

## Silicon NPN Power Transistors

2SC3834

## DESCRIPTION

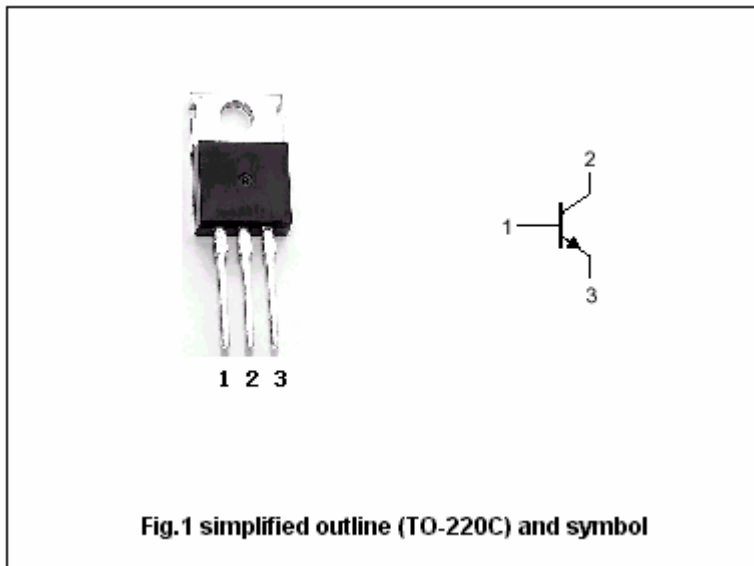
- Switching transistor
- With TO-220 package

## APPLICATIONS

- For humidifier ,DC-DC converter and general purpose applications

## PINNING

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



## Absolute maximum ratings (Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	200	V
$V_{CEO}$	Collector-emitter voltage	Open base	120	V
$V_{EBO}$	Emitter-base voltage	Open collector	8	V
$I_C$	Collector current (DC)		7	A
$I_{CM}$	Collector current-peak		14	A
$I_B$	Base current (DC)		3	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	50	W
$T_j$	Junction temperature		150	℃
$T_{stg}$	Storage temperature		-55~150	℃

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =50mA ; I <sub>B</sub> =0	120			V
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A ; I <sub>B</sub> =0.3A			0.5	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> =3A ; I <sub>B</sub> =0.3A			1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =200V ; I <sub>E</sub> =0			0.1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =8V ; I <sub>C</sub> =0			0.1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.6A ; V <sub>CE</sub> =4V	70		250	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =3A ; V <sub>CE</sub> =4V	70		220	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =12V		30		MHz
C <sub>OB</sub>	Collector output capacitance	f=1MHz ; V <sub>CB</sub> =10V		110		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3.0A I <sub>B1</sub> =0.3A , I <sub>B2</sub> =-0.6A V <sub>CC</sub> =50V, R <sub>L</sub> =16.7Ω			0.5	μs
t <sub>s</sub>	Storage time				3.0	μs
t <sub>f</sub>	Fall time				0.5	μs

◆ h<sub>FE-2</sub> Classifications

O	Y	G
70-140	100-200	160-220

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PACKAGE OUTLINE

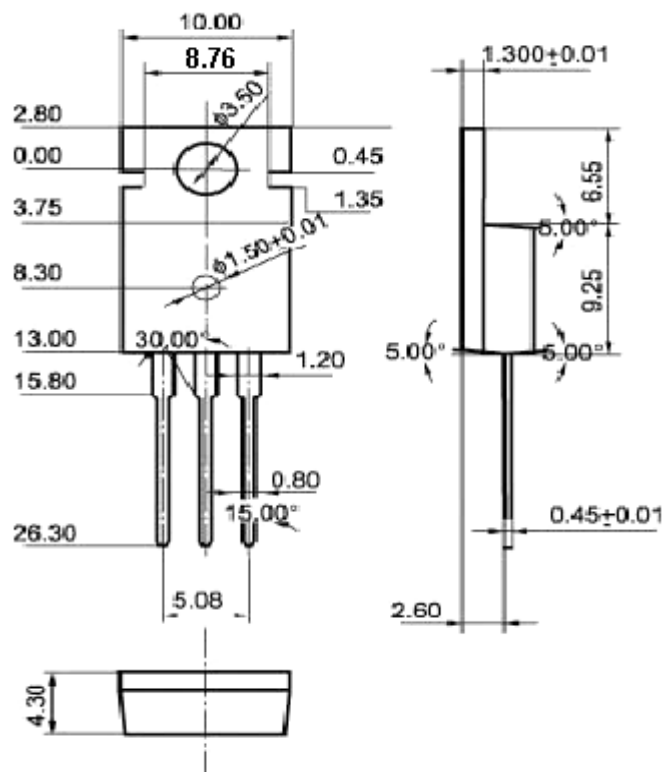


Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)

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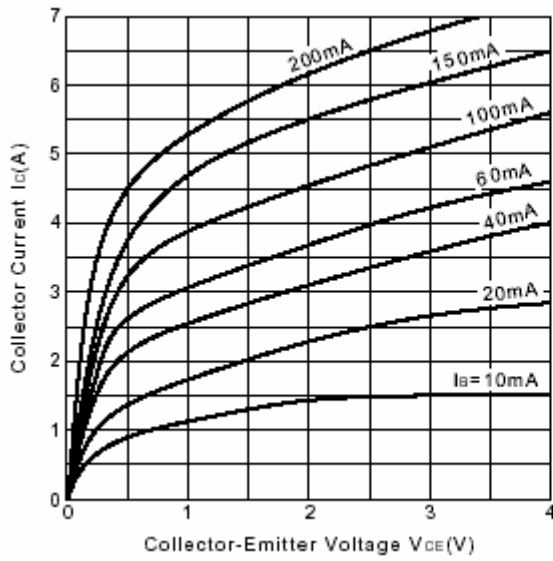


