

Silicon NPN Power Transistors

2SC4596

**DESCRIPTION**

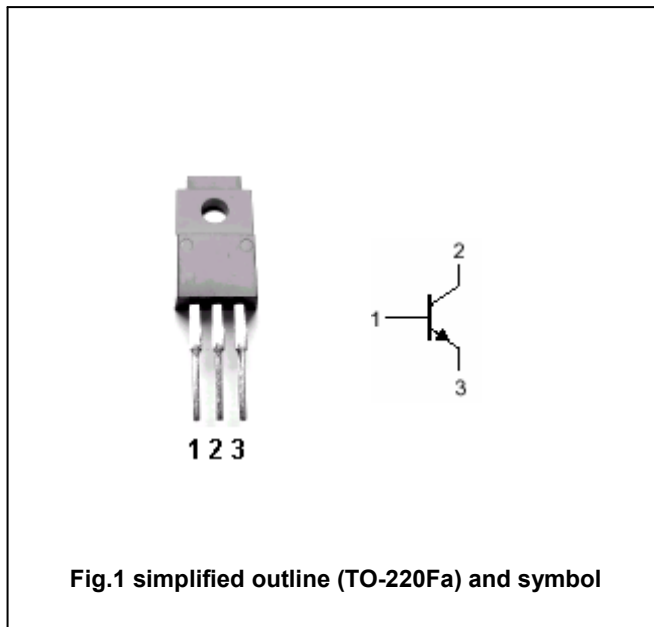
- With TO-220Fa package
- Low collector saturation voltage
- Wide area of safe operation

**APPLICATIONS**

- For high speed power switching and DC-DC converter applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</sub>	Collector-base voltage	Open emitter	100	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	60	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		5	A
I <sub>CM</sub>	Collector current-peak		10	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	25	W
		T <sub>a</sub> =25°C	1	
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	60			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50μA, I <sub>C</sub> =0	5			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A, I <sub>B</sub> =0.15A			0.3	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =4A, I <sub>B</sub> =0.2A			0.5	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =3A, I <sub>B</sub> =0.15A			1.2	V
V <sub>BEsat-2</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			10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A; V <sub>CE</sub> =2V	60		320	
C <sub>ob</sub>	Output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =10V, f=1MHz		80		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A; V <sub>CE</sub> =10V		120		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3A; R <sub>L</sub> =10Ω I <sub>B1</sub> = I <sub>B2</sub> =0.15A V <sub>CC</sub> ≈30V			0.3	μs
t <sub>s</sub>	Storage time				1.5	μs
t <sub>f</sub>	Fall time				0.3	μs

◆ h<sub>FE</sub> Classifications

D	E	F
60-120	100-200	160-320

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PACKAGE OUTLINE

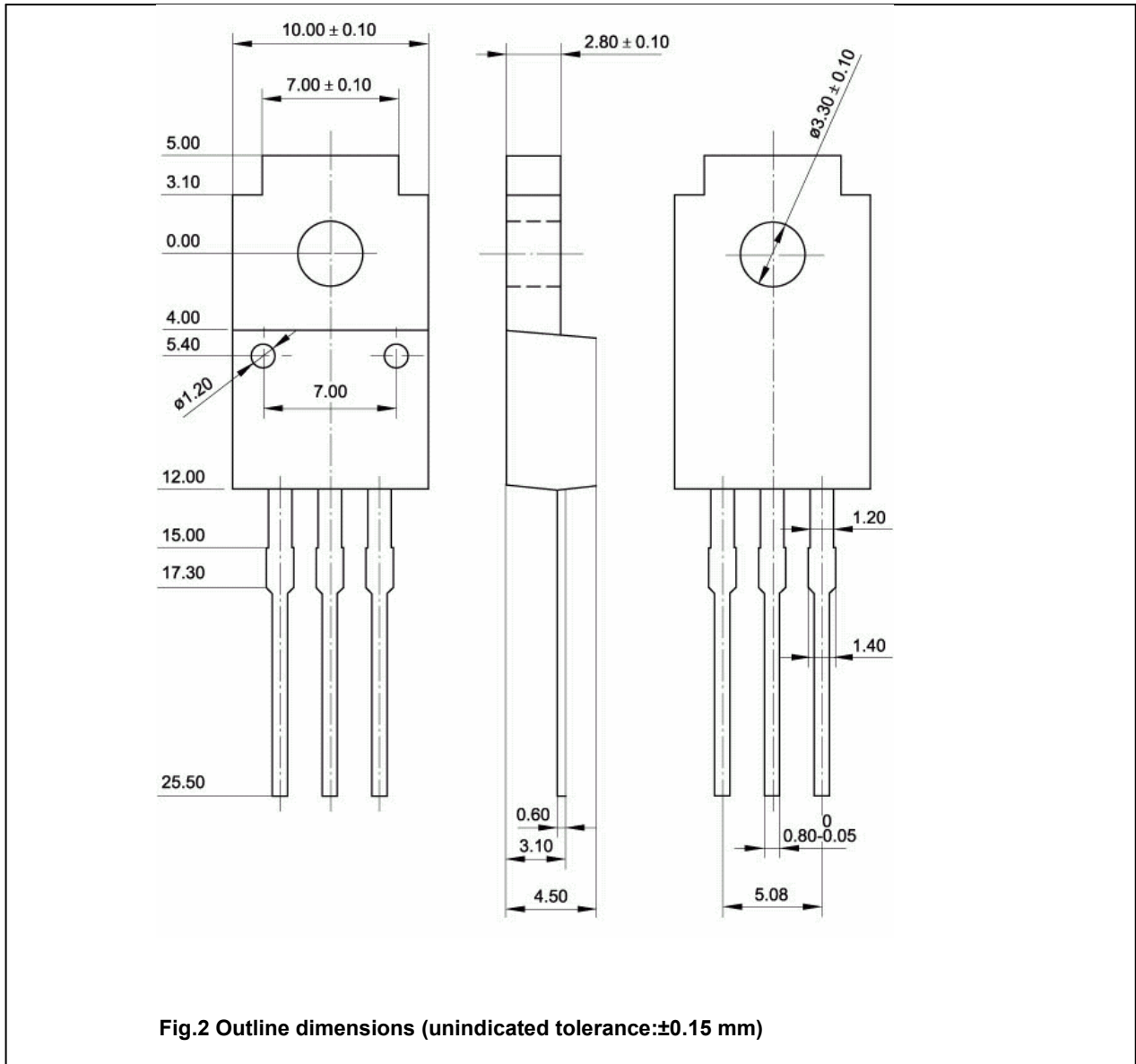


Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)