

Silicon NPN Power Transistors

2N3054 2N3054A

**DESCRIPTION**

- With TO-66 package

**APPLICATIONS**

- Designed for general purpose switching and amplifier applications

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

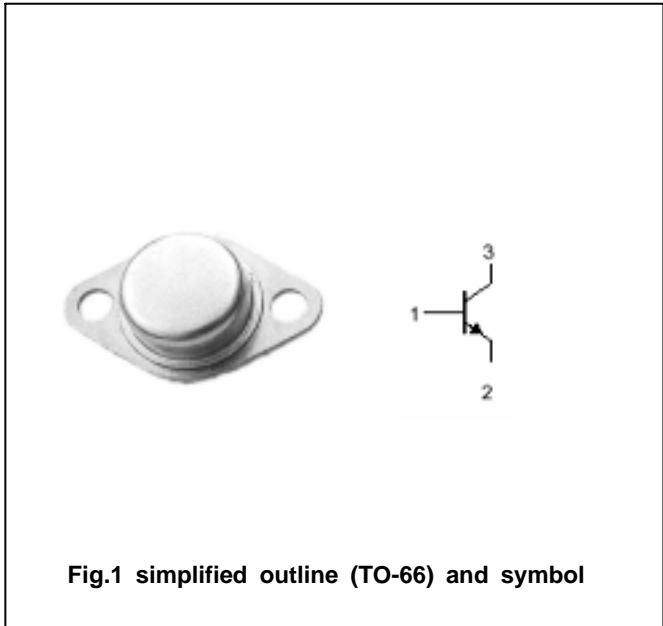


Fig.1 simplified outline (TO-66) and symbol

**Absolute maximum ratings(Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	90	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	55	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		4	A
I <sub>B</sub>	Base current		2	A
P <sub>D</sub>	Power dissipation	2N3054	25	W
		2N3054A	75	
T <sub>j</sub>	Junction temperature		200	
T <sub>stg</sub>	Storage temperature		-65~200	

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	2N3054	7.0
		2N3054A	2.33

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	55			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =0.5A ; I <sub>B</sub> =50mA			1.0	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A; I <sub>B</sub> =1A			6.0	V
V <sub>BE</sub>	Base -emitter on voltage	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =4V			1.7	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =90V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150			1.0 6.0	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =30V; I <sub>B</sub> =0			0.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =10V	40			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =2V	8		80	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.2A ; V <sub>CE</sub> =10V; f=1MHz	3.0			

