

Silicon NPN Power Transistors

2SC1678

**DESCRIPTION**

- With TO-220 package
- Low collector saturation voltage

**APPLICATIONS**

- 27MHz RF power amplifier applications

**PINNING**

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

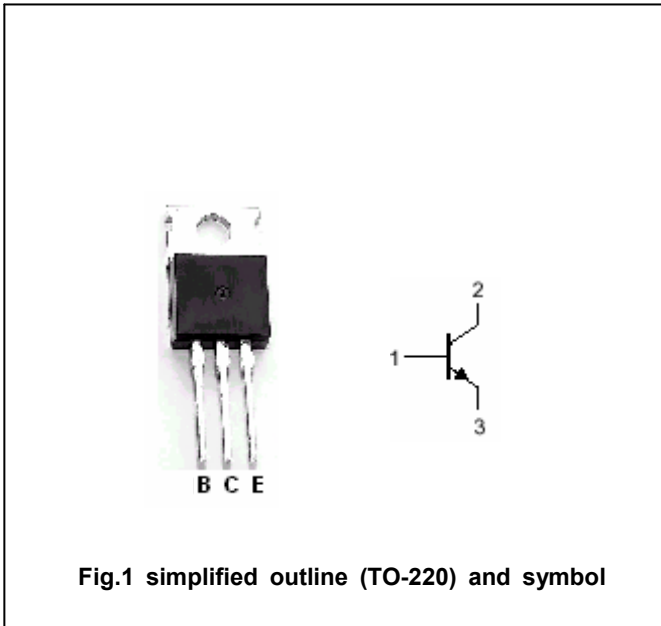


Fig.1 simplified outline (TO-220) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	65	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	65	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	4	V
I <sub>C</sub>	Collector current		3	A
I <sub>B</sub>	Base current		0.4	A
I <sub>E</sub>	Emitter current		-3	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	10	W
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>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =0.5A; I <sub>B</sub> =50m A			1.0	V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA; I <sub>E</sub> =0	65			V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA; I <sub>B</sub> =0	65			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA; I <sub>C</sub> =0	4			V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =30V; I <sub>E</sub> =0			10	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =20V; I <sub>B</sub> =0			100	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1.5A ; V <sub>CE</sub> =5V	10			
C <sub>OB</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz		30		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V	100			MHz

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PACKAGE OUTLINE

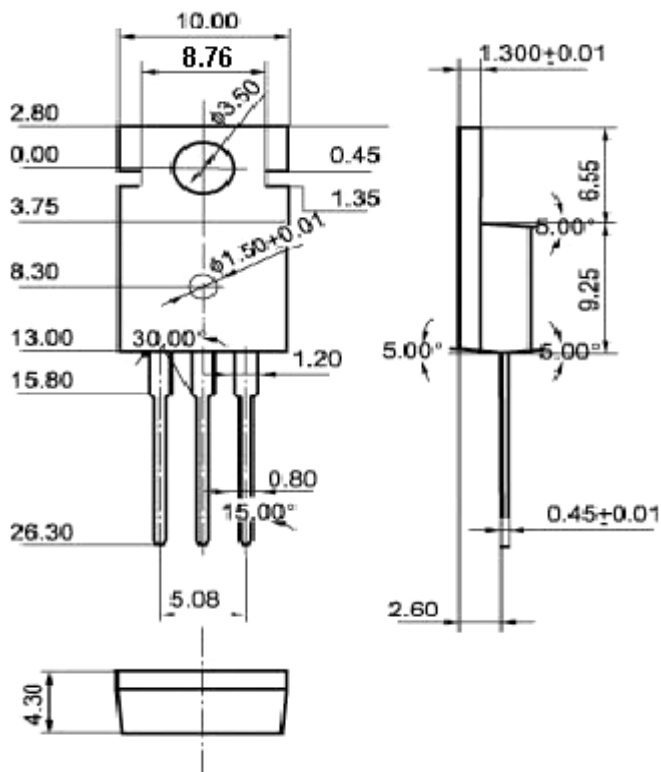


Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)