

## Silicon NPN Power Transistors

BUV42

## DESCRIPTION

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- With TO-3 package
- Fast switching times
- Low collector saturation voltage

## APPLICATIONS

- For switching applications

## PINNING (See Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

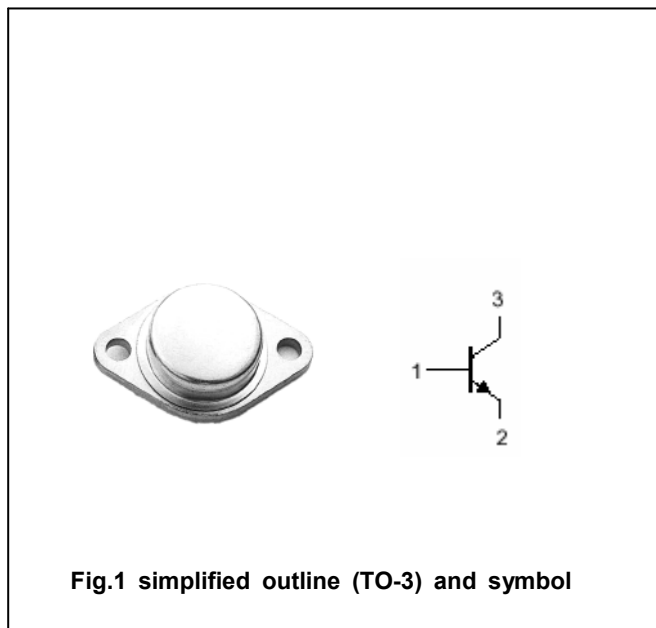


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings ( $T_c=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	350	V
$V_{CEO}$	Collector-emitter voltage	Open base	250	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		12	A
$I_{CM}$	Collector current-peak		18	A
$I_B$	Base current		2.5	A
$I_{BM}$	Base current-peak		4	A
$P_T$	Total power dissipation	$T_c \leq 25^\circ\text{C}$	120	W
$T_j$	Junction temperature		200	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-65~200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-c}$	Thermal resistance from junction to case	1.46	$^\circ\text{C}/\text{W}$

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## CHARACTERISTICS

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

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; L=25mH	250			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> =2A; I <sub>B</sub> =0.13A T <sub>j</sub> =100°C			0.8 0.9	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =4A; I <sub>B</sub> =0.4A T <sub>j</sub> =100°C			0.9 1.2	V
V <sub>CEsat-3</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =6A; I <sub>B</sub> =0.75A T <sub>j</sub> =100°C			1.2 1.5	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =4A; I <sub>B</sub> =0.4A T <sub>j</sub> =100°C			1.3	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =6A; I <sub>B</sub> =0.75A T <sub>j</sub> =100°C			1.5	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =V <sub>CEV</sub> ; V <sub>BE</sub> =-1.5V T <sub>C</sub> =100°C			0.5 2.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1	mA

## Switching times resistive load

t <sub>r</sub>	Rise time	I <sub>C</sub> =6A ; I <sub>B1</sub> =0.75A R <sub>B2</sub> =3.3Ω; V <sub>CC</sub> =200V V <sub>BB</sub> =-5V; T <sub>p</sub> =30μs		0.3	0.4	μs
t <sub>s</sub>	Storage time			1.0	1.6	μs
t <sub>f</sub>	Fall time			0.15	0.3	μs

PACKAGE OUTLINE

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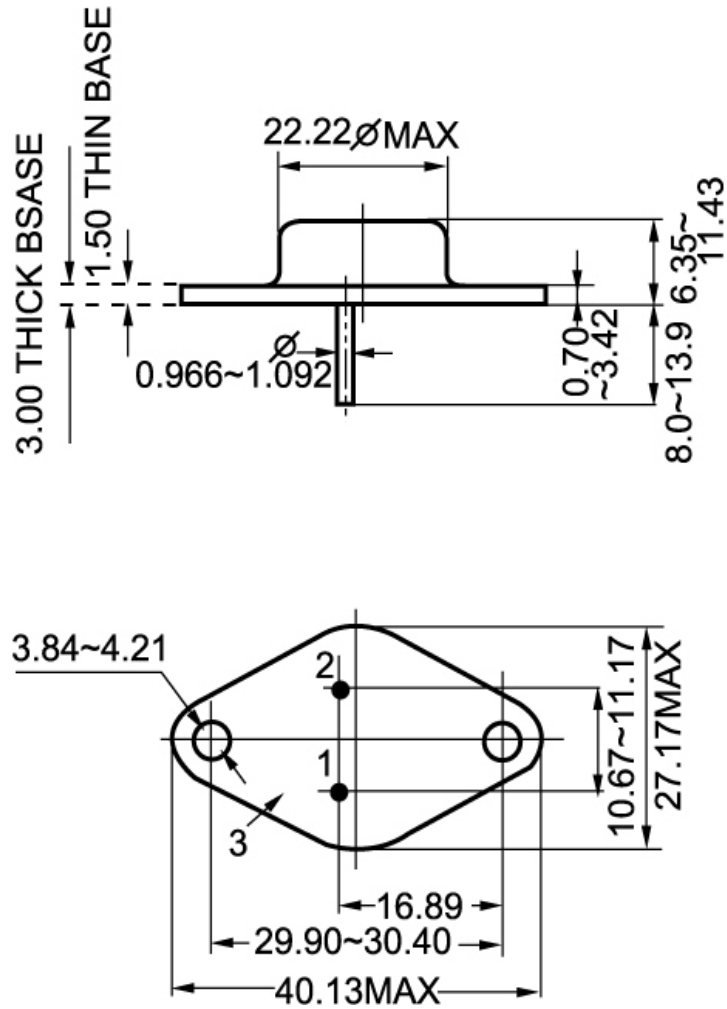


Fig.2 Outline dimensions