

## Silicon NPN Power Transistors

## D44C Series

### DESCRIPTION

- With TO-220 package
- Complement to type D45C Series
- Very low collector saturation voltage
- Fast switching

### APPLICATIONS

- Designed for various specific and general purpose application
- Shunt and switching regulators
- Low and high frequency inverters converters and etc.

### PINNING

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

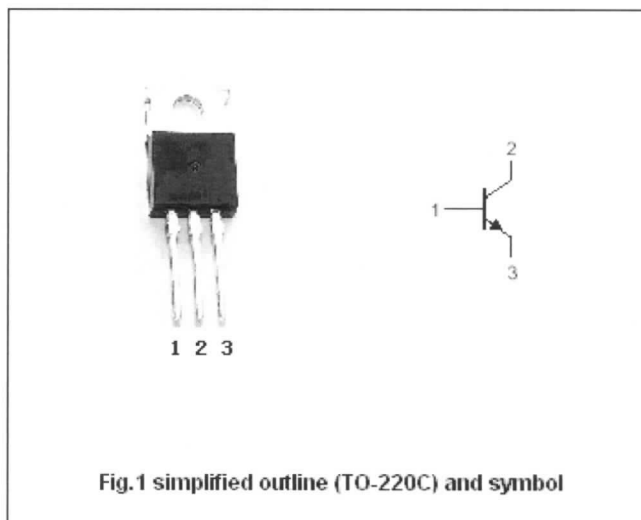


Fig.1 simplified outline (TO-220C) and symbol

### Absolute maximum ratings (Ta=25 °C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	D44C1,2,3	40	V
		D44C4,5,6	55	
		D44C7,8,9	70	
		D44C10,11,12	90	
V <sub>CEO</sub>	Collector-emitter voltage	D44C1,2,3	30	V
		D44C4,5,6	45	
		D44C7,8,9	60	
		D44C10,11,12	80	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		4	A
I <sub>CM</sub>	Collector current -peak		6	A
I <sub>B</sub>	Base current (DC)		1	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25 °C	30	W
T <sub>J</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C



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## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage	D44C2,3,5,6,8,9,11,12	I <sub>C</sub> =1A ; I <sub>B</sub> =50mA			0.5	V
		D44C1,4,7,10	I <sub>C</sub> =1A ; I <sub>B</sub> =0.1A				
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =1A ; I <sub>B</sub> =0.1A			1.3	V
I <sub>CES</sub>	Collector cut-off current		V <sub>CE</sub> =Rated V <sub>CES</sub> ;			100	μA
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			10	μA
h <sub>FE-1</sub>	DC current gain	D44C3,6,9,12	I <sub>C</sub> =0.2A ; V <sub>CE</sub> =1V	40		120	
		D44C2,5,8,11		100		220	
		D44C1,4,7,10		25			
h <sub>FE-2</sub>	DC current gain	D44C1,4,7,10	I <sub>C</sub> =1A ; V <sub>CE</sub> =1V	10			
		D44C2,3,5,6,8,9,11,12	I <sub>C</sub> =2A ; V <sub>CE</sub> =1V	20			
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =20mA; V <sub>CE</sub> =4V; f=1.0MHz		50		MHz

### Switching times

t <sub>r</sub>	Rise time	I <sub>C</sub> =1.0A; V <sub>CC</sub> =20V I <sub>B1</sub> =-I <sub>B2</sub> =0.1A			0.3	μs
t <sub>s</sub>	Storage time				0.7	μs
t <sub>f</sub>	Fall time				0.4	μs

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## PACKAGE OUTLINE

