

**Silicon PNP Power Transistors**

**2SA1111 2SA1112**

**DESCRIPTION**

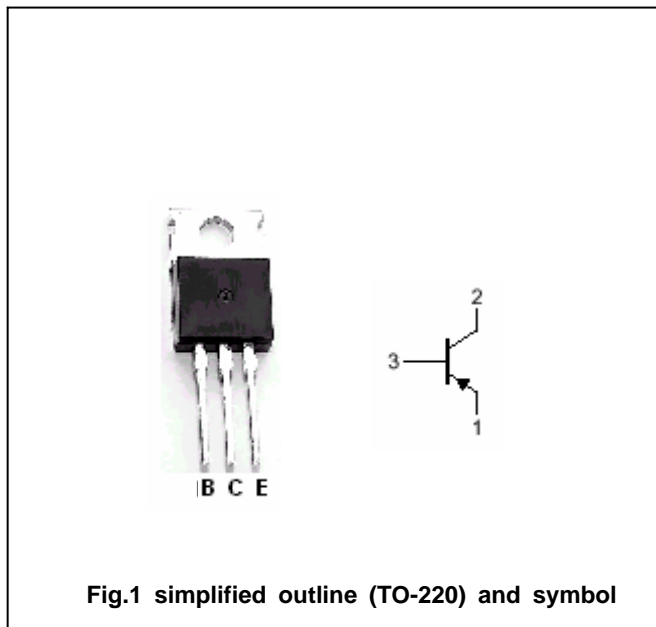
- With TO-220 package
- Complement to type 2SC2591/2592
- Good linearity of  $h_{FE}$
- High  $V_{CEO}$

**APPLICATIONS**

- For audio frequency, high power amplifiers application

**PINNING**

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



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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2SA1111	-150	V
		2SA1112	-180	
$V_{CEO}$	Collector-emitter voltage	2SA1111	-150	V
		2SA1112	-180	
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current		-1	A
$I_{CM}$	Collector current-peak		-1.5	A
$P_C$	Collector power dissipation	$T_C=25$	20	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>(BR)CEO</sub>	Collector-emitter breakdown voltage	2SA1111	I <sub>C</sub> =-0.1mA, I <sub>B</sub> =0	-150			V
		2SA1112		-180			
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =-10 μA, I <sub>C</sub> =0	-5			V	
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-0.5A; I <sub>B</sub> =-50mA		-0.5	-2.0	V	
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-0.5A; I <sub>B</sub> =-50mA		-1.0	-2.0	V	
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-120V; I <sub>E</sub> =0			-1	μA	
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-4V; I <sub>C</sub> =0			-1	μA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-150mA; V <sub>CE</sub> =-10V	65		330		
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-500mA; V <sub>CE</sub> =-5V	50				
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =-10V; f=1MHz		30		pF	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =50mA; V <sub>CE</sub> =-10V		200		MHz	

◆ h<sub>FE-1</sub> Classifications

P	Q	R	S
65-110	90-155	130-220	185-330

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PACKAGE OUTLINE



Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.10$  mm)

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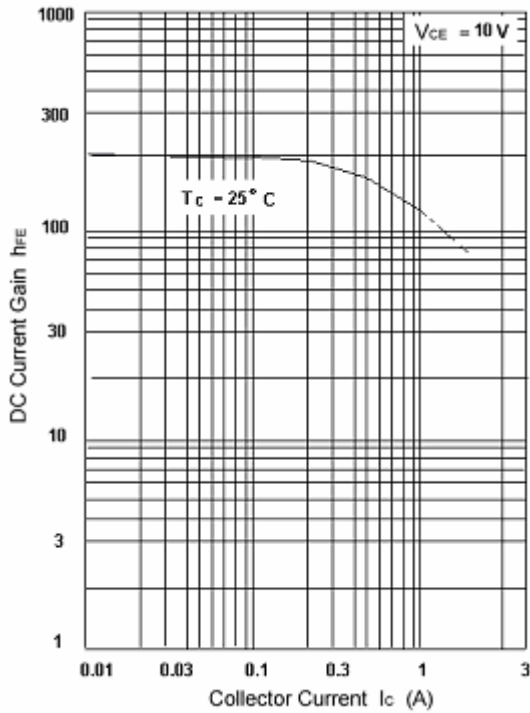


