

**Silicon NPN Power Transistors**

**2N5804 2N5805**

**DESCRIPTION**

- With TO-3 package
- High breakdown voltage

**APPLICATIONS**

- Switching regulator
- Inverters
- Solenoid and relay drivers
- Motor controls

**PINNING**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

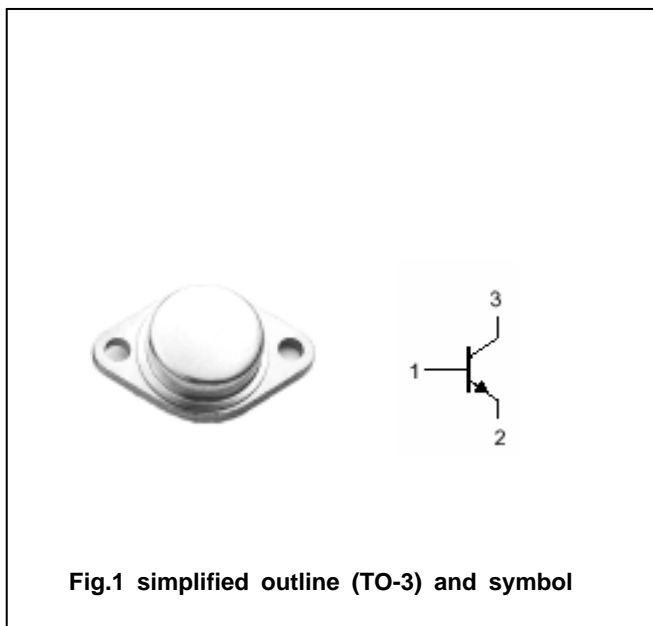


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta= )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N5804	300	V
		2N5805	375	
V <sub>CEO</sub>	Collector-emitter voltage	2N5804	225	V
		2N5805	300	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		5	A
P <sub>D</sub>	Total Power Dissipation	T <sub>C</sub> =25	110	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	1.25	/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	2N5804	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	225			V
		2N5805		300			
V <sub>CEsat</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =5A ; I <sub>B</sub> =1A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =5A ; I <sub>B</sub> =1A			1.5	V
I <sub>CEO</sub>	Collector cut-off current		V <sub>CE</sub> =RatedV <sub>CE</sub> ; I <sub>B</sub> =0			10	mA
I <sub>CEV</sub>	Collector cut-off current	2N5804	V <sub>CE</sub> =RatedV <sub>CE</sub> ; V <sub>BE(off)</sub> =1.5V			12	mA
		2N5805		10			
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =7V; I <sub>C</sub> =0			1.0	mA
h <sub>FE</sub>	DC current gain		I <sub>C</sub> =5A ; V <sub>CE</sub> =4V	20		100	
f <sub>T</sub>	Transistion frequency		I <sub>C</sub> =1A ; V <sub>CE</sub> =10V	15			MHz

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PACKAGE OUTLINE

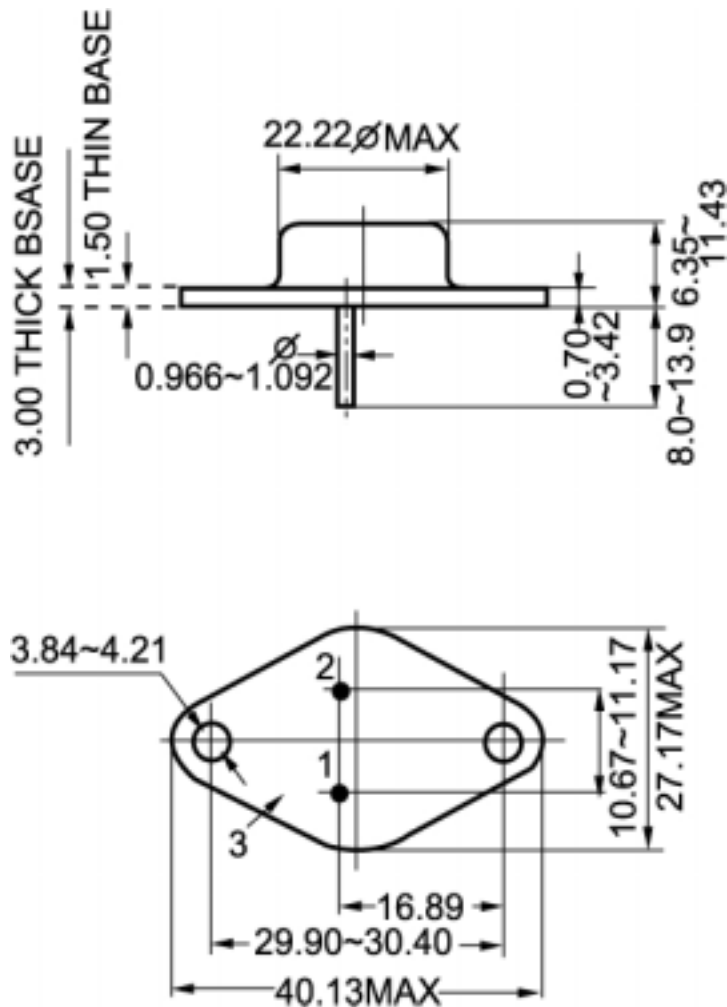


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.10\text{mm}$ )