

Silicon PNP Power Transistors

2SB1603 2SB1603A

DESCRIPTION

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

APPLICATIONS

- For low-voltage switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

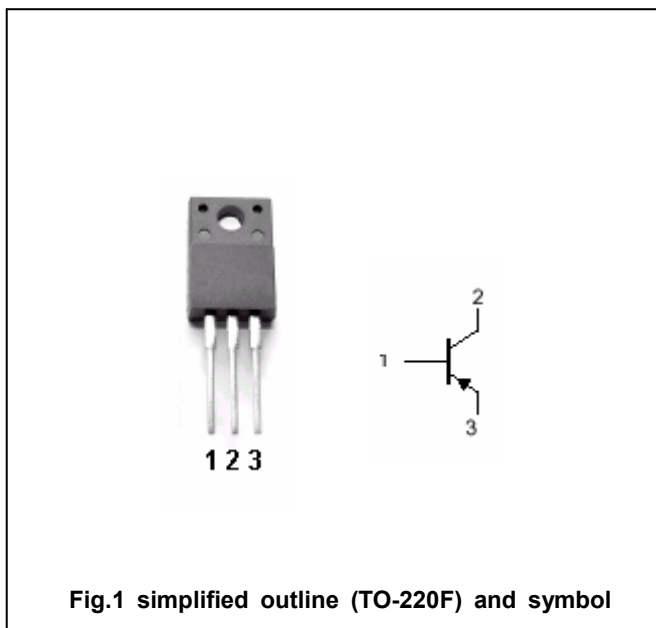


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V _{CBO}	Collector-base voltage	2SB1603	-40	V
		2SB1603A	-50	
V _{CEO}	Collector-emitter voltage	2SB1603	-20	V
		2SB1603A	-40	
V _{EBO}	Emitter-base voltage	Open collector	-5	V
I _C	Collector current		-4	A
I _{CM}	Collector current-peak		-8	A
P _C	Collector dissipation	T _a =25°C	2	W
		T _C =25°C	25	
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	2SB1603	-20			V
		2SB1603A	-40			
V _{CEsat}	Collector-emitter saturation voltage	I _C =-2A ; I _B =-0.1A			-0.5	V
V _{BEsat}	Base-emitter saturation voltage	I _C =-2A ; I _B =-0.1A			-1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =-40V ; I _E =0			-50	μA
I _{EBO}	Emitter cut-off current	V _{EB} =-5V ; I _C =0			-50	μA
h _{FE-1}	DC current gain	I _C =-0.1A ; V _{CE} =-2V	45			
h _{FE-2}	DC current gain	I _C =-1A ; V _{CE} =-2V	90		260	
f _T	Transition frequency	I _C =-0.5A ; V _{CE} =-5V		150		MHz

Switching times

t _{on}	Turn-on time	I _C =-2A ; I _{B1} =-I _{B2} =-0.2A		0.3		μs
t _{stg}	Storage time			0.4		μs
t _f	Fall time			0.1		μs

