

Silicon NPN Power Transistors

2SC4153

DESCRIPTION

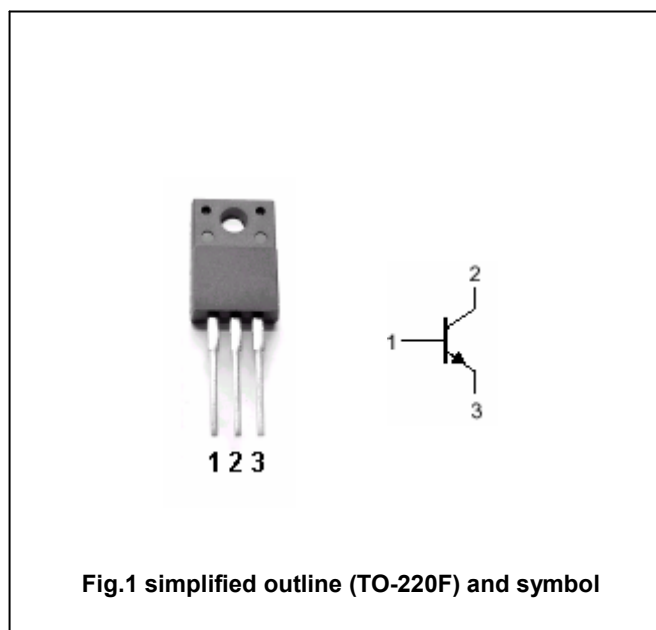
- With TO-220F package
- Switching transistor

APPLICATIONS

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

PINNING

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

**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	$T_C=25^\circ\text{C}$	30	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

T_j=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 _{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

