

**Silicon NPN Power Transistors**

**2SC5669**

**DESCRIPTION**

- With TO-3PN package
- Complement to type 2SA2031
- Wide area of safe operation
- Large current capacitance

**APPLICATIONS**

- For audio frequency output applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

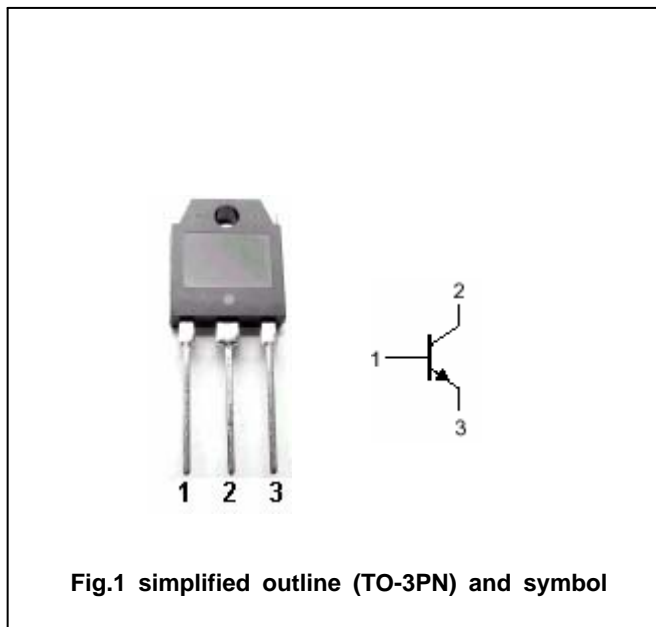


Fig.1 simplified outline (TO-3PN) and symbol

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

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	2.5	W
		T <sub>C</sub> =25	140	
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

## CHARACTERISTICS

T<sub>j</sub>=25 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		0.2	2.0	V
V <sub>BE</sub>	Base-emitter saturation voltage	I <sub>C</sub> =7.5A ; 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	μ A
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V; I <sub>C</sub> =0			100	μ A
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> =7.5A ; V <sub>CE</sub> =5V	35			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz		200		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V		15		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =7.5A; R <sub>L</sub> =6.67 I <sub>B1</sub> =-I <sub>B2</sub> =0.75A V <sub>CC</sub> =50V		0.56		μ s
t <sub>stg</sub>	Storage time			3.3		μ s
t <sub>f</sub>	Fall time			0.4		μ s



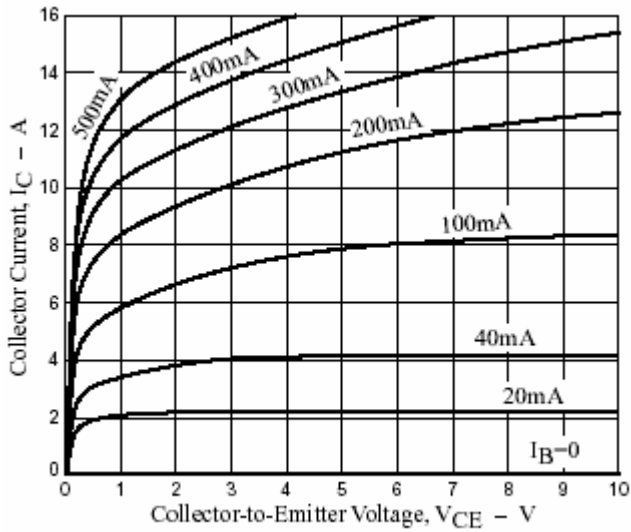


Fig.3 Static Characteristic

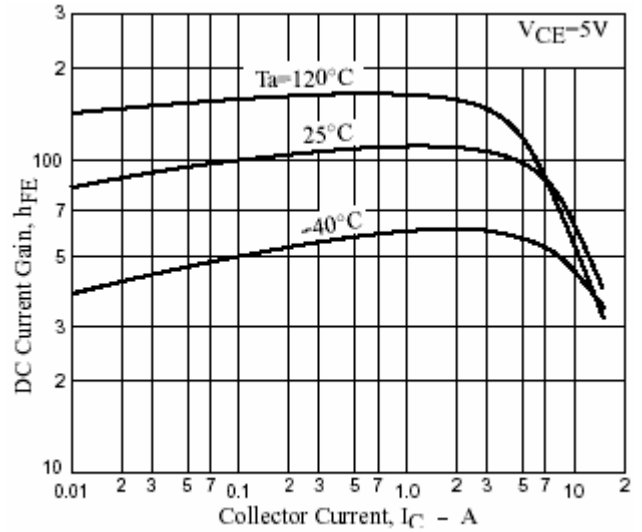


Fig.4 DC current Gain

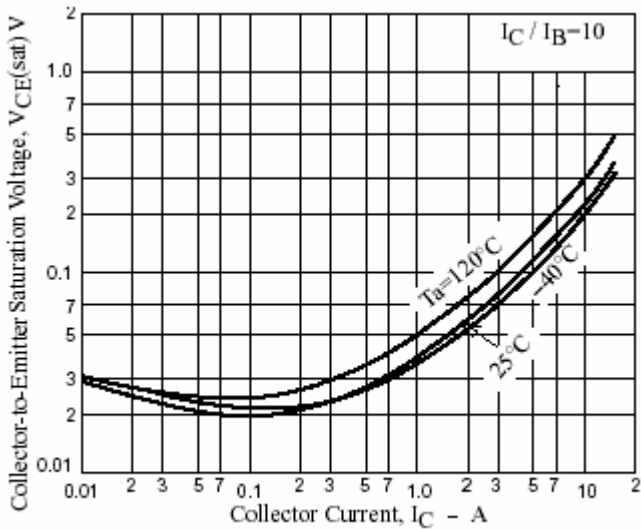


Fig.5 Collector-Emitter Saturation Voltage

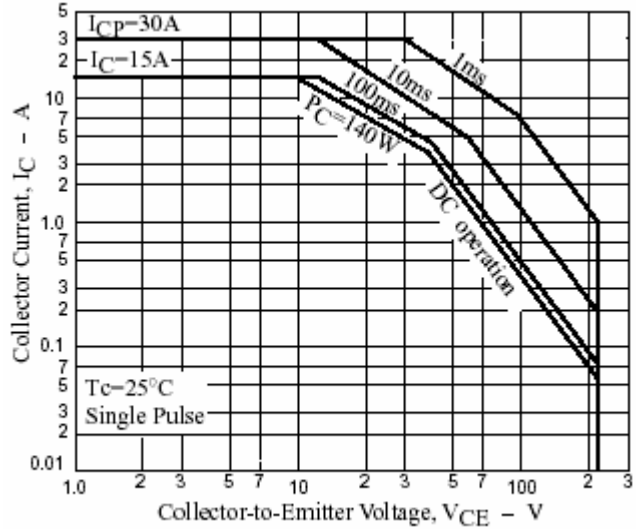


Fig.6 Safe Operating Area