

Silicon NPN Power Transistors

D44C Series

DESCRIPTION

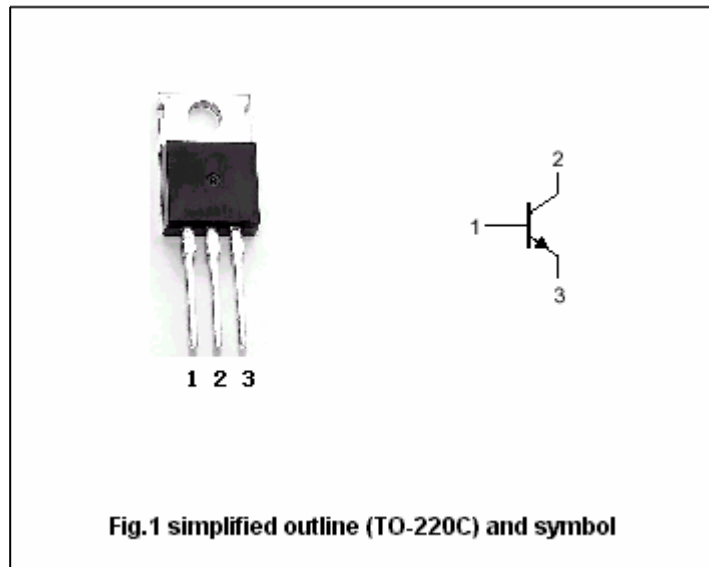
- With TO-220 package
- Complement to type D45C Series
- Very low collector saturation voltage
- Fast switching

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

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

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	D44C1,2,3	Open emitter	40	V
		D44C4,5,6		55	
		D44C7,8,9		70	
		D44C10,11,12		90	
V_{CEO}	Collector-emitter voltage	D44C1,2,3	Open base	30	V
		D44C4,5,6		45	
		D44C7,8,9		60	
		D44C10,11,12		80	
V_{EBO}	Emitter-base voltage		Open collector	5	V
I_C	Collector current (DC)			4	A
I_{CM}	Collector current -peak			6	A
I_B	Base current (DC)			1	A
P_D	Total power dissipation		$T_C=25^\circ\text{C}$	30	W
T_j	Junction temperature			150	$^\circ\text{C}$
T_{stg}	Storage temperature			-55~150	$^\circ\text{C}$

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V_{CEsat}	Collector-emitter saturation voltage	D44C2,3,5,6,8,9,11,12	$I_C=1A ; I_B=50mA$			0.5	V
		D44C1,4,7,10	$I_C=1A ; I_B=0.1A$				
V_{BEsat}	Base-emitter saturation voltage		$I_C=1A ; I_B=0.1A$			1.3	V
I_{CES}	Collector cut-off current		$V_{CE}=\text{Rated } V_{CES};$			100	μA
I_{EBO}	Emitter cut-off current		$V_{EB}=5V; I_C=0$			10	μA
h_{FE-1}	DC current gain	D44C3,6,9,12	$I_C=0.2A ; V_{CE}=1V$	40		120	
		D44C2,5,8,11		100		220	
		D44C1,4,7,10		25			
h_{FE-2}	DC current gain	D44C1,4,7,10	$I_C=1A ; V_{CE}=1V$	10			
		D44C2,3,5,6,8,9,11,12	$I_C=2A ; V_{CE}=1V$	20			
f_T	Transition frequency		$I_C=20mA; V_{CE}=4V;$ $f=1.0MHz$		50		MHz

Switching times

t_r	Rise time	$I_C=1.0A; V_{CC}=20V$ $I_{B1}=-I_{B2}=0.1A$			0.3	μs
t_s	Storage time				0.7	μs
t_f	Fall time				0.4	μs

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PACKAGE OUTLINE

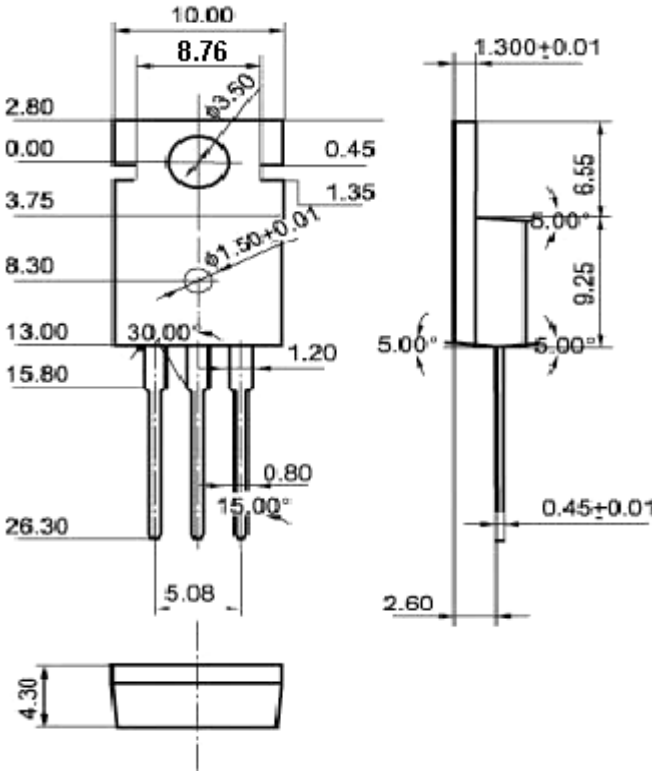


Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)