Fig.3 DC current Gain

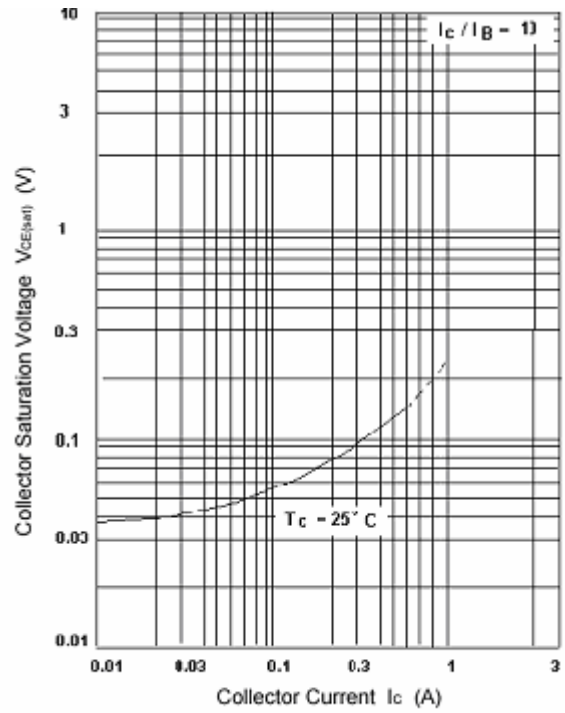


Fig.4 Collector-Emitter Saturation Voltage

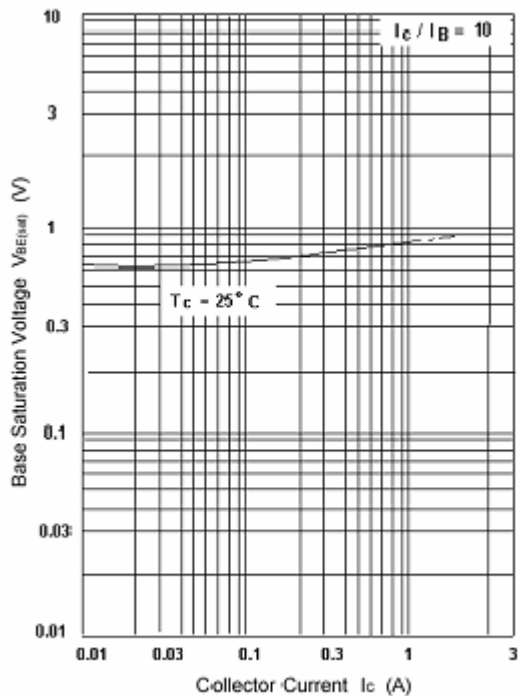


Fig.5 Base-Emitter Saturation Voltage

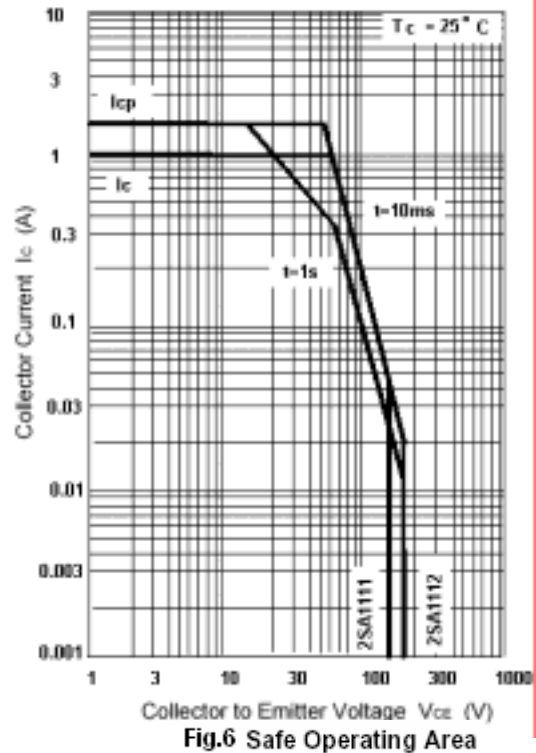


Fig.6 Safe Operating Area