-base voltage	BD746	-50	V
		BD746A	-70	
		BD746B	-90	
		BD746C	-110	
V <sub>CEO</sub>	Collector-emitter voltage	BD746	-45	V
		BD746A	-60	
		BD746B	-80	
		BD746C	-100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current		-20	A
I <sub>CM</sub>	Collector current-peak		-25	A
I <sub>B</sub>	Base current		-7	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	115	W
		T <sub>a</sub> =25°C	3.5	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	BD746	-45			V	
		BD746A	-60				
		BD746B	-80				
		BD746C	-100				
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-5 A; I <sub>B</sub> =-0.5 A			-1.0	V	
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-20 A; I <sub>B</sub> =-5 A			-3.0	V	
V <sub>BE-1</sub>	Base-emitter on voltage	I <sub>C</sub> =-5 A; V <sub>CE</sub> =-4V			-1.0	V	
V <sub>BE-2</sub>	Base-emitter on voltage	I <sub>C</sub> =-20 A; V <sub>CE</sub> =-4V			-3.0	V	
I <sub>CEO</sub>	Collector cut-off current	BD746/A	V <sub>CE</sub> =-30V; I <sub>B</sub> =0			-0.1	mA
		BD746B/C	V <sub>CE</sub> =-60V; I <sub>B</sub> =0				
I <sub>CBO</sub>	Collector cut-off current	BD746	V <sub>CE</sub> =-50V; V <sub>BE</sub> =0 T <sub>C</sub> =125 °C			-0.1 -5.0	mA
		BD746A	V <sub>CE</sub> =-70V; V <sub>BE</sub> =0 T <sub>C</sub> =125 °C			-0.1 -5.0	
		BD746B	V <sub>CE</sub> =-90V; V <sub>BE</sub> =0 T <sub>C</sub> =125 °C			-0.1 -5.0	
		BD746C	V <sub>CE</sub> =-110V; V <sub>BE</sub> =0 T <sub>C</sub> =125 °C			-0.1 -5.0	
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-0.5	mA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-4V	40				
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-5A; V <sub>CE</sub> =-4V	20		150		
h <sub>FE-3</sub>	DC current gain	I <sub>C</sub> =-20A; V <sub>CE</sub> =-4V	5				

## Switching times resistive load

t <sub>d</sub>	Delay time	I <sub>C</sub> =-5 A; I <sub>B1</sub> =-I <sub>B2</sub> =-0.5 A V <sub>BE(off)</sub> =4.2V; R <sub>L</sub> =6Ω t <sub>p</sub> =20μs		0.02		μs
t <sub>r</sub>	Rise time			0.12		μs
t <sub>s</sub>	Storage time			0.6		μs
t <sub>f</sub>	Fall time			0.3		μs

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.1	°C/W

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PACKAGE OUTLINE

