Silicon NPN Power Transistors 2SC3830

DESCRIPTION

- With TO-220C package
- High voltage
- High speed switching

APPLICATIONS

- For switching regulator and general purpose applications

PINNING

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

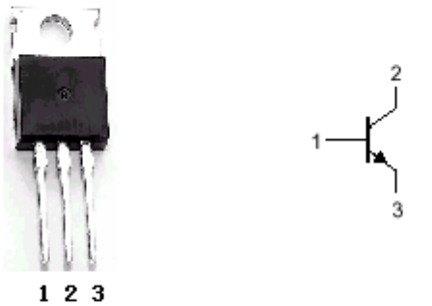


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	600	V
V_{CEO}	Collector-emitter voltage	Open base	500	V
V_{EBO}	Emitter-base voltage	Open collector	10	V
I_C	Collector current		6	A
I_{CM}	Collector current-peak		12	A
I_B	Base current		2	A
P_C	Collector dissipation	T_C=25℃	50	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=25mA ; I_B=0	500			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=2A; I_B=0.4A			0.5	V
V_{BEsat}	Base-emitter saturation voltage	I_C=2A; I_B=0.4A			1.3	V
I_{CBO}	Collector cut-off current	V_{CB}=600V ;I_E=0			1	mA
I_{EBO}	Emitter cut-off current	V_{EB}=10V; I_C=0			100	μA
h_{FE}	DC current gain	I_C=2A ; V_{CE}=4V	10		30	
f_T	Transition frequency	I_C=0.5A ; V_{CE}=12V		8		MHz
C_{OB}	Output capacitance	f=1MHz ; V_{CB}=10V		45		pF

Switching times

t_{on}	Turn-on time	V_{CC}=200V; I_C=2A I_{B1}=0.2A; I_{B2}=-0.4A; R_L=100Ω			1.0	μs
t_{stg}	Storage time				4.5	μs
t_f	Fall time				0.5	μs

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PACKAGE OUTLINE

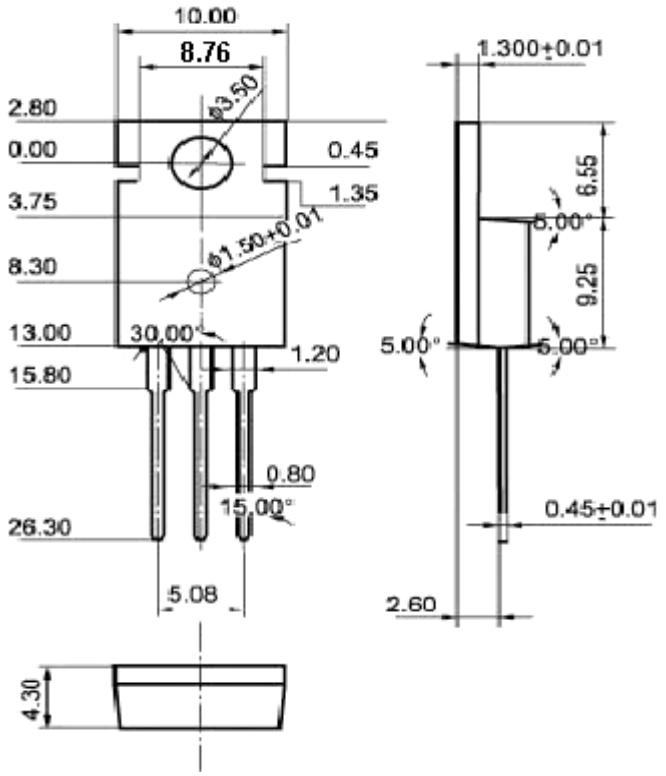


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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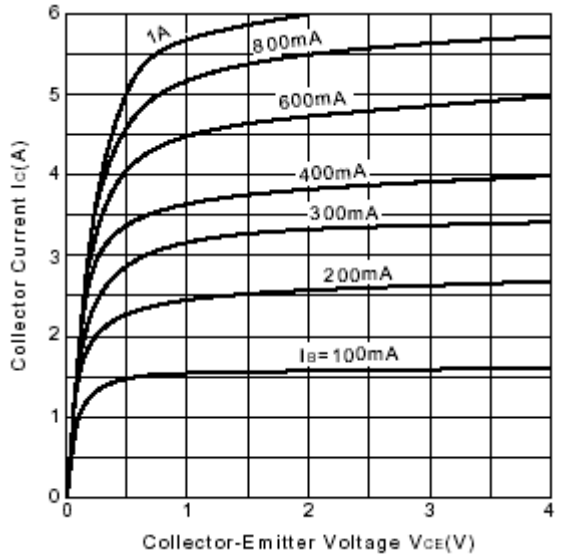


