

**Silicon NPN Power Transistors**

**2N6306**

**DESCRIPTION**

- With TO-3 package
- High breakdown voltage
- High power dissipation

**APPLICATIONS**

- Designed for high voltage inverters, switching regulators, line operated amplifiers, and switching power supplies applications

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

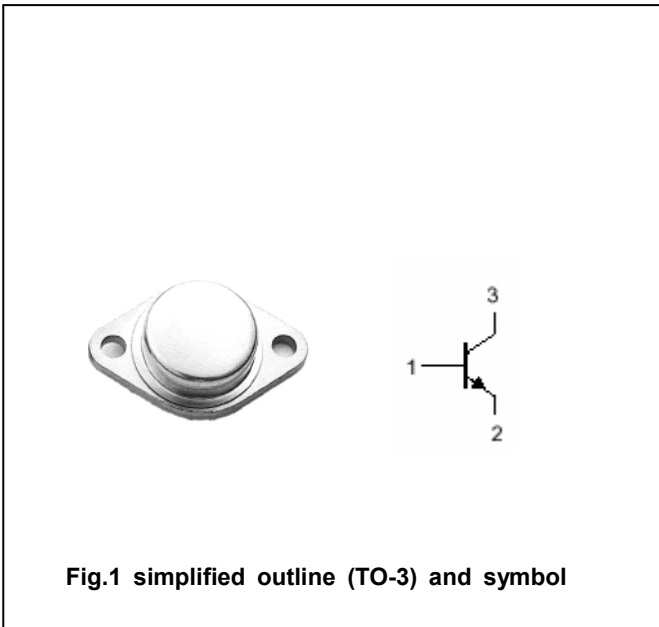


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	500	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	250	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	8	V
I <sub>C</sub>	Collector current		8	A
I <sub>B</sub>	Base current		4	A
P <sub>T</sub>	Total power dissipation	T <sub>c</sub> =25°C	125	W
T <sub>j</sub>	Junction temperature		200	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

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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	250			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A ; I <sub>B</sub> =0.6A			0.8	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A ; I <sub>B</sub> =2A			5.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =8A ; I <sub>B</sub> =2A			2.3	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =3A ; V <sub>CE</sub> =5V			1.3	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =500V ; V <sub>BE</sub> =-1.5V			0.5	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =250V ; I <sub>B</sub> =0			0.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =8V ; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =3A ; V <sub>CE</sub> =5V	15		75	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =8A ; V <sub>CE</sub> =5V	4			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=1MHz			250	pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.3A ; V <sub>CE</sub> =10V ; f=1MHz	5			MHz

## Switching times

t <sub>r</sub>	Rise time	V <sub>CC</sub> =125V ; I <sub>C</sub> =3.0A ; I <sub>B</sub> =0.6A			0.6	μs
t <sub>s</sub>	Storage time				1.6	μs
t <sub>f</sub>	Fall time				0.4	μs

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PACKAGE OUTLINE

