Silicon NPN Power Transistors 2SC4153

DESCRIPTION

- With TO-220F package
- Switching transistor

APPLICATIONS

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

PINNING

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

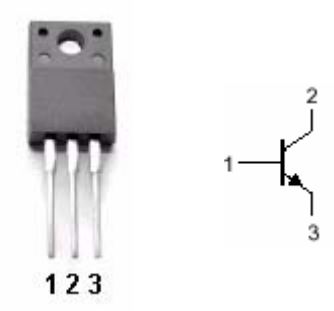

Fig.1 simplified outline (TO-220F) and symbol

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℃	30	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=50mA ;I_B=0	120			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=3A ;I_B=0.3A			0.5	V
V_{BEsat}	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_E=-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=3A I_{B1}=0.3A ,I_{B2}=-0.6A V_{CC}=50V, R_L=16.7Ω			0.5	μs
t_s	Storage time				3.0	μs
t_f	Fall time				0.5	μs

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PACKAGE OUTLINE

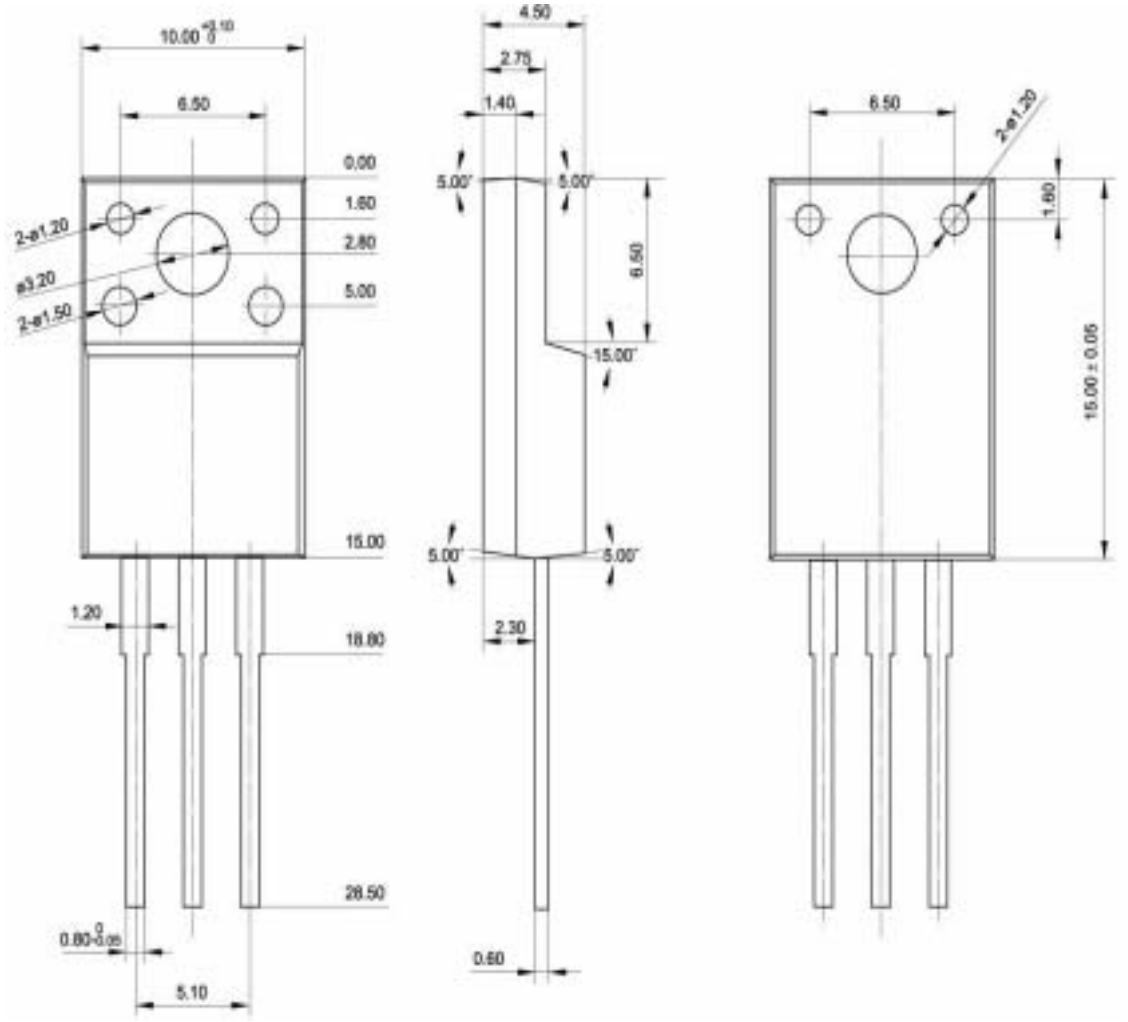

Fig.2 outline dimensions

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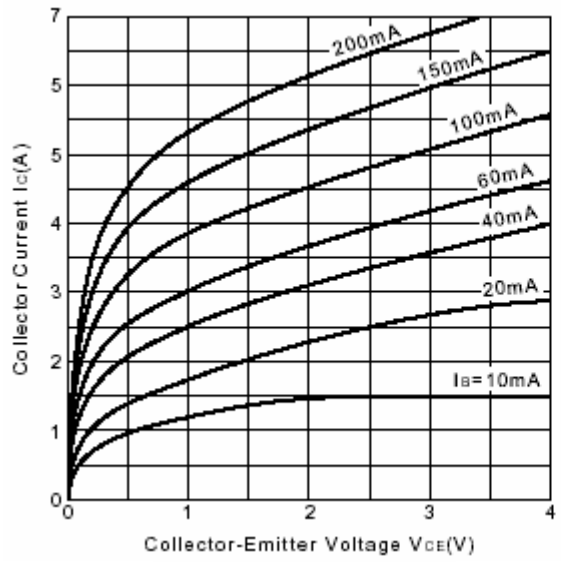