◆ h_{FE-2} Classifications

Q	P
90-180	130-260

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PACKAGE OUTLINE

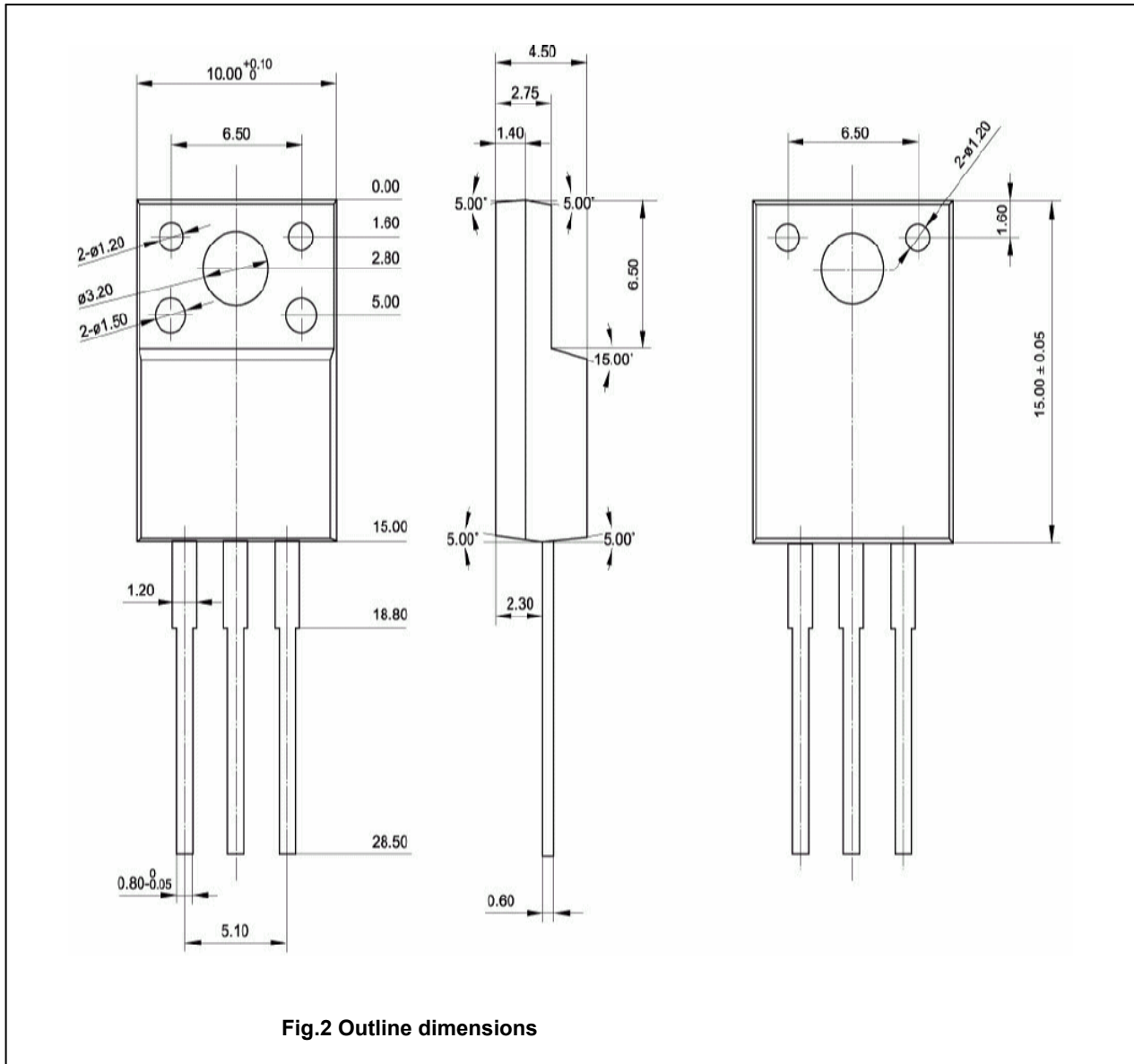


Fig.2 Outline dimensions

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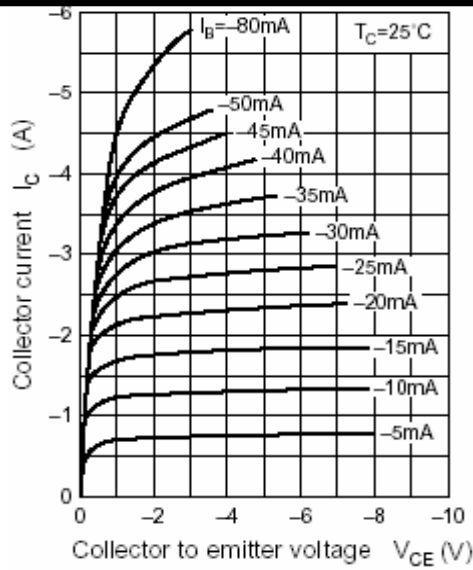


