

**Silicon NPN Power Transistors**

**2SC3336**

**DESCRIPTION**

- With TO-3P(I) 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

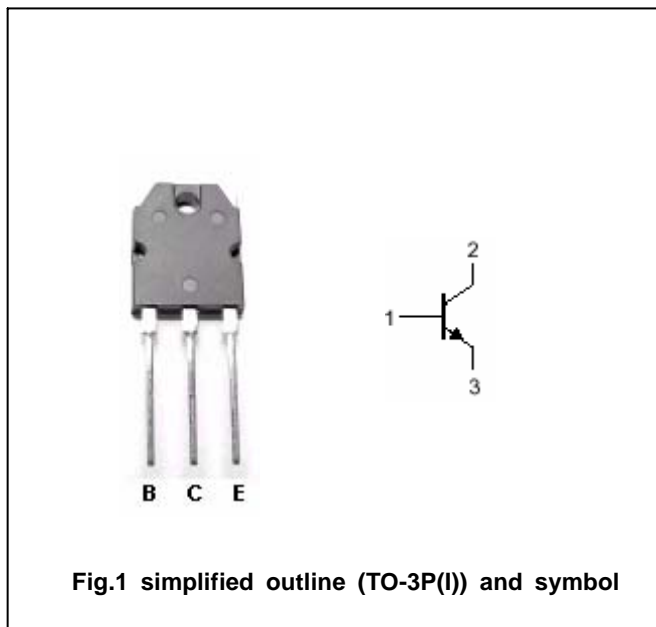


Fig.1 simplified outline (TO-3P(I)) and symbol

**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	10	V
$I_C$	Collector current		15	A
$I_{CM}$	Collector current-peak		25	A
$I_B$	Base current		7.5	A
$P_T$	Total power dissipation	$T_C=25$	100	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

T<sub>j</sub>=25 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	10			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7.5A; I <sub>B</sub> =1.5A			1.0	V
V <sub>BE sat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =7.5A; I <sub>B</sub> =1.5A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =400V; I <sub>E</sub> =0			50	μ A
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =350V; R <sub>BE</sub> =			50	μ A
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =7.5A ; V <sub>CE</sub> =5V	12			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =15A ; V <sub>CE</sub> =5V	5			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =15A ; V <sub>CC</sub> =150V I <sub>B</sub> =-I <sub>B</sub> =3.0A			0.5	μ s
t <sub>stg</sub>	Storage time				1.5	μ s
t <sub>f</sub>	Fall time				0.5	μ s



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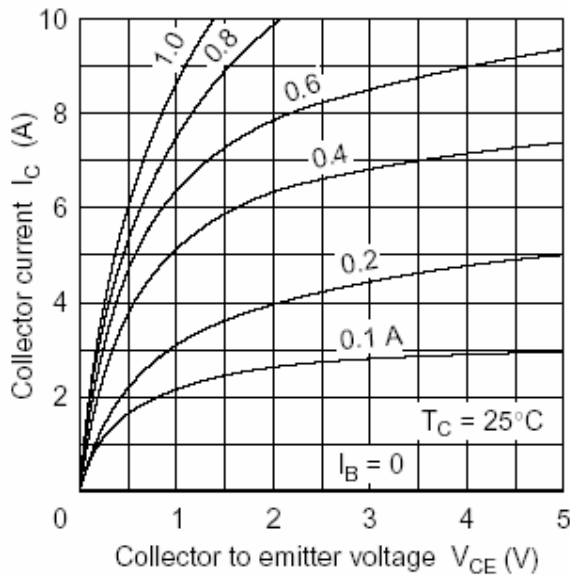


