

**Silicon NPN Power Transistors**

**BUX81**

**DESCRIPTION**

- With TO-3 package
- High voltage ;fast switching speed
- Low saturation voltage

**APPLICATIONS**

- Switching-mode power supplies ,CRT scanning,inverters,and other industrial applications

**PINNING(see fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

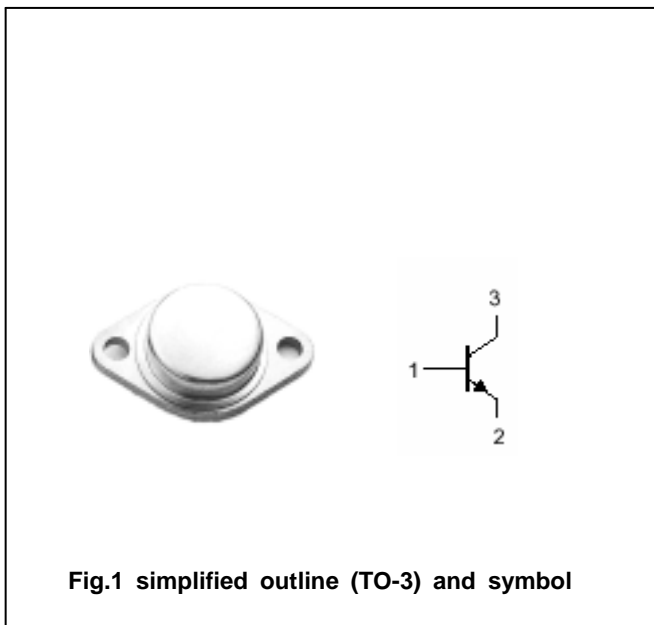


Fig.1 simplified outline (TO-3) and symbol

**ABSOLUTE MAXIMUM RATINGS(Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</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	10	V
I <sub>C</sub>	Collector current		10	A
I <sub>CM</sub>	Collector current-peak		15	A
I <sub>B</sub>	Base current		4	A
I <sub>BM</sub>	Base current-peak		6	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25	150	W
T <sub>j</sub>	Junction temperature		200	
T <sub>stg</sub>	Storage temperature		-65~200	

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.17	/W

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## CHARACTERISTICS

T<sub>j</sub>=25 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; L=25mH	450			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5 A; I <sub>B</sub> =1 A			1.5	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8 A; I <sub>B</sub> =2.5 A			3.0	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =5 A; I <sub>B</sub> =1 A			1.4	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =8 A; I <sub>B</sub> =2.5 A			1.8	V
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =1000V; V <sub>BE</sub> =0 T <sub>C</sub> =125			1.0 3.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =10V; I <sub>C</sub> =0			10	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1.2A ; V <sub>CE</sub> =5V	20			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V		8		MHz
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =20V; f=0.1MHz		105		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =5A ; I <sub>B1</sub> =1A; I <sub>B2</sub> =-2A V <sub>CC</sub> =250V			0.5	μs
t <sub>s</sub>	Storage time				3.5	μs
t <sub>f</sub>	Fall time				0.8	μs

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PACKAGE OUTLINE

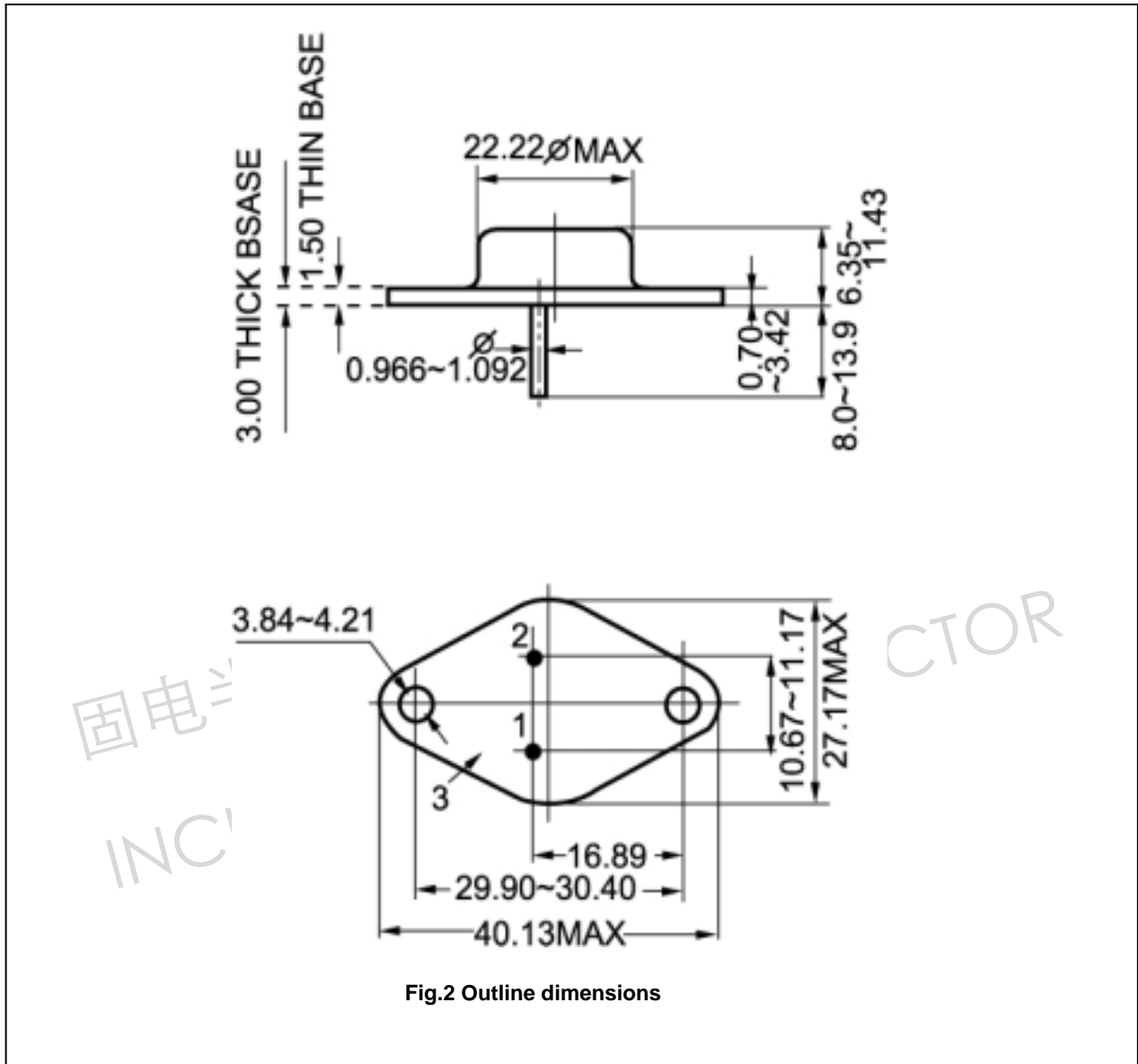


Fig.2 Outline dimensions