

**Silicon PNP Power Transistors**

**2SA2031**

**DESCRIPTION**

- With TO-3PN package
- Complement to type 2SC5669
- Wide area of safe operation
- Large current capacitance

**APPLICATIONS**

- For audio frequency output applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

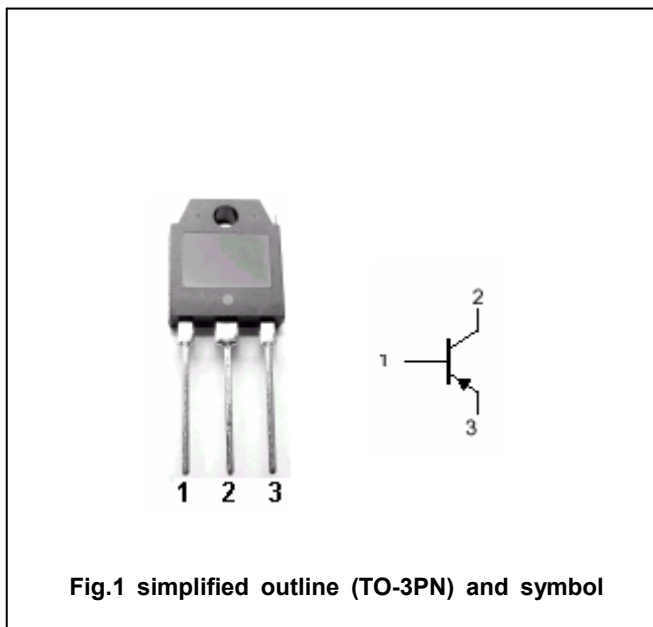


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	-250	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	-230	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-6	V
I <sub>C</sub>	Collector current		-15	A
I <sub>CM</sub>	Collector current-peak		-30	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25°C	2.5	W
		T <sub>C</sub> =25°C	140	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =-50mA; R <sub>BE</sub> =∞	-230			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =-5mA; I <sub>E</sub> =0	-250			V
V <sub>(BREBO)</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =-5mA; I <sub>C</sub> =0	-6			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-7.5 A; I <sub>B</sub> =-0.75A		-0.3	-2.0	V
V <sub>BE</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-7.5 A; V <sub>CE</sub> =-5V			-1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-250V; I <sub>E</sub> =0			-100	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-4V; I <sub>C</sub> =0			-100	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-5V	60		160	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-7.5 A; V <sub>CE</sub> =-5V	35			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =-10V, f=1MHz		400		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-1A; V <sub>CE</sub> =-5V		10		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-7.5A; R <sub>L</sub> =6.67Ω I <sub>B1</sub> =-I <sub>B2</sub> =-0.75A V <sub>CC</sub> =-50V		0.45		μs
t <sub>stg</sub>	Storage time			1.75		μs
t <sub>f</sub>	Fall time			0.25		μs

