

Silicon PNP Power Transistors

2SB947 2SB947A

DESCRIPTION

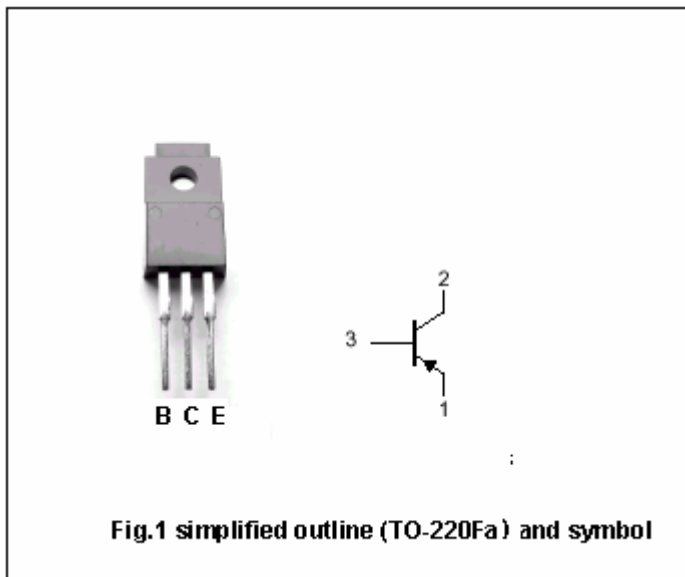
- With TO-220Fa package
- High speed switching
- Low collector saturation voltage

APPLICATIONS

- For low-voltage switching applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2SB947	-40	V
		2SB947A	-50	
V <sub>CEO</sub>	Collector-emitter voltage	2SB947	-20	V
		2SB947A	-40	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current		-10	A
I <sub>CM</sub>	Collector current-peak		-15	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25°C	2	W
		T <sub>C</sub> =25°C	35	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter voltage	2SB947	I <sub>C</sub> =-10mA; I <sub>B</sub> =0			V
		2SB947A				
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-7A; I <sub>B</sub> =-0.23A			-0.6	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-7A; I <sub>B</sub> =-0.23A			-1.5	V
I <sub>CBO</sub>	Collector cut-off current	2SB947				μA
		2SB947A				
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		200		pF
t <sub>on</sub>	Trun-on time	I <sub>C</sub> =-2A; I <sub>B1</sub> =-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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PACKAGE OUTLINE



Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)

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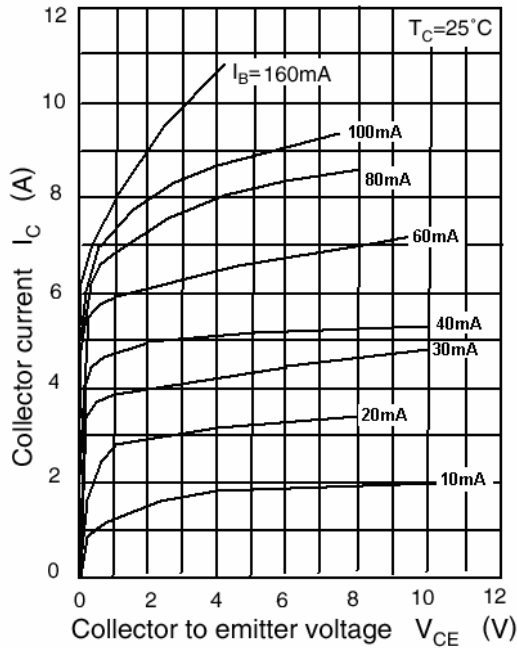


