

**Silicon NPN Power Transistors**

**2SC5416**

**DESCRIPTION**

- With TO-220F package
- High breakdown voltage
- High reliability

**APPLICATIONS**

- For inverter lighting applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

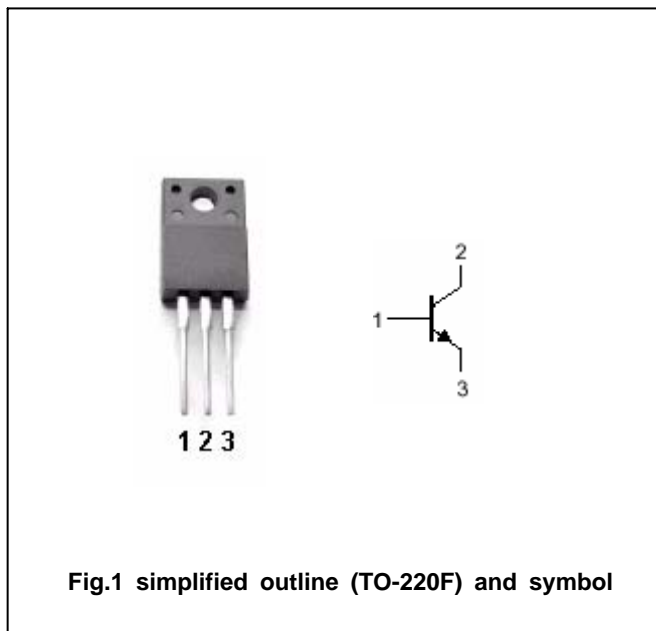


Fig.1 simplified outline (TO-220F) and symbol

**Absolute maximum ratings (Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	1000	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	450	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	9	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	2	W
		T <sub>C</sub> =25	25	
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A; I <sub>B</sub> =0	450			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4 A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.4 A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =450V; I <sub>E</sub> =0			10	μ A
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =1000V; R <sub>BE</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =9V; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V	30		50	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1.5A ; V <sub>CE</sub> =5V	10			

## Switching times

t <sub>s</sub>	Storage time	I <sub>C</sub> =2A; I <sub>B1</sub> =0.4A ; I <sub>B2</sub> =-0.8A			2.5	μ s
t <sub>f</sub>	Fall time				0.15	μ s