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PACKAGE OUTLINE

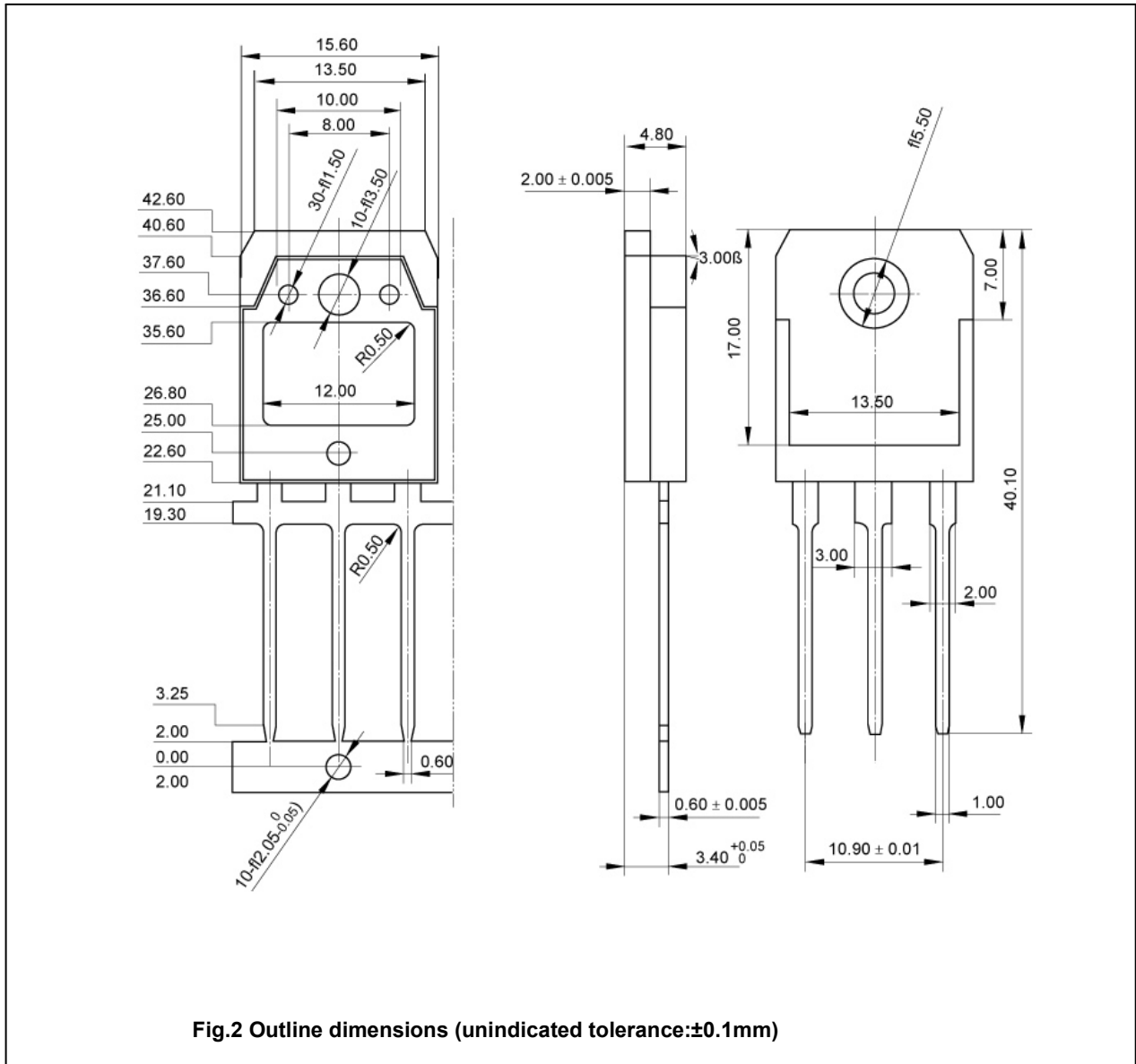


Fig.2 Outline dimensions (unindicated tolerance:±0.1mm)

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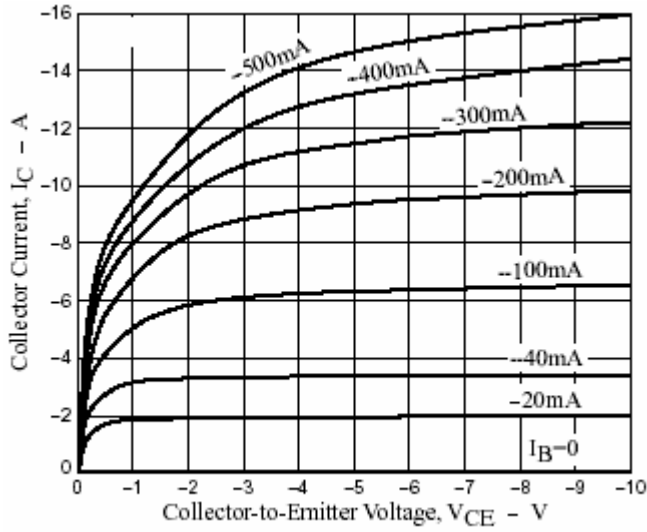


