

**Silicon PNP Power Transistors**

**2N4398 2N4399 2N5745**

**DESCRIPTION**

- With TO-3 package
- Complement to type 2N5301/5302/5303
- Low collector saturation voltage
- Excellent safe operating area

**APPLICATIONS**

- For use in power amplifier and switching circuits applications.

**PINNING**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

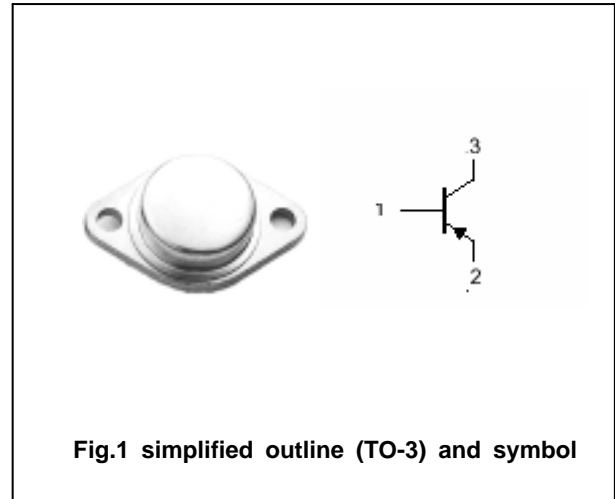


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta= )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N4398	-40	V
		2N4399	-60	
		2N5745	-80	
V <sub>CEO</sub>	Collector-emitter voltage	2N4398	-40	V
		2N4399	-60	
		2N5745	-80	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current	2N4398/4399	-30	A
		2N5745	-20	
I <sub>B</sub>	Base current		-7.5	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25	200	W
T <sub>j</sub>	Junction temperature		200	
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	0.875	/W

## Silicon PNP Power Transistors

## 2N4398 2N4399 2N5745

## 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	2N4398	I <sub>C</sub> =-0.2A ; I <sub>B</sub> =0	-40			V
		2N4399		-60			
		2N5745		-80			
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-10A; I <sub>B</sub> =-1A			-0.75	V
		2N5745		-1.0			
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-15A ; I <sub>B</sub> =-1.5A			-1.0	V
		2N5745		-1.5			
V <sub>CEsat-3</sub>	Collector-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-20A ; I <sub>B</sub> =-2A			-2.0	V
		2N5745	I <sub>C</sub> =-20A ; I <sub>B</sub> =-4A				
V <sub>CEsat-4</sub>	Collector-emitter saturation voltage <b>Only for 2N4398 2N4399</b>		I <sub>C</sub> =-30A ; I <sub>B</sub> =-6A			-4.0	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-10A; I <sub>B</sub> =-1A			-1.6	V
		2N5745		-1.7			
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-15A ; I <sub>B</sub> =-1.5A			-1.85	V
		2N5745		-2.0			
V <sub>BEsat-3</sub>	Base-emitter saturation voltage	2N4398/4399	I <sub>C</sub> =-20A ; I <sub>B</sub> =-2A			-2.5	V
		2N5745	I <sub>C</sub> =-20A ; I <sub>B</sub> =-4A				
V <sub>BE-1</sub>	Base-emitter on voltage	2N4398/4399	I <sub>C</sub> =-15A ; V <sub>CE</sub> =-2V			-1.7	V
		2N5745	I <sub>C</sub> =-10A ; V <sub>CE</sub> =-2V			-1.5	
V <sub>BE-2</sub>	Base-emitter on voltage	2N4398/4399	I <sub>C</sub> =-30A ; V <sub>CE</sub> =-4V			-3.0	V
		2N5745	I <sub>C</sub> =-20A ; V <sub>CE</sub> =-4V			-2.5	
I <sub>CEx</sub>	Collector cut-off current		V <sub>CE</sub> = Rated V <sub>CEO</sub> ; V <sub>BE(off)</sub> =-1.5V T <sub>C</sub> =150			-5 -10	mA
I <sub>CEO</sub>	Collector cut-off current		V <sub>CE</sub> =Rated V <sub>CEO</sub> ; I <sub>B</sub> =0			-5.0	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> =-1A ; V <sub>CE</sub> =-2V	40			
h <sub>FE-2</sub>	DC current gain	2N5745	I <sub>C</sub> =-10A ; V <sub>CE</sub> =-2V	15		60	
		2N4398/4399	I <sub>C</sub> =-15A ; V <sub>CE</sub> =-2V				
h <sub>FE-3</sub>	DC current gain	2N5745	I <sub>C</sub> =-20A ; V <sub>CE</sub> =-2V	5			
		2N4398/4399	I <sub>C</sub> =-30A ; V <sub>CE</sub> =-4V				
f <sub>T</sub>	Transition frequency	2N4398/4399	I <sub>C</sub> =-1A ; V <sub>CE</sub> =-10V; f=1.0MHz	4			MHz
		2N5745		2			

