

**Silicon NPN Power Transistors**

**BUX40**

**DESCRIPTION**

- With TO-3 package
- High current capability
- Fast switching speed

**APPLICATIONS**

- For use in switching and linear applications

**PINNING(see fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

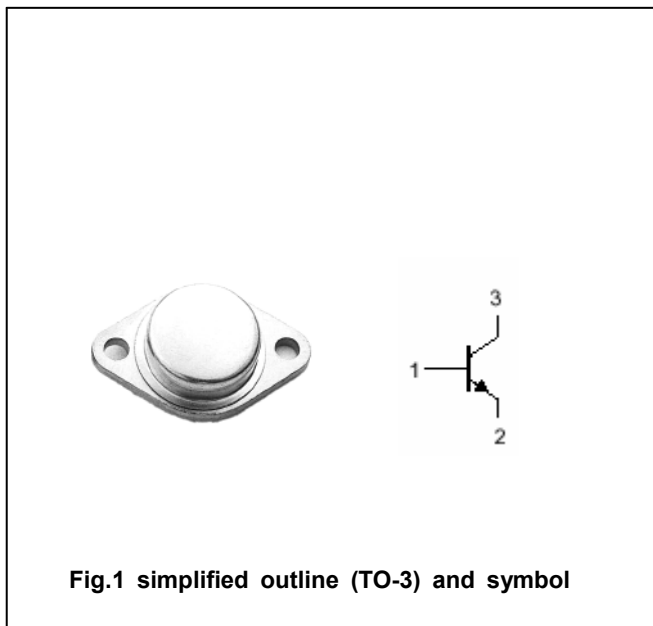


Fig.1 simplified outline (TO-3) and symbol

**ABSOLUTE MAXIMUM RATINGS(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	160	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	125	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		20	A
I <sub>CM</sub>	Collector current-peak	t <sub>p</sub> =10ms	28	A
I <sub>B</sub>	Base current		4	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	120	W
T <sub>j</sub>	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 junction to case	1.46	°C/W

## Silicon NPN Power Transistors

## BUX40

## 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> =0.2mA; I <sub>B</sub> =0	125			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50mA; I <sub>C</sub> =0	7			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10 A; I <sub>B</sub> =1 A			1.2	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =15 A; I <sub>B</sub> =1.88 A			1.6	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =15 A; I <sub>B</sub> =1.88 A			2.0	V
I <sub>CEX</sub>	Collector cut-off current	V <sub>CE</sub> =160V; V <sub>BE</sub> =-1.5V T <sub>C</sub> =125°C			1.0 5.0	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =100V; 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
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V	15		45	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =15A ; V <sub>CE</sub> =4V	8			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =15V; f=10MHz	8.0			MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =15A ; I <sub>B1</sub> =1.88A V <sub>CC</sub> =30V			1.2	μs
t <sub>s</sub>	Storage time	I <sub>C</sub> =15A ; I <sub>B1</sub> =-I <sub>B2</sub> =1.88A V <sub>CC</sub> =30V			1.0	μs
t <sub>f</sub>	Fall time				0.4	μs

PACKAGE OUTLINE

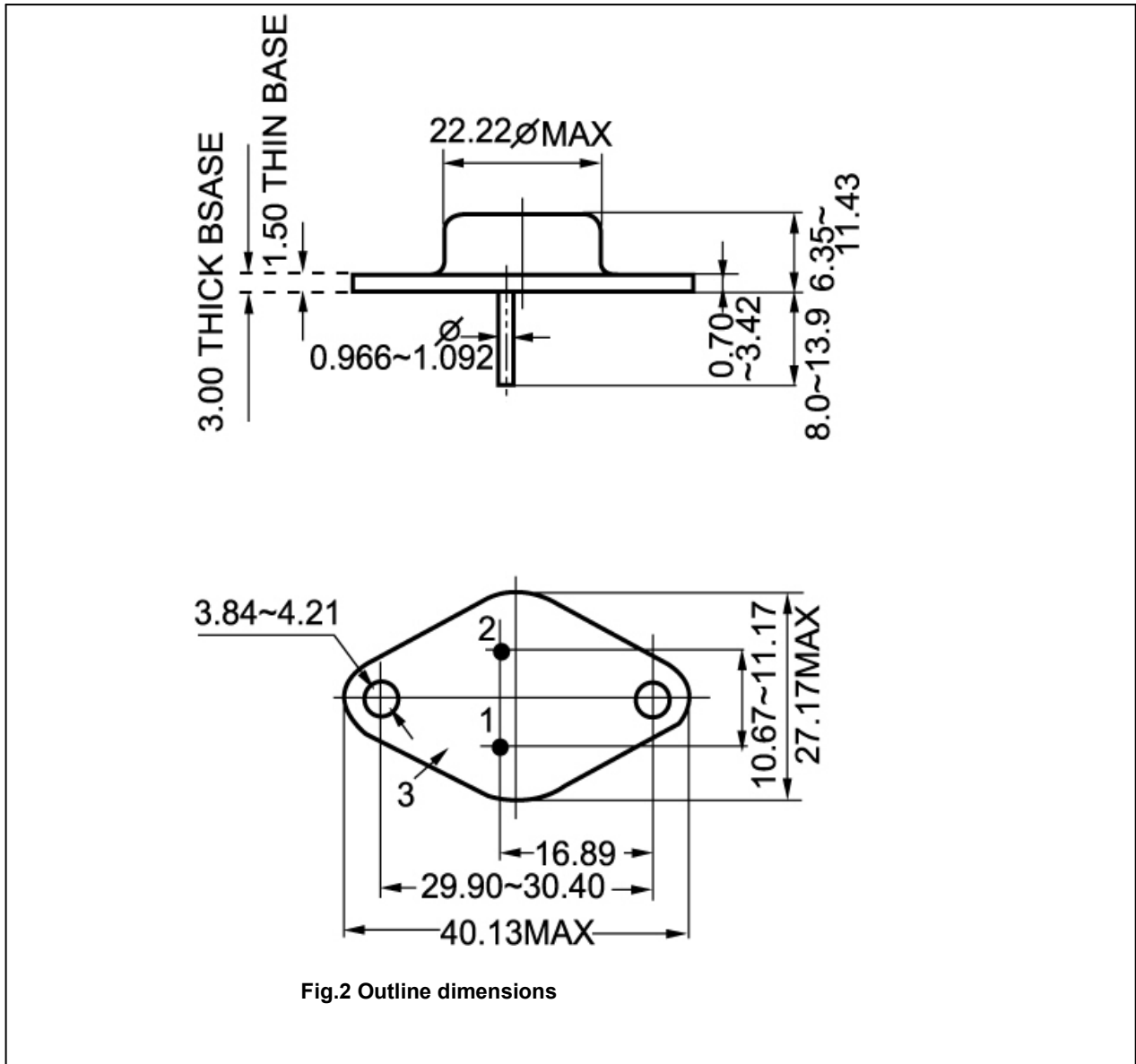


Fig.2 Outline dimensions