

**Silicon NPN Power Transistors**

**2SC3310**

**DESCRIPTION**

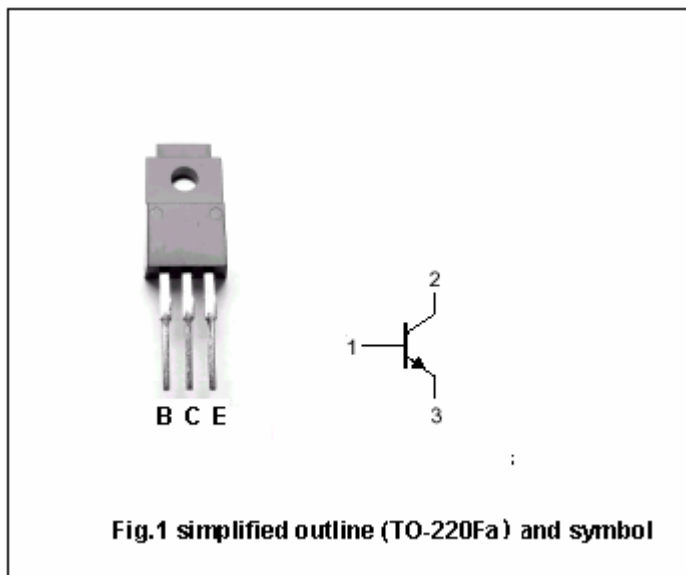
- With TO-220Fa package
- High collector breakdown voltage
- Excellent Switching times

**APPLICATIONS**

- Switching regulator
- High speed DC-DC converter
- High voltage switching

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



**Absolute maximum ratings(Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	500	V
$V_{CEO}$	Collector-emitter voltage	Open base	400	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current (DC)		5	A
$I_{CM}$	Collector current (pulse)		7	A
$I_B$	Base current (DC)		1	A
$P_C$	Collector power dissipation	$T_a=25$	2	W
		$T_C=25$	30	
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## 2SC3310

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA ; I <sub>E</sub> =0	500			V
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	400			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A ; I <sub>B</sub> =1A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =5A ; I <sub>B</sub> =1A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =400V ; I <sub>E</sub> =0			100	μ A
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =3A ; V <sub>CE</sub> =5V	12			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =5V	8			

## Switching times

T <sub>r</sub>	Rise time	I <sub>C</sub> =4A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.4A V <sub>CC</sub> 200V ; R <sub>L</sub> =10			1.0	μ s
t <sub>s</sub>	Storage time				2.5	μ s
t <sub>f</sub>	Fall time				1.0	μ s