PACKAGE OUTLINE

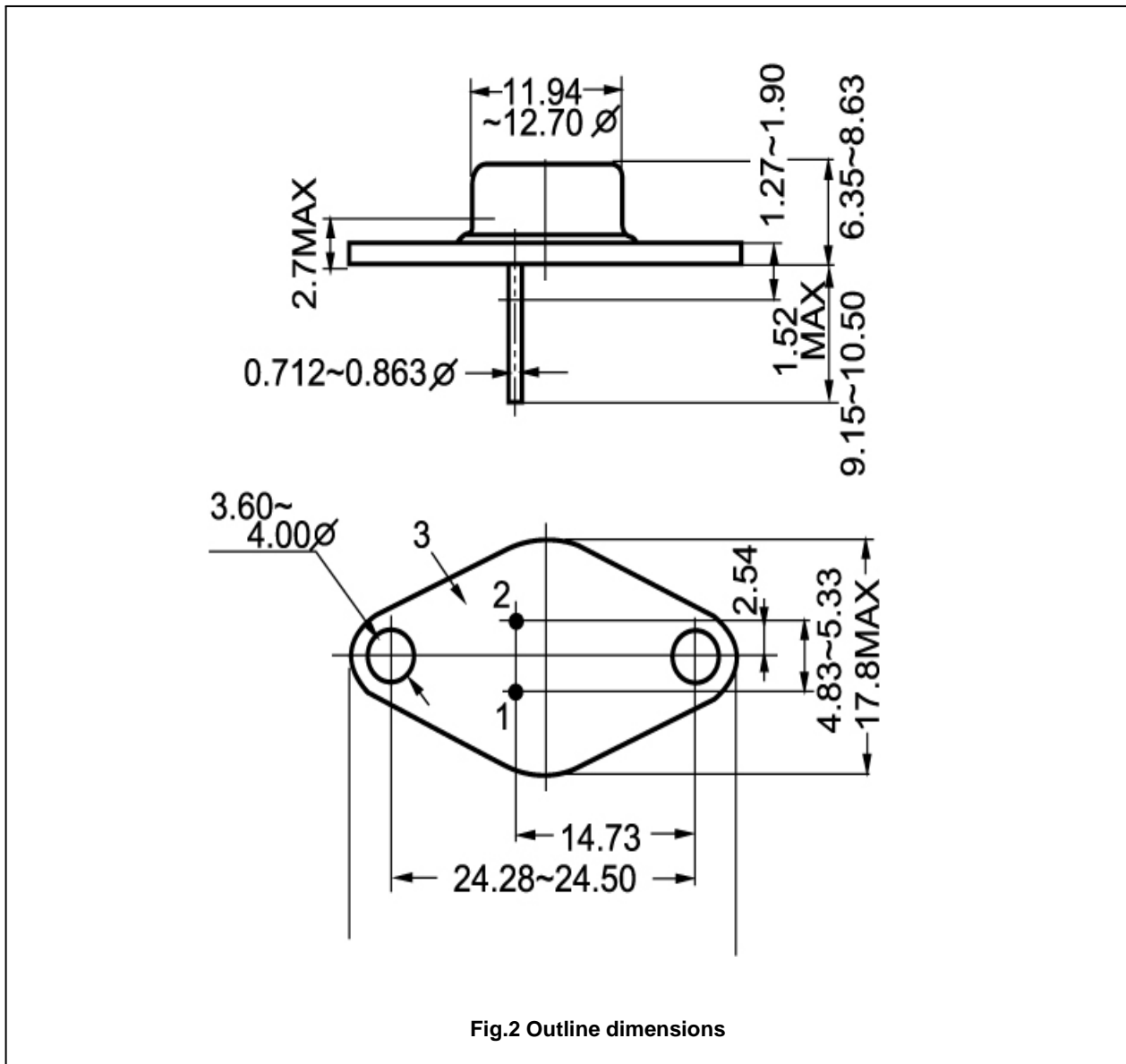


Fig.2 Outline dimensions

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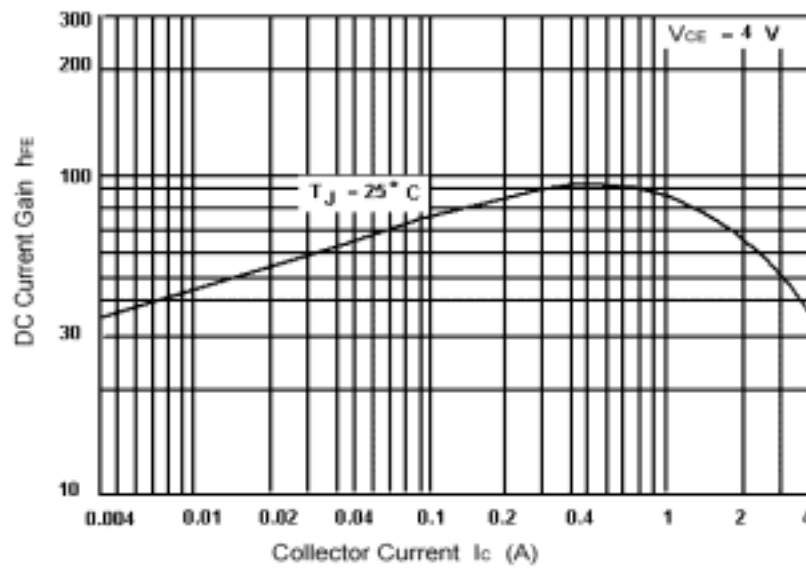


Fig.3 DC current Gain

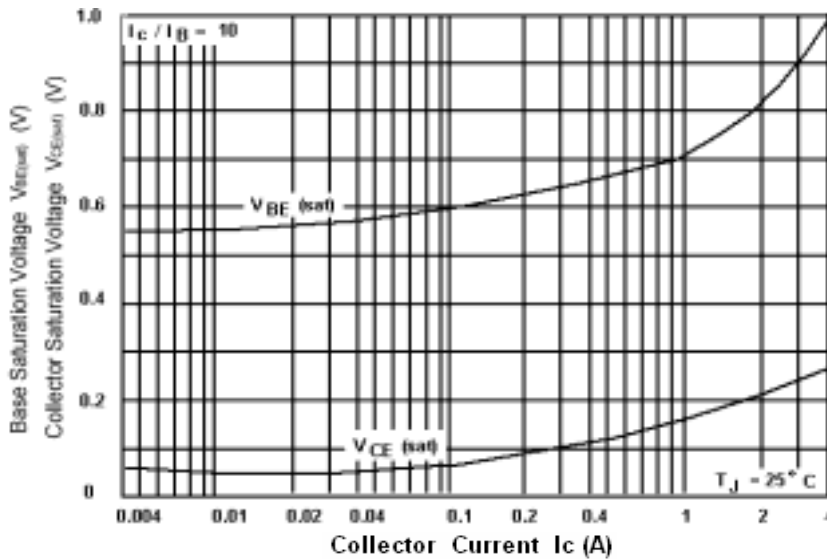


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

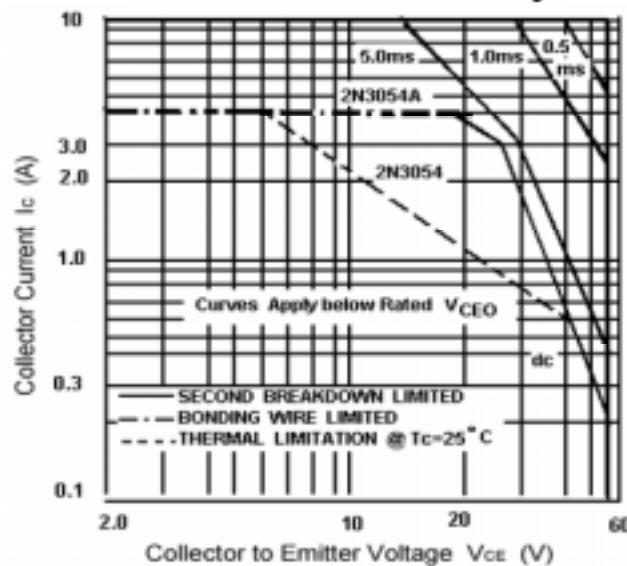


Fig.5 Safe Operating Area