Silicon PNP Power Transistors

2N4398 2N4399 2N5745

PACKAGE OUTLINE

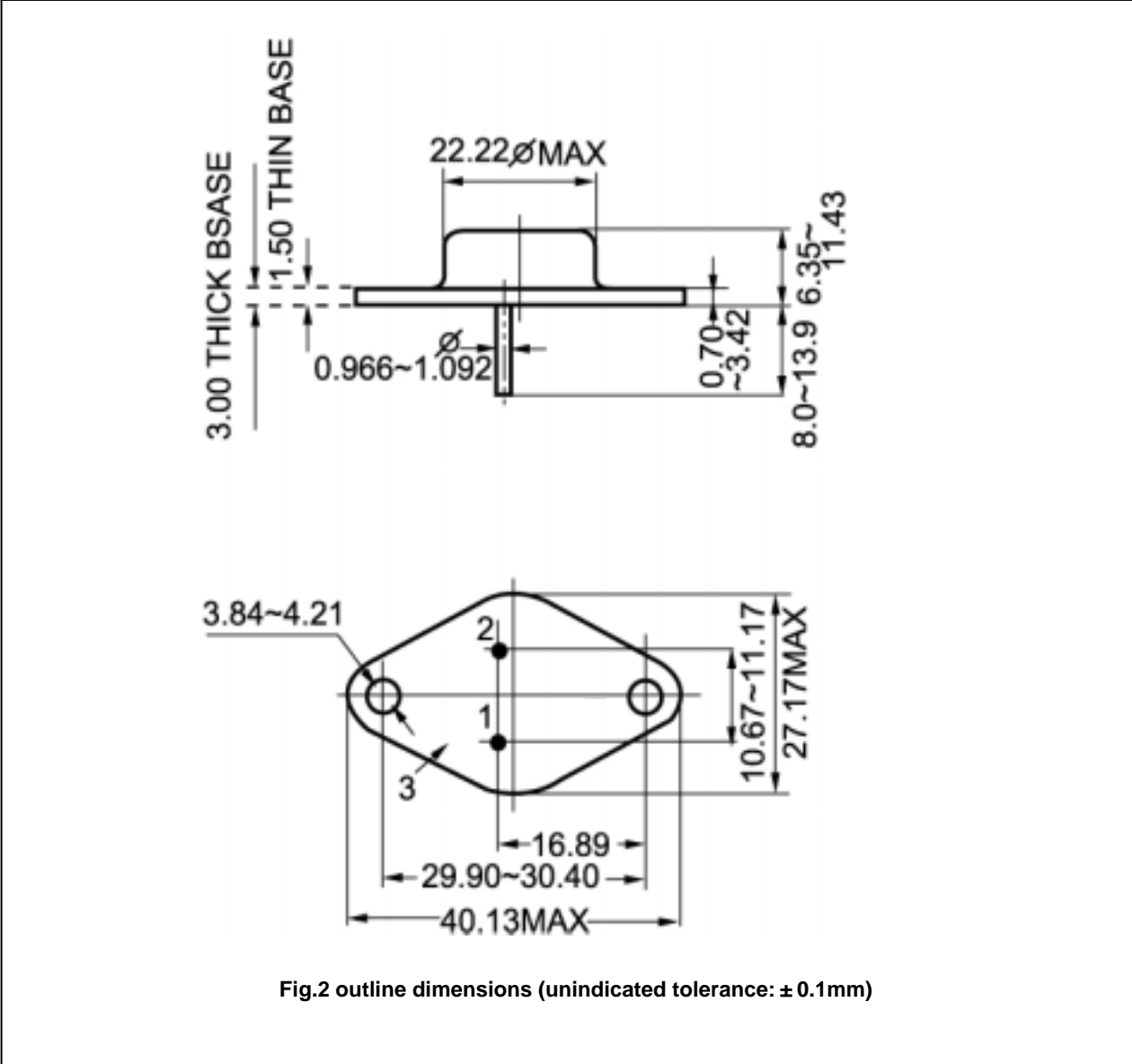


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1$ mm)