

**Silicon NPN Power Transistors**

**2SC2613**

**DESCRIPTION**

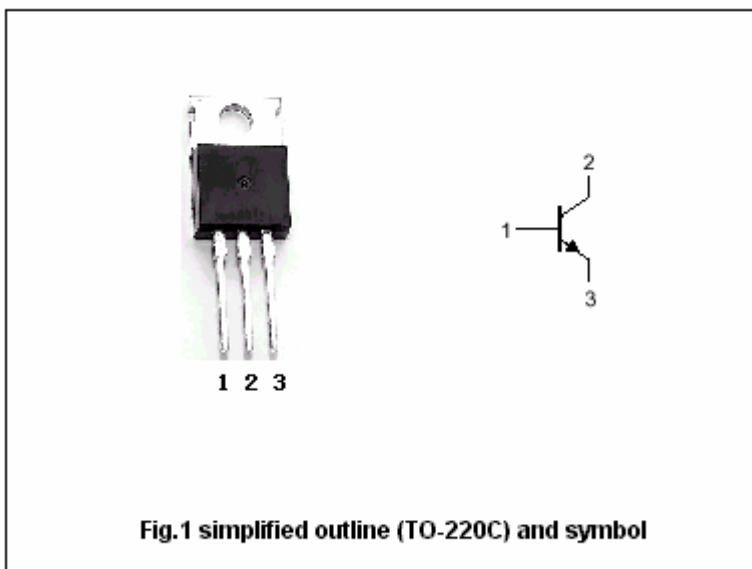
- With TO-220 package
- High collector breakdown voltage  
:  $V_{CEO}=400V(\text{Min})$

**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( $T_a=25^\circ\text{C}$ )**

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		5	A
$I_{CM}$	Collector current-peak		10	A
$I_B$	Base current		2.5	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	40	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

## Silicon NPN Power Transistors

## 2SC2613

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(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			100	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =350V; R <sub>BE</sub> =∞			100	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =2.5A; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =5A; V <sub>CE</sub> =5V	7			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =5.0A I <sub>B1</sub> =- I <sub>B2</sub> =1A V <sub>CC</sub> ≈150V			1.0	μs
t <sub>stg</sub>	Storage time			1.2	2.5	μs
t <sub>f</sub>	Fall time				1.0	μs

Silicon NPN Power Transistors

2SC2613

PACKAGE OUTLINE

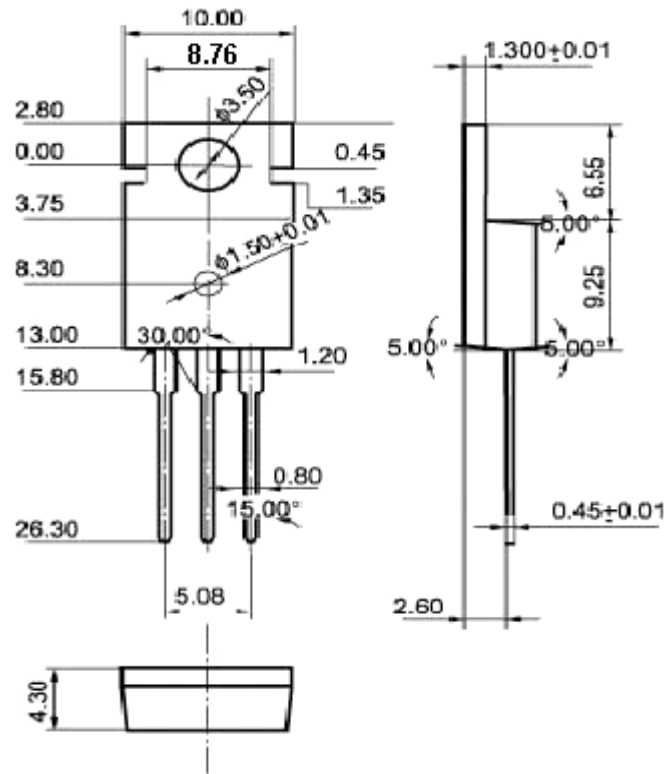


Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)

