

**Silicon PNP Power Transistors**

**2SB953 2SB953A**

**DESCRIPTION**

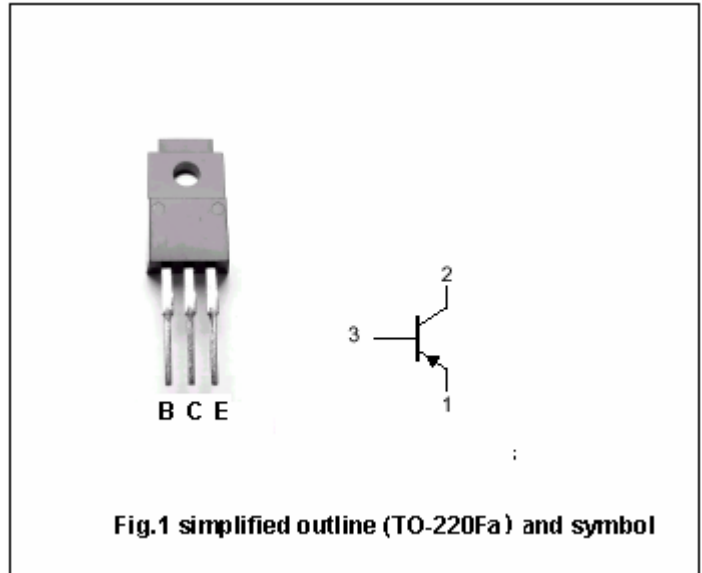
- With TO-220Fa package
- Complement to type 2SD1444/1444A
- High speed switching
- Low collector saturation voltage

**APPLICATIONS**

- For low-voltage switching

**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	2SB953	-40	V
		2SB953A	-50	
V <sub>CEO</sub>	Collector-emitter voltage	2SB953	-20	V
		2SB953A	-40	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current		-7	A
I <sub>CM</sub>	Collector current-peak		-12	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25	2	W
		T <sub>C</sub> =25	30	
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

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## 2SB953 2SB953A

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter voltage	2SB953	I <sub>C</sub> =-10mA; I <sub>B</sub> =0	-20		V
		2SB953A		-40		
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-5A; I <sub>B</sub> =-0.16A			-0.6	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-5A; I <sub>B</sub> =-0.16A			-1.5	V
I <sub>CBO</sub>	Collector cut-off current	2SB953	V <sub>CB</sub> =-40V; I <sub>E</sub> =0		-50	μA
		2SB953A		V <sub>CB</sub> =-50V; I <sub>E</sub> =0		
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-50	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-0.1A; V <sub>CE</sub> =-2V	45			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-2A; V <sub>CE</sub> =-2V	90		260	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-0.5A; V <sub>CE</sub> =-10V, f=10MHz		150		MHz
C <sub>OB</sub>	Collector output capacitance	f=1MHz; V <sub>CB</sub> =-10V		140		pF

## Switching times

t <sub>on</sub>	Trun-on time	I <sub>C</sub> =-2A I <sub>B1</sub> =-66mA, I <sub>B2</sub> =66mA		0.1		μs
t <sub>s</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.1		μs

◆ h<sub>FE-2</sub> Classifications

Q	P
90-180	130-260



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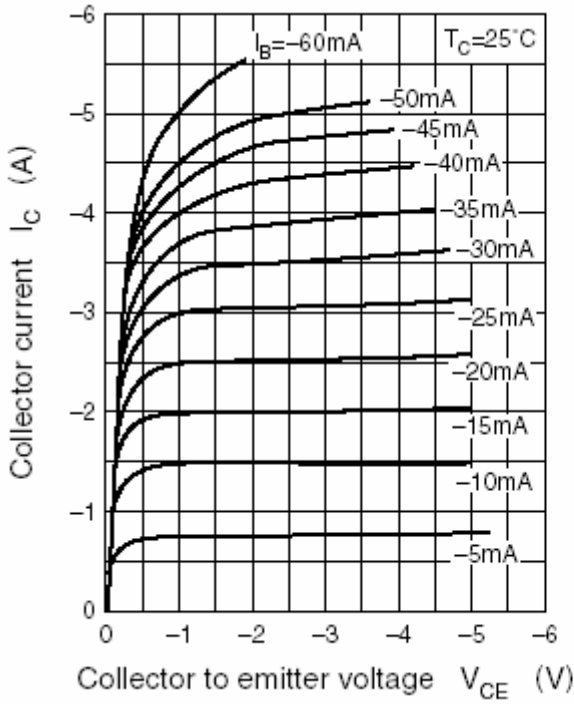