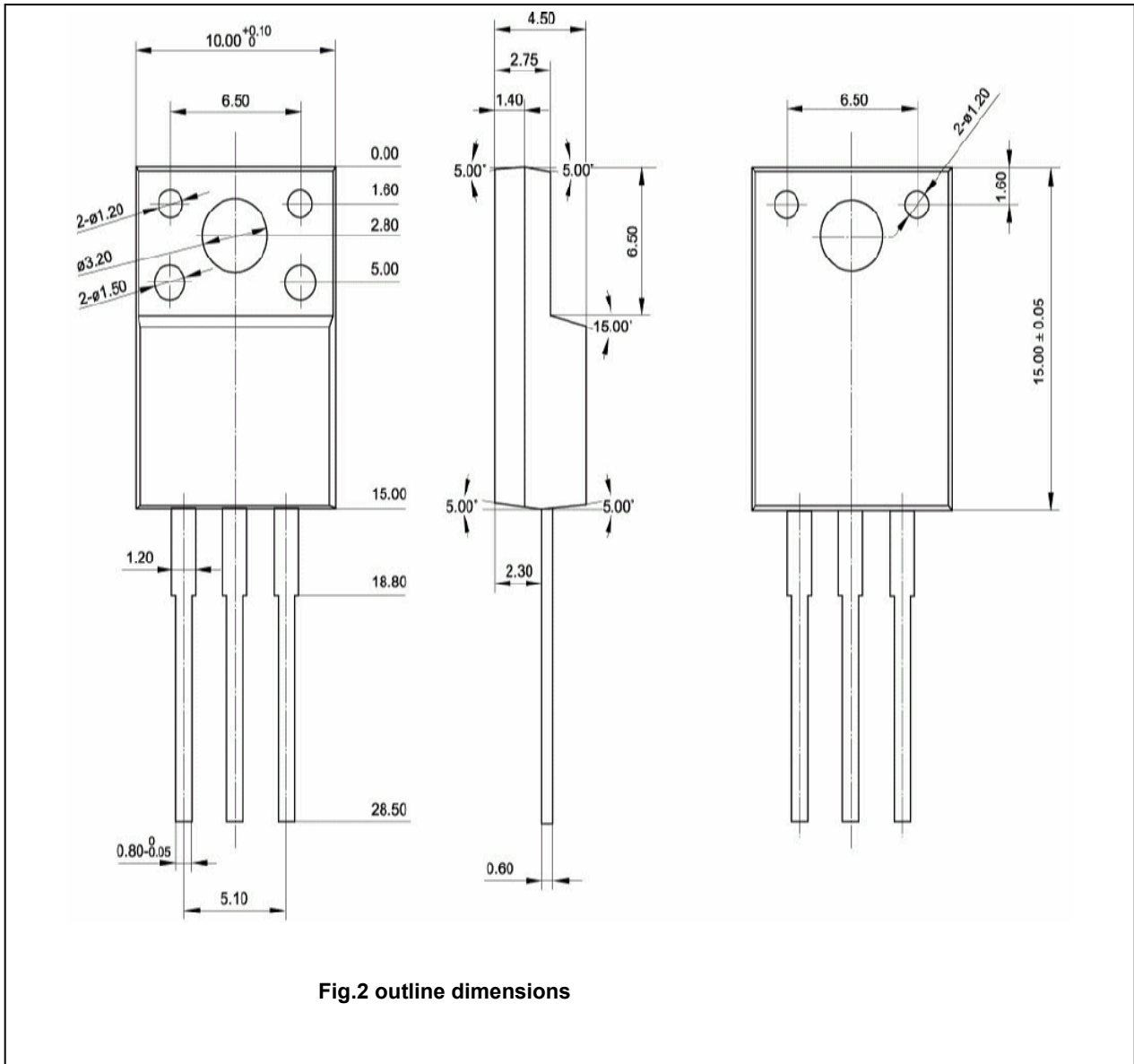


Fig.2 outline dimensions

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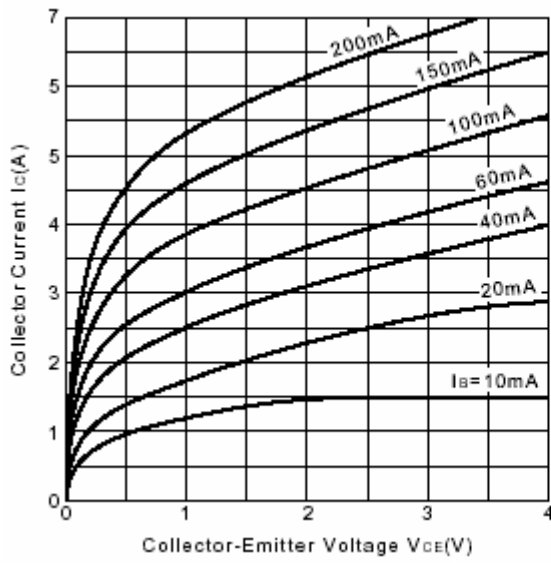