PACKAGE OUTLINE

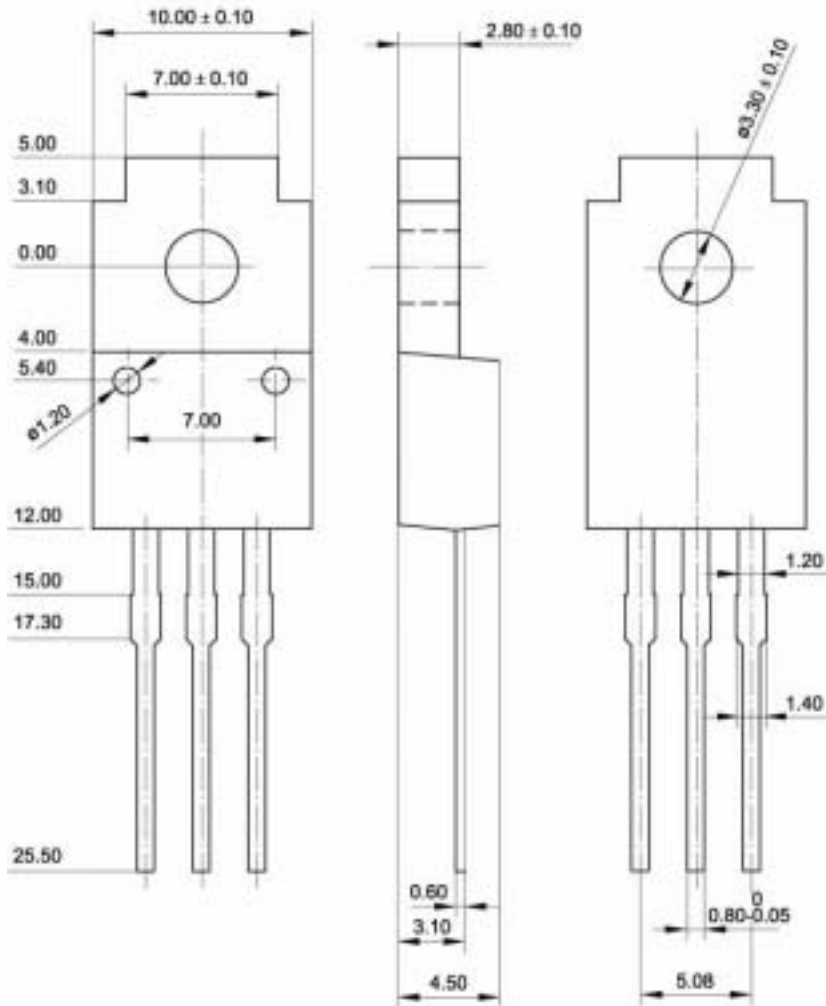


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)

