

## Silicon NPN Power Transistors

## 2SD2023

## DESCRIPTION

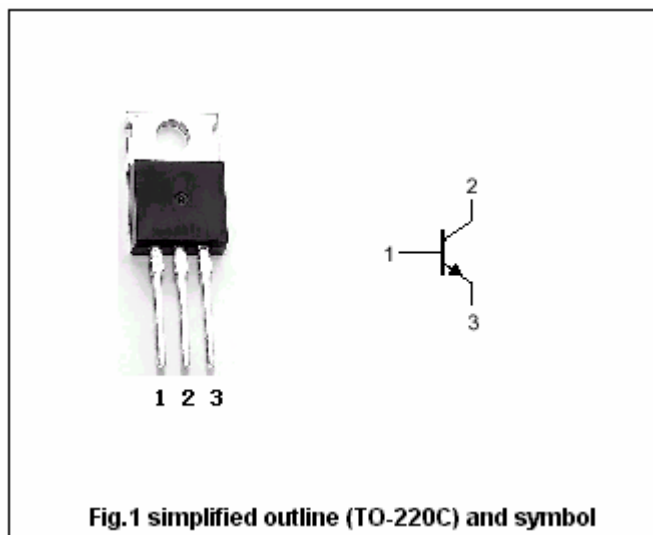
- With TO-220C package
- Complement to type 2SB1033
- Low collector saturation voltage

## APPLICATIONS

- Low frequency power amplifiers
- Power drivers
- DC-DC converters

## 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	80	V
$V_{CEO}$	Collector-emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		3	A
$I_B$	Base current		1	A
$P_C$	Collector dissipation	$T_C=25^\circ\text{C}$	40	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-50~150	$^\circ\text{C}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA; I <sub>B</sub> =0	60			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =50μA; I <sub>E</sub> =0	80			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50μA; I <sub>C</sub> =0	6			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.2A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =0.2A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =60V; I <sub>E</sub> =0			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A; V <sub>CE</sub> =5V	60		320	
C <sub>OB</sub>	Collector output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =10V; f=1MHz		70		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V		8		MHz

◆ h<sub>FE</sub> Classifications

D	E	F
60-120	100-200	160-320

PACKAGE OUTLINE



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