Fig.3 Static Characteristic

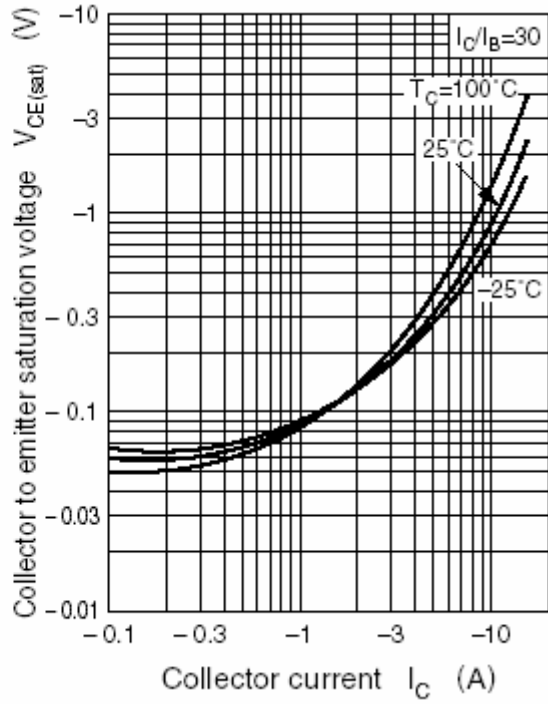


Fig.4 Collector-Emitter Saturation Voltage

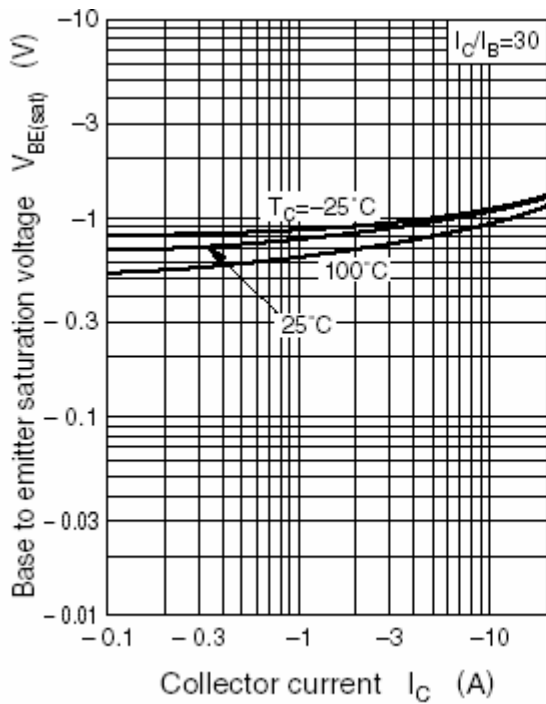


Fig.5 Base-Emitter Saturation Voltage

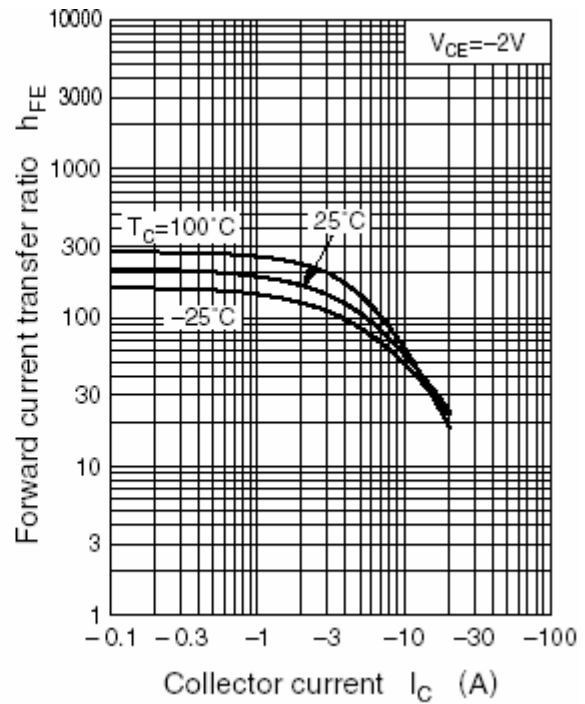


Fig.6 DC current Gain

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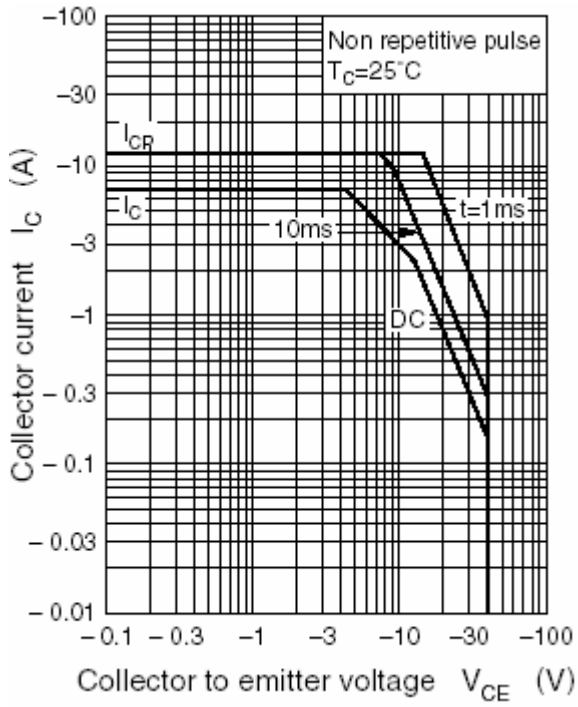


Fig.7 Safe Operating Area

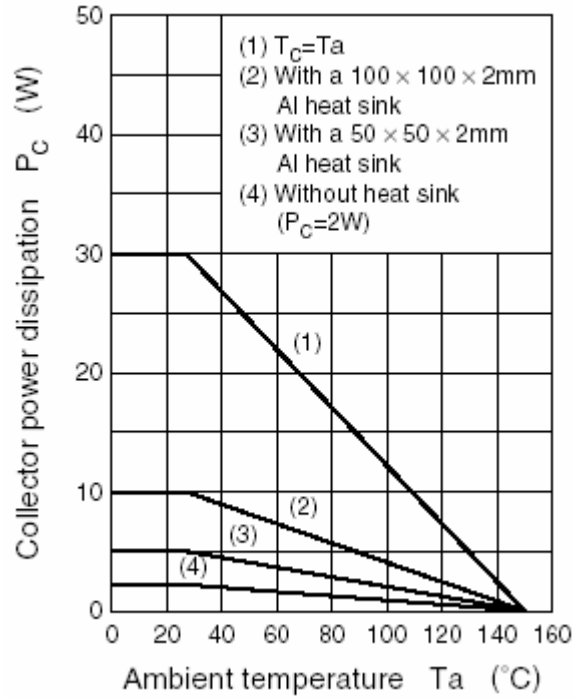


Fig.8  $P_C$ - $T_a$  Derating