

**Silicon PNP Power Transistors**

**2SA1451**

**DESCRIPTION**

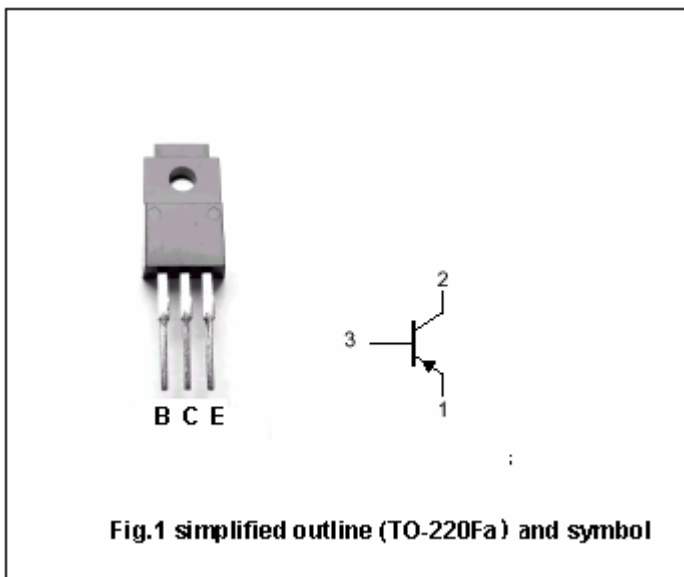
- With TO-220Fa package
- Low collector saturation voltage
- High speed switching time
- Complement to type 2SC3709

**APPLICATIONS**

- High current switching applications

**PINNING**

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



**Absolute maximum ratings(Ta=25□)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	-60	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	-50	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-6	V
I <sub>C</sub>	Collector current		-12	A
I <sub>B</sub>	Base current		-2	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25□	30	W
T <sub>j</sub>	Junction temperature		150	□
T <sub>stg</sub>	Storage temperature		-55~150	□

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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 ; I <sub>B</sub> =0	-50			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-6A ; I <sub>B</sub> =-0.3A		-0.15	-0.4	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-6A ; I <sub>B</sub> =-0.3A		-0.9	-1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-60V ; I <sub>E</sub> =0			-10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-6V ; I <sub>C</sub> =0			-10	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A ; V <sub>CE</sub> =-1V	70		240	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-6A ; V <sub>CE</sub> =-1V	40			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-1A ; V <sub>CE</sub> =-5V		70		MHz
C <sub>ob</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CE</sub> =-10V ; f=1MHz		320		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>B1</sub> =-I <sub>B2</sub> =-0.3A V <sub>CC</sub> =-30V ; R <sub>L</sub> =5Ω		0.3		μs
t <sub>s</sub>	Storage time			1.0		μs
t <sub>f</sub>	Fall time			0.5		μs

