

## Silicon NPN Power Transistors

2N5972

## DESCRIPTION

- With TO-3 package
- Low-collector emitter saturation voltage

## APPLICATIONS

- Designed for general-purpose power amplifier and switching applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

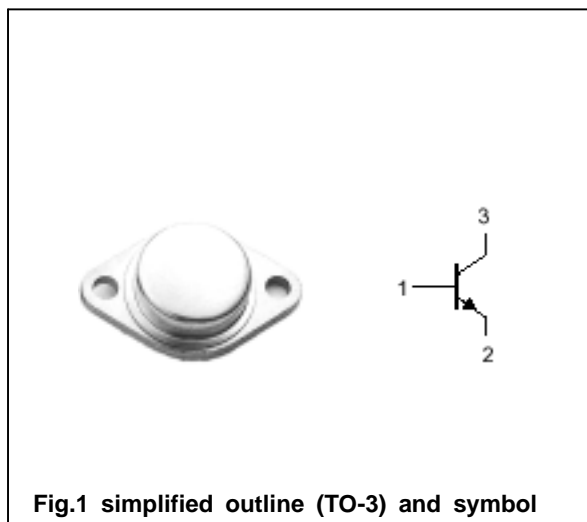


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a =$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	100	V
$V_{CEO}$	Collector-emitter voltage	Open base	80	V
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		15	A
$I_{CM}$	Collector current-peak		30	A
$I_B$	Base current		5	A
$P_D$	Total Power Dissipation	$T_C=25$	150	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-65~200	

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th-j-c}$	Thermal resistance junction to case	1.1	/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 ; I <sub>B</sub> =0	80			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =0.7A			1.0	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =15A ; I <sub>B</sub> =3.75A			4.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =15A ; I <sub>B</sub> =3.75A			2.5	V
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =40V ; I <sub>B</sub> =0			1.0	mA
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =100V ; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150			0.5 5.0	mA
I <sub>CBO</sub>	Emitter cut-off current	V <sub>CB</sub> =100V ; I <sub>E</sub> =0			0.5	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> =5A ; V <sub>CE</sub> =1.5V	25		75	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =15A ; V <sub>CE</sub> =4V	4			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =10V	4			MHz

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PACKAGE OUTLINE

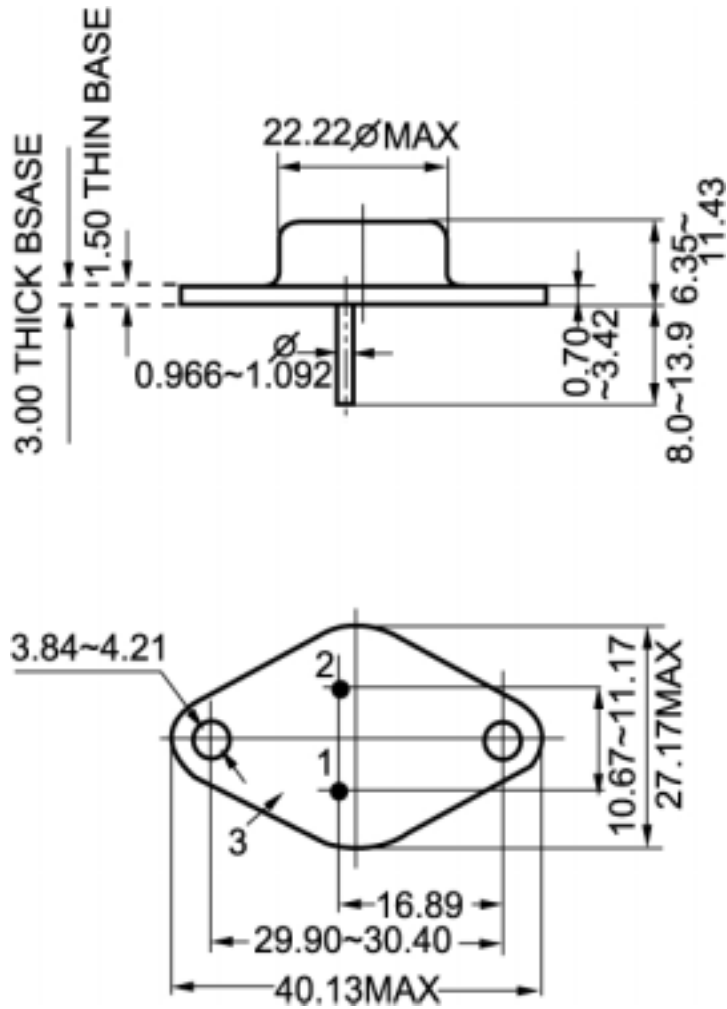


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.10$ mm)