

Silicon NPN Power Transistors

2SD1138

**DESCRIPTION**

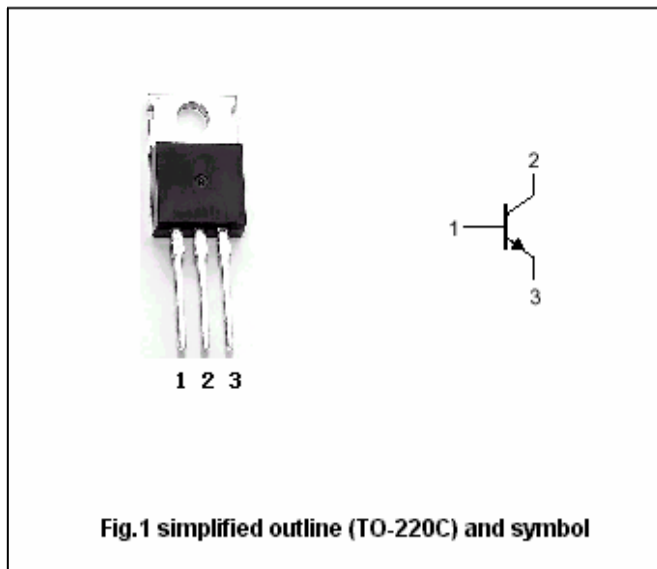
- With TO-220C package
- Complement to type 2SB861

**APPLICATIONS**

- Low frequency high voltage power amplifier TV vertical deflection output

**PINNING**

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



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	200	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	150	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		2	A
I <sub>CP</sub>	Collector current-peak		5	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25°C	1.8	W
		T <sub>C</sub> =25°C	30	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-45~150	°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> =50mA; R <sub>BE</sub> =∞	150			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =5mA; I <sub>C</sub> =0	6			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =0.5 A; I <sub>B</sub> =50m A			3.0	V
V <sub>BE</sub>	Base-emitter voltage	I <sub>C</sub> =50mA ; V <sub>CE</sub> =4V			1.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =120V; I <sub>E</sub> =0			1	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =50mA ; V <sub>CE</sub> =4V	60		320	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V	60			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =100V, f=1MHz		20		pF

◆ h<sub>FE-1</sub> classifications

B	C	D
60-120	100-200	160-320

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PACKAGE OUTLINE

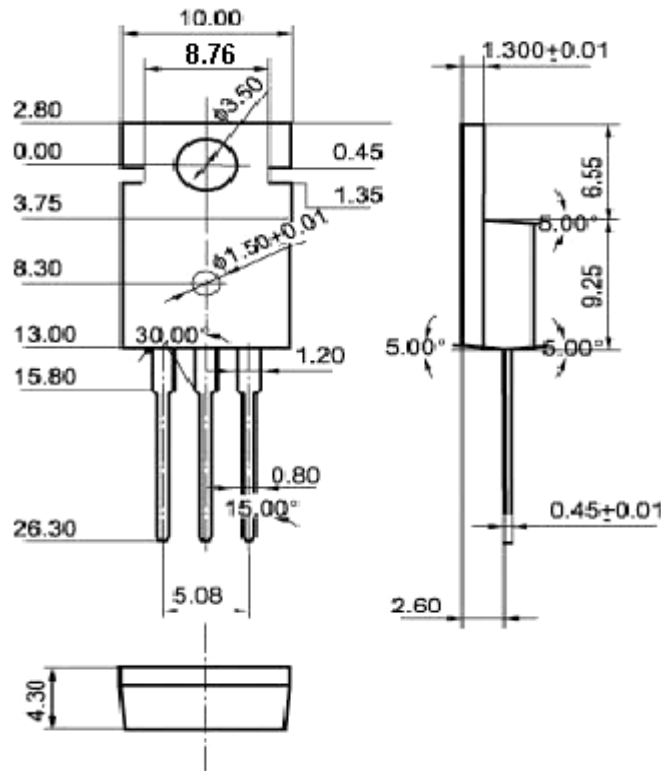


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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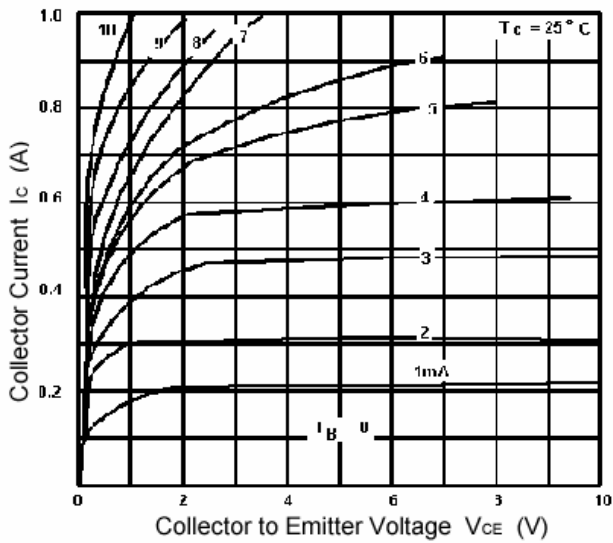


