

## 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

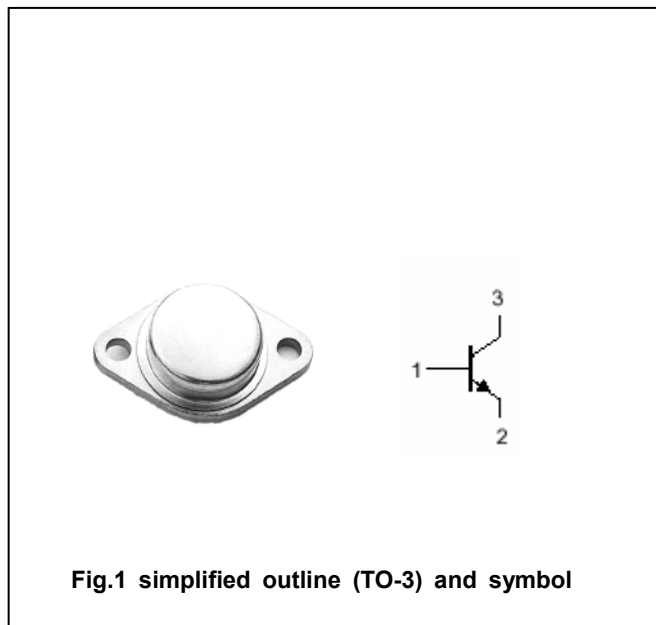


Fig.1 simplified outline (TO-3) and symbol

ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1000	V
$V_{CEO}$	Collector-emitter voltage	Open base	450	V
$V_{EBO}$	Emitter-base voltage	Open collector	10	V
$I_C$	Collector current		10	A
$I_{CM}$	Collector current-peak		15	A
$I_B$	Base current		4	A
$I_{BM}$	Base current-peak		6	A
$P_T$	Total power dissipation	$T_C=25^\circ\text{C}$	150	W
$T_j$	Junction temperature		200	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	1.17	$^\circ\text{C}/\text{W}$

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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; 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 °C			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

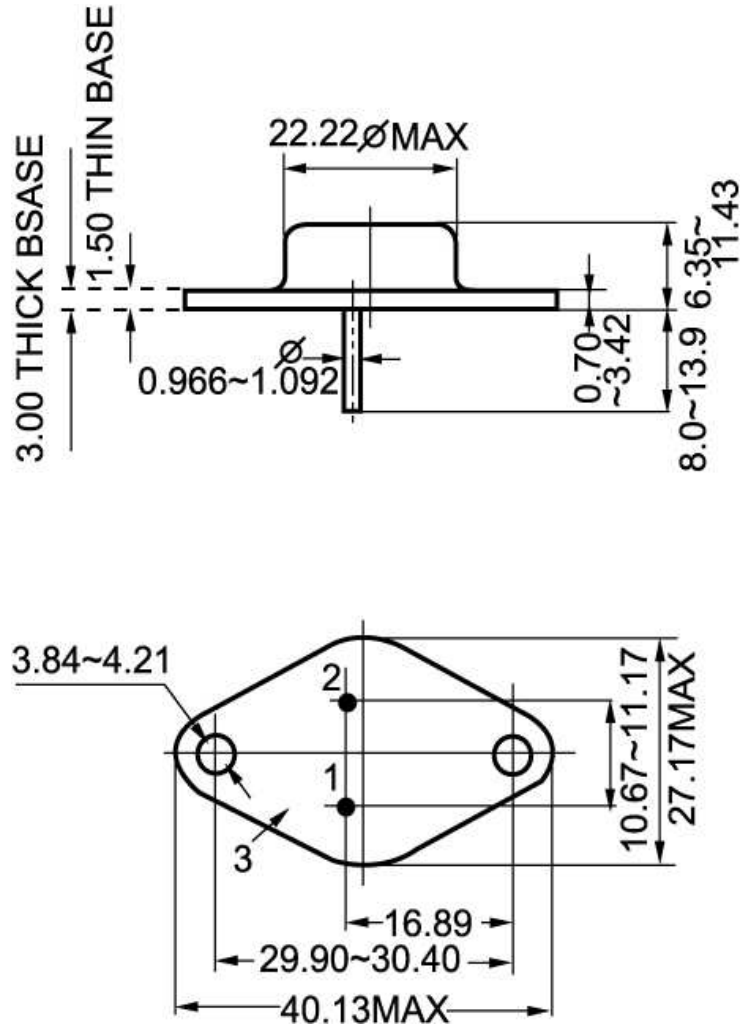


Fig.2 Outline dimensions