

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($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage		Open emitter	90	V
V_{CEO}	Collector-emitter voltage		Open base	55	V
V_{EBO}	Emitter-base voltage		Open collector	7	V
I_C	Collector current			4	A
I_B	Base current			2	A
P_D	Power dissipation	2N3054	$T_C=25^\circ\text{C}$	25	W
		2N3054A		75	
T_j	Junction temperature			200	$^\circ\text{C}$
T_{stg}	Storage temperature			-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER		MAX	UNIT
$R_{th\ j-C}$	Thermal resistance junction to case	2N3054	7.0	$^\circ\text{C}/\text{W}$
		2N3054A	2.33	

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CHARACTERISTICS

T_j=25°C unless otherwise specified

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

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PACKAGE OUTLINE

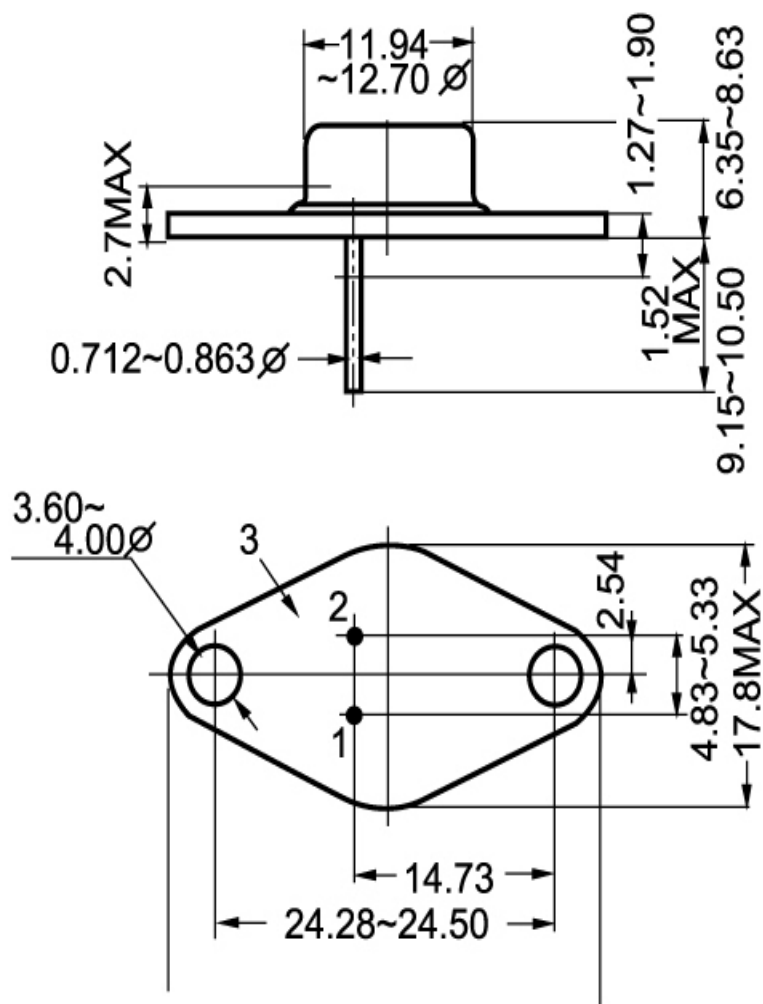


Fig.2 Outline dimensions

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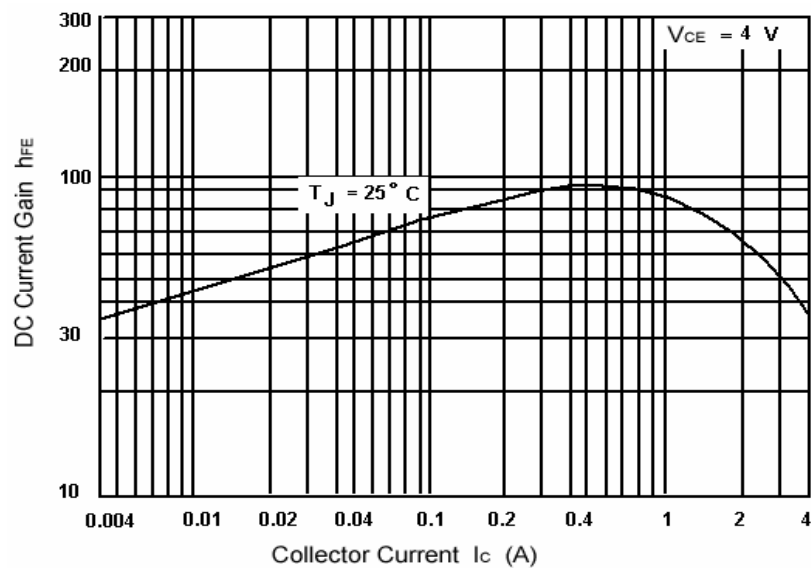


Fig.3 DC current Gain

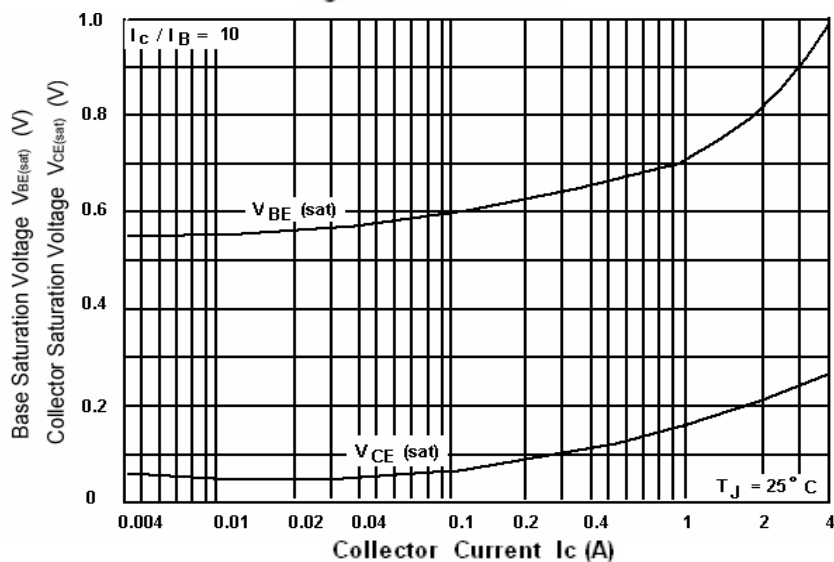
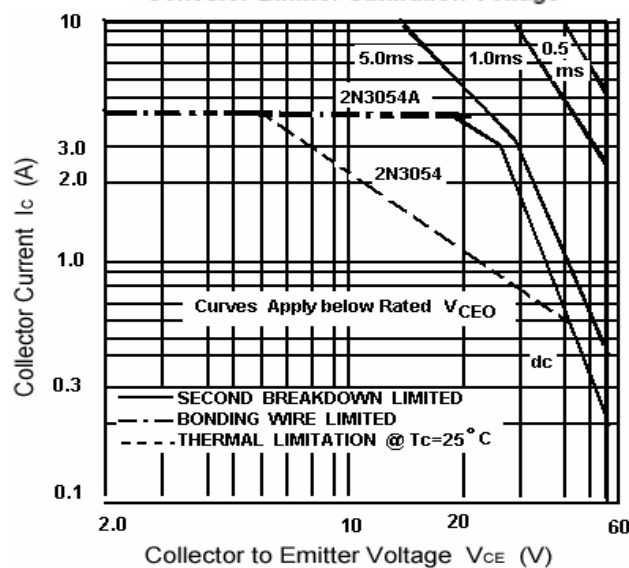
Fig.4 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Fig.5 Safe Operating Area