

Silicon NPN Power Transistors

2SC3979

DESCRIPTION

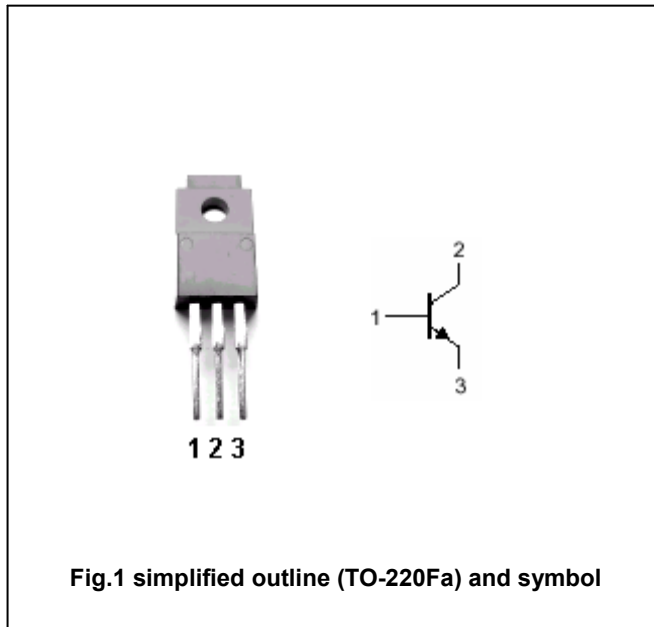
- With TO-220Fa package
- High breakdown voltage
- High speed switching
- Wide area of safe operation

APPLICATIONS

- For high breakdown voltage high-speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	900	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	800	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current (DC)		3	A
I <sub>CM</sub>	Collector current-peak		5	A
I <sub>B</sub>	Base current		1	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	40	W
		T <sub>a</sub> =25°C	2	
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>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA, I <sub>B</sub> =0	800			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =0.8A; I <sub>B</sub> =0.16A			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =0.8A; I <sub>B</sub> =0.16A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =900V; I <sub>E</sub> =0			50	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; 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> =5V	8			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =0.8A; V <sub>CE</sub> =5V	6			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.15A; V <sub>CE</sub> =5V		10		MHz

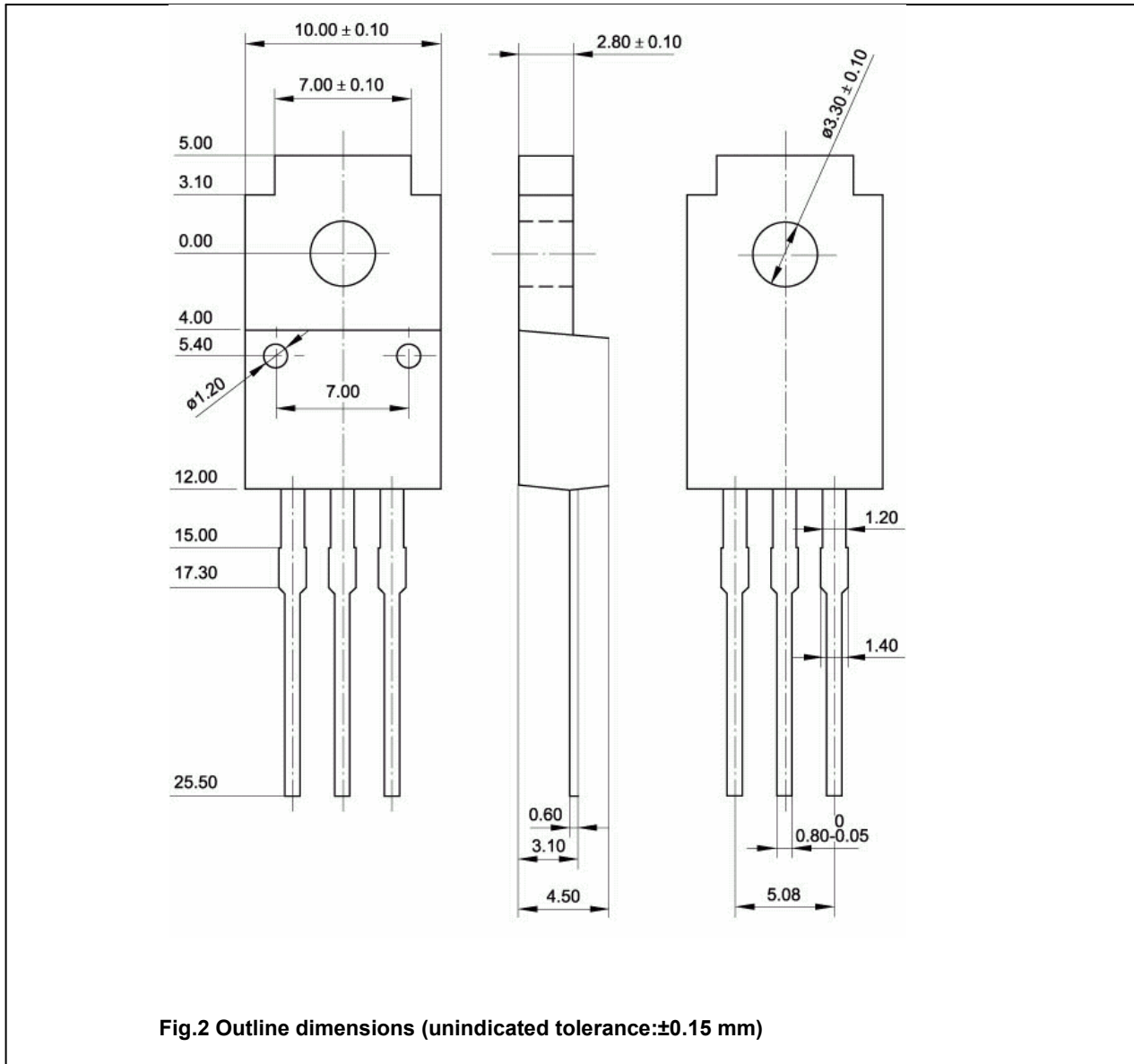
## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =0.8A; I <sub>B1</sub> =0.16A I <sub>B2</sub> =-0.32A V <sub>CC</sub> =250V			0.7	μs
t <sub>s</sub>	Storage time				2.5	μs
t <sub>f</sub>	Fall time				0.3	μs

