

**Silicon NPN Power Transistors**

**2N5970**

**DESCRIPTION**

- With TO-3 package
- Low collector saturation voltage
- High power dissipations

**APPLICATIONS**

- Designed for general-purpose power amplifier and switching applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

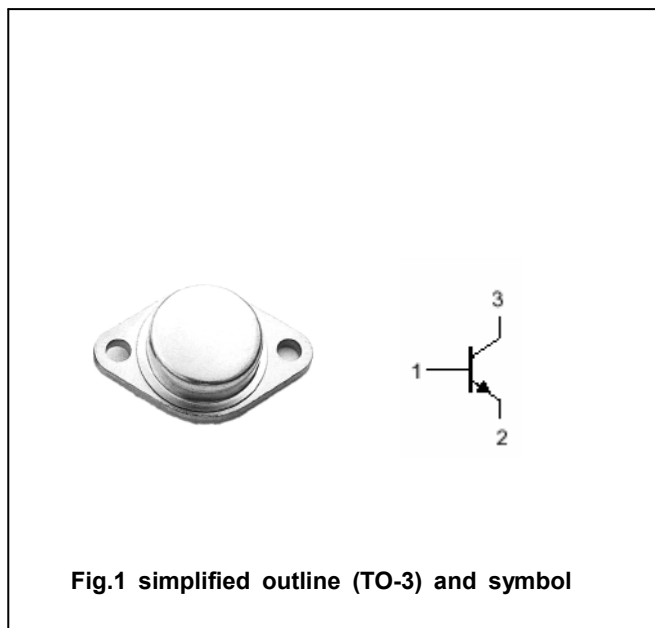


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	80	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	60	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		15	A
I <sub>CM</sub>	Collector current-peak		30	A
I <sub>B</sub>	Base current		5	A
P <sub>D</sub>	Total Power Dissipation	T <sub>C</sub> =25□	150	W
T <sub>j</sub>	Junction temperature		150	□
T <sub>stg</sub>	Storage temperature		-65~200	□

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.1	□/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 ; I <sub>B</sub> =0	60			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> =30V; I <sub>B</sub> =0			1.0	mA
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =80V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150°C			0.5 5.0	mA
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =80V; 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	20		60	
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

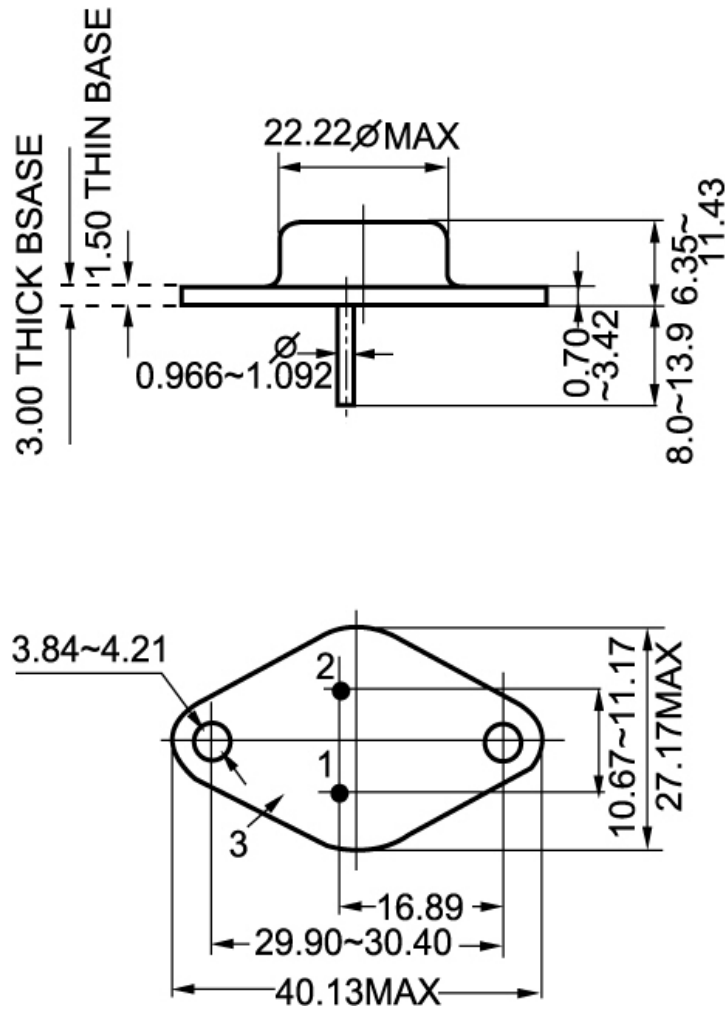


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.10\text{mm}$ )