

**Silicon PNP Power Transistors**

**2SB948 2SB948A**

**DESCRIPTION**

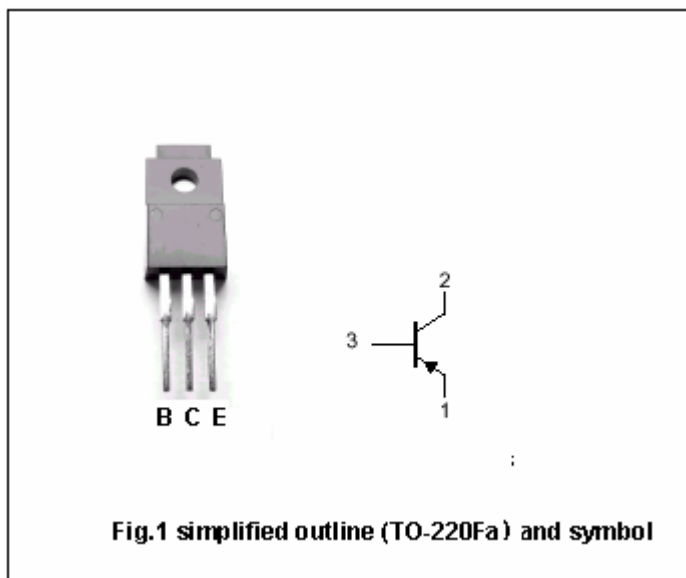
- With TO-220Fa package
- Complement to type 2SD1445/1445A
- High speed switching
- Low collector saturation voltage

**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	2SB948	-40	V
		2SB948A	-50	
V <sub>CEO</sub>	Collector-emitter voltage	2SB948	-20	V
		2SB948A	-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		-20	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25°C	2	W
		T <sub>C</sub> =25°C	40	
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	2SB948	I <sub>C</sub> =-10mA ; I <sub>B</sub> =0	-20			V
		2SB948A		-40			
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-10A ; I <sub>B</sub> =-0.33A			-0.6	V	
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-10A ; I <sub>B</sub> =-0.33A			-1.5	V	
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-40V ; I <sub>E</sub> =0			-50	μA	
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> =-3A ; 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		100		MHz	
C <sub>OB</sub>	Collector output capacitance	f=1MHz ; V <sub>CB</sub> =-10V		400		pF	

## Switching times

t <sub>on</sub>	Trun-on time	I <sub>C</sub> =-3A I <sub>B1</sub> =-0.1A, I <sub>B2</sub> =0.1A		0.1		μs
t <sub>s</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.1		μs