Silicon NPN Power Transistors

2SC2613

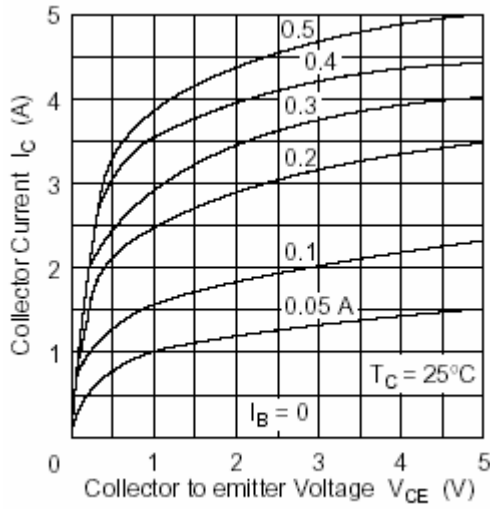


Fig.3 Static Characteristic

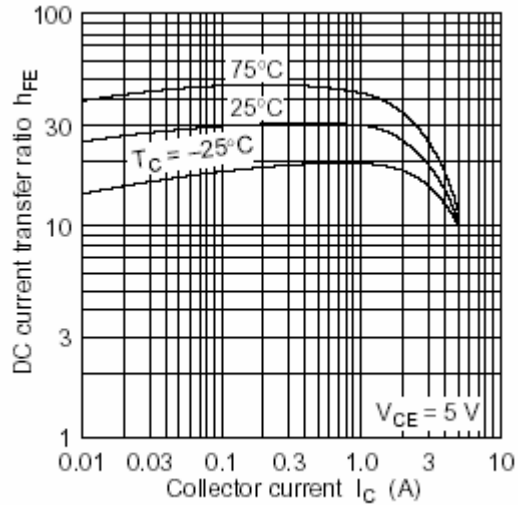


Fig.4 DC current Gain

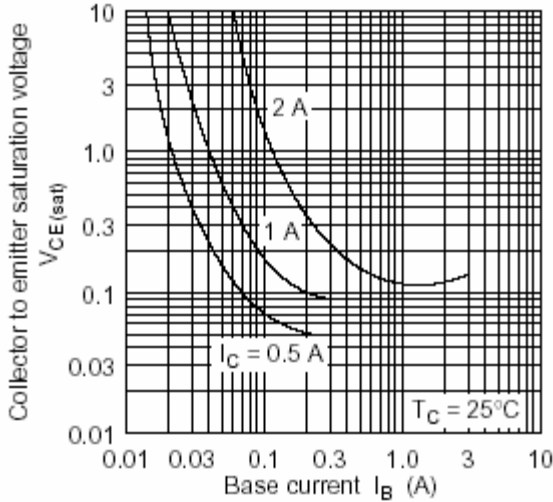


Fig.5 Collector-Emitter Saturation Voltage

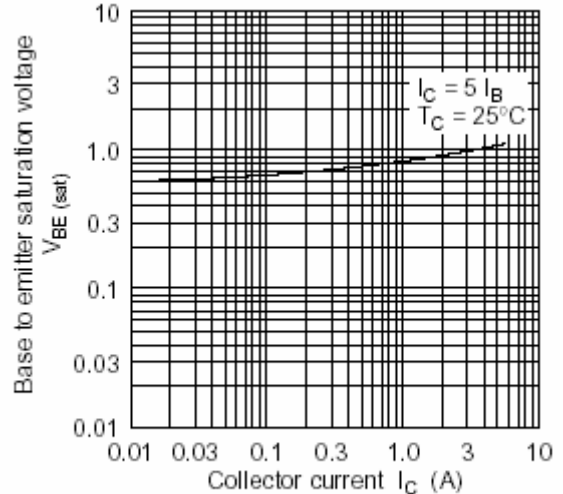


Fig.6 Base-Emitter Saturation Voltage

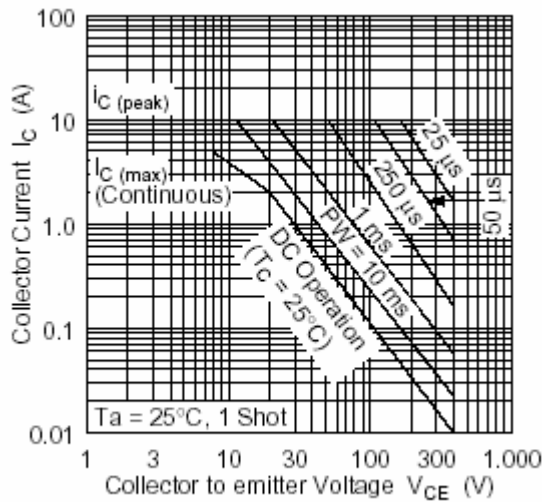


Fig.7 Safe Operating Area