

**Silicon Power Transistors**

**2SC2331**

**DESCRIPTION**

- With TO-220 package
- Complement to type 2SA1008
- Low collector saturation voltage
- Fast switching speed

**APPLICATIONS**

- Switching regulators
- DC/DC converters
- High frequency power amplifiers

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

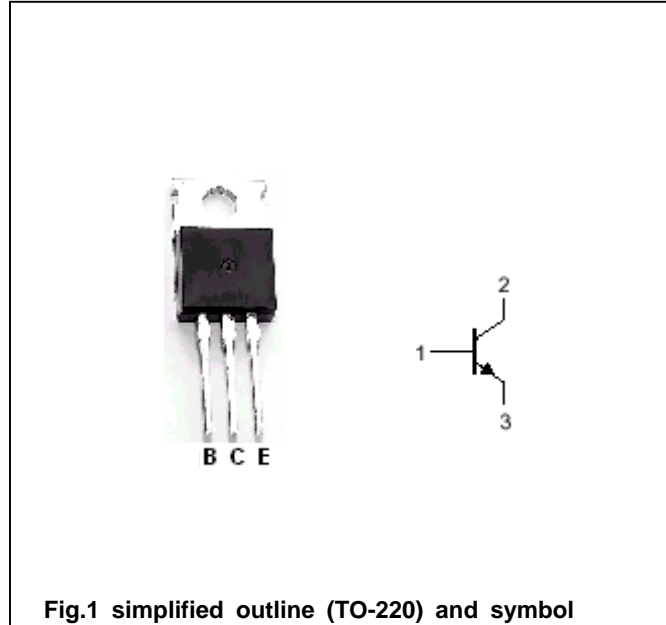


Fig.1 simplified outline (TO-220) and symbol

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

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	100	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		2.0	A
I <sub>CM</sub>	Collector current-Peak		4.0	A
I <sub>B</sub>	Base current		1.0	A
P <sub>T</sub>	Total power dissipation	T <sub>a</sub> =25	1.5	W
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25	15	W
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>CE0(SUS)</sub>	Base-emitter sustaining voltage	I <sub>C</sub> =1.0A, I <sub>B</sub> =0.1A, L=1mH	100			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1A; I <sub>B</sub> =0.1A			0.6	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1A; I <sub>B</sub> =0.1A			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-1</sub>	DC current gain	I <sub>C</sub> =0.1A; V <sub>CE</sub> =5V	40			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1A; V <sub>CE</sub> =5V	40		200	

Switching times resistive load

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =1.0A I <sub>B1</sub> =- I <sub>B2</sub> =0.1A R <sub>L</sub> =50 ;V <sub>CC</sub> 50V			0.5	μs
t <sub>s</sub>	Storage time				1.5	μs
t <sub>f</sub>	Fall time				0.5	μs

◆ h<sub>FE-2</sub> Classifications

M	L	K
40-80	60-120	100-200

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PACKAGE OUTLINE

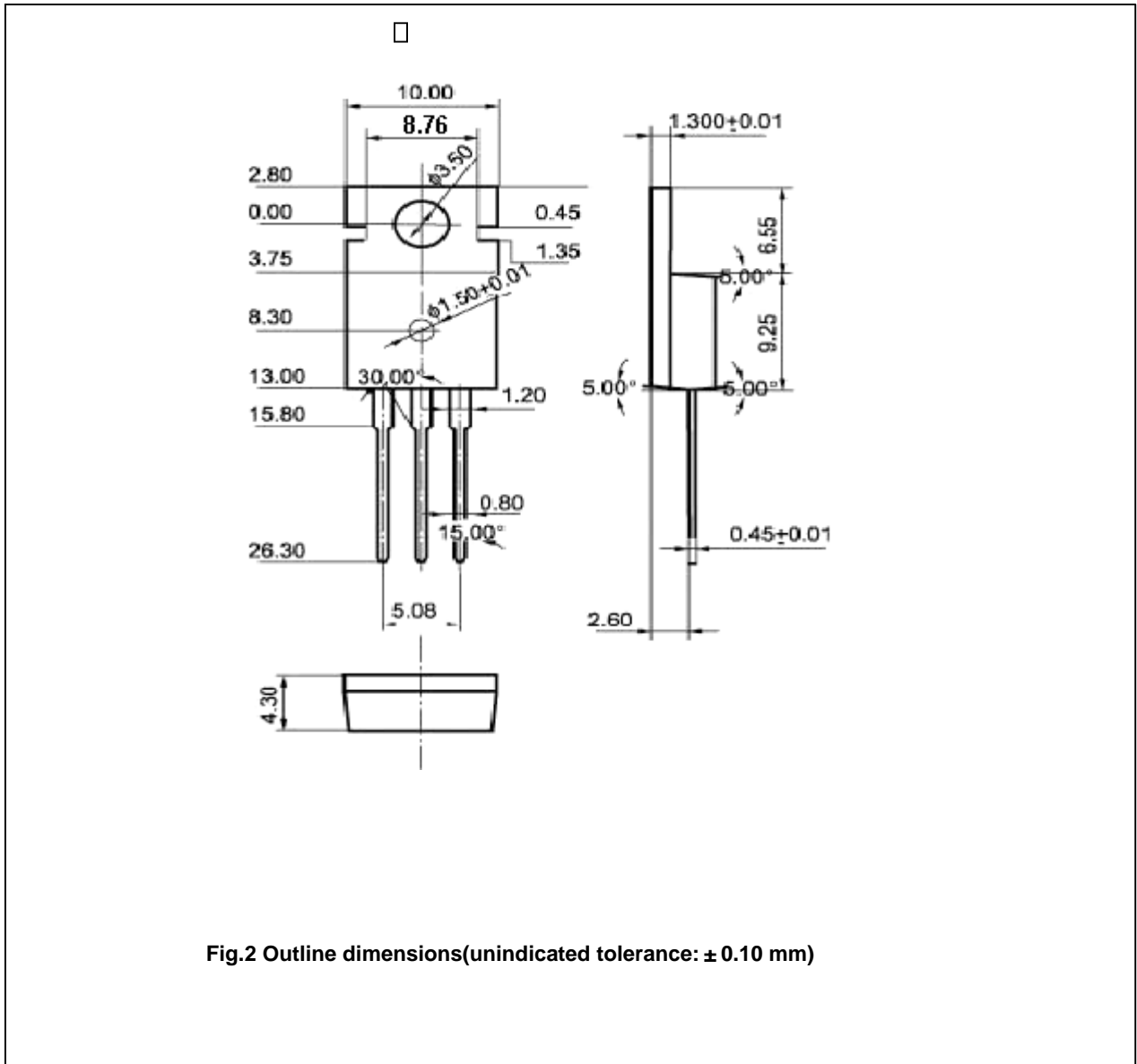


Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.10$  mm)