Fig.3 Static Characteristic

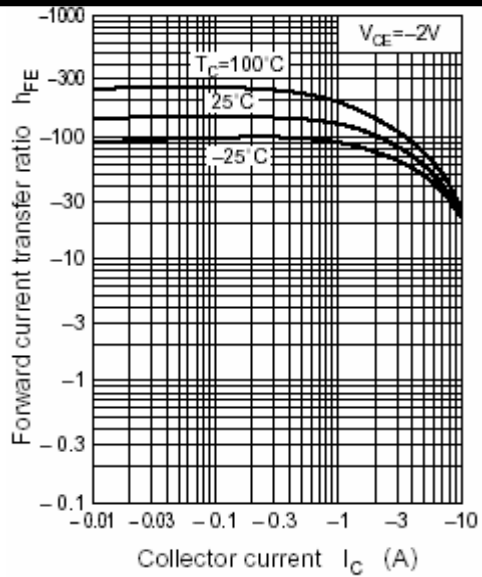


Fig.4 DC current Gain

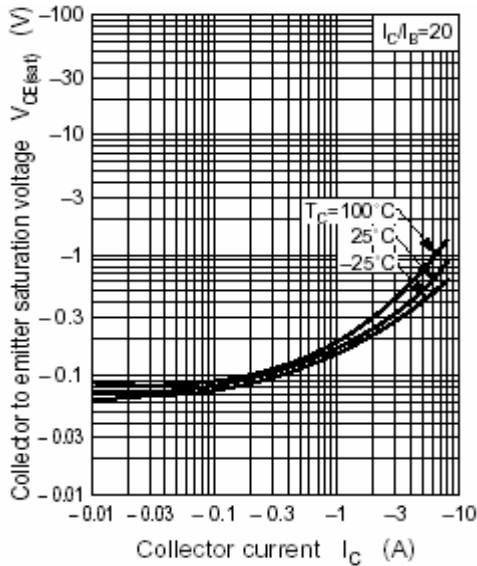


Fig.5 Collector-Emitter Saturation Voltage

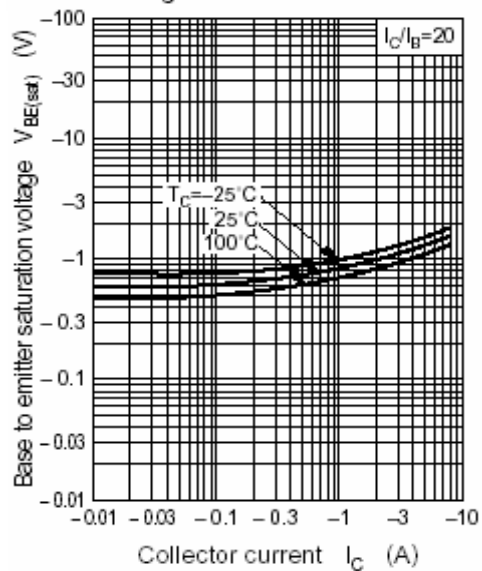


Fig.6 Base-Emitter Saturation Voltage

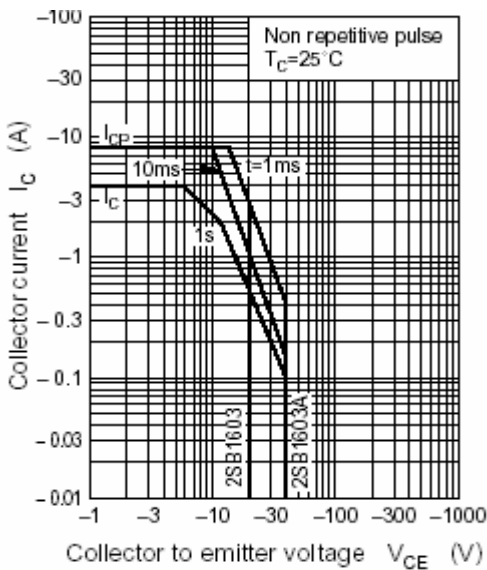


Fig.7 Safe Operating Area