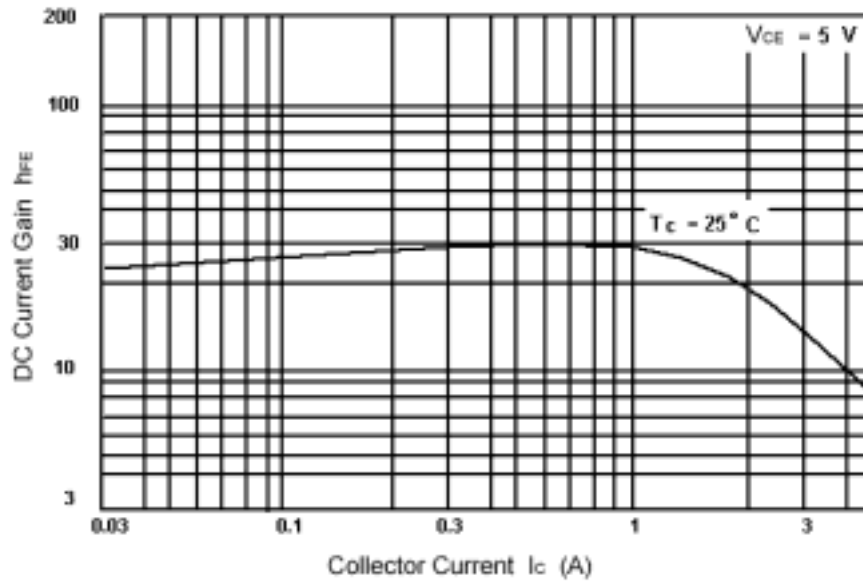


Fig.3 DC current Gain

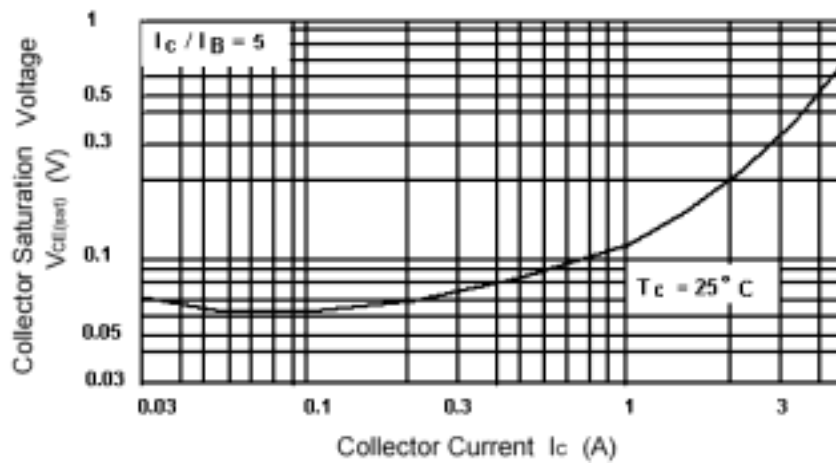


Fig.4 Collector-Emitter Saturation Voltage

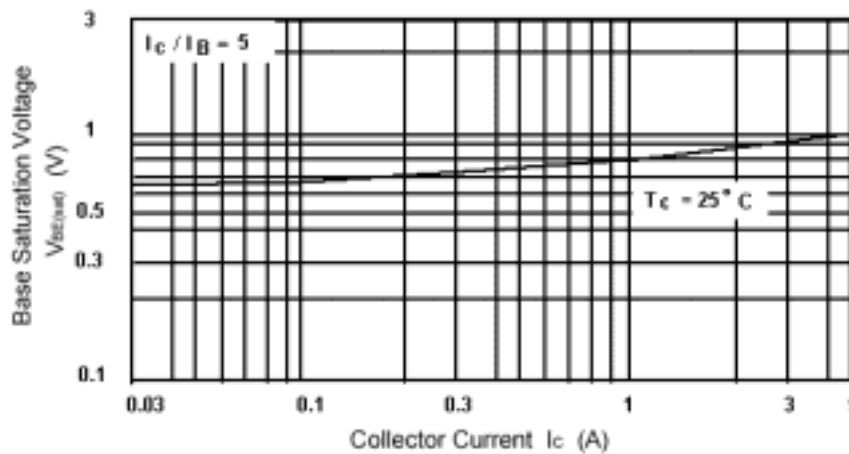


Fig.5 Base-Emitter Saturation Voltage

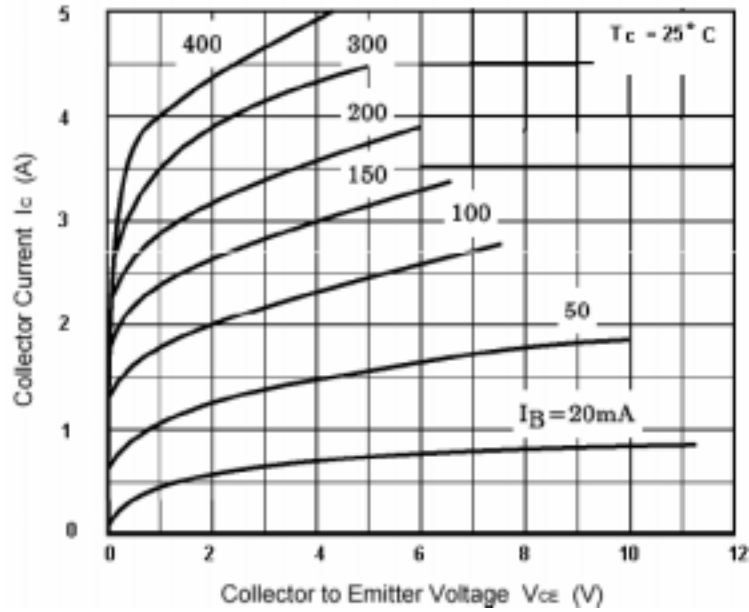


Fig.6 Static Characteristic

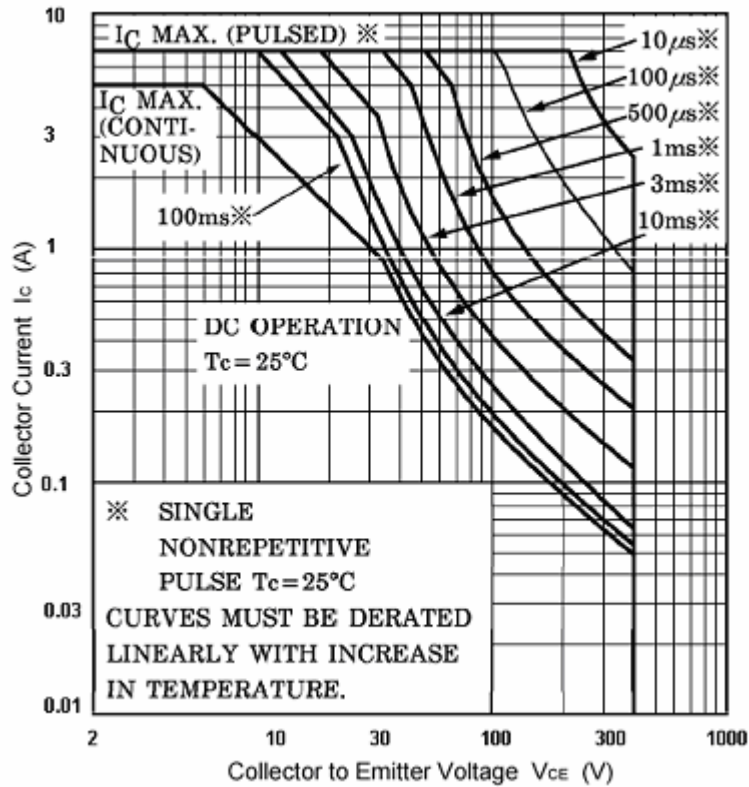


Fig.7 Safe Operating Area