Fig.3 Static Characteristic

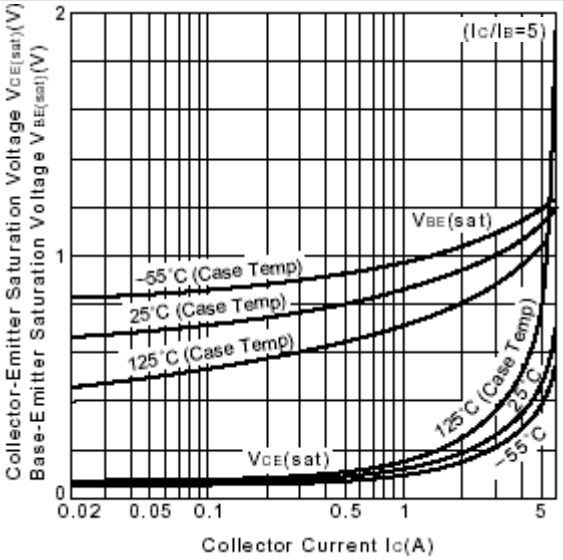


Fig.4 Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

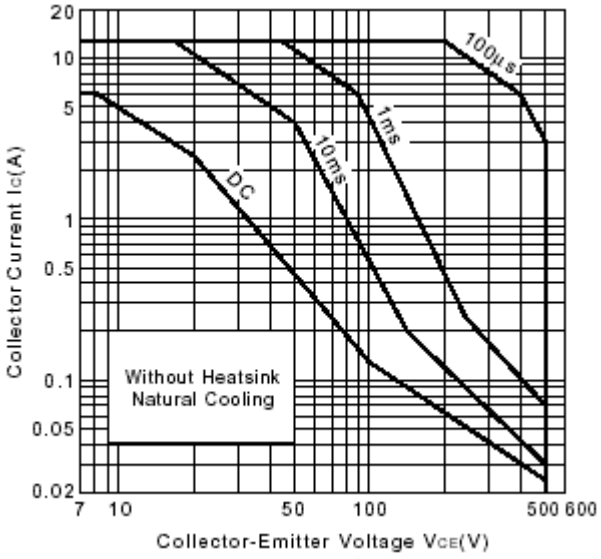


Fig.5 Safe Operating Area

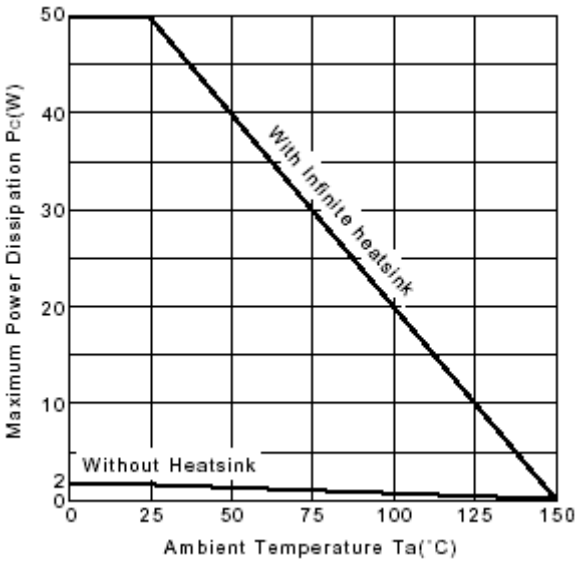


Fig.6 Power Derating

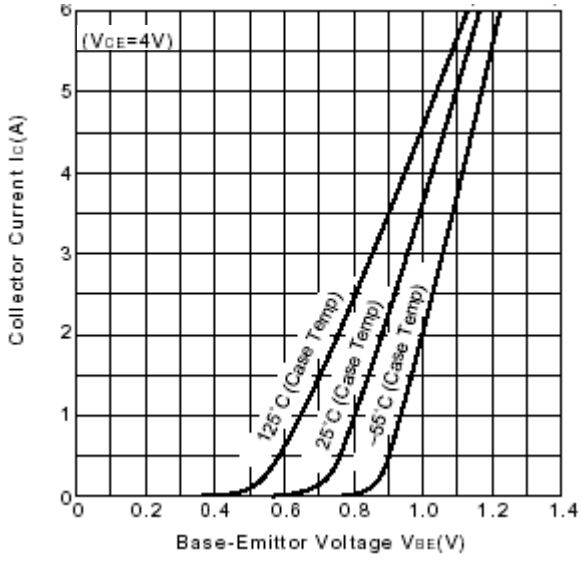


Fig.7 I_C–V_{BE}

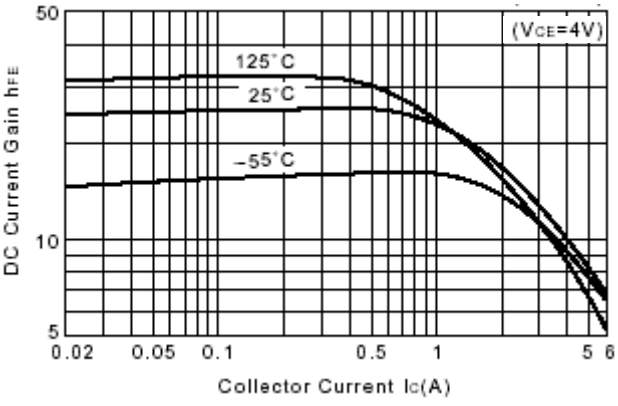


Fig.8 DC current Gain