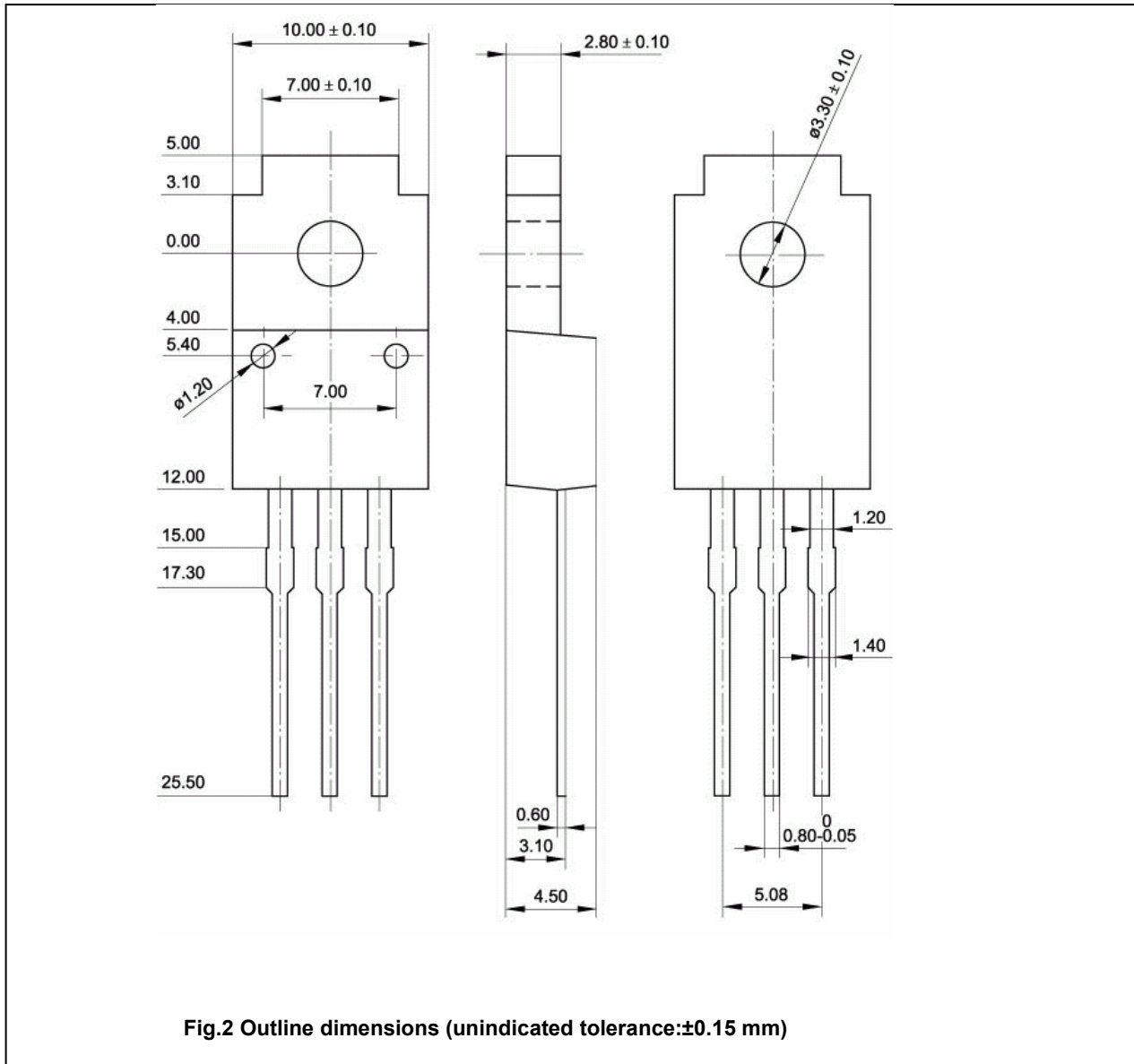
◆ h<sub>FE-1</sub> Classifications

O	Y
70-140	120-240

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PACKAGE OUTLINE



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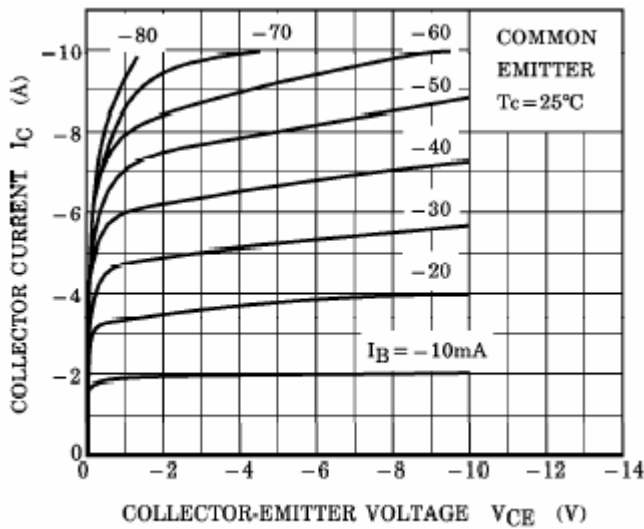