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PACKAGE OUTLINE



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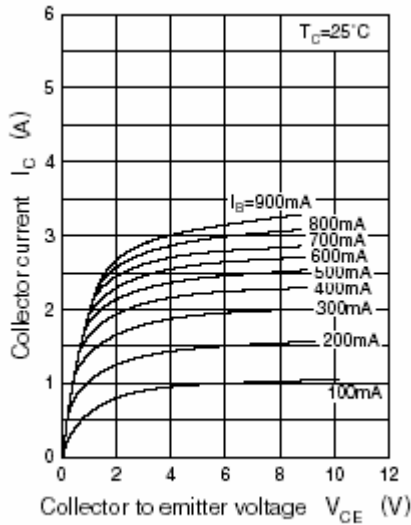


Fig.3 Static Characteristic

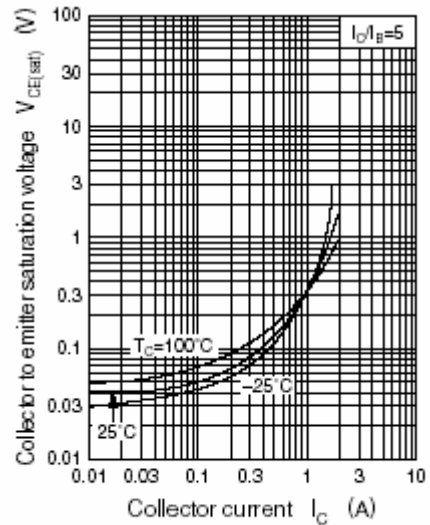


Fig.4 Collector-Emitter Saturation Voltage

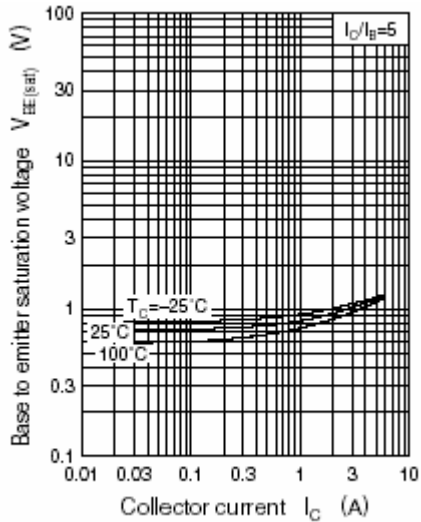


Fig.5 Base-Emitter Saturation Voltage

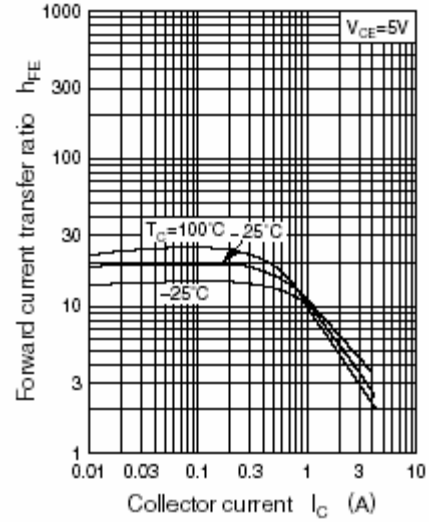


Fig.6 DC current Gain

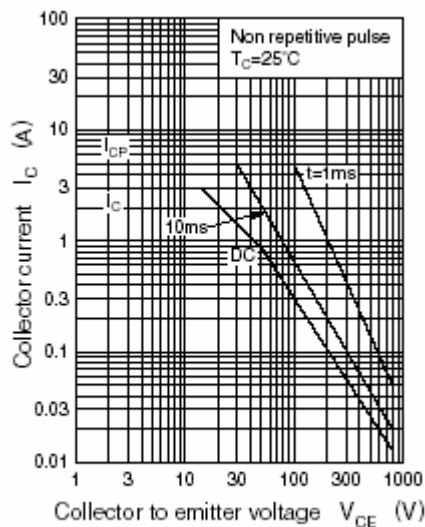


Fig.7 Safe Operating Area