

**Silicon PNP Power Transistors**

**2SB1151**

**DESCRIPTION**

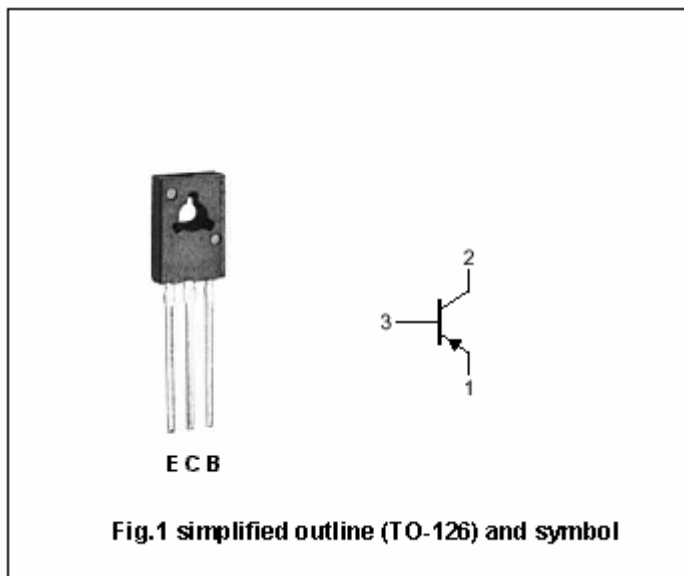
- With TO-126 package
- Complement to type 2SD1691
- Low saturation voltage
- Large current
- High total power dissipation: $P_T=1.3W$
- Large current capability and wide SOA

**APPLICATIONS**

- DC-DC converter
- Driver of solenoid or motor

**PINNING**

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



**Absolute maximum ratings( $T_a=25^\circ C$ )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-60	V
$V_{CEO}$	Collector-emitter voltage	Open base	-60	V
$V_{EBO}$	Emitter-base voltage	Open collector	-7	V
$I_C$	Collector current (DC)		-5	A
$I_{CM}$	Collector current-Peak		-8	A
$I_B$	Base current		-1	A
$P_D$	Total power dissipation	$T_a=25^\circ C$	1.3	W
		$T_C=25^\circ C$	20	
$T_j$	Junction temperature		150	$^\circ C$
$T_{stg}$	Storage temperature		-55~150	$^\circ C$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-2.0A ; I <sub>B</sub> =-0.2A			-0.3	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-2.0A ; I <sub>B</sub> =-0.2A			-1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-50V; I <sub>E</sub> =0			-10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-7V; 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> =-1V	60			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-2A ; V <sub>CE</sub> =-1V	100		400	
h <sub>FE-3</sub>	DC current gain	I <sub>C</sub> =-5A ; V <sub>CE</sub> =-2V	50			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-2A; I <sub>B1</sub> =-I <sub>B2</sub> =-0.2A R <sub>L</sub> =5.0Ω; V <sub>CC</sub> ≈10V		0.15	1.0	μs
t <sub>stg</sub>	Storage time			0.78	2.5	μs
t <sub>f</sub>	Fall time			0.18	1.0	μs

