

**Silicon PNP Power Transistors**

**2SB942 2SB942A**

**DESCRIPTION**

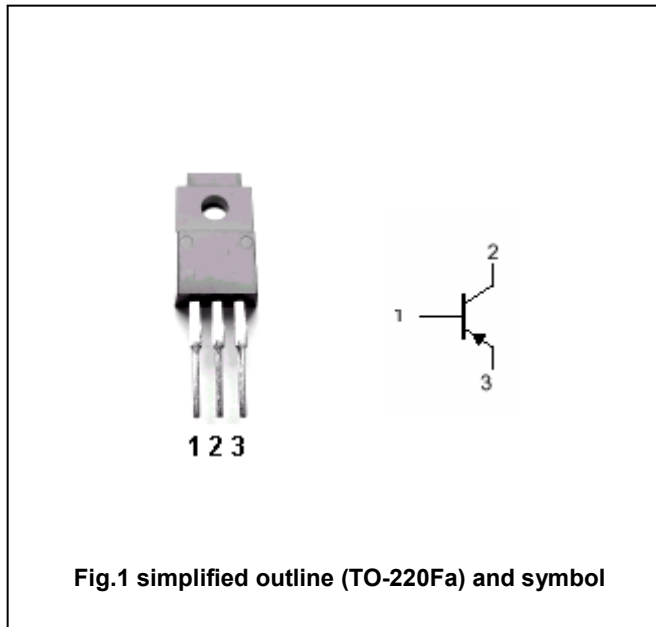
- With TO-220Fa package
- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity
- Low collector saturation voltage
- Complement to type 2SD1267/1267A

**APPLICATIONS**

- For low-frequency power amplification

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2SB942	-60	V
		2SB942A	-80	
V <sub>CEO</sub>	Collector-emitter voltage	2SB942	-60	V
		2SB942A	-80	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current		-4	A
I <sub>CM</sub>	Collector current-peak		-8	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	2SB942	I <sub>C</sub> =-30mA, I <sub>B</sub> =0	-60			V
		2SB942A		-80			
V <sub>CEsat</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =-4A, I <sub>B</sub> =-0.4A			-1.5	V
V <sub>BE</sub>	Base-emitter voltage		I <sub>C</sub> =-3A; V <sub>CE</sub> =-4V			-2	V
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-1	mA
I <sub>CEO</sub>	Collector cut-off current	2SB942	V <sub>CE</sub> =-30V; I <sub>B</sub> =0			-0.7	mA
		2SB942A	V <sub>CE</sub> =-60V; I <sub>B</sub> =0				
I <sub>CES</sub>	Collector cut-off current	2SB942	V <sub>CE</sub> =-60V; V <sub>BE</sub> =0			-0.4	mA
		2SB942A	V <sub>CE</sub> =-80V; V <sub>BE</sub> =0				
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =-1A; V <sub>CE</sub> =-4V	70		250	
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =-3A; V <sub>CE</sub> =-4V	15			
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =-0.1A; V <sub>CE</sub> =-10V, f=10MHz		30		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-4A I <sub>B1</sub> =-0.4A, I <sub>B2</sub> =0.4A		0.2		μs
t <sub>stg</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.2		μs