Fig.3 Static Characteristic

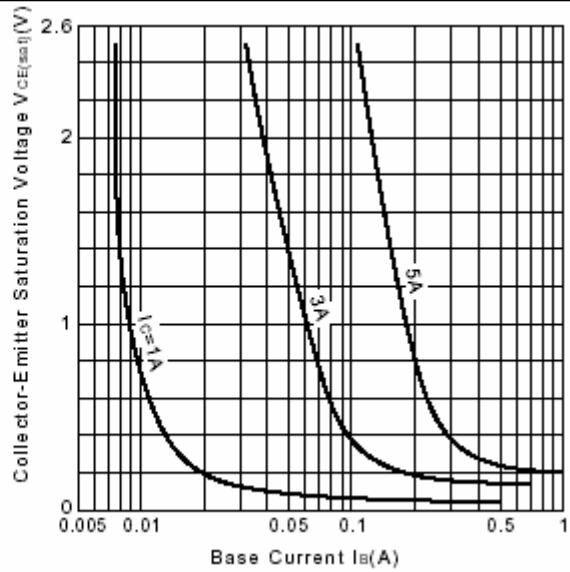


Fig.4  $V_{CE(sat)}-I_B$

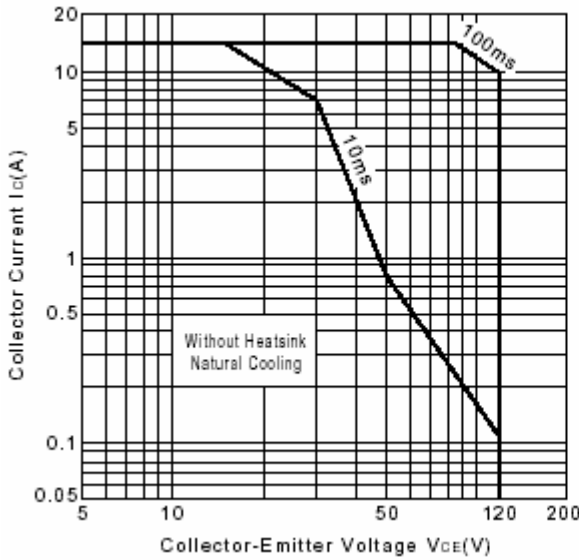


Fig.5 Safe Operating Area

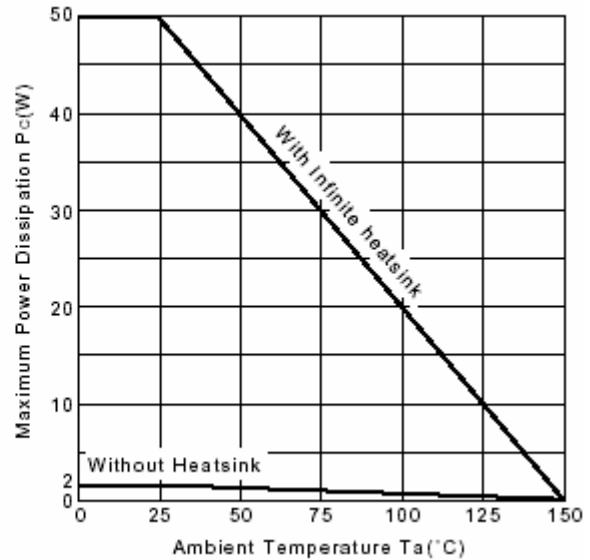


Fig.6 Power Derating

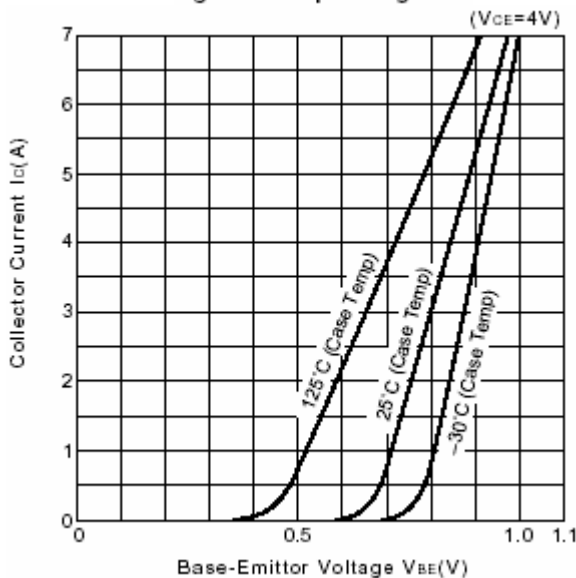


Fig.7  $I_C-V_{BE}$

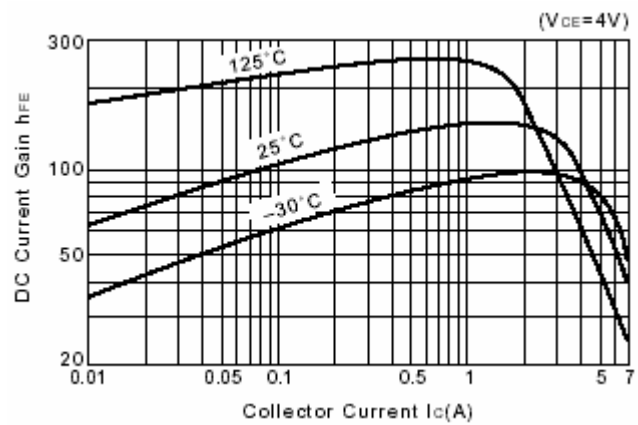


Fig.8 DC current Gain