

**Silicon Power Transistors**

**2SD1589**

**DESCRIPTION**

- With TO-220Fa package
- DARLINGTON
- Complement to type 2SB1098
- Low speed switching

**APPLICATIONS**

- Low frequency power amplifier
- Low speed switching industrial use

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

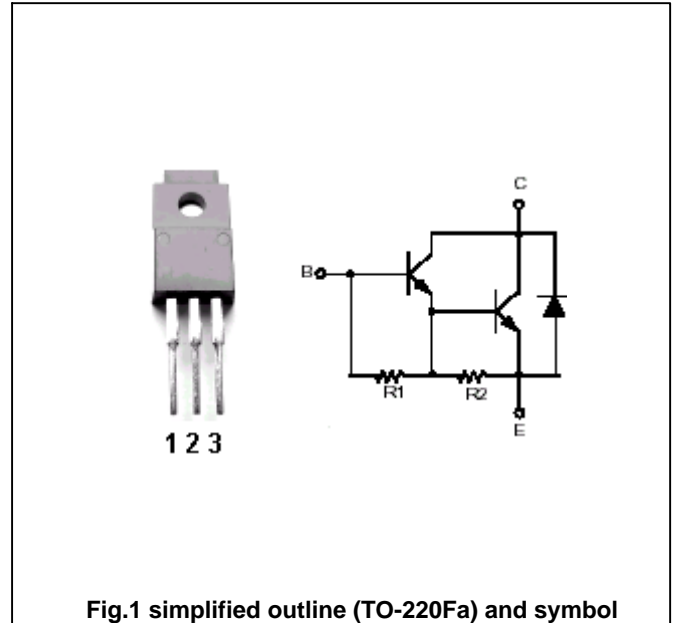


Fig.1 simplified outline (TO-220Fa) and symbol

**ABSOLUTE MAXIMUM RATINGS AT Tc=25**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</sub>	Collector-base voltage	Open emitter	150	V
V <sub>CE0</sub>	Collector-emitter voltage	Open base	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>c</sub>	Collector current (DC)		5	A
I <sub>CM</sub>	Collector current-Peak		8	A
I <sub>B</sub>	Base current (DC)		0.5	A
P <sub>C</sub>	Collector power dissipation	T <sub>a</sub> =25	1.5	W
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25	20	W
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>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A , I <sub>B</sub> =0	60			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A I <sub>B</sub> =3mA			1.5	V
V <sub>BEsat</sub>	Emitter-base saturation voltage	I <sub>C</sub> =3A I <sub>B</sub> =3mA			2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =100V I <sub>E</sub> =0			1	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =3A ; V <sub>CE</sub> =2V	2000		15000	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =2V	500			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3A ; I <sub>B1</sub> =3mA I <sub>B2</sub> =-3mA; V <sub>CC</sub> 50V R <sub>L</sub> =16.7		1.0		μs
t <sub>s</sub>	Storage time			3.5		μs
t <sub>f</sub>	Fall time			1.2		μs

◆ h<sub>FE</sub> Classifications

R	O	Y
2000-5000	3000-7000	5000-15000

