

## Silicon PNP Power Transistors

## 2SA1988

**DESCRIPTION**

- With TO-3PN package
- High collector-emitter voltage

**APPLICATIONS**

- For audio frequency power amplifier and industrial use

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

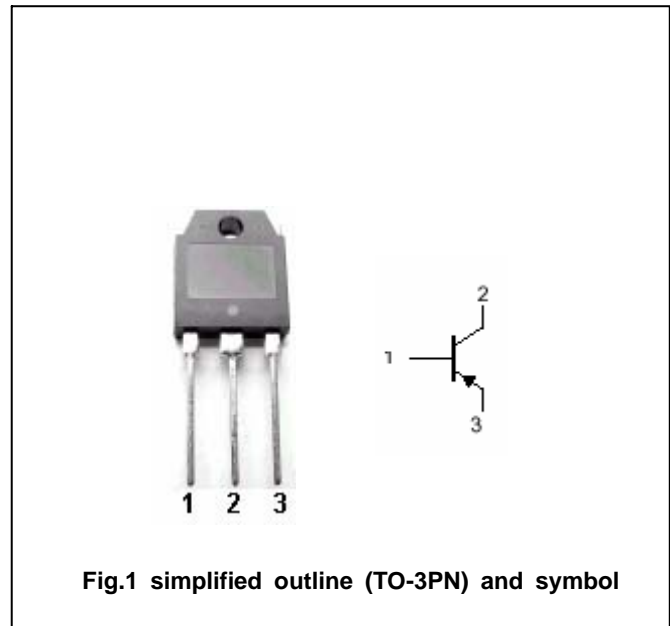


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings(Ta= )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-200	V
$V_{CEO}$	Collector-emitter voltage	Open base	-200	V
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current		-7	A
$I_{CM}$	Collector current-peak		-10	A
$P_C$	Collector power dissipation	$T_C=25$	100	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A		-0.6	-2.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-5A; I <sub>B</sub> =-0.5A		-1.3	-2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-200V; I <sub>E</sub> =0			-50	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-3V; I <sub>C</sub> =0			-50	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-5V	70		200	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-3.5A; V <sub>CE</sub> =-5V	20			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =-10V, f=1MHz		270		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-1A; V <sub>CE</sub> =-5V		40		MHz