Fig.3 Static Characteristic

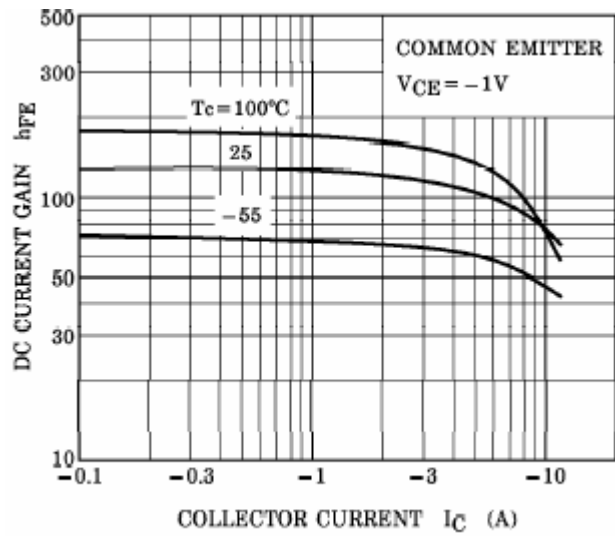


Fig.4 DC current Gain

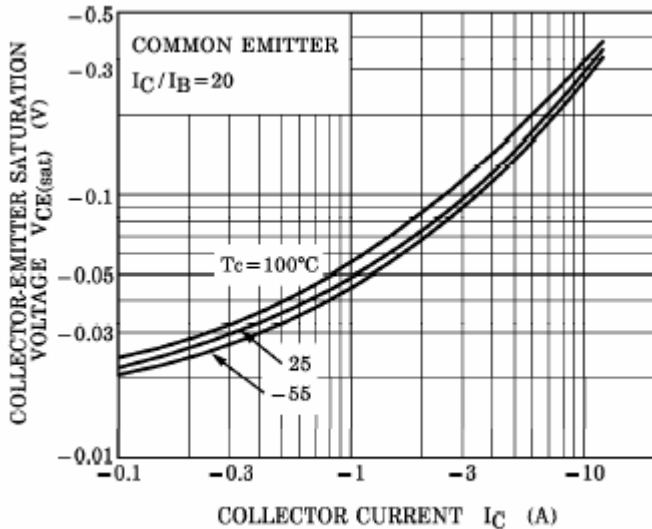


Fig.5 Collector-Emitter Saturation Voltage

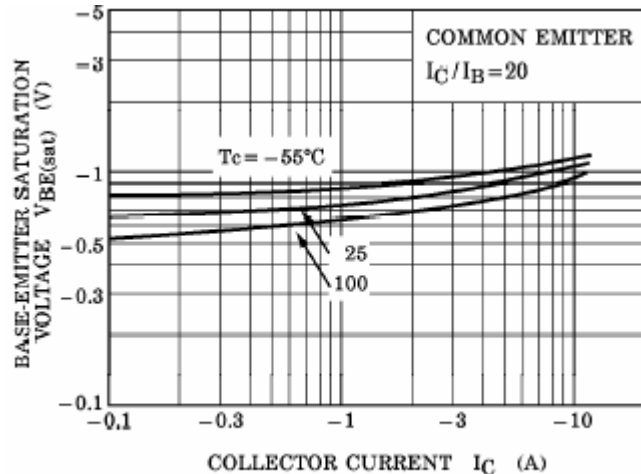


Fig.6 Base-Emitter Saturation Voltage

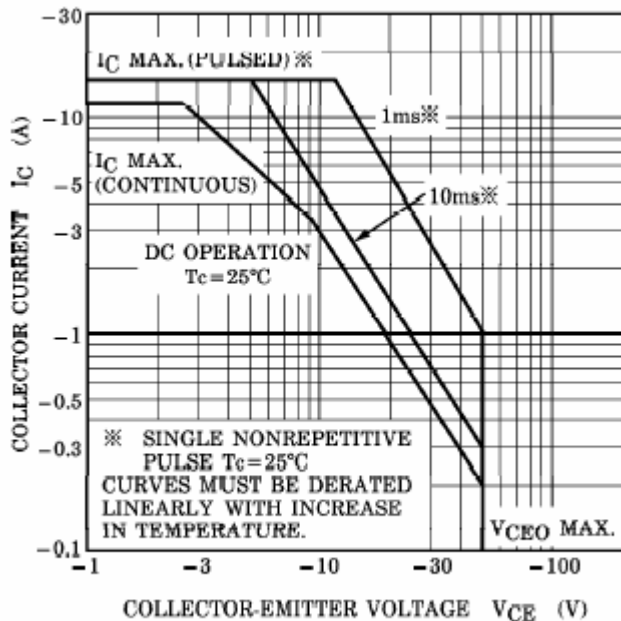


Fig.7 Safe Operating Area