

Silicon PNP Power Transistors

2SB1606

DESCRIPTION

- With TO-220F package
- Large collector current  $I_C$
- Low collector saturation voltage.
- Good linearity of  $h_{FE}$

APPLICATIONS

- For power switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

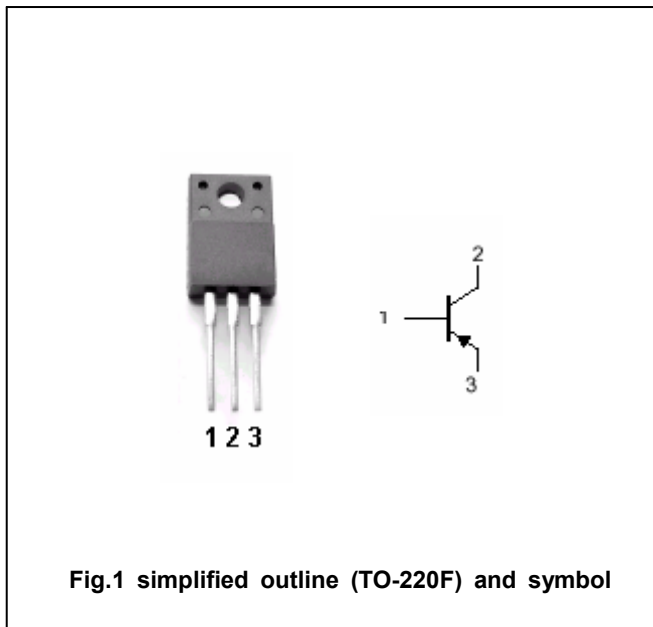


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-130	V
$V_{CEO}$	Collector-emitter voltage	Open base	-80	V
$V_{EBO}$	Emitter-base voltage	Open collector	-7	V
$I_C$	Collector current		-5	A
$I_{CM}$	Collector current-peak		-10	A
$P_C$	Collector dissipation	$T_C=25^\circ\text{C}$	40	W
			2	
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =-10mA ; I <sub>B</sub> =0	-80			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-4A ; I <sub>B</sub> =-0.2A			-0.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-4A ; I <sub>B</sub> =-0.2A			-1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-100V; I <sub>E</sub> =0			-10	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> =-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		30		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-2A; I <sub>B1</sub> =-I <sub>B2</sub> =-0.2A		0.13		μs
t <sub>stg</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.13		μs

