

Silicon PNP Power Transistors

2SB903

DESCRIPTION

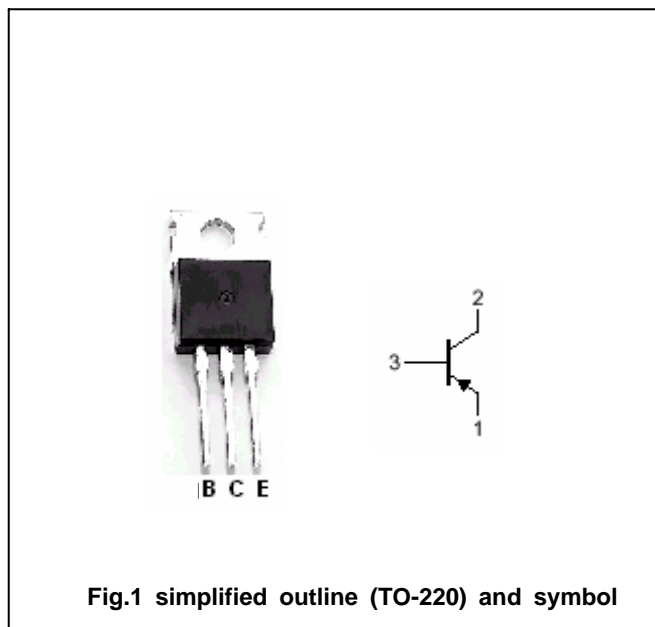
- With TO-220 package
- Low collector saturation voltage
- Large current capacity.
- Complement to type 2SD1212

APPLICATIONS

- Suitable for relay drivers, high-speed inverters, converters, and other general large current switching applications.
- High-speed switching applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector; connected to mounting base
3	Base



Absolute maximum ratings (Ta=25)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-60	V
V_{CEO}	Collector-emitter voltage	Open base	-30	V
V_{EBO}	Emitter-base voltage	Open collector	-6	V
I_C	Collector current		-12	A
I_{CM}	Collector current-peak		-20	A
P_C	Collector power dissipation		1.75	W
		$T_C=25$	35	
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =-1mA ; I _E =0	-60			V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =-1mA ; R _{BE} =	-30			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =-1mA ; I _C =0	-6			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =-5A, I _B =-0.25A			-0.5	V
I _{CBO}	Collector cut-offcurrent	V _{CB} =-40V; I _E =0			-0.1	mA
I _{EBO}	Emitter cut-offcurrent	V _{EB} =-4V; I _C =0			-0.1	mA
h _{FE-1}	DC current gain	I _C =-1A ; V _{CE} =-2V	70		280	
h _{FE-2}	DC current gain	I _C =-6A ; V _{CE} =-2V	30			
f _T	Transition frequency	I _C =-1A ; V _{CE} =-5V		120		MHz

Switching times

t _{on}	Turn-on time	I _C =-5A ; I _{B1} =-I _{B2} =-0.5A; V _{CC} =-10V; R _L =2		0.10		μs
t _{stg}	Storage time			0.30		μs
t _f	Fall time			0.03		μs

◆ h_{FE-1} classifications

Q	R	S
70-140	100-200	140-280

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PACKAGE OUTLINE

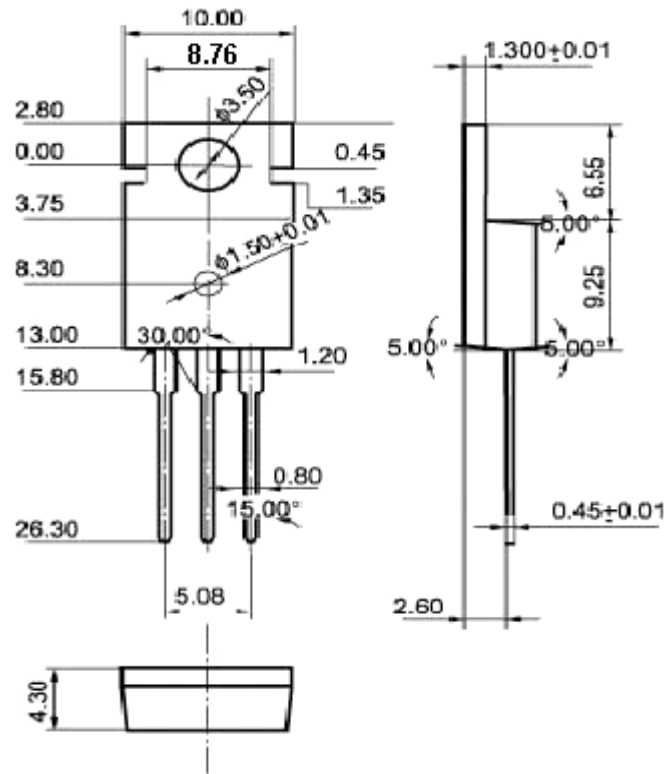


Fig.2 outline dimensions (unindicated tolerance: ± 0.10 mm)