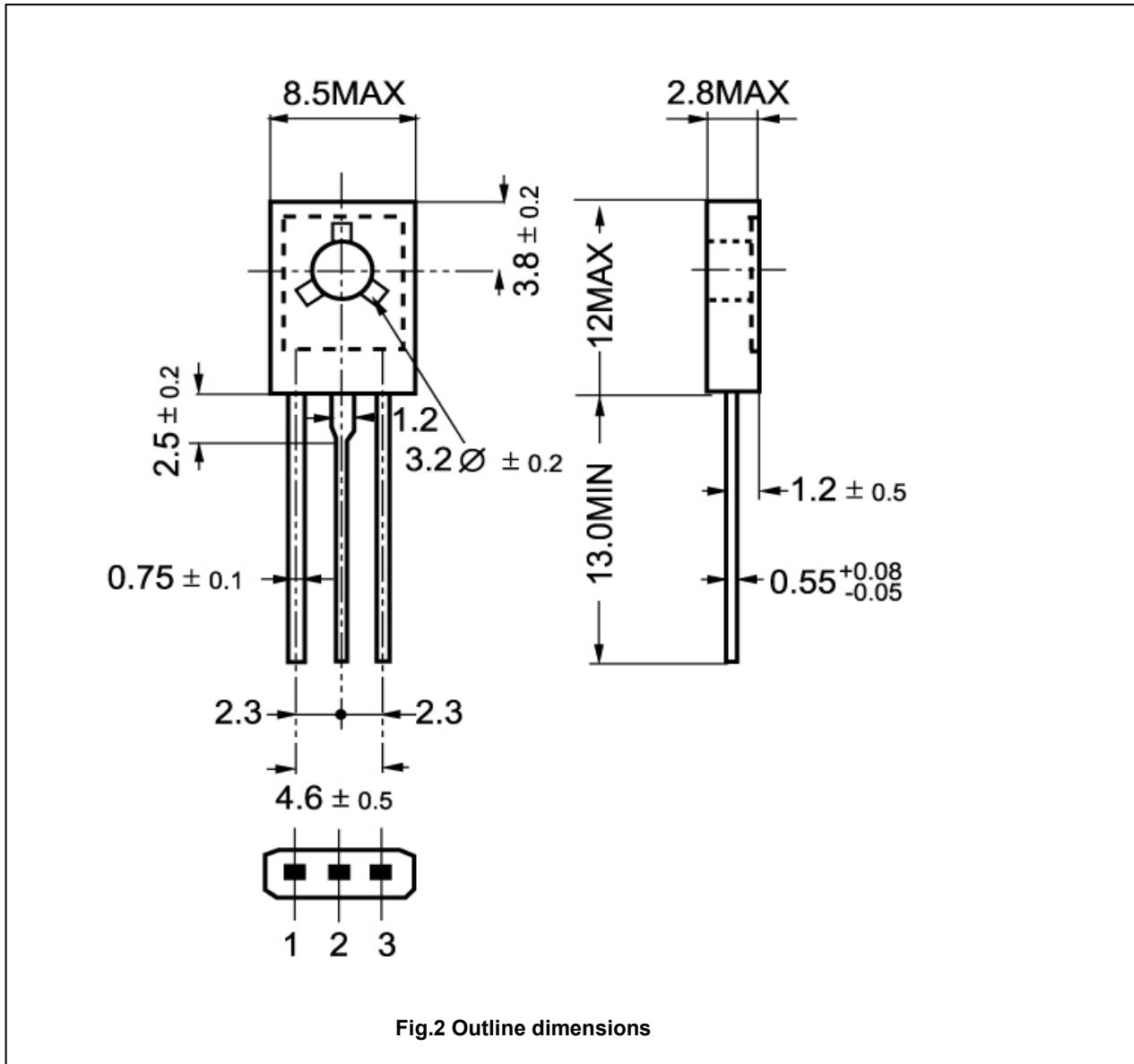
◆ h<sub>FE-2</sub> Classifications

M	L	K
100-200	160-320	200-400

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PACKAGE OUTLINE



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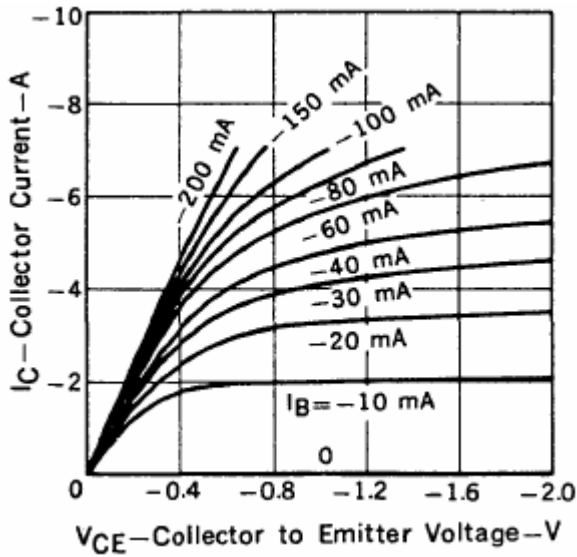


