

Silicon NPN Power Transistors

2SC3834

DESCRIPTION

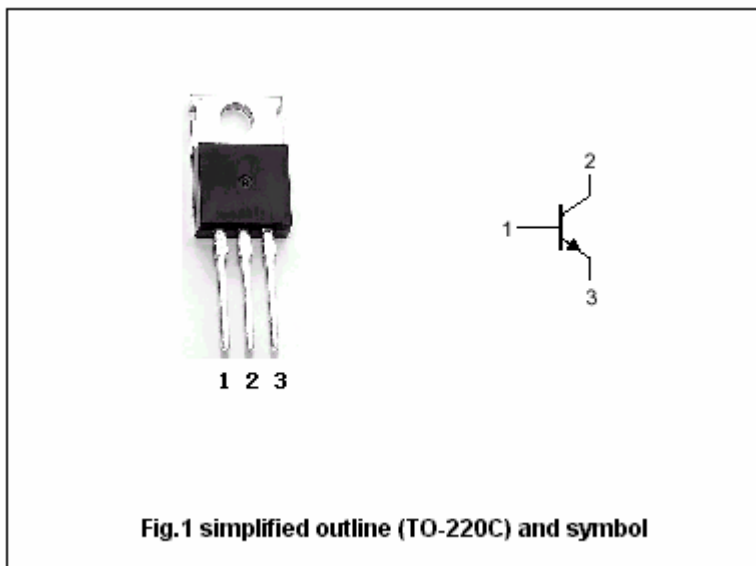
- Switching transistor
- With TO-220 package

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

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=50mA ; I_B=0$	120			V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=3A ; I_B=0.3A$			0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=3A ; I_B=0.3A$			1.2	V
I_{CBO}	Collector cut-off current	$V_{CB}=200V ; I_E=0$			0.1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=8V ; I_C=0$			0.1	mA
h_{FE-1}	DC current gain	$I_C=0.6A ; V_{CE}=4V$	70		250	
h_{FE-2}	DC current gain	$I_C=3A ; V_{CE}=4V$	70		220	
f_T	Transition frequency	$I_C=0.5A ; V_{CE}=12V$		30		MHz
C_{OB}	Collector output capacitance	$f=1MHz ; V_{CB}=10V$		110		pF

Switching times

t_{on}	Turn-on time	$I_C=3.0A$ $I_{B1}=0.3A, I_{B2}=-0.6A$ $V_{CC}=50V, R_L=16.7\Omega$			0.5	μs
t_s	Storage time				3.0	μs
t_f	Fall time				0.5	μs

◆ h_{FE-2} Classifications

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

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

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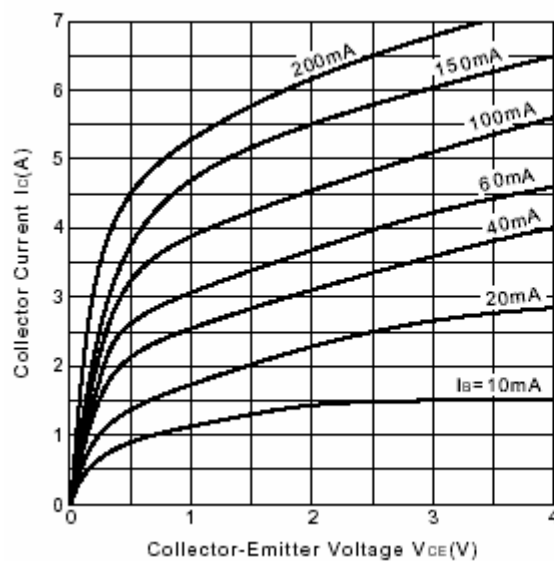