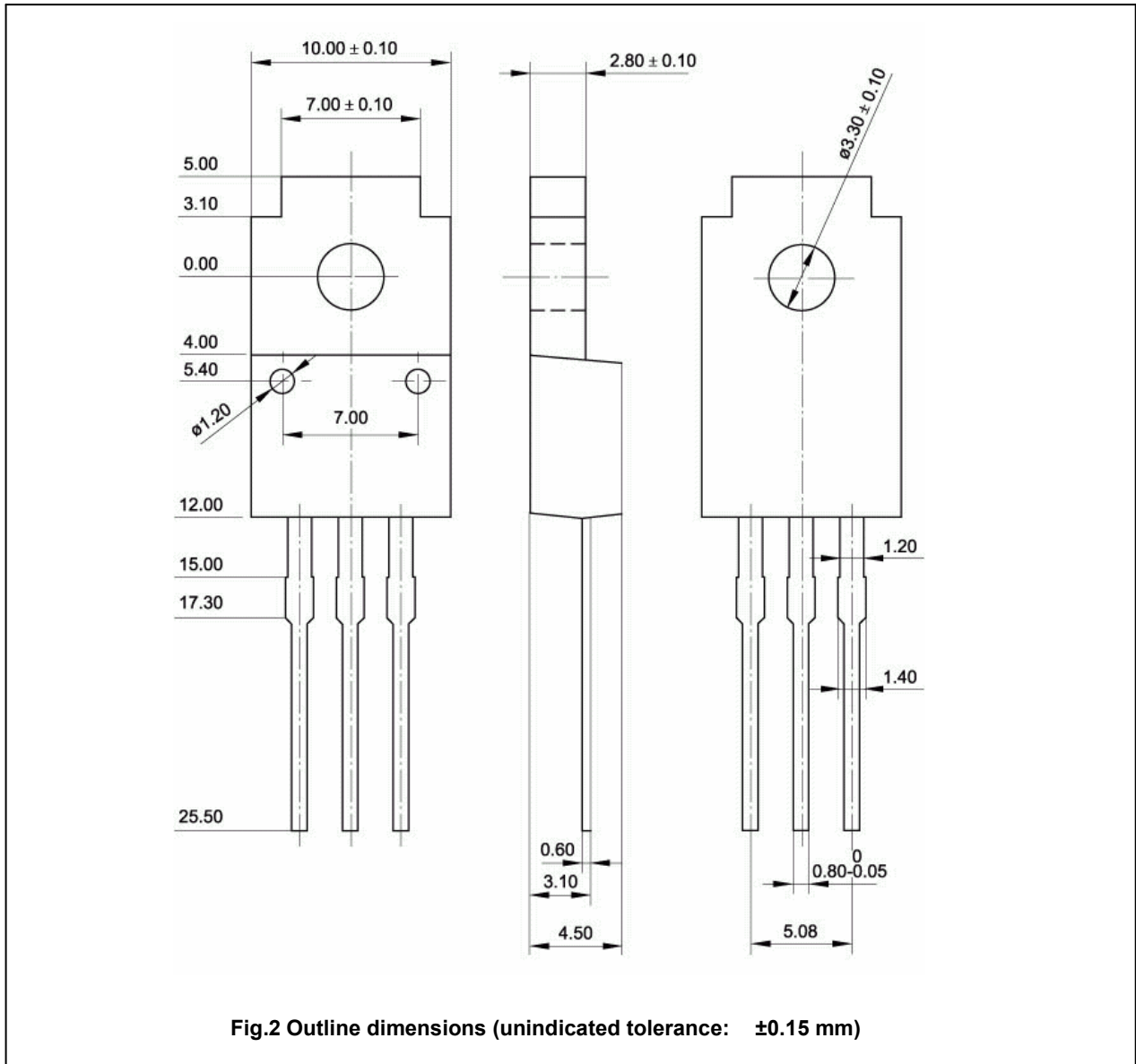
◆ h<sub>FE-2</sub> Classifications

Q	P
90-180	130-260

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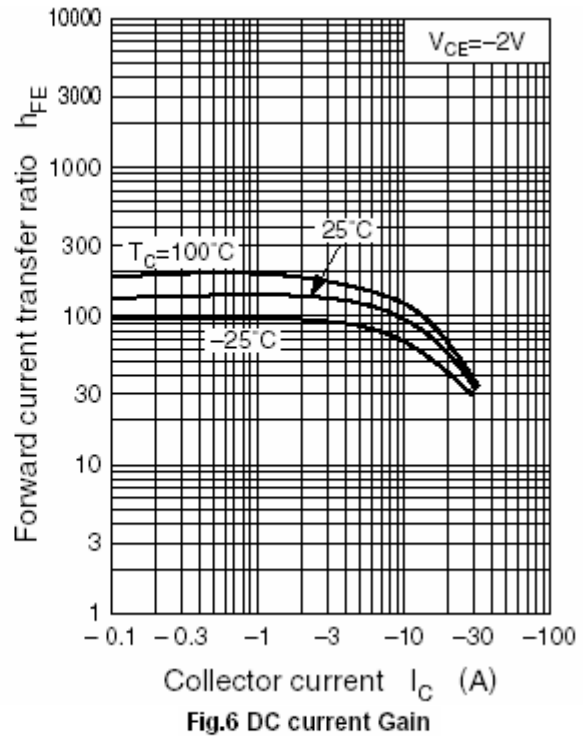
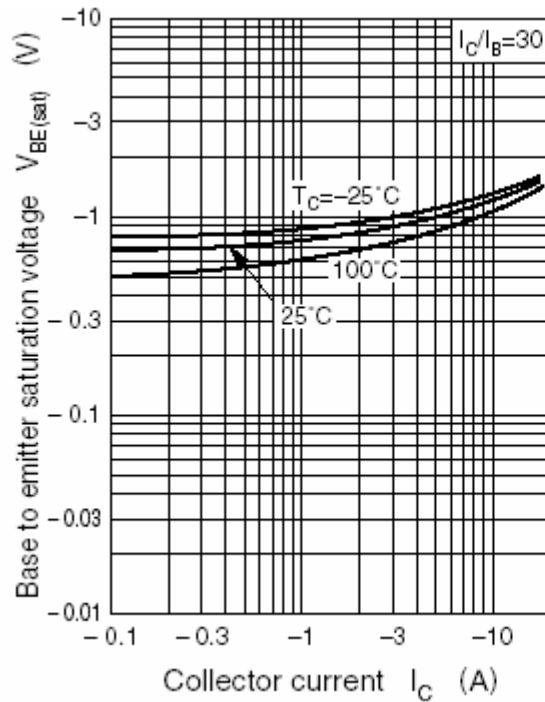
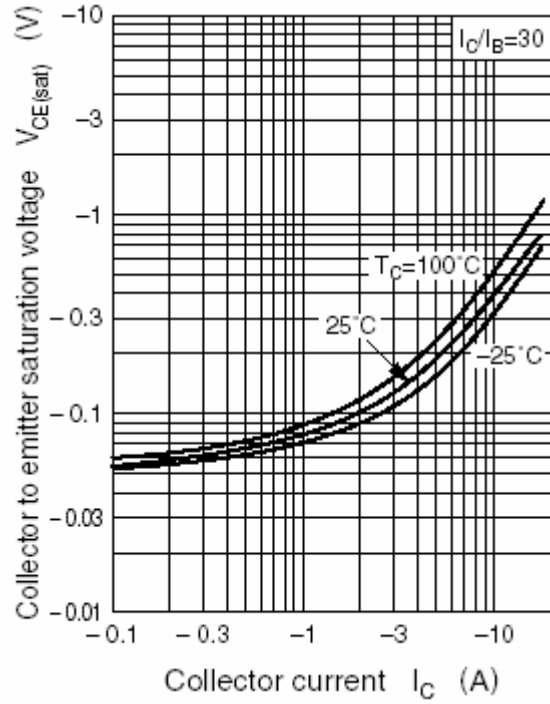
