

**Silicon NPN Power Transistors**

**BUS13A**

**DESCRIPTION**

- With TO-3 package
- High voltage ,high speed

**APPLICATIONS**

- Converters
- Inverters
- Switching regulators
- Motor controls

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

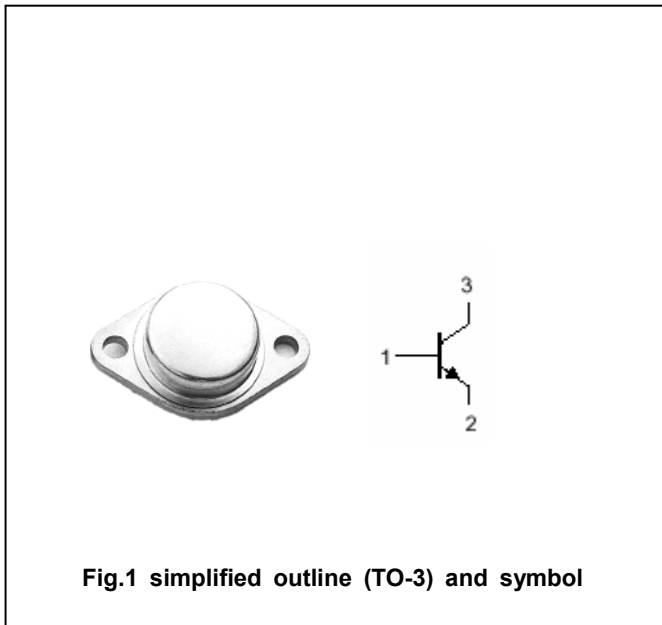


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=□)**

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	1000	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	450	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	9	V
I <sub>C</sub>	Collector current		15	A
I <sub>CM</sub>	Collector current-Peak		30	A
I <sub>B</sub>	Base current		6	A
I <sub>BM</sub>	Base current-Peak		9	A
P <sub>T</sub>	Total power dissipation	T <sub>mb</sub> =25□	175	W
T <sub>j</sub>	Junction temperature		200	□
T <sub>stg</sub>	Storage temperature		-65~200	□

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-mb</sub>	Thermal resistance from junction to mounting base	1.0	□/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0; L=25mH	450			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =1.6A			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =1.6A			1.6	V
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =RatedBV <sub>CEO</sub> ; V <sub>BE</sub> =0 T <sub>C</sub> =125 °C			1 4	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =9V; I <sub>C</sub> =0			10	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	15		50	

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =8A; I <sub>B1</sub> =- I <sub>B2</sub> =1.6A			1.0	μs
t <sub>s</sub>	Storage time				4.0	μs
t <sub>f</sub>	Fall time				0.8	μs

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PACKAGE OUTLINE

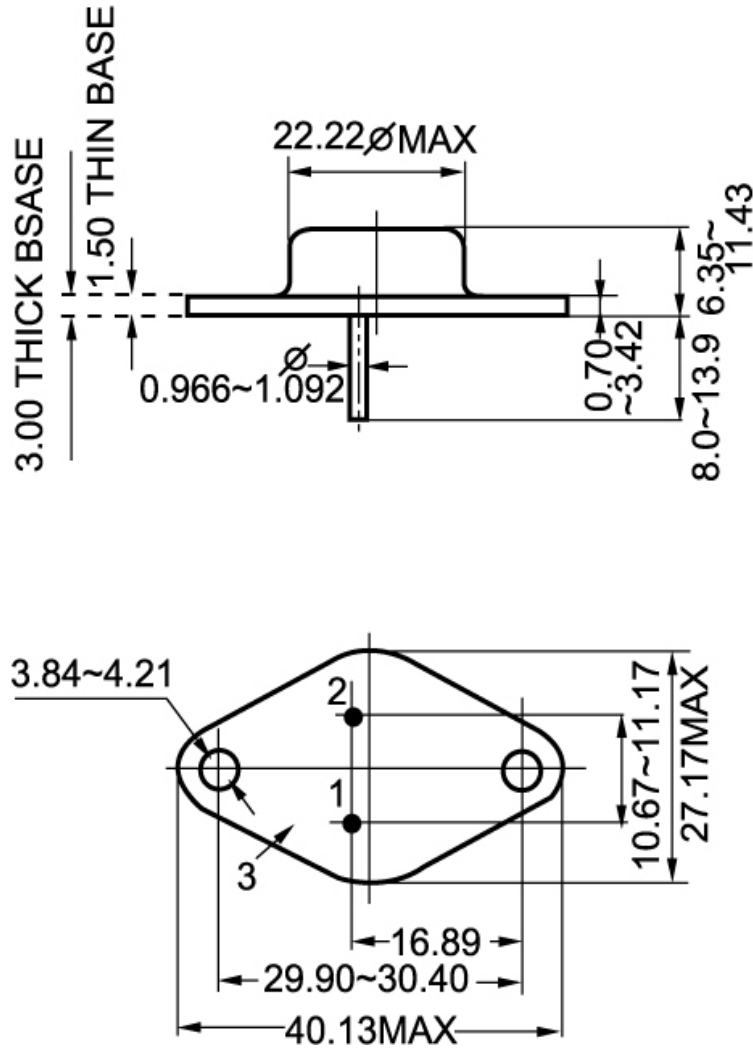


Fig.2 Outline dimensions