

**Silicon NPN Power Transistors**

**2SC2816**

**DESCRIPTION**

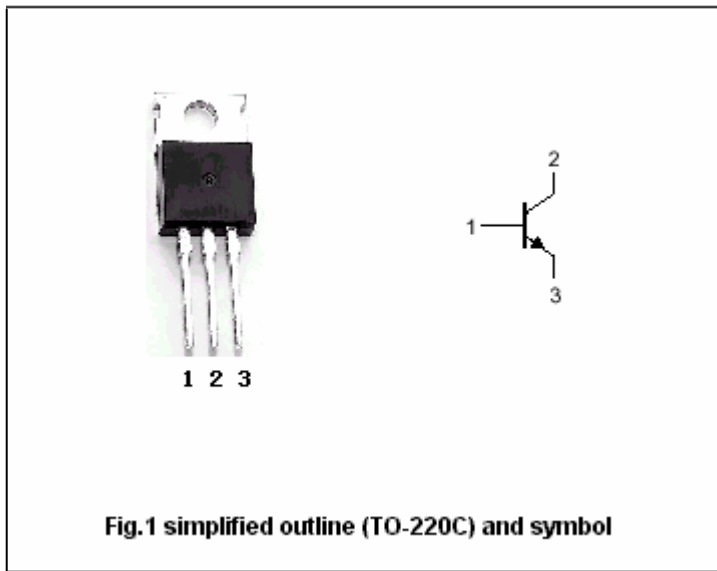
- With TO-220C package
- High voltage
- High speed

**APPLICATIONS**

- For high voltage ,high speed and high power switching applications

**PINNING**

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



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	500	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	400	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		5	A
I <sub>CM</sub>	Collector current-peak		10	A
I <sub>B</sub>	Base current		2.5	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	40	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>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; R <sub>BE</sub> =∞;L=100mH	400			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =10mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.5A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.5A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =400V ; I <sub>E</sub> =0			50	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =350V ; R <sub>BE</sub> =∞			50	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =2.5 A ; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =5 A ; V <sub>CE</sub> =5V	7			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =5A; I <sub>B1</sub> =-I <sub>B2</sub> =1A V <sub>CC</sub> =150V			0.5	μs
t <sub>s</sub>	Storage time				1.5	μs
t <sub>f</sub>	Fall time				0.5	μs



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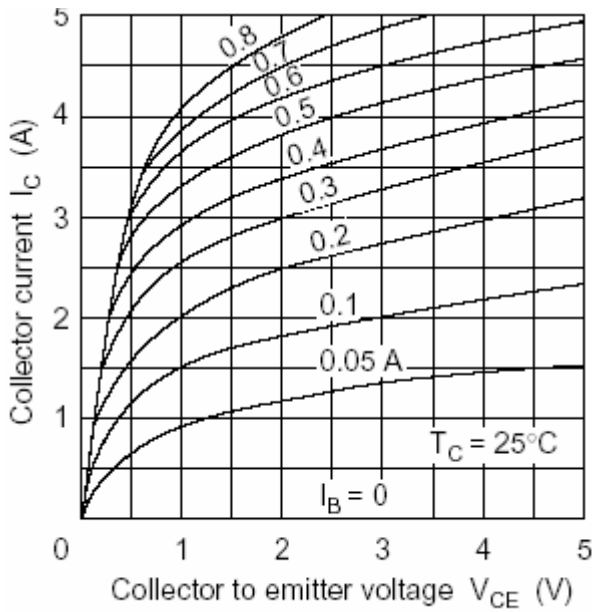


Fig.3 Static Characteristic

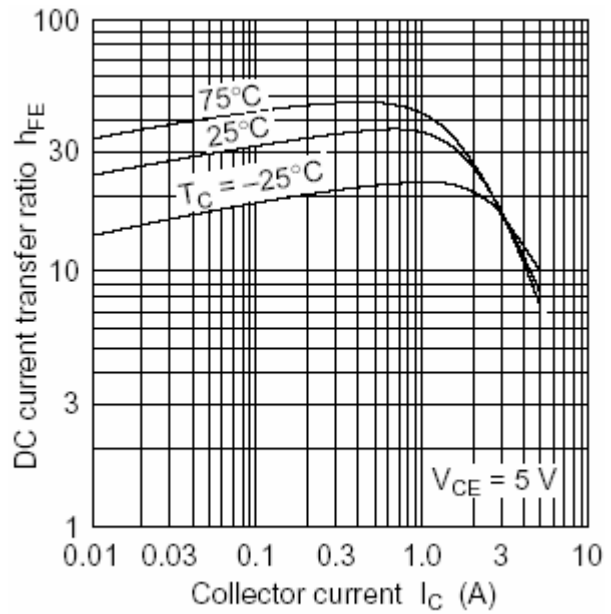


Fig.4 DC current Gain

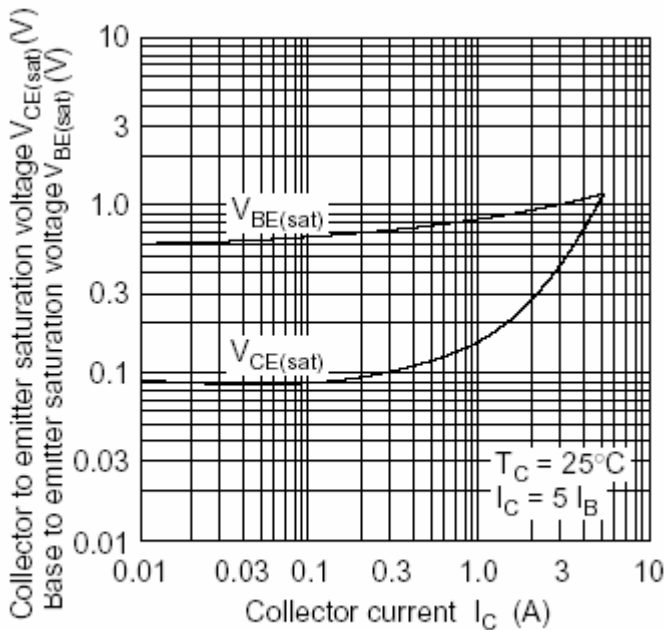


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

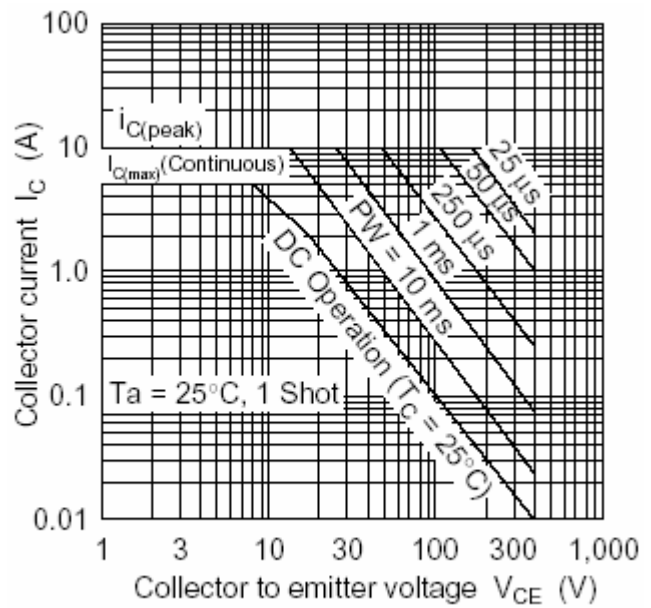


Fig.6 Safe Operating Area