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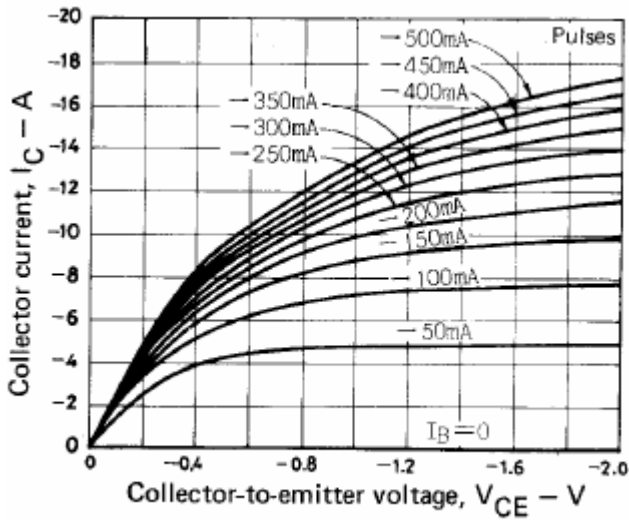


Fig.3 Static Characteristic

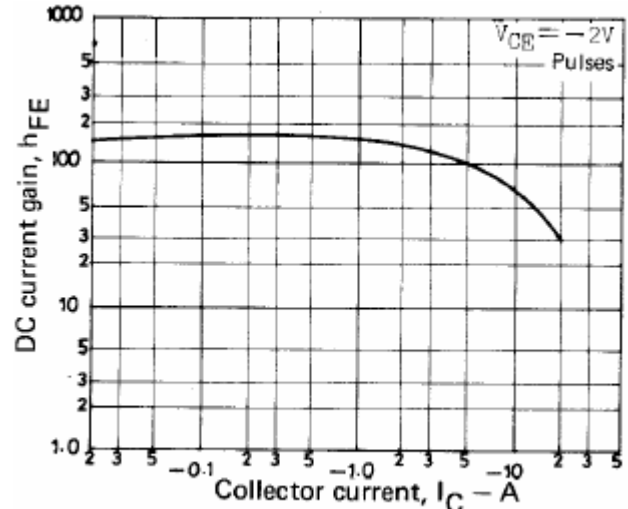


Fig.4 DC current Gain

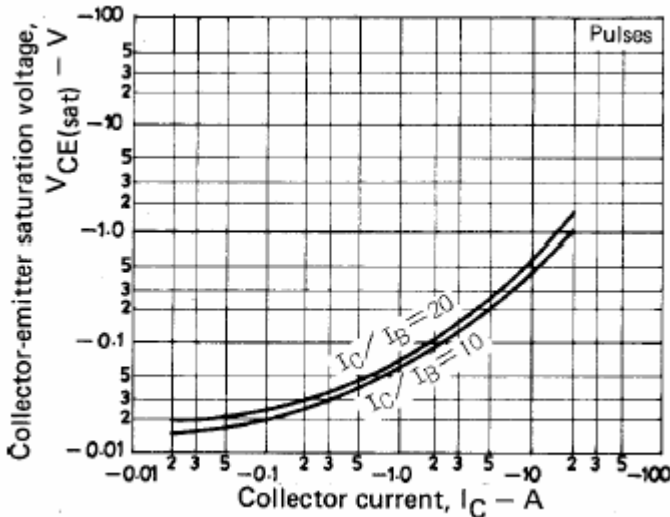


Fig.5 Collector-Emitter Saturation Voltage

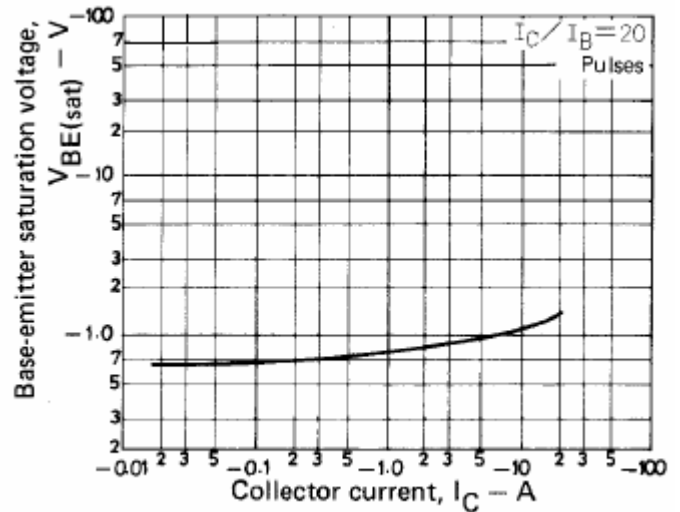


Fig.6 Base-Emitter Saturation Voltage

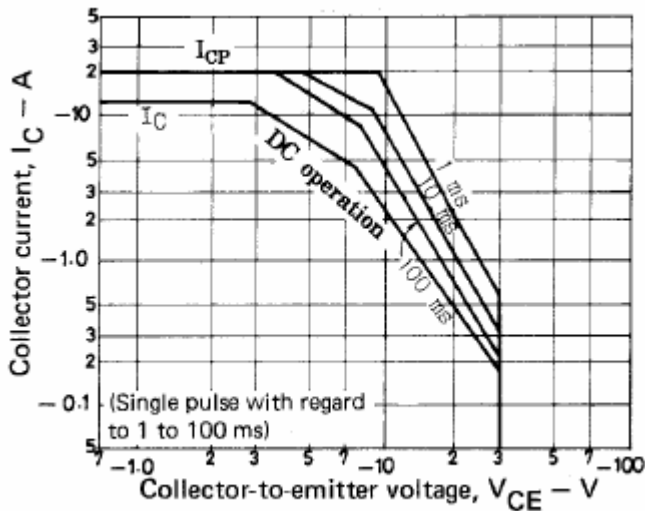


Fig.7 Safe Operating Area