Fig.3 Static Characteristic

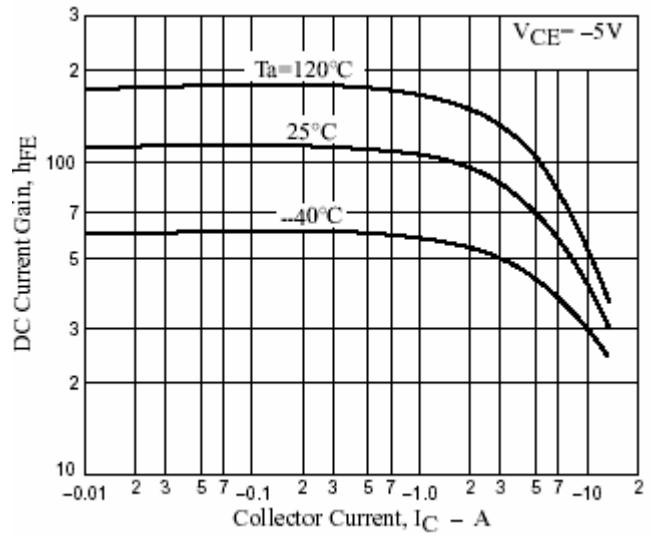


Fig.4 DC current Gain

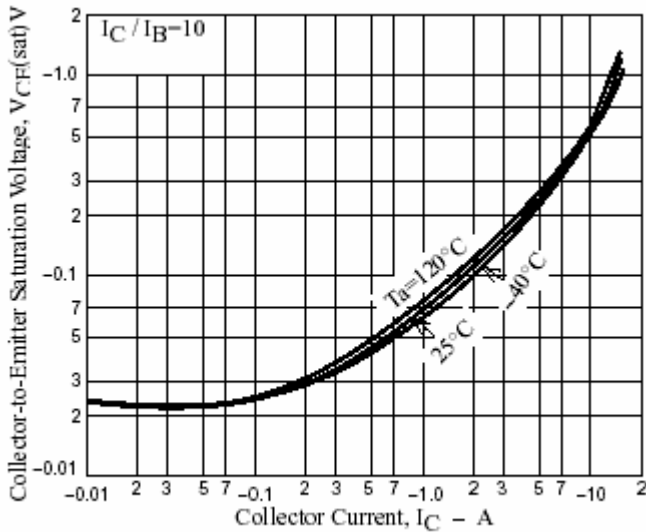


Fig.5 Collector-Emitter Saturation Voltage

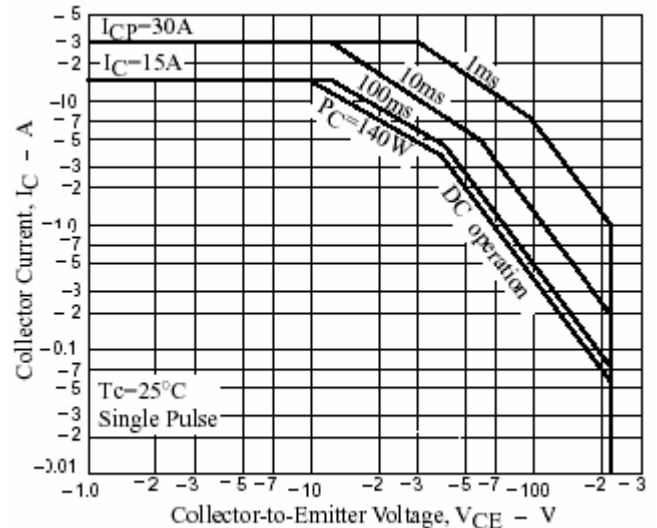


Fig.6 Safe Operating Area