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PACKAGE OUTLINE

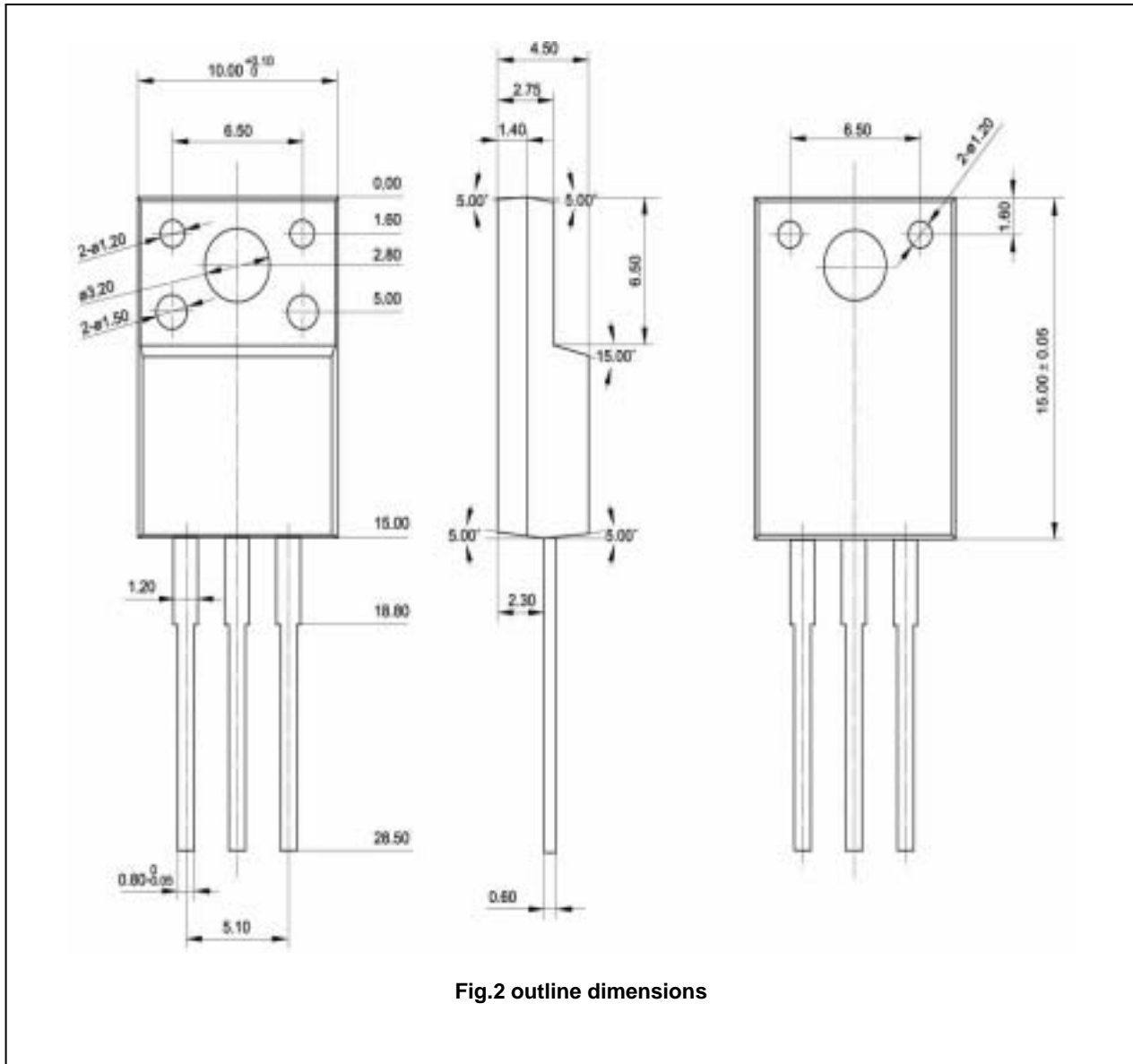


Fig.2 outline dimensions

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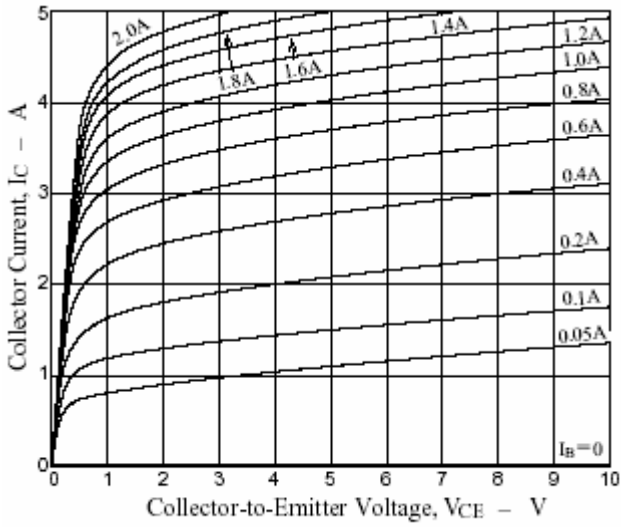