Fig.3 Static Characteristic

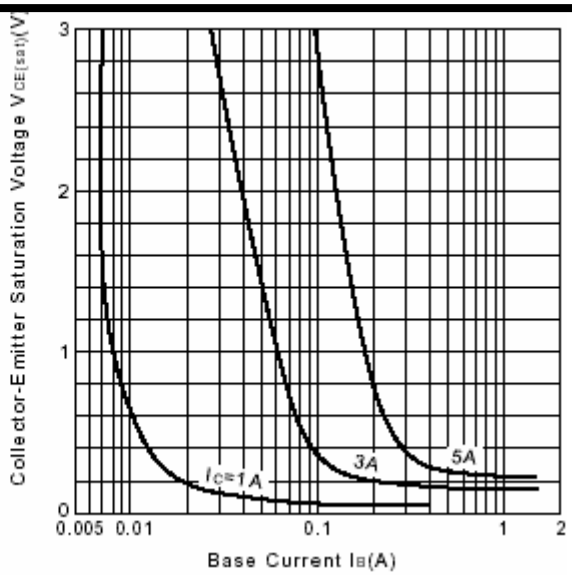

Fig.4 $V_{CE}(sat)-I_B$

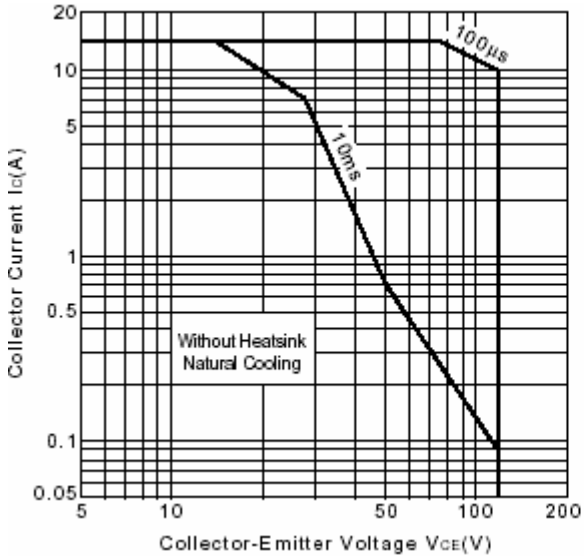

Fig.5 Safe Operating Area

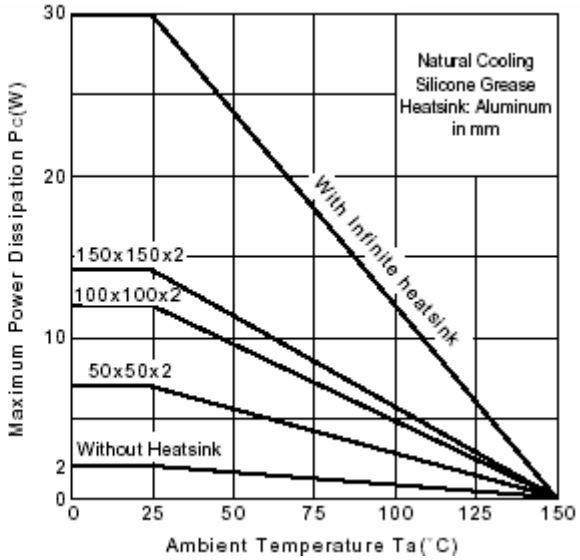

Fig.6 Power Derating

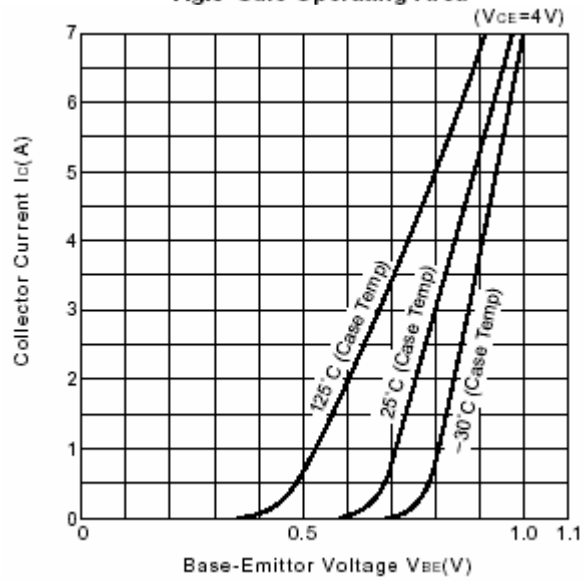

Fig.7 I_C-V_{BE}

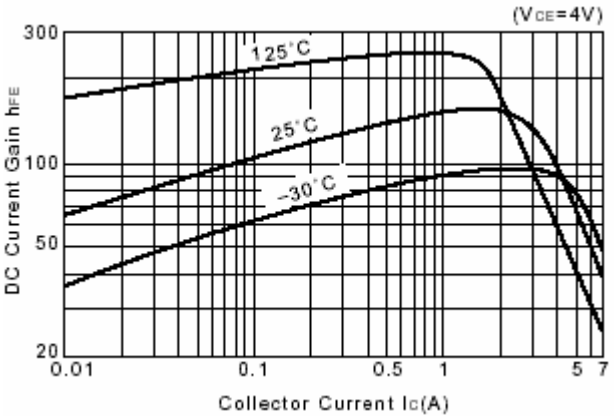

Fig.8 DC current Gain