

Silicon NPN Power Transistors

2SC4242

DESCRIPTION

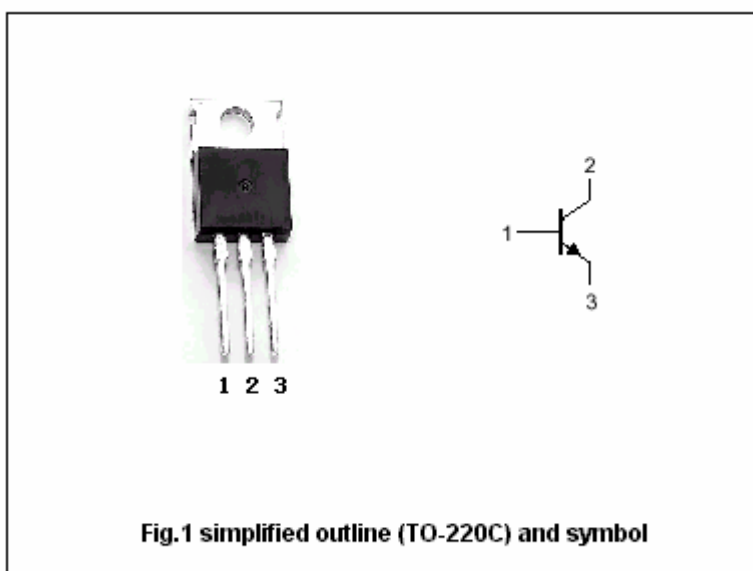
- With TO-220C package
- High voltage ,high speed

APPLICATIONS

- For use in high voltage ,high speed; power switching in inductive circuit.
- Particularly suited for 115 and 220V switchmode applications such as switching regulators ,inverters ; DC-DC converters

PINNING

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

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	450	V
V_{CEO}	Collector-emitter voltage	Open base	400	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		2	A
P_C	Collector dissipation	$T_C=25^\circ\text{C}$	40	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-50~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-c}$	Thermal resistance from junction to case	3.125	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	I _C =0.1A ; I _B =0	400			V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =1mA ; I _E =0	450			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =1mA ; I _C =0	8			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A ; I _B =0.8A			0.8	V
V _{BEsat}	Base-emitter saturation voltage	I _C =4A ; I _B =0.8A			1.2	V
I _{CBO}	Collector cut-off current	V _{CB} =450V ; I _E =0			100	μA
I _{EBO}	Emitter cut-off current	V _{EB} =8V ; I _C =0			100	μA
h _{FE}	DC current gain	I _C =4A ; V _{CE} =5V	10			
f _T	Transition frequency	I _C =0.4A ; V _{CE} =10V		20		MHz
C _{ob}	Collector output capacitance	f=1MHz ; V _{CB} =10V		50		pF

Switching times

t _{on}	Turn-on time	I _C =5A, I _{B1} =1A I _{B2} =-1A; V _{CC} =150V R _L =30Ω			1.0	μs
t _s	Storage time				2.5	μs
t _f	Fall time				0.5	μs

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PACKAGE OUTLINE

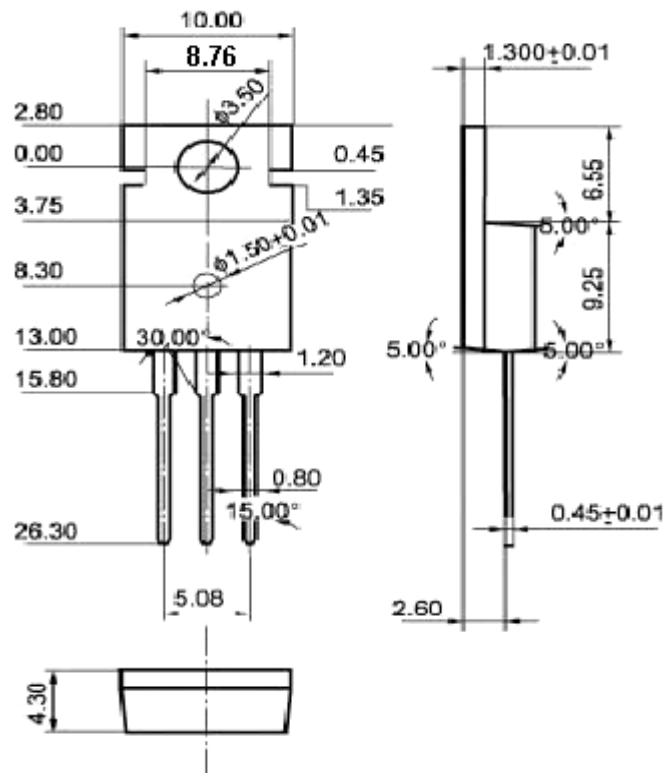


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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