

## Silicon NPN Power Transistors

2N3055

## DESCRIPTION

- With TO-3 package
- Complement to type MJ2955
- DC Current Gain  $-h_{FE} = 20-70 @ I_C = 4 \text{ A dc}$
- Collector–Emitter Saturation Voltage -  
 $V_{CE(sat)} = 1.1 \text{ Vdc (Max) @ } I_C = 4 \text{ A dc}$
- Excellent Safe Operating Area

## APPLICATIONS

- Designed for general–purpose switching and amplifier applications.

## PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

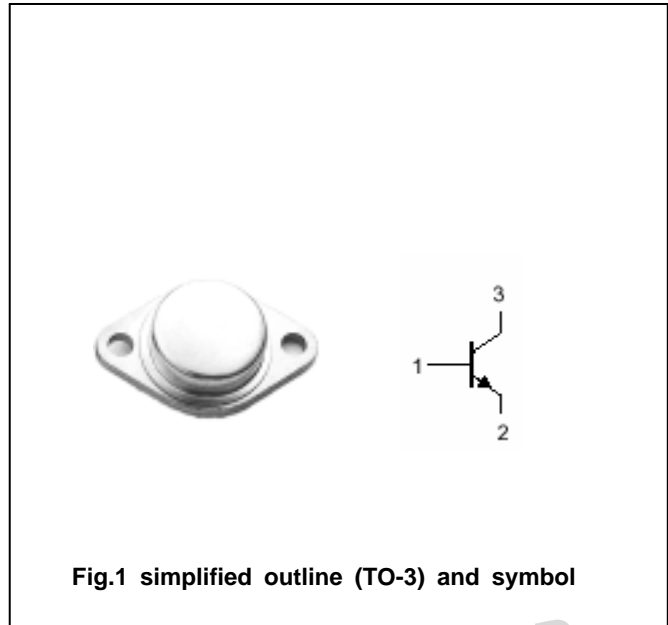


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings( $T_a =$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	100	V
$V_{CEO}$	Collector-emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		15	A
$I_B$	Base current		7	A
$P_C$	Collector power dissipation	$T_C=25$	115	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-65~200	

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th j-c}$	Thermal resistance junction to case	1.52	/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; I <sub>B</sub> =0	60			V
V <sub>CER</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; R <sub>BE</sub> =100	70			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =4A ; I <sub>B</sub> =0.4A			1.1	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =3.3A			3.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =4A ; V <sub>CE</sub> =4V			1.5	V
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =30V ; I <sub>B</sub> =0			0.7	mA
I <sub>CEX</sub>	Collector cut-off current	V <sub>CE</sub> =100V ; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150			1.0 5.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			5.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =4A ; V <sub>CE</sub> =4V	20		70	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V	5.0			
I <sub>s/b</sub>	Second breakdown collector current With base forward biased	V <sub>CE</sub> =40Vdc, t=1.0s, Nonrepetitive	2.87			A
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V	2.5			MHz