◆ h<sub>FE-2</sub> classifications

Q	P
90-180	130-260

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PACKAGE OUTLINE

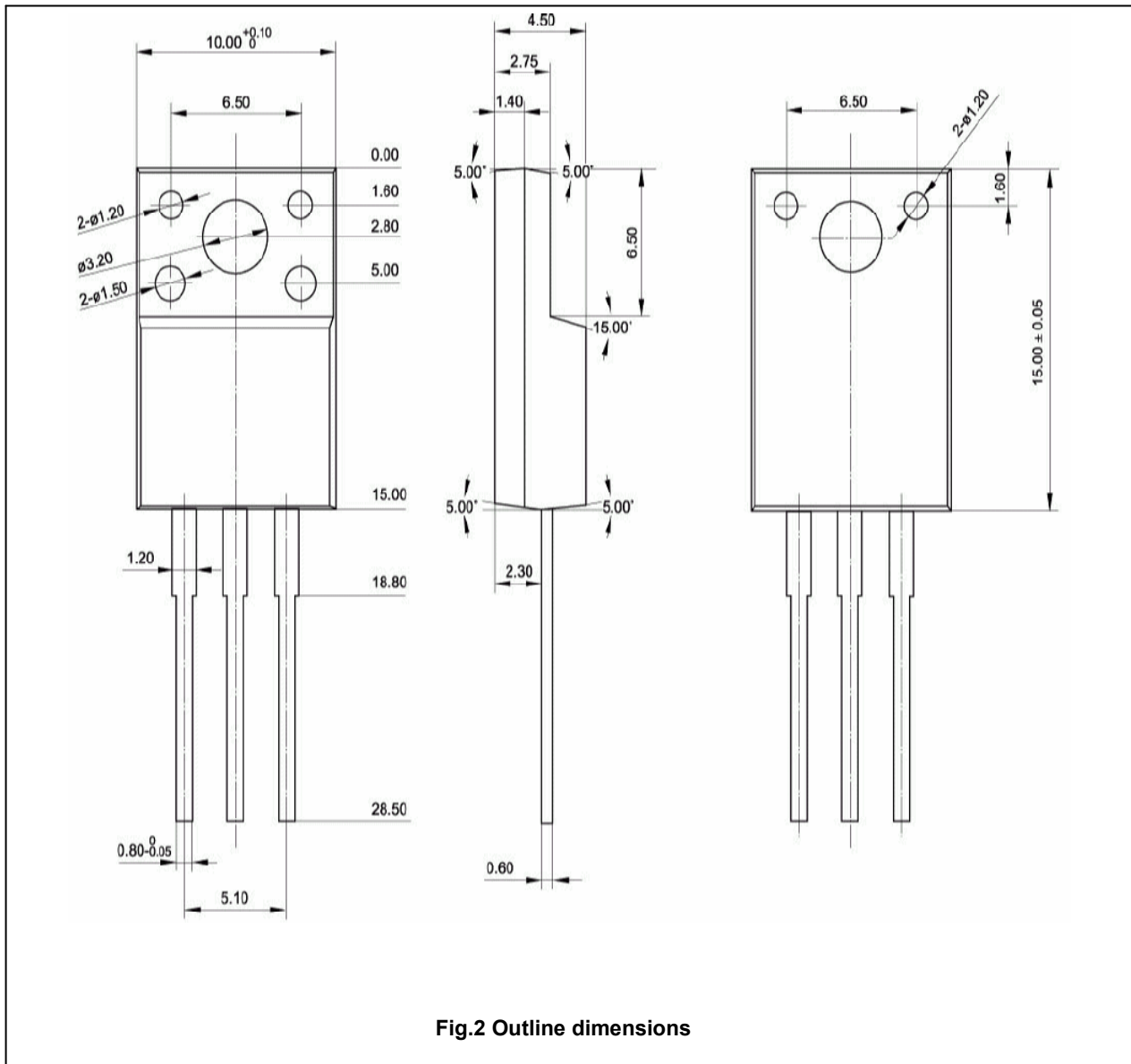


Fig.2 Outline dimensions

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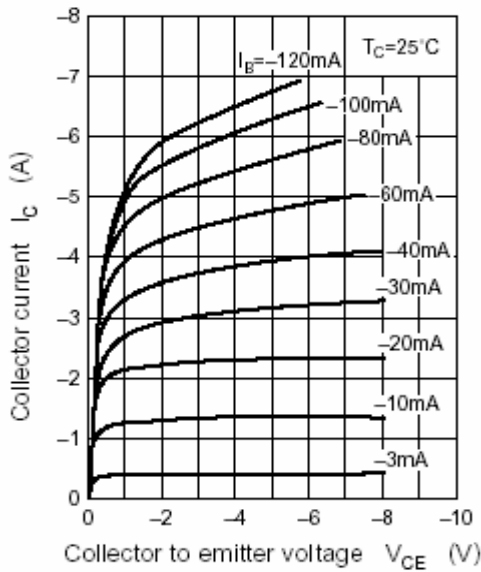


Fig.3 Static Characteristic

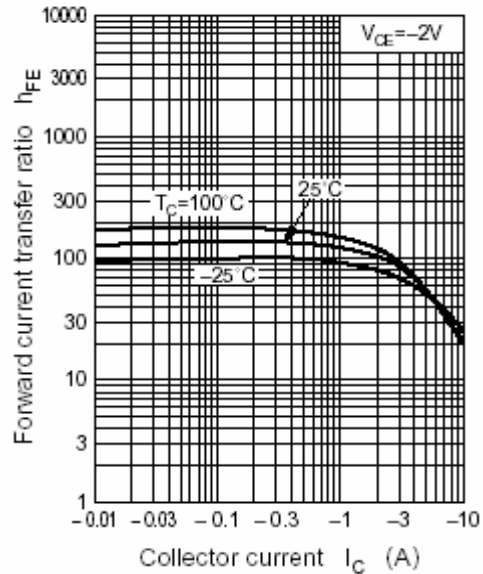


Fig.4 DC current Gain

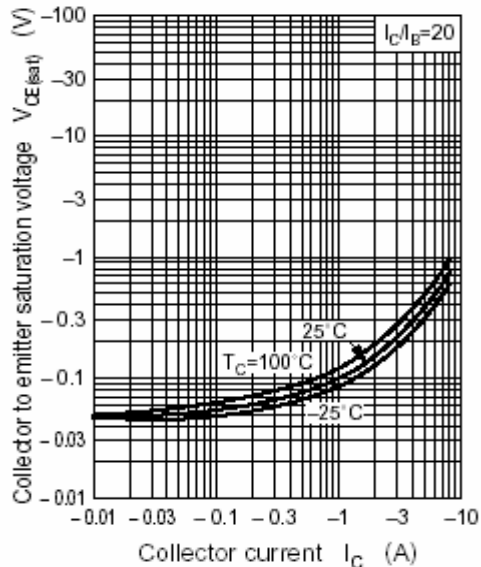


Fig.5 Collector-Emitter Saturation Voltage

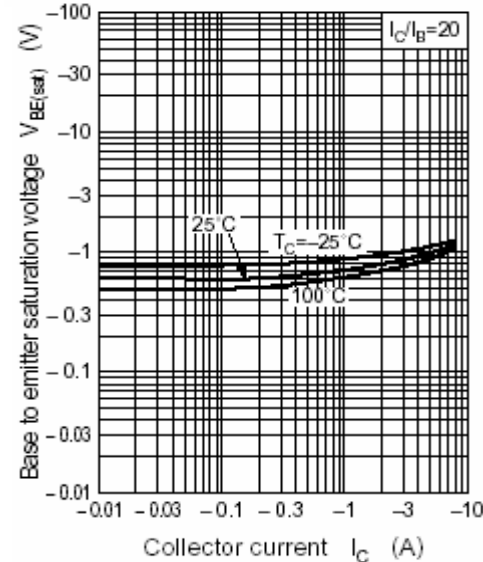


Fig.6 Base-Emitter Saturation Voltage

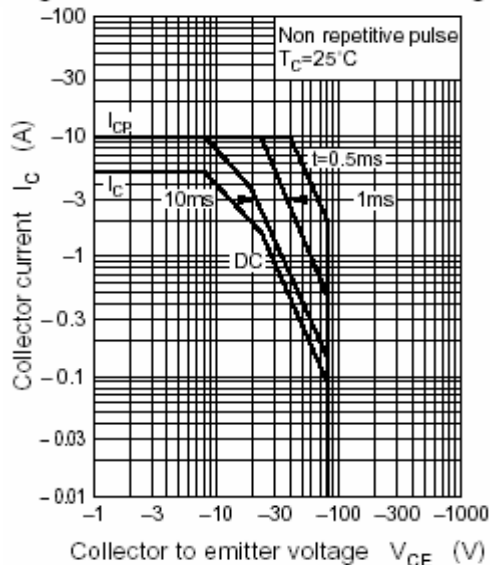


Fig.7 Safe Operating Area