Fig.3 Static Characteristic

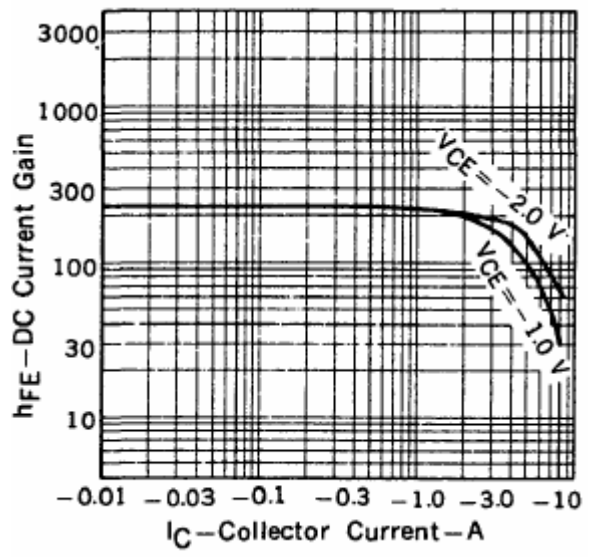


Fig.4 DC current Gain

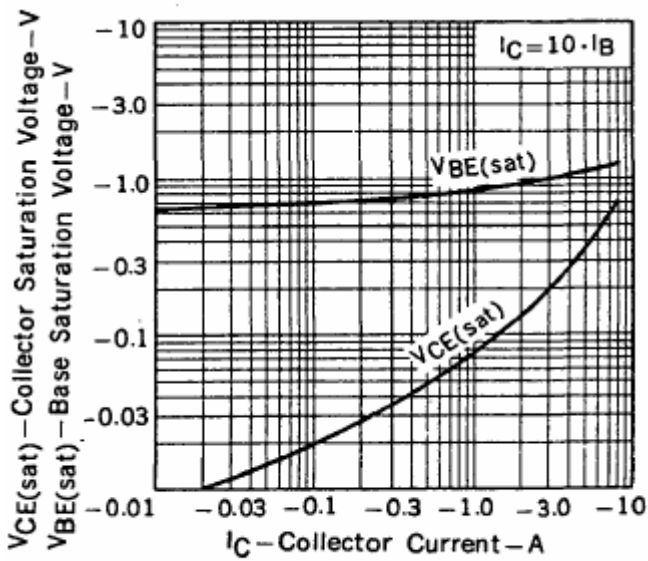


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

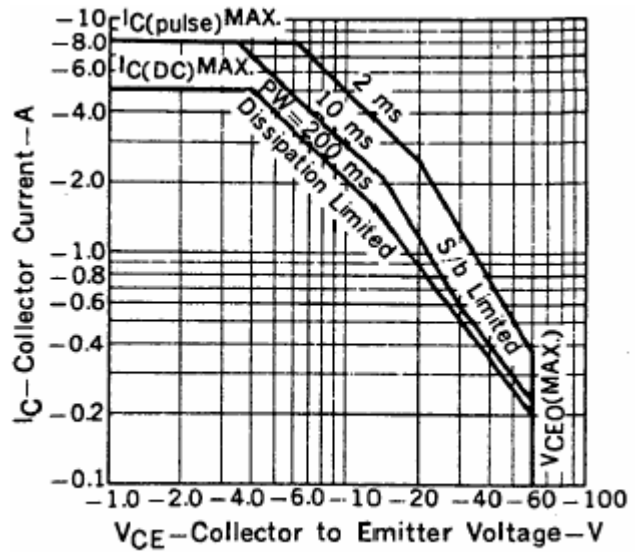


Fig.6 Safe Operating Area