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PACKAGE OUTLINE

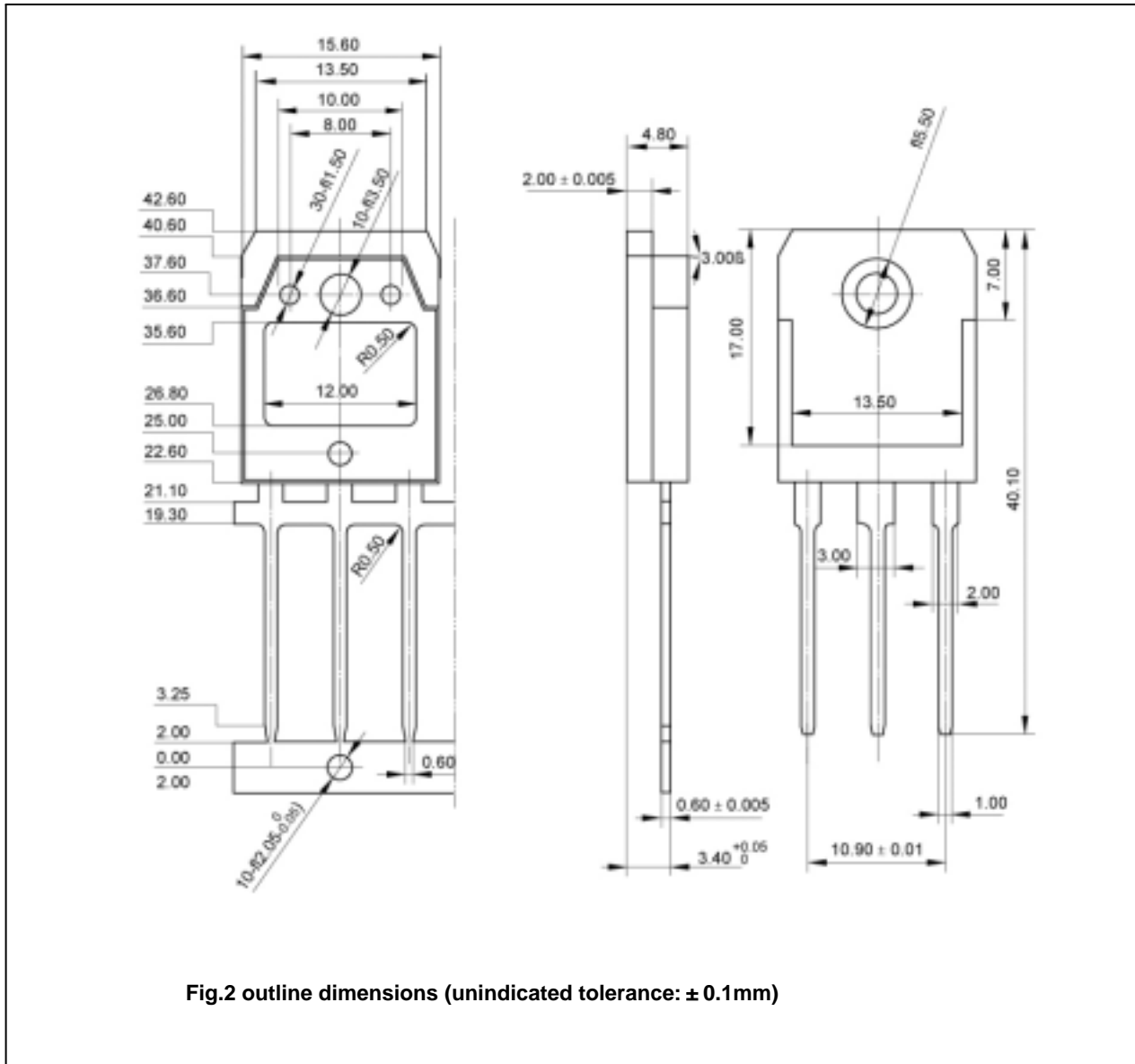


Fig.2 outline dimensions (unindicated tolerance: ± 0.1mm)

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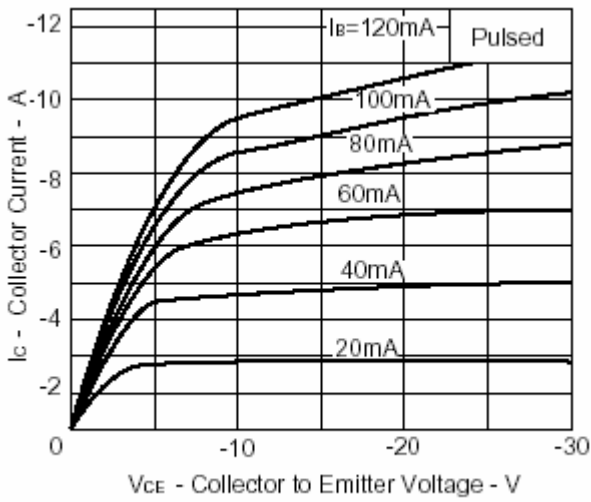


Fig.3 Static Characteristic

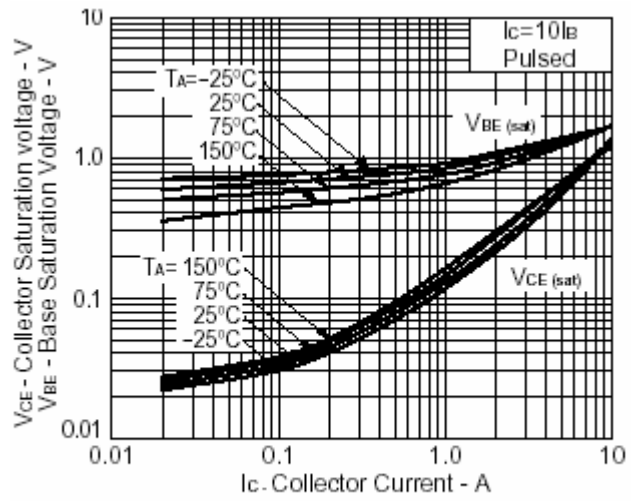


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

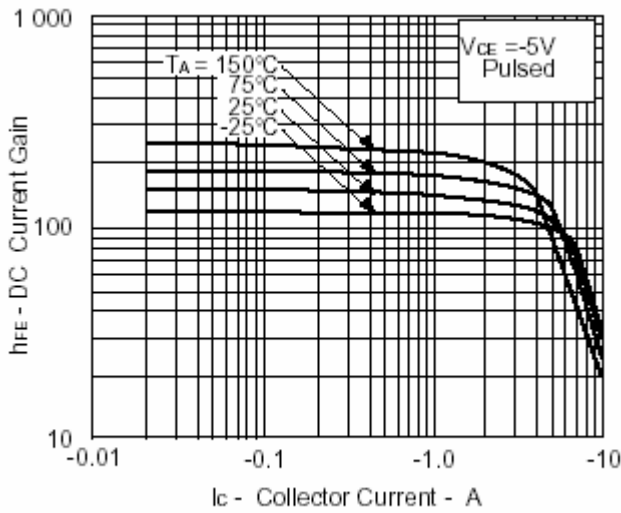


Fig.5 DC current Gain

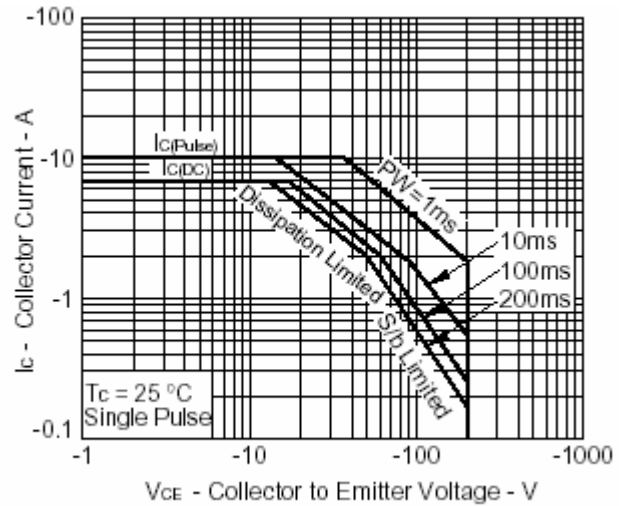


Fig.6 Safe Operating Area