Fig.3 Static Characteristic

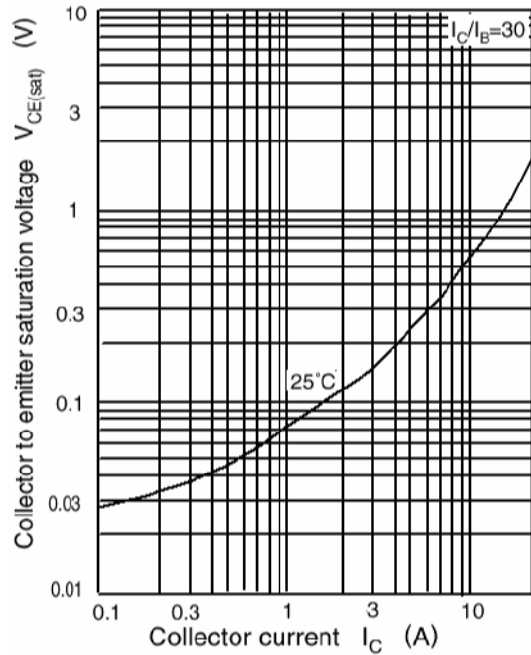


Fig.4 Collector-Emitter Saturation Voltage

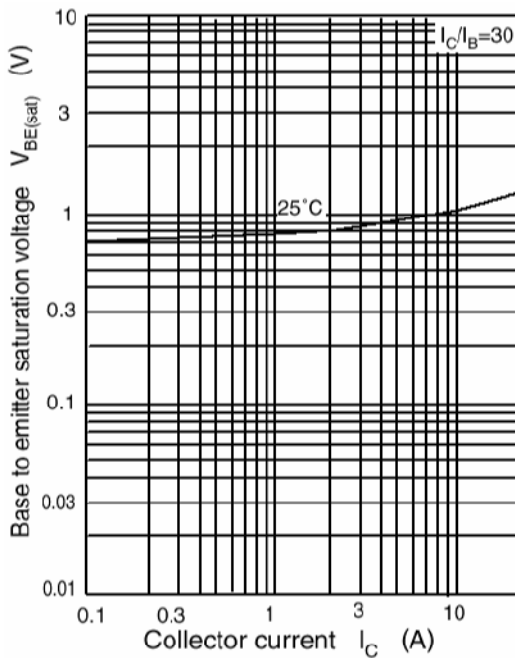


Fig.5 Base-Emitter Saturation Voltage

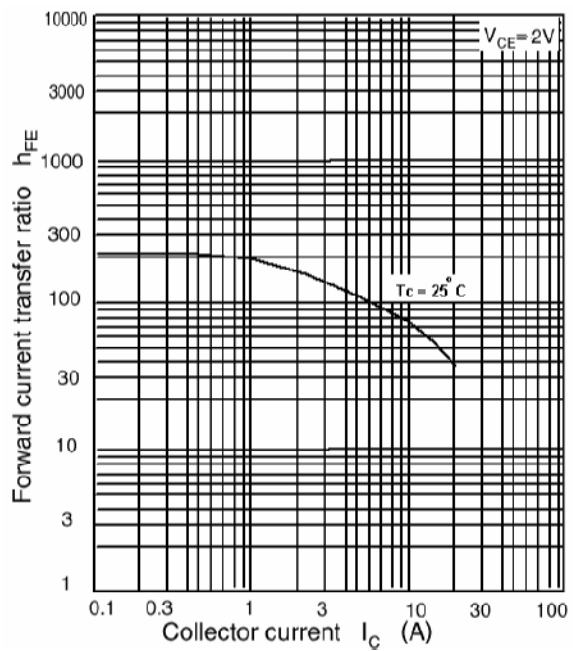


Fig.6 DC current Gain

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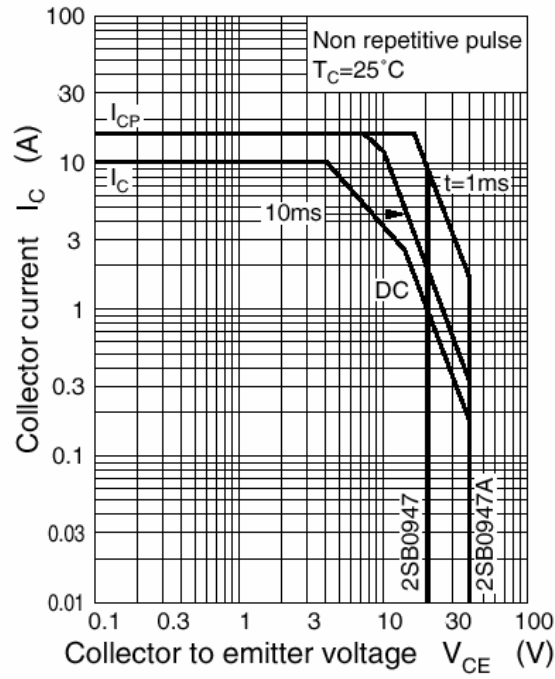


Fig.7 Safe Operating Area