

## Silicon NPN Power Transistors

2N6569

## DESCRIPTION

- With TO-3 package
- Complement to type 2N6594
- Wide area of safe operation

## APPLICATIONS

- Designed for low voltage amplifier power switching applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

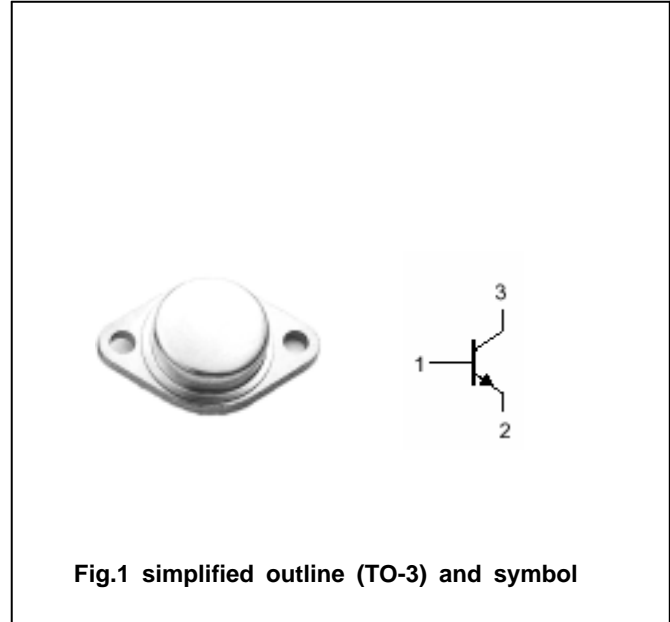


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a =$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	45	V
$V_{CEO}$	Collector-emitter voltage	Open base	40	V
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		12	A
$I_{CM}$	Collector current-peak		24	A
$I_B$	Base current		5	A
$I_E$	Emitter current		17	A
$I_{EM}$	Emitter current-peak		34	A
$P_C$	Collector power dissipation	$T_C=25$	100	W
$T_j$	Junction temperature		200	
$T_{stg}$	Storage temperature		-65~200	

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	40			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =4A; I <sub>B</sub> =0.4A			1.5	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =12A; I <sub>B</sub> =2.4A			4.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =4A; I <sub>B</sub> =0.4A			2.0	V
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =40V; I <sub>B</sub> =0			1.0	mA
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =45V; I <sub>E</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			5.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =4A ; V <sub>CE</sub> =3V	15		200	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =12A ; V <sub>CE</sub> =4V	5		100	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1.0A ; V <sub>CE</sub> =4V; f=0.5MHz	1.5		20	MHz

## Switching times

t <sub>d</sub>	Delay time	I <sub>C</sub> =2A; I <sub>B1</sub> =-I <sub>B2</sub> =0.2A V <sub>CC</sub> =30V; t <sub>p</sub> =25 μs; Duty Cycle 2.0%			0.4	μs
t <sub>r</sub>	Rise time				1.5	μs
t <sub>stg</sub>	Storage time				5.0	μs
t <sub>f</sub>	Fall time				1.5	μs

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.75	/W

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PACKAGE OUTLINE

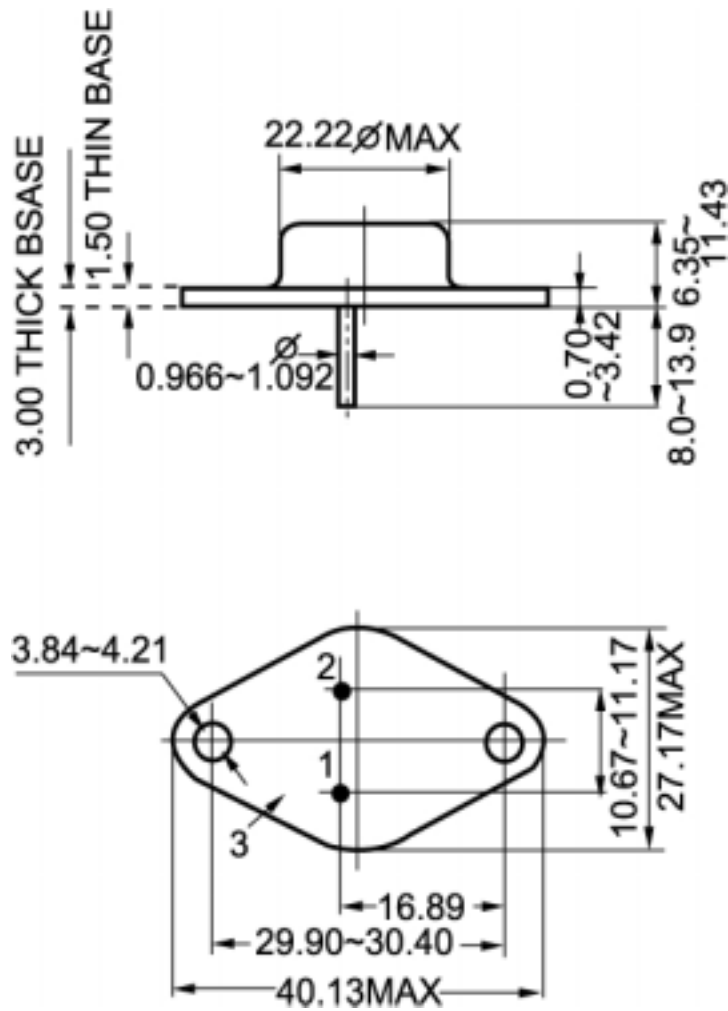


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1\text{mm}$ )