PACKAGE OUTLINE

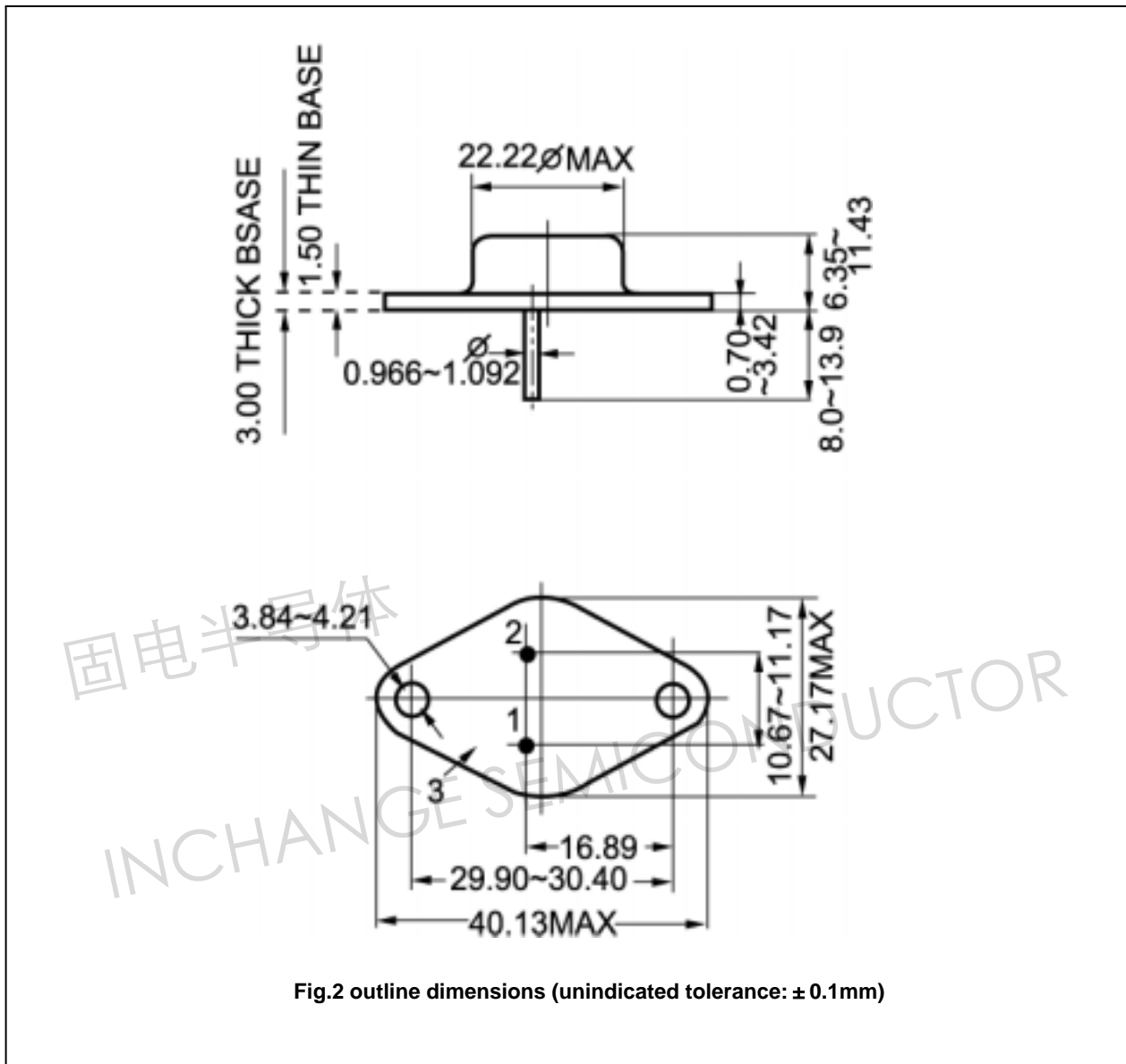


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1$ mm)

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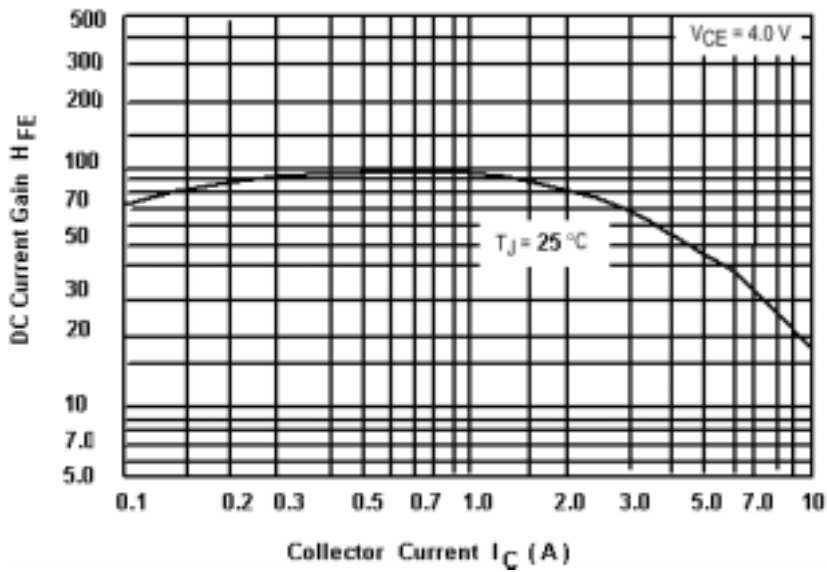


