

**Silicon NPN Power Transistors**

**D44H11**

**DESCRIPTION**

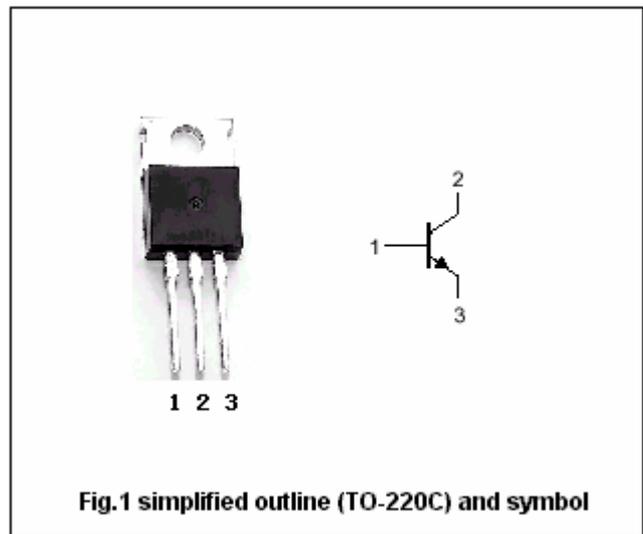
- With TO-220C package
- Fast switching speeds
- Low collector saturation voltage

**APPLICATIONS**

- For general purpose power amplification and switching regulators, converters and power amplifiers applications

**PINNING**

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



**Absolute maximum ratings (Tc=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	80	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	80	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		10	A
I <sub>CM</sub>	Collector current-Peak		20	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25°C	50	W
		T <sub>a</sub> =25°C	1.67	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance from junction to case	2.5	°C/W

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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> =10mA I <sub>B</sub> =0,	80			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =0.4A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =8A ; I <sub>B</sub> =0.8A			1.5	V
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =80V; V <sub>BE</sub> =0			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			0.1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =2A ; V <sub>CE</sub> =1V	60			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =4A ; V <sub>CE</sub> =1V	40			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V		50		MHz
C <sub>cb</sub>	Collector capacitance	f=1MHz ; V <sub>CB</sub> =10V		130		pF

Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =5A I <sub>B1</sub> =- I <sub>B2</sub> =0.5A		0.3		μs
t <sub>s</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.14		μs

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PACKAGE OUTLINE

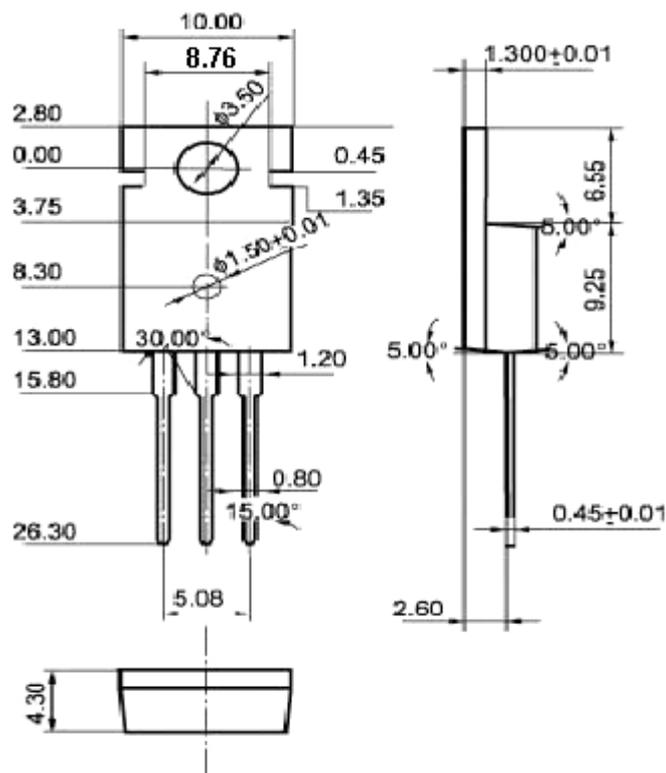


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10\text{mm}$ )

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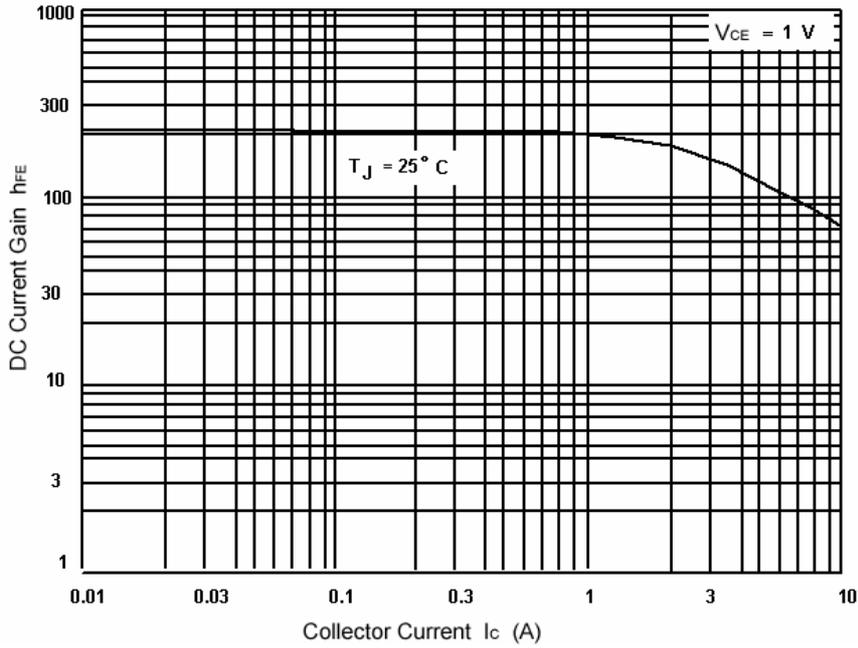


