

**Inchange Semiconductor**

**Product Specification**

**Silicon PNP Power Transistors**

**2SB1223**

**DESCRIPTION**

- With TO-220F package
- Complement to type 2SD1825
- High DC current gain.
- Large current capacity and wide ASO.
- DARLINGTON

**APPLICATIONS**

- Suitable for use in control of motor drivers, printer hammer drivers, and constant-voltage regulators.

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

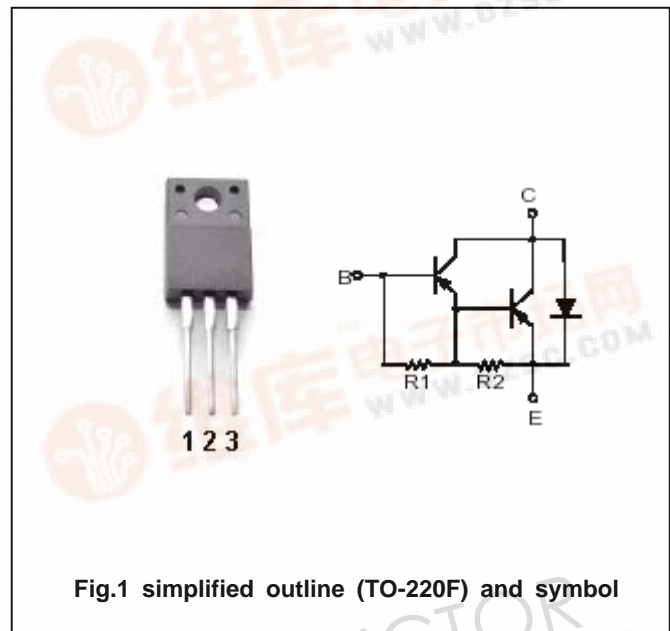


Fig.1 simplified outline (TO-220F) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	-70	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	-60	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-6	V
I <sub>C</sub>	Collector current		-4	A
I <sub>CM</sub>	Collector current-peak		-6	A
P <sub>C</sub>	Collector dissipation	T <sub>C</sub> =25	20	W
		T <sub>a</sub> =25	2	
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =-5mA; I <sub>E</sub> =0	-70			V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =-50mA; R <sub>BE</sub> =	-60			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-2A ; I <sub>B</sub> =-4mA		-1.0	-1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-2A ; I <sub>B</sub> =-4mA			-2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-40V; I <sub>E</sub> =0			-0.1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-3.0	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =-2A ; V <sub>CE</sub> =-2V	2000	5000		
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-2A ; V <sub>CE</sub> =-5V		20		MHz

## Switching times

t <sub>on</sub>	Turn-on time			0.5		μs
t <sub>stg</sub>	Storage time	I <sub>C</sub> =500I <sub>B1</sub> =-500I <sub>B2</sub> =-2A V <sub>CC</sub> =-20V ,R <sub>L</sub> =10		1.4		μs
t <sub>f</sub>	Fall time			1.2		μs

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PACKAGE OUTLINE

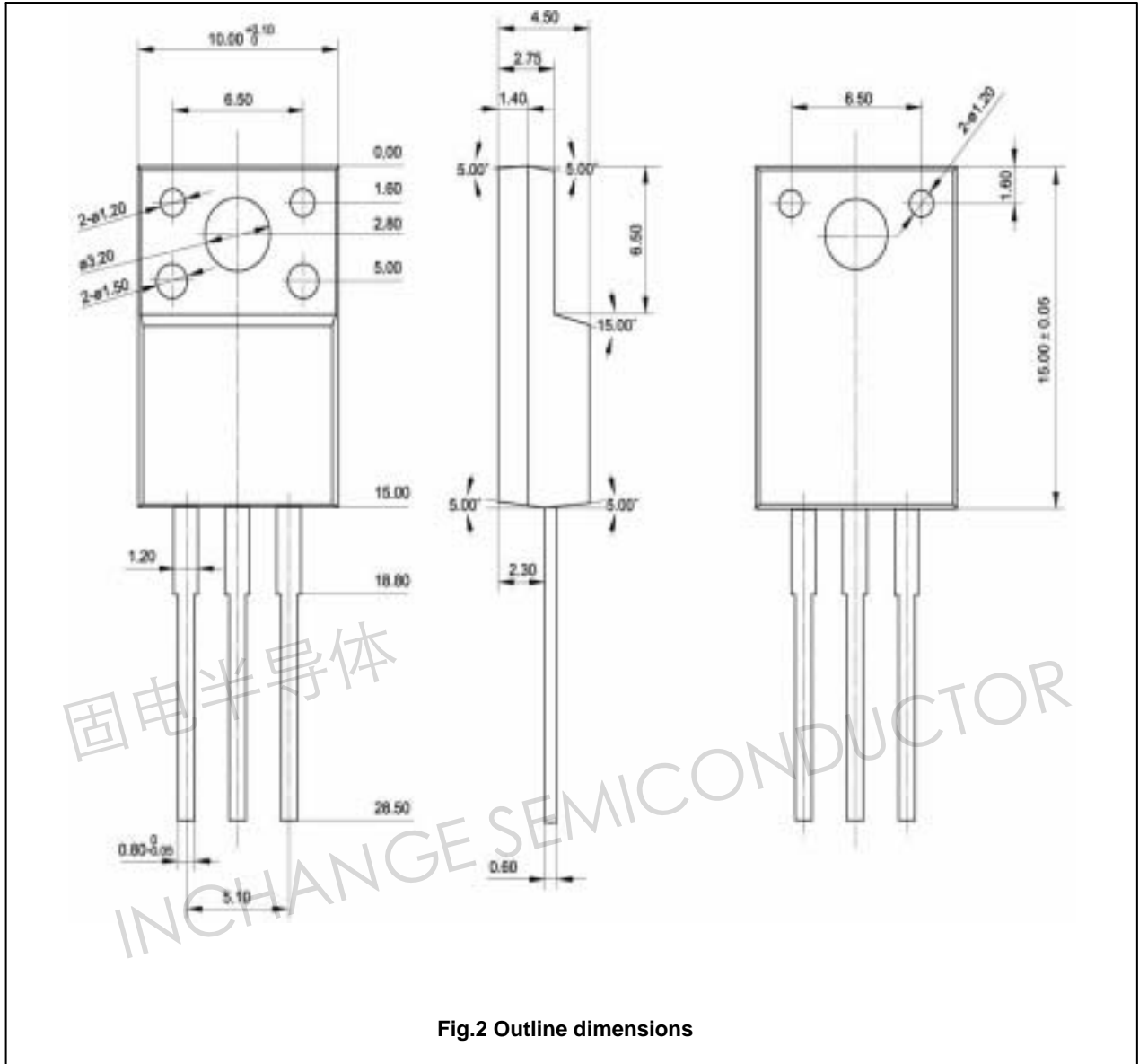


Fig.2 Outline dimensions