Fig.3 Static Characteristic

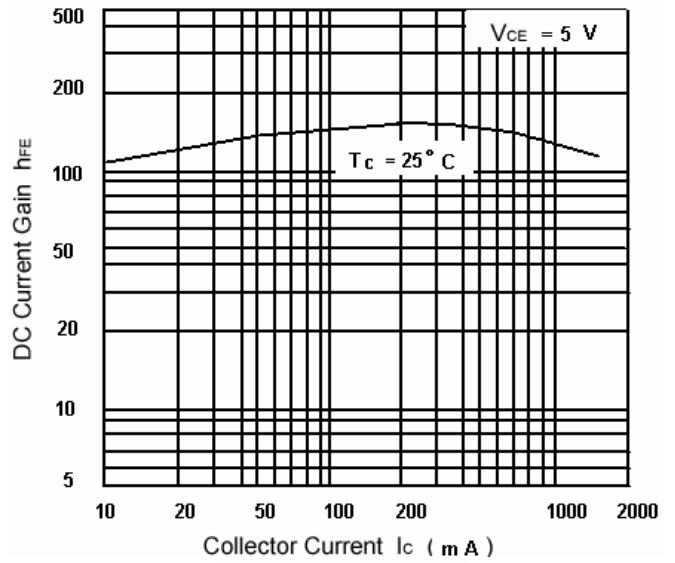


Fig.4 DC current Gain

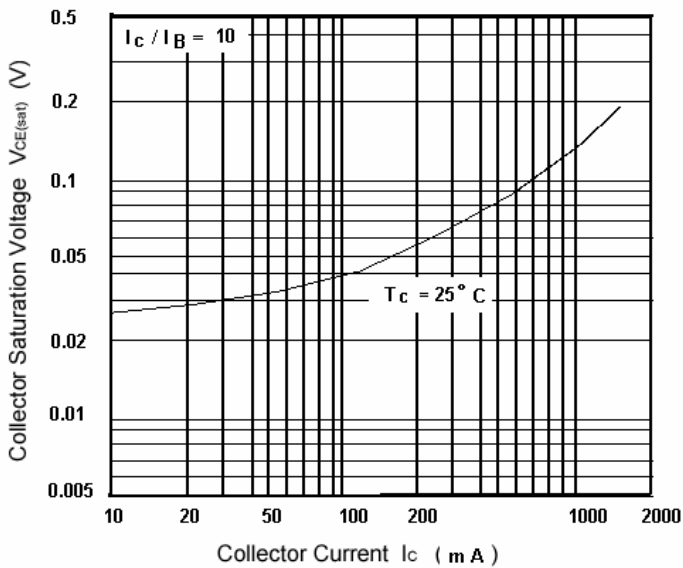


Fig.5 Collector-Emitter Saturation Voltage

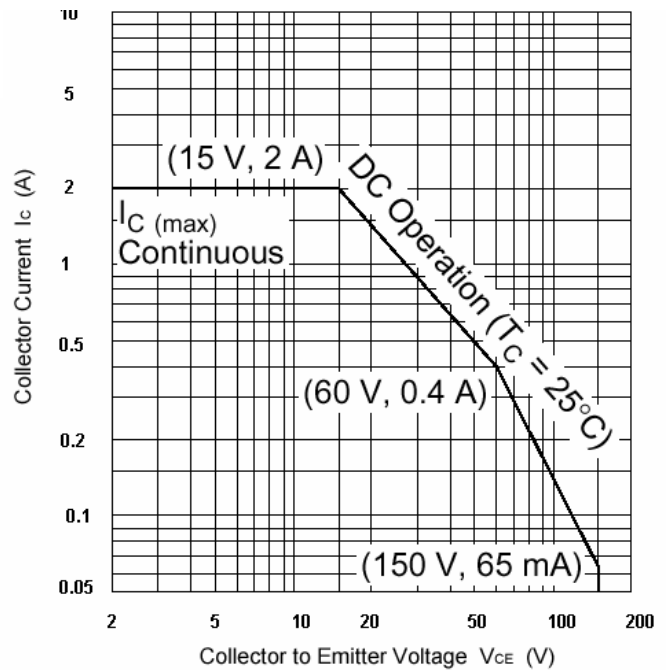


Fig.6 Safe Operating Area