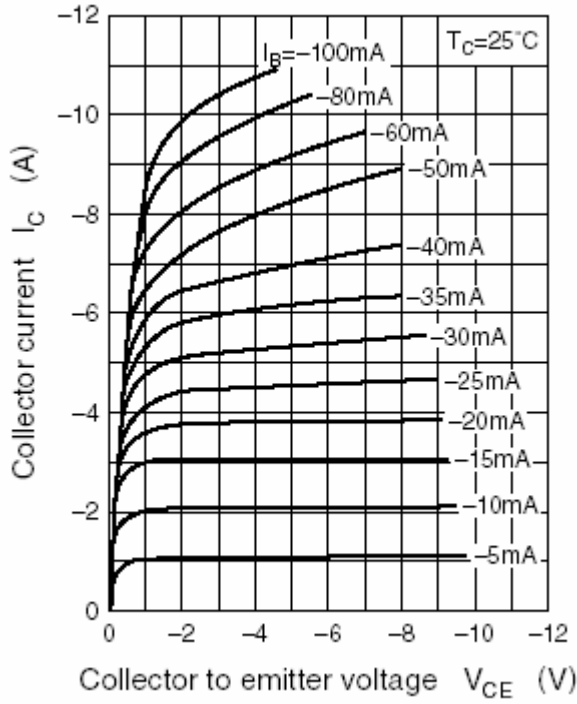
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PACKAGE OUTLINE



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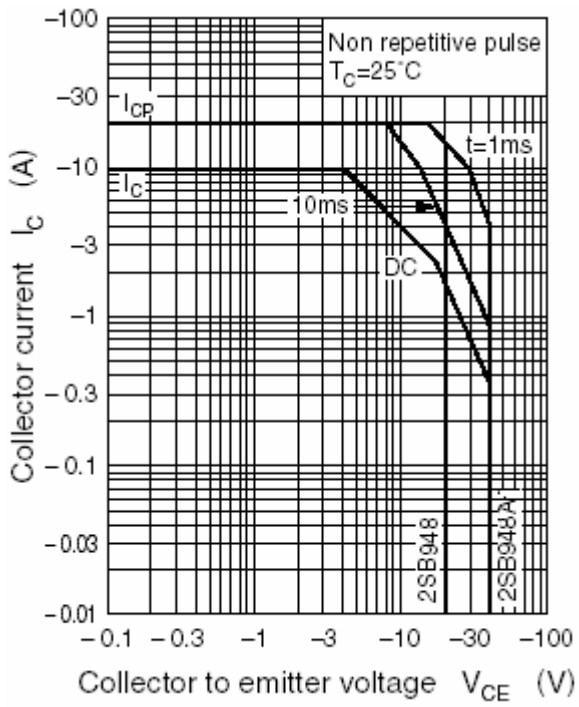


Fig.7 Safe Operating Area