Fig.3 Static Characteristic

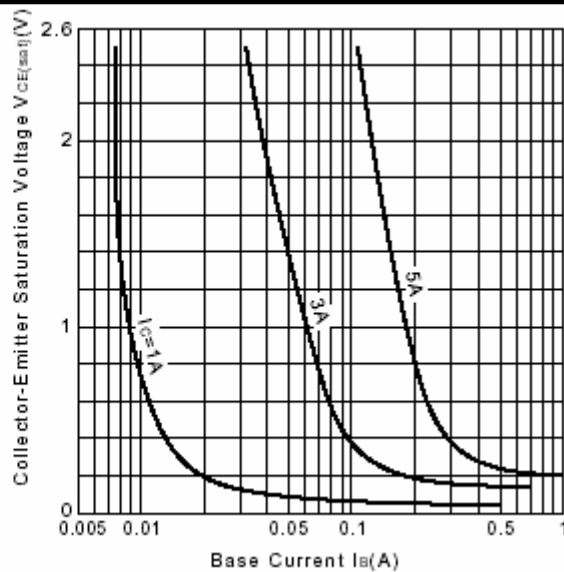
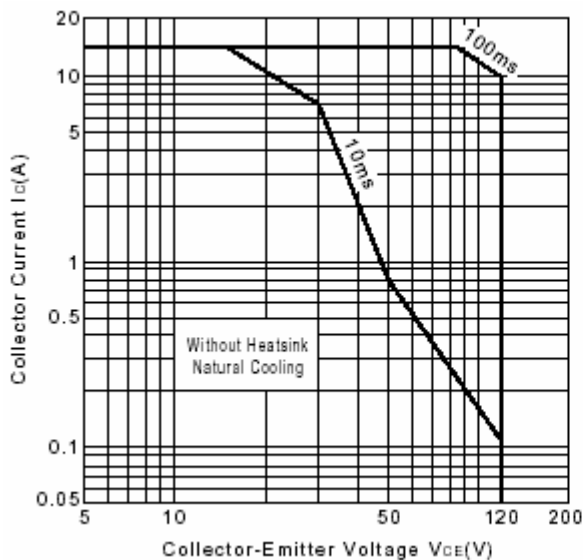
Fig.4 $V_{CE(sat)}-I_B$ 

Fig.5 Safe Operating Area

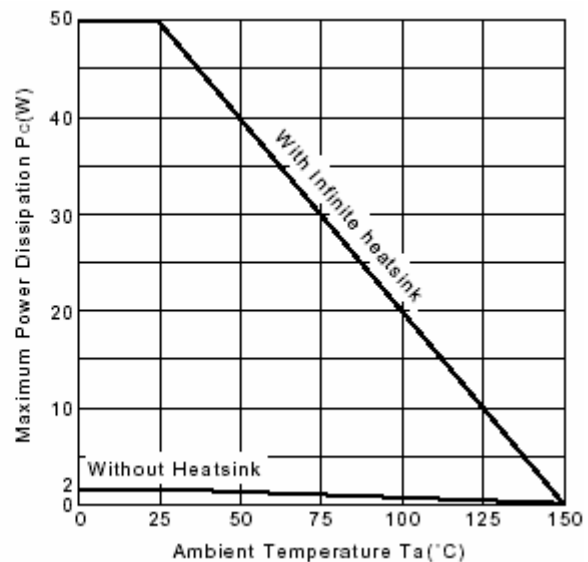


Fig.6 Power Derating

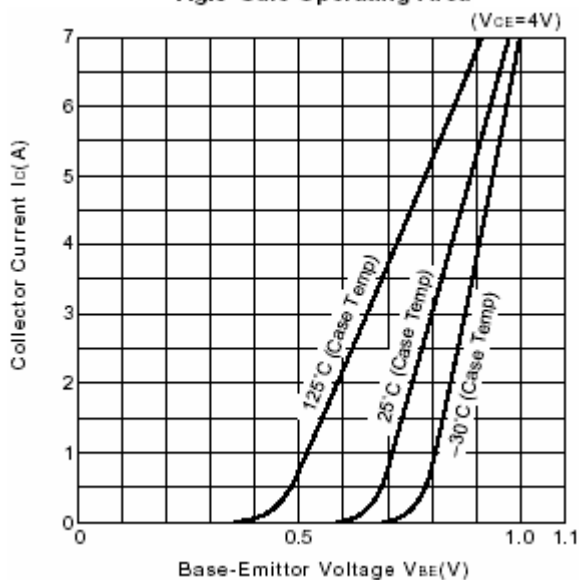
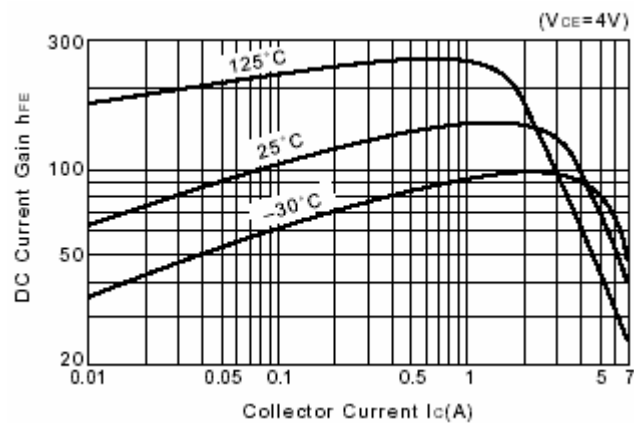
Fig.7 I_C-V_{BE} 

Fig.8 DC current Gain