

## Silicon NPN Power Transistors

## 2SD1308

## DESCRIPTION

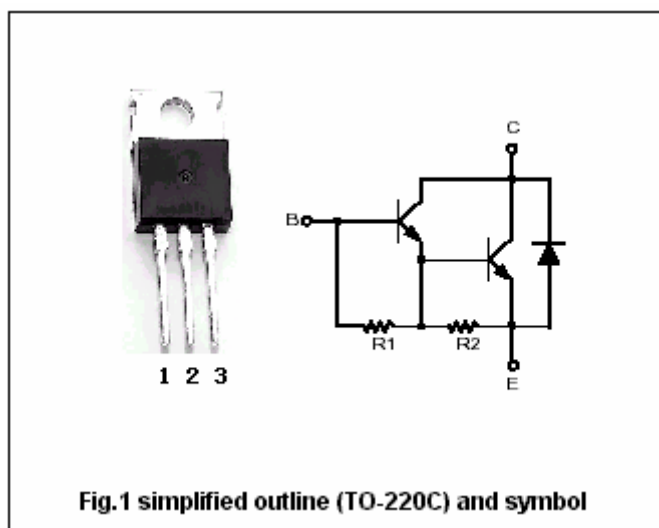
- With TO-220 package
- Low collector saturation voltage
- DARLINGTON
- Complement to type 2SB974

## APPLICATIONS

- For audio frequency power amplifier and low speed switching industrial use

## PINNING

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

Absolute maximum ratings( $T_a=25^{\circ}\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	100	V
$V_{CEO}$	Collector-emitter voltage	Open base	100	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		5	A
$I_{CM}$	Collector current-peak		10	A
$I_B$	Base current		0.5	A
$P_T$	Total power dissipation	$T_C=25^{\circ}\text{C}$	30	W
		$T_a=25^{\circ}\text{C}$	1.5	
$T_j$	Junction temperature		150	$^{\circ}\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^{\circ}\text{C}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	100			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =2mA			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =2mA			2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =100V ; I <sub>E</sub> =0			1.0	μ A
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			5.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =2A ; V <sub>CE</sub> =2V	2000		20000	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =4A ; V <sub>CE</sub> =2V	500			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =2A; I <sub>B1</sub> =-I <sub>B2</sub> =2mA R <sub>L</sub> =25 Ω ; V <sub>CC</sub> ≈50V		1.0		μ s
t <sub>s</sub>	Storage time			3.5		μ s
t <sub>f</sub>	Fall time			1.2		μ s

◆ h<sub>FE-1</sub> classifications

M	L	K
2000-5000	4000-10000	8000-20000

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## PACKAGE OUTLINE

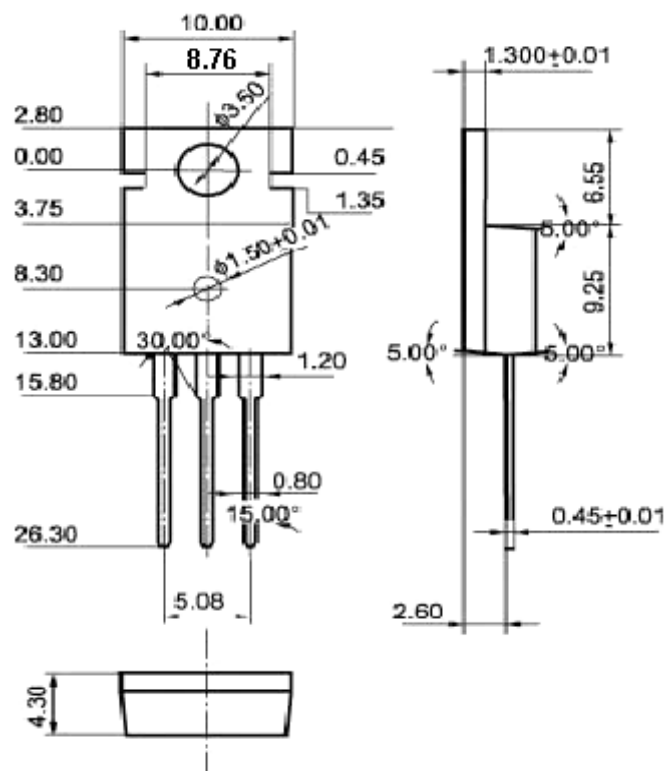


Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)