Fig.3 Static Characteristic

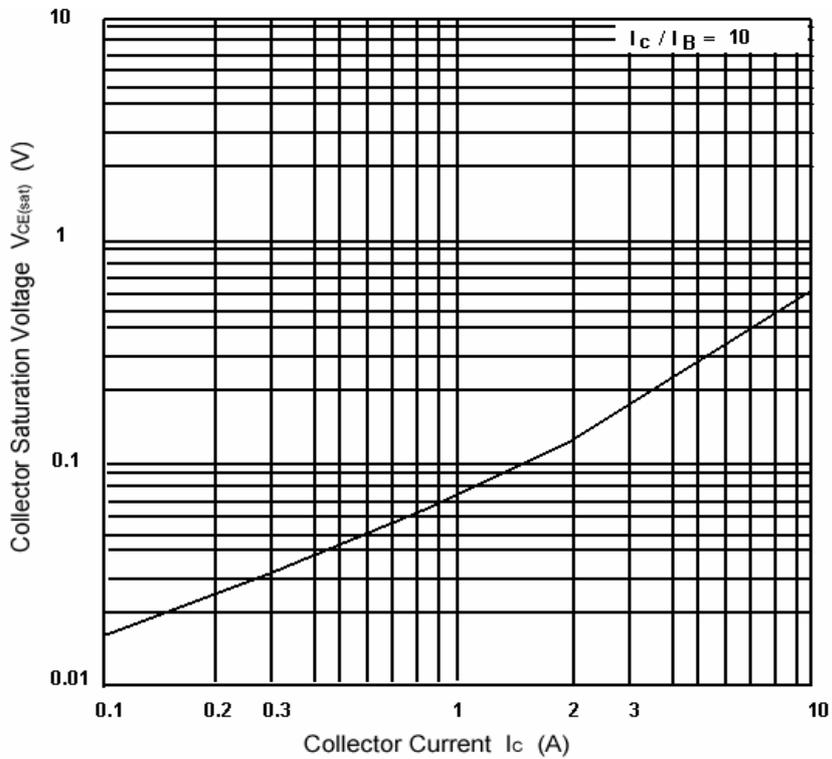


Fig.4 Collector-Emitter Saturation Voltage

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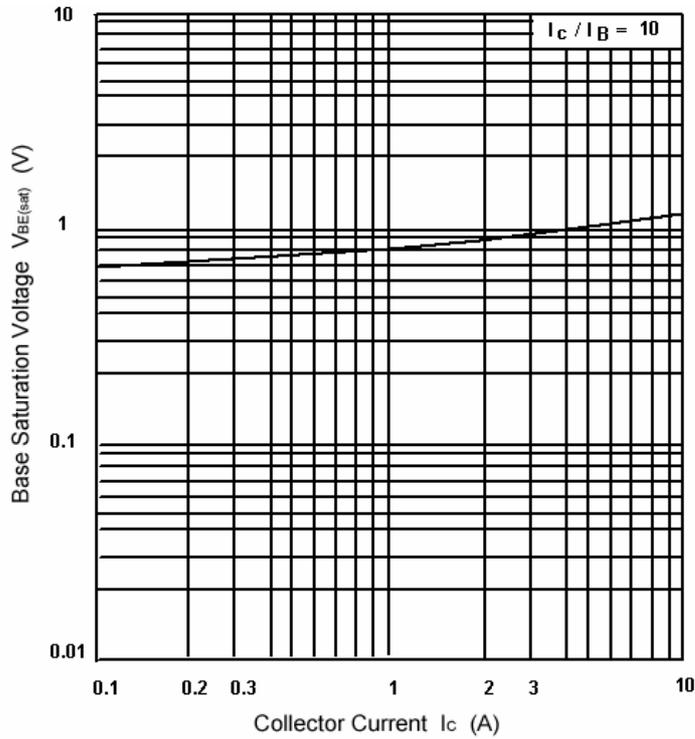


Fig.5 Base-Emitter Saturation Voltage

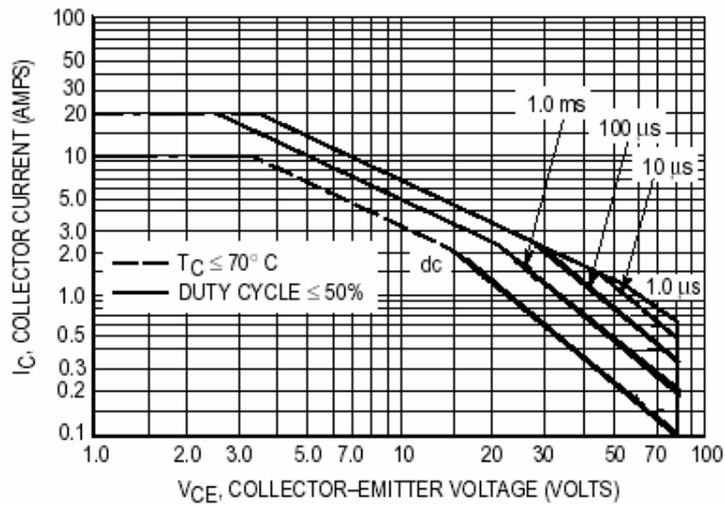


Fig.6 Safe Operating Area