

**Silicon NPN Power Transistors**

**2SD1135**

**DESCRIPTION**

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- With TO-220C package
- Complement to type 2SB859

**APPLICATIONS**

- For low frequency power amplifier applications

**PINNING**

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

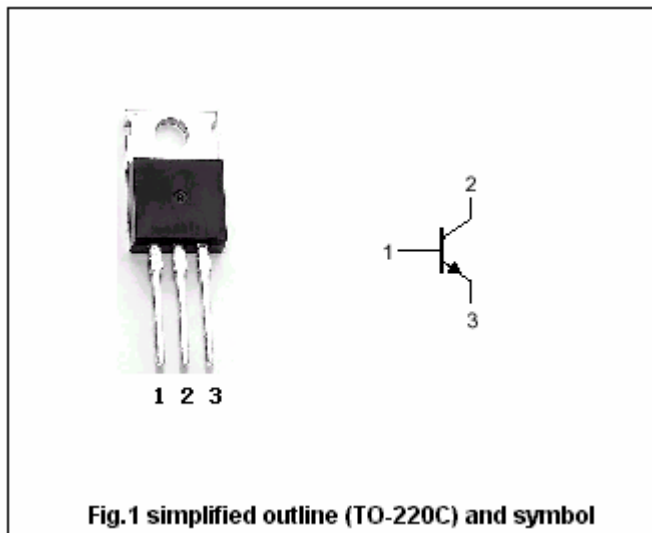


Fig.1 simplified outline (TO-220C) and symbol

**Absolute maximum ratings(Tc=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	100	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	80	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	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>C</sub> =25°C	40	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-45~150	°C

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## 2SD1135

## CHARACTERISTICS

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

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =50mA; R <sub>BE</sub> =∞	80			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =10μA; I <sub>C</sub> =0	5			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2 A; I <sub>B</sub> =0.2 A			2.0	V
V <sub>BE</sub>	Base-emitter voltage	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =80V; I <sub>E</sub> =0			0.1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	60		200	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V	35			
C <sub>ob</sub>	Collector output capacitance	I <sub>C</sub> =0; V <sub>CB</sub> =20V; f=1MHz		40		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V		10		MHz

◆ h<sub>FE-1</sub> classifications

B	C
60-120	100-200

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PACKAGE OUTLINE

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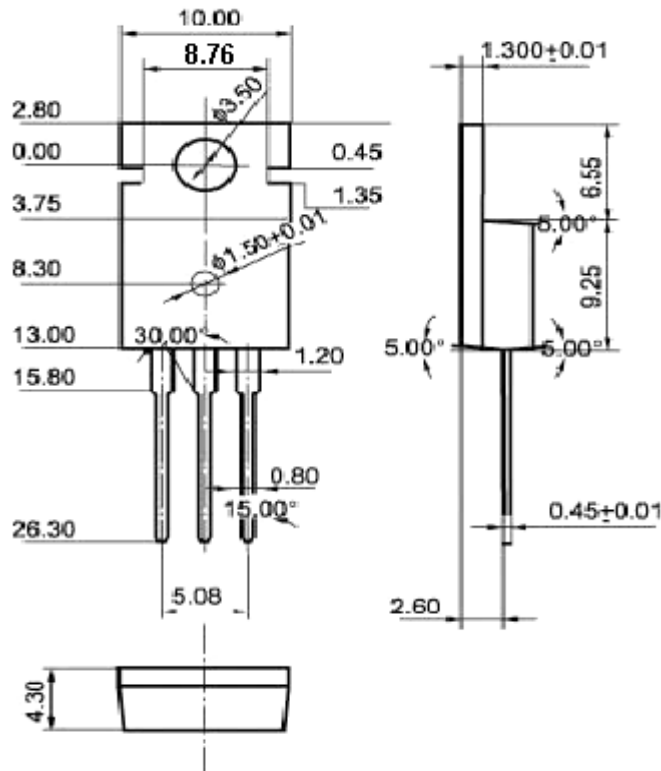


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10$  mm)

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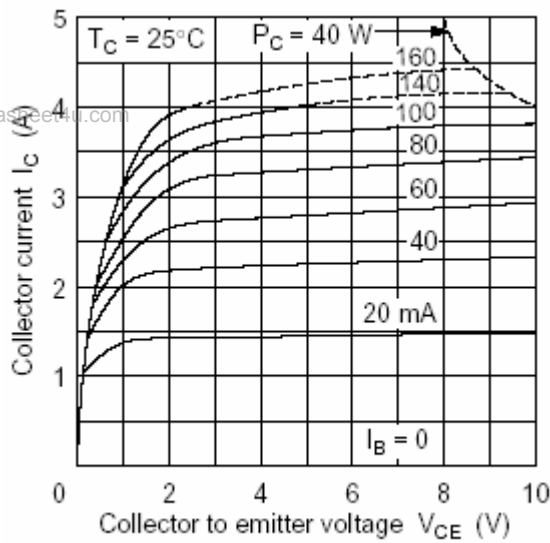