◆ h<sub>FE-1</sub> Classifications

Q	P
70-150	120-250

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PACKAGE OUTLINE

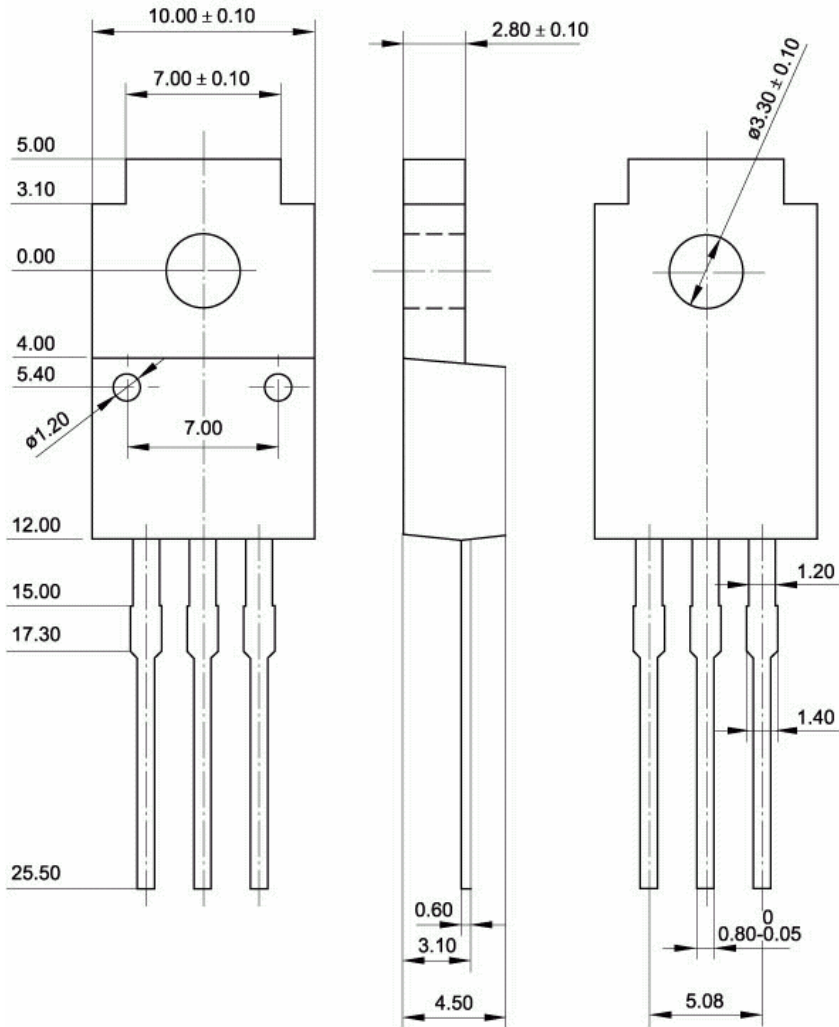


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)

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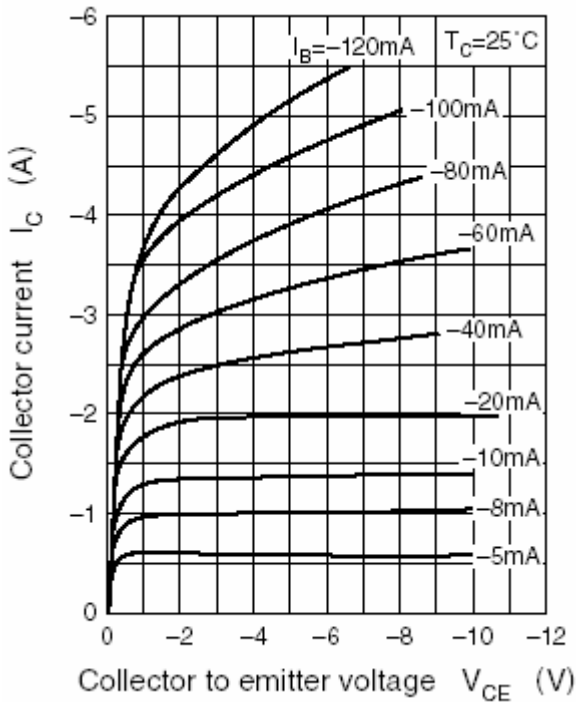