Fig.3 Static Characteristic

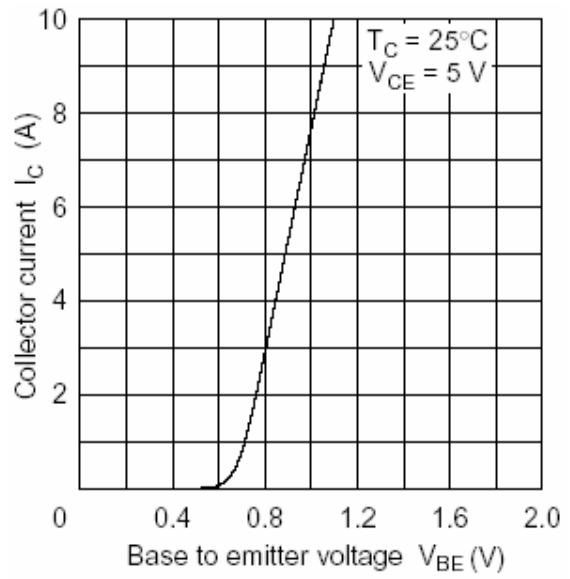


Fig.4  $I_C - V_{BE}$

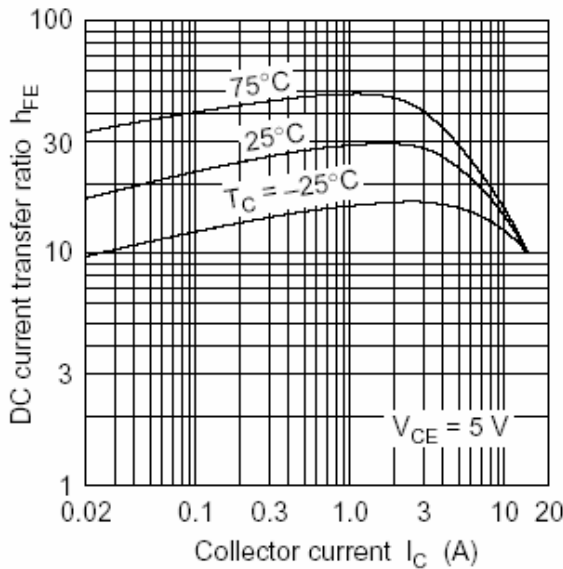


Fig.5 DC current Gain

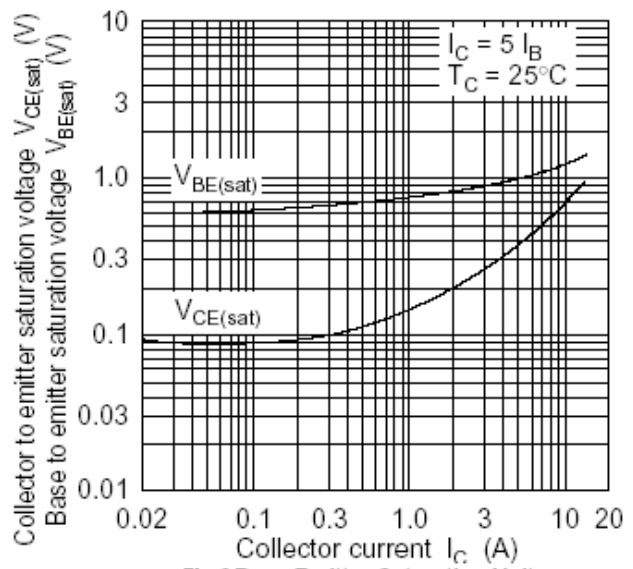


Fig.6 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

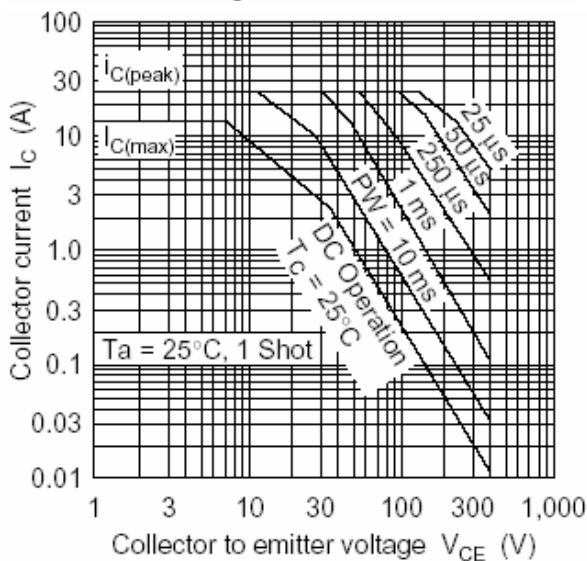


Fig.7 Safe Operating Area