Fig.3 Static Characteristic

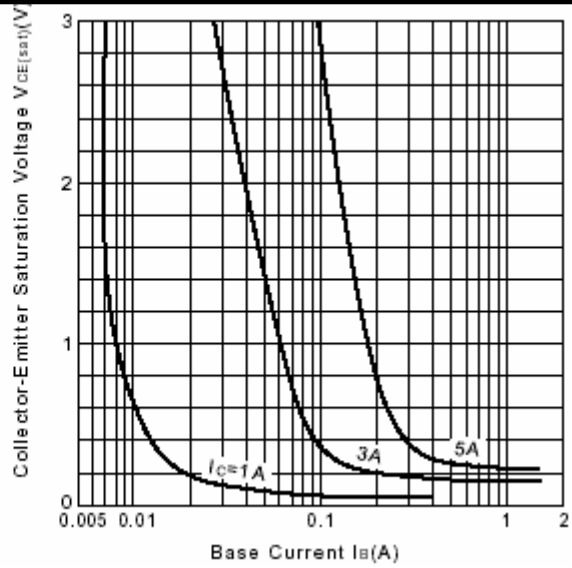


Fig.4 $V_{CE(sat)}-I_B$

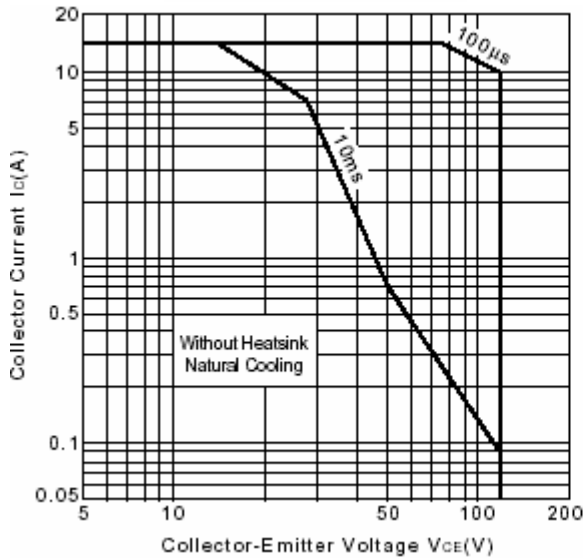


Fig.5 Safe Operating Area

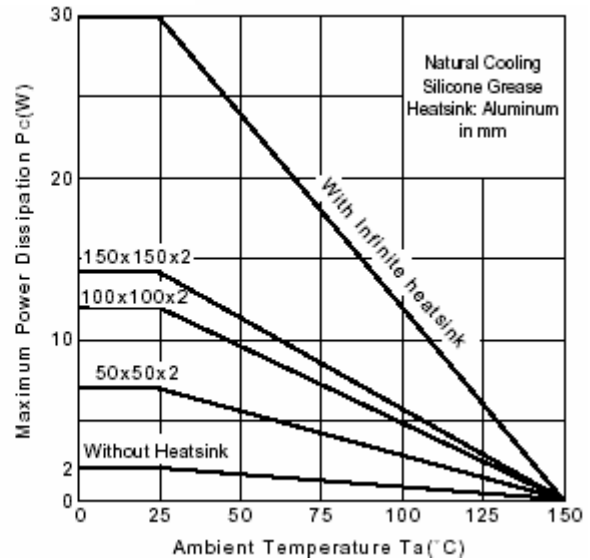


Fig.6 Power Derating

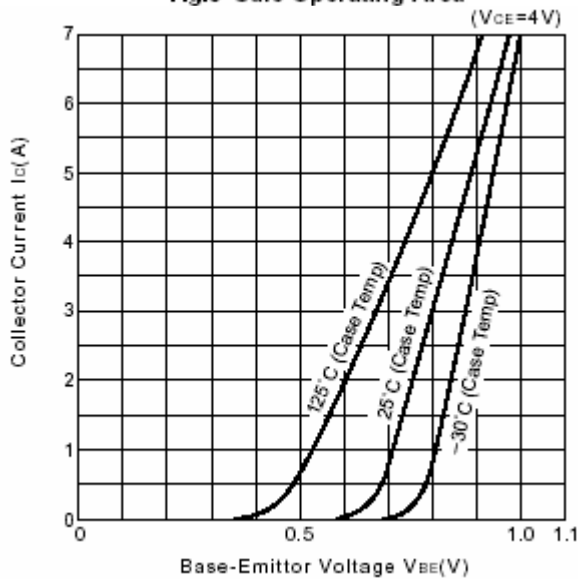


Fig.7 I_C-V_{BE}

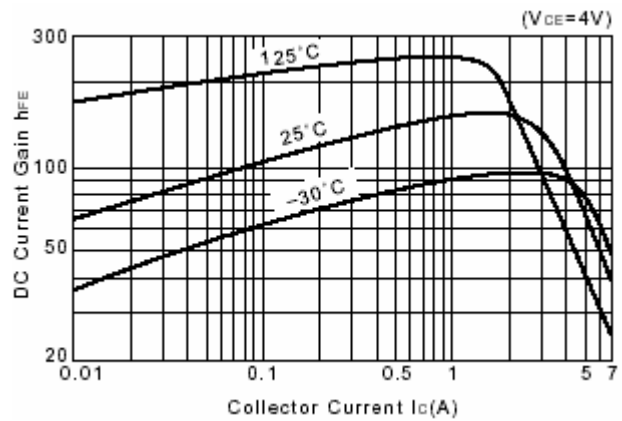


Fig.8 DC current Gain