

## Silicon PNP Power Transistors

2SB1193

## DESCRIPTION

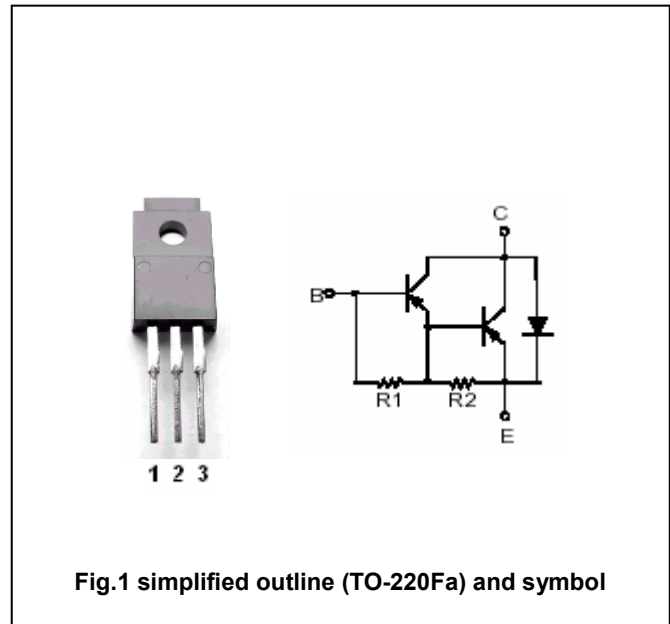
- With TO-220Fa package
- High DC current gain
- High speed switching
- DARLINGTON
- Complement to type 2SD1773

## APPLICATIONS

- For medium speed switching applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-120	V
$V_{CEO}$	Collector -emitter voltage	Open base	-120	V
$V_{EBO}$	Emitter-base voltage	Open collector	-7	V
$I_C$	Collector current		-8	A
$I_{CM}$	Collector current-peak		-12	A
$P_C$	Collector power dissipation	$T_a=25^\circ$	2	W
		$T_c=25^\circ$	50	
$T_j$	Junction temperature		150	$^\circ$
$T_{stg}$	Storage temperature		-55~150	$^\circ$

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =-2A; R <sub>BE</sub> =∞; L=10mH	-120			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =-50mA; I <sub>C</sub> =0	-7			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-4A ; I <sub>B</sub> =-8mA			-1.5	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-8A ; I <sub>B</sub> =-80mA			-3.0	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-4A ; I <sub>B</sub> =-8mA			-2.0	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-8A ; I <sub>B</sub> =-80mA			-3.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-120V; I <sub>E</sub> =0			-100	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =-100V; R <sub>BE</sub> =∞			-10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =-4A ; V <sub>CE</sub> =-3V	1000		20000	

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-4A ; I <sub>B1</sub> =-I <sub>B2</sub> =-8mA V <sub>CC</sub> =-50V		0.7		μs
t <sub>stg</sub>	Storage time			3.5		μs
t <sub>f</sub>	Fall time			2.0		μs

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PACKAGE OUTLINE



Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)