Fig.3 Static Characteristic

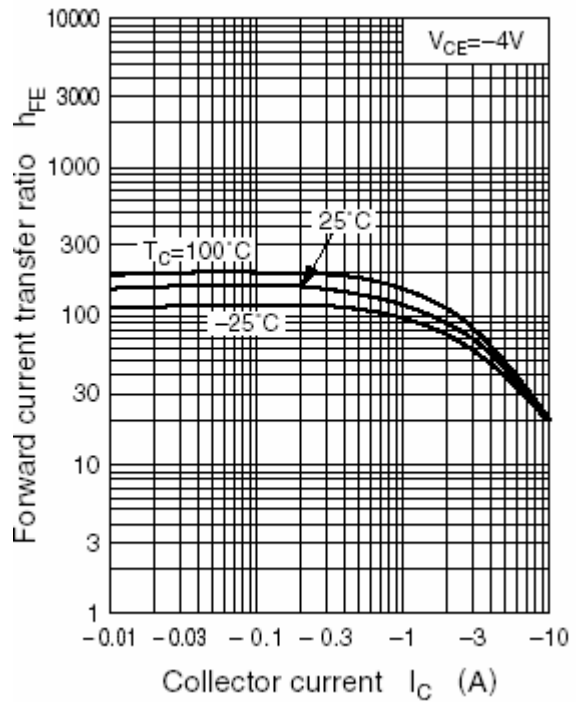


Fig.4 DC current Gain

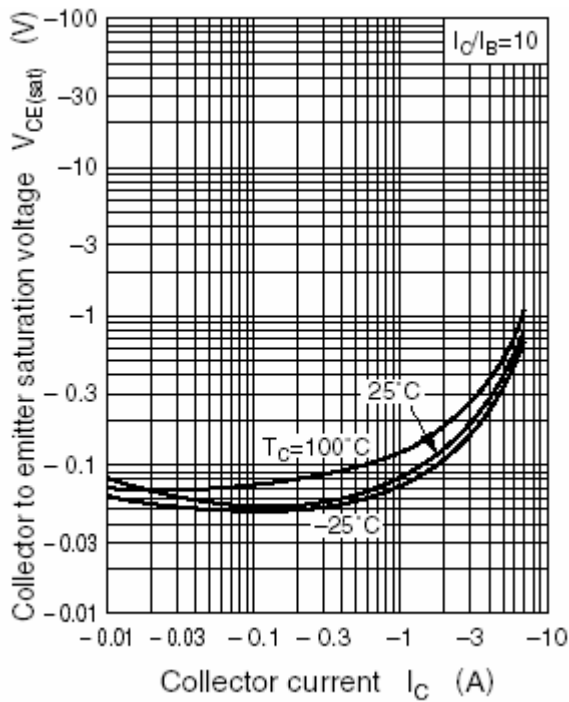


Fig.5 Collector-Emitter Saturation Voltage

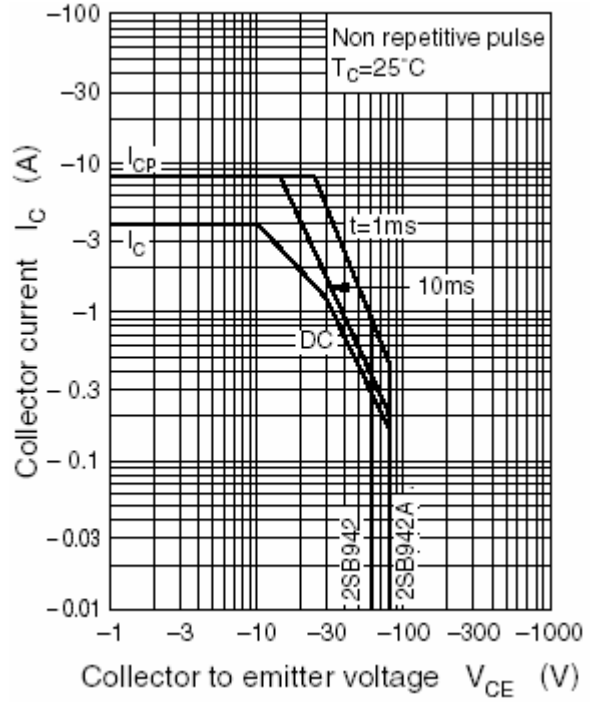


Fig.6 Safe Operating Area