Fig.3 Static Characteristic

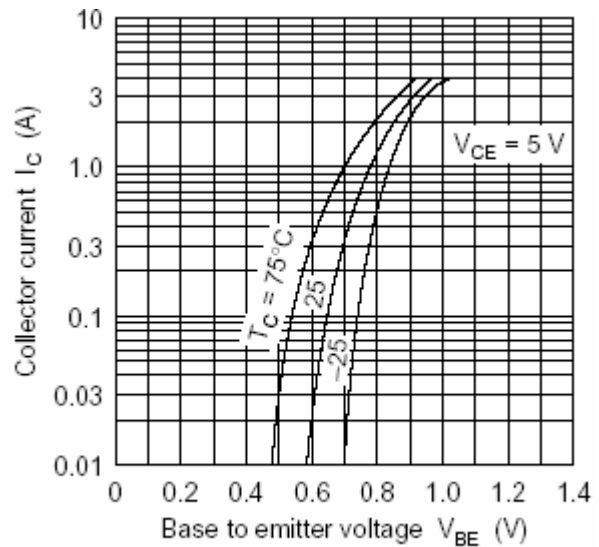


Fig.4 Base-Emitter On Voltage

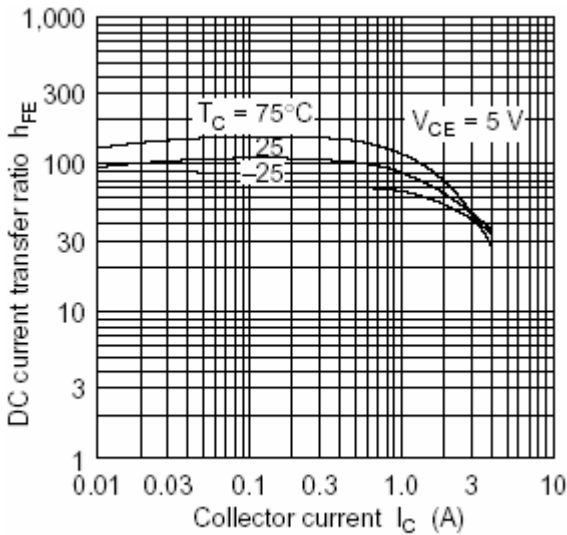


Fig.5 DC current Gain

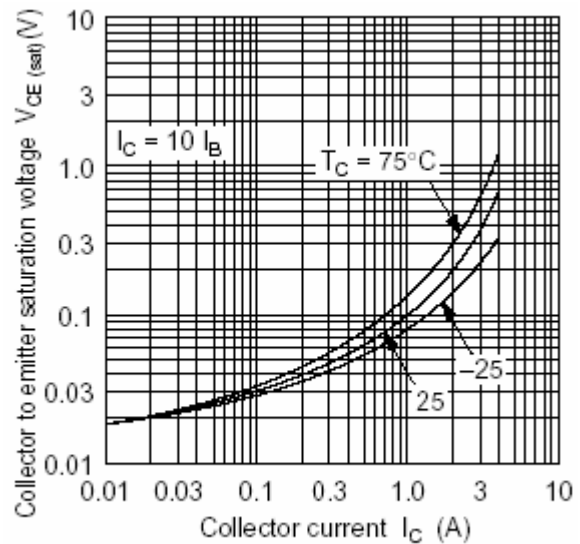


Fig.6 Collector-Emitter Saturation Voltage

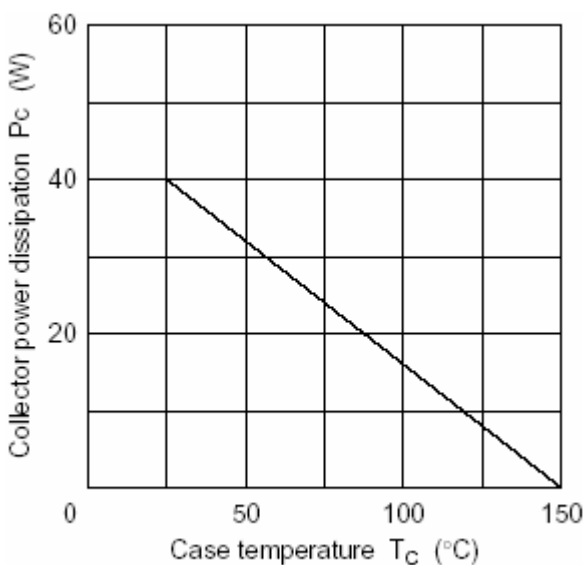


Fig.7 Power Derating

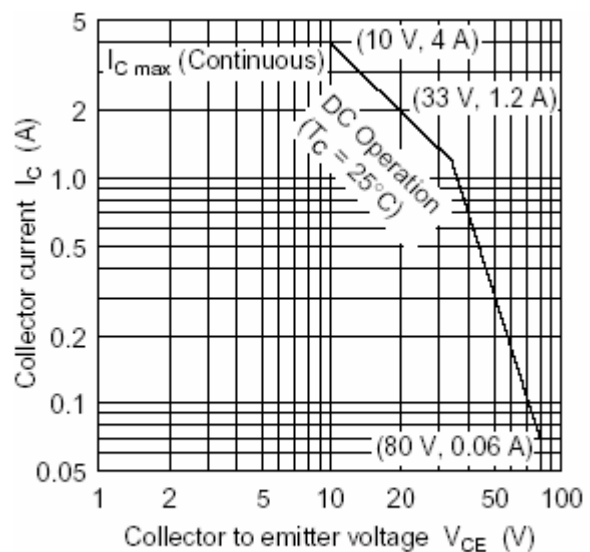


Fig.8 Safe Operating Area