

**Silicon NPN Power Transistors**

**2SD1825**

**DESCRIPTION**

- With TO-220F package
- Complement to type 2SB1223
- High DC current gain.
- Large current capacity and wide ASO.
- DARLINGTON

**APPLICATIONS**

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

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

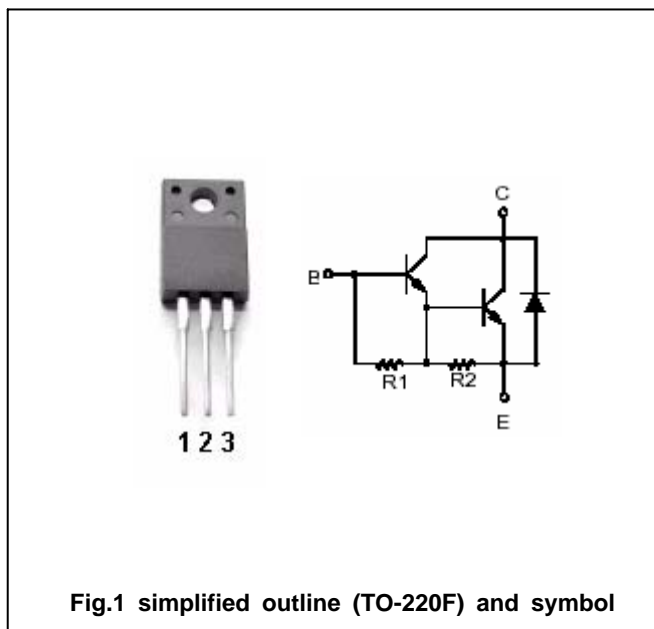


Fig.1 simplified outline (TO-220F) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	70	V
$V_{CEO}$	Collector-emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		4	A
$I_{CM}$	Collector current-peak		6	A
$P_C$	Collector dissipation	$T_C=25$	20	W
		$T_a=25$	2	
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

## Silicon NPN Power Transistors

## 2SD1825

## 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			1.5	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	I <sub>C</sub> =2A; I <sub>B1</sub> =I <sub>B2</sub> =4mA V <sub>CC</sub> =20V, R <sub>L</sub> =10		0.6		μs
t <sub>s</sub>	Storage time			2.7		μs
t <sub>f</sub>	Fall time			1.6		μs

Silicon NPN Power Transistors

2SD1825

PACKAGE OUTLINE

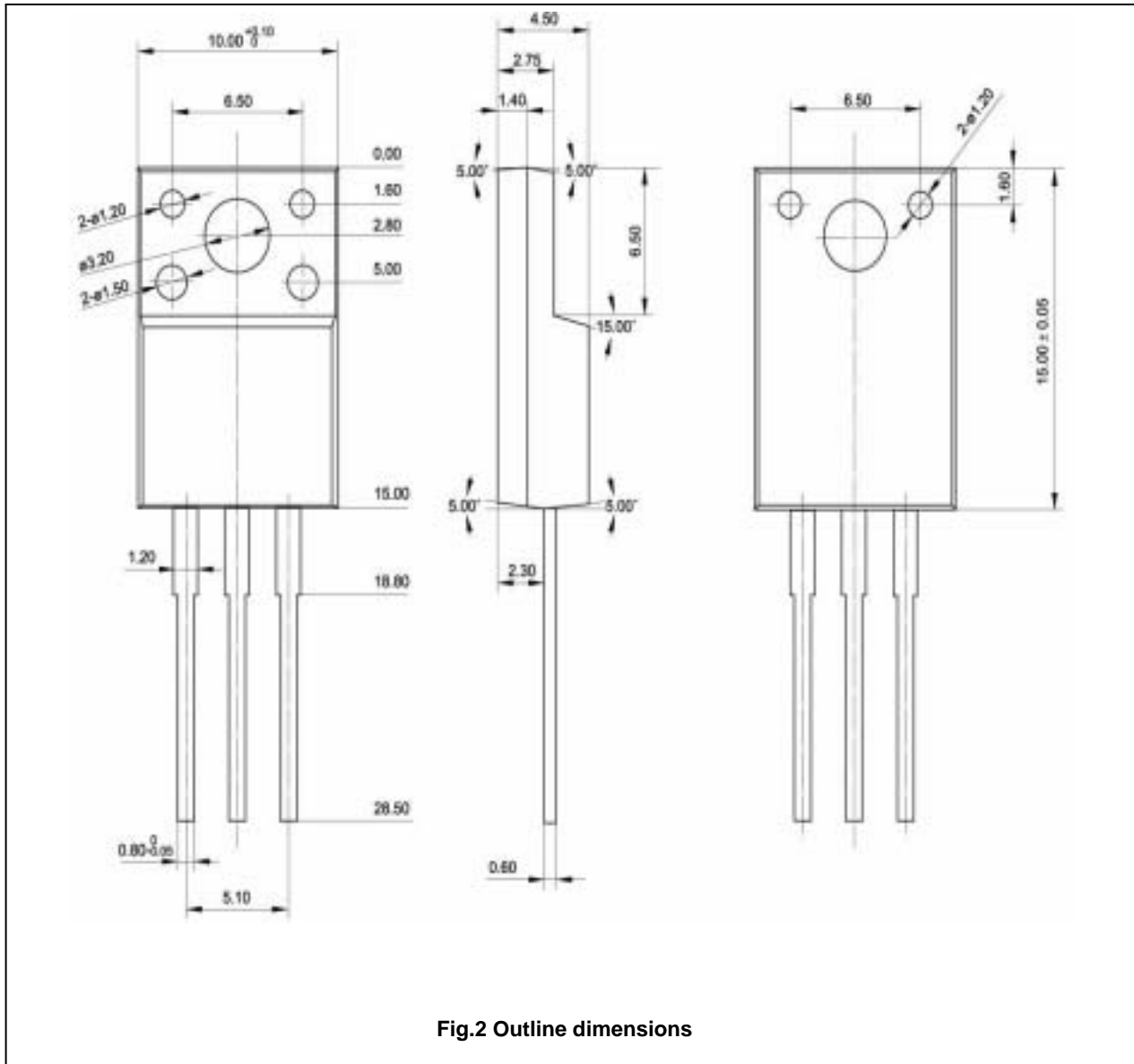


Fig.2 Outline dimensions