Fig.3 Static Characteristic

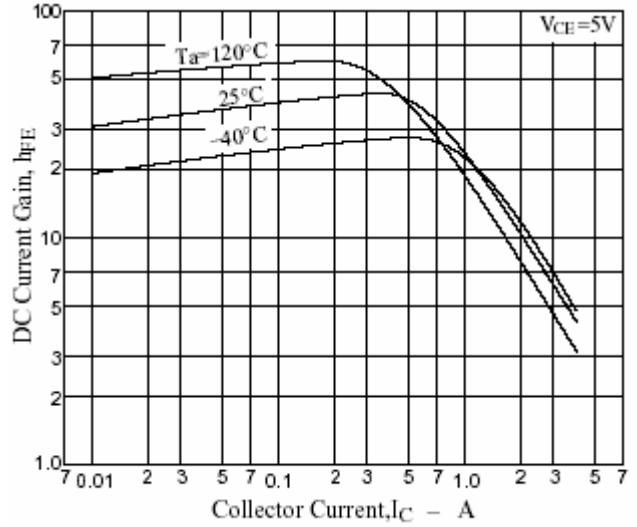


Fig.4 DC current Gain

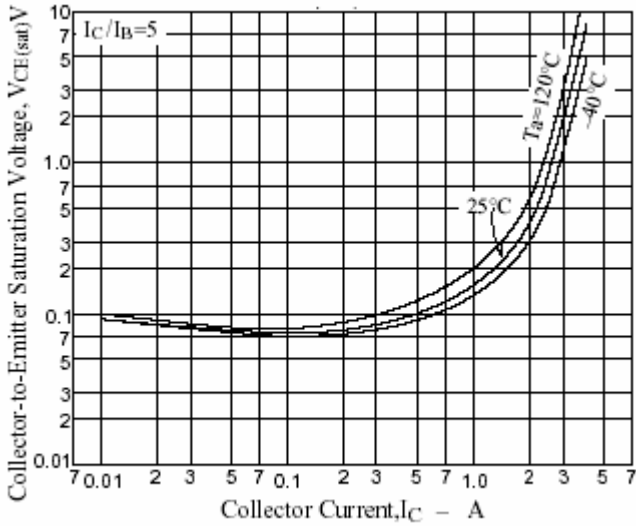


Fig.5 Collector-Emitter Saturation Voltage

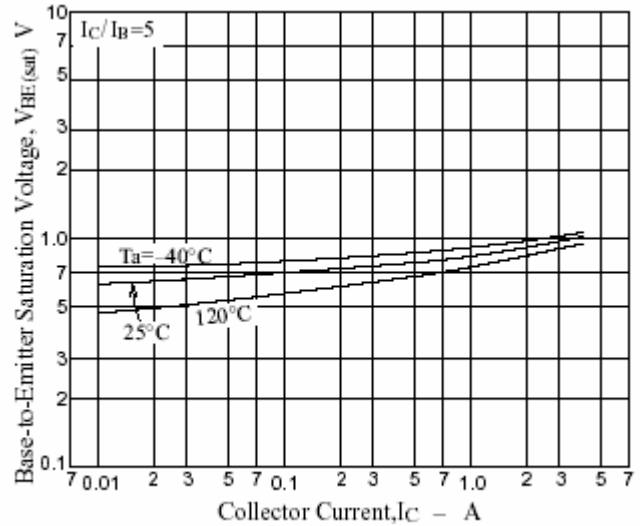


Fig.6 Base-Emitter Saturation Voltage

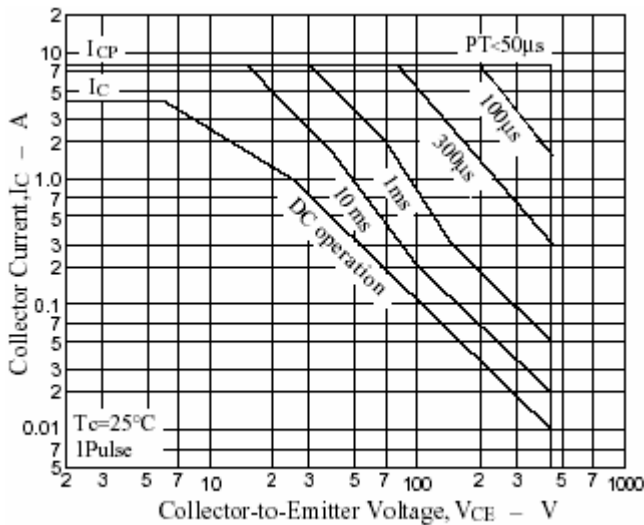


Fig.7 Safe Operating Area