Fig.3 DC current Gain

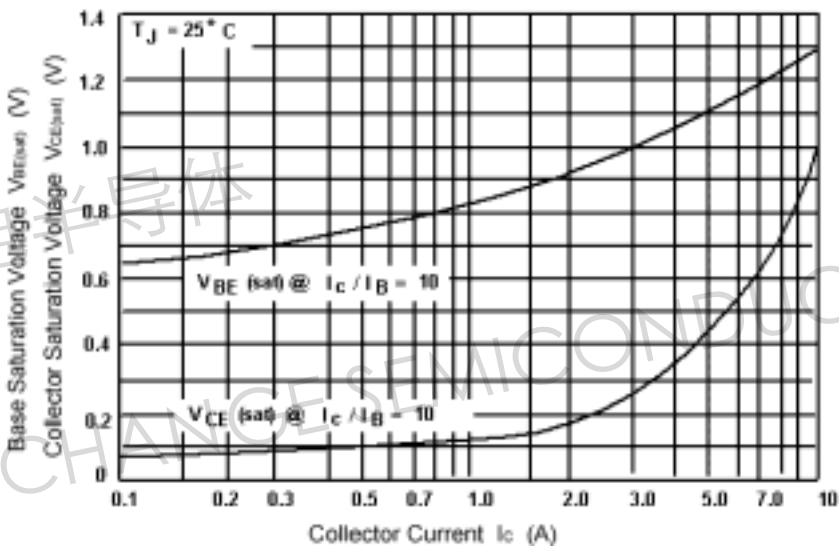


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

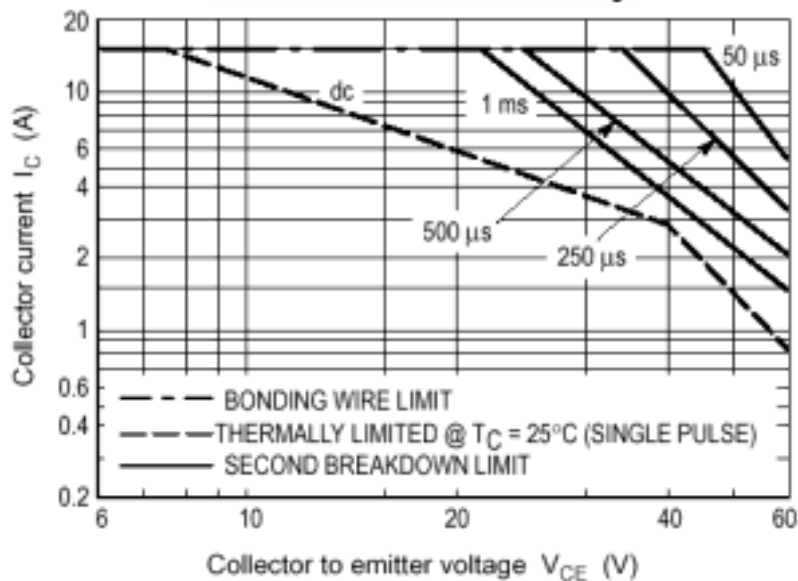


Fig.5 Safe Operating Area