

Silicon NPN Power Transistors

2SD313

**DESCRIPTION**

- With TO-220C package
- Complement to type 2SB507
- Low collector saturation voltage

**APPLICATIONS**

- Designed for the output stage of 15W to 25W AF power amplifier

**PINNING**

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

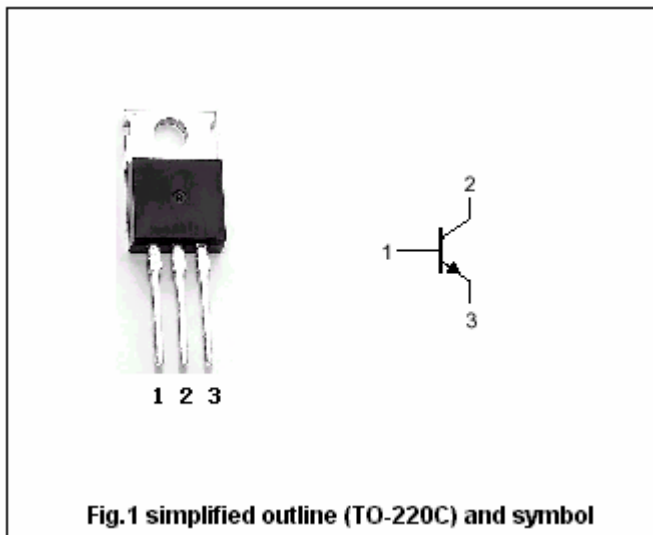


Fig.1 simplified outline (TO-220C) and symbol

**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	60	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 (DC)		3	A
I <sub>CM</sub>	Collector current-Peak		8	A
I <sub>B</sub>	Base current		1	A
P <sub>C</sub>	Collector dissipation	T <sub>C</sub> =25°C	30	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-50~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	CHARACTERISTICS	MAX	UNIT
R <sub>θjc</sub>	Thermal resistance junction to case	4.16	°C/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter voltage	I <sub>C</sub> =10mA; I <sub>B</sub> =0	60			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.2A			1.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =1A; V <sub>CE</sub> =2V			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =60V; I <sub>E</sub> =0			0.1	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =60V; I <sub>B</sub> =0			5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A; V <sub>CE</sub> =2V	40		320	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =0.1A; V <sub>CE</sub> =2V	40			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V	5			MHz

◆ h<sub>FE-1</sub> Classifications

C	D	E	F
40-80	60-120	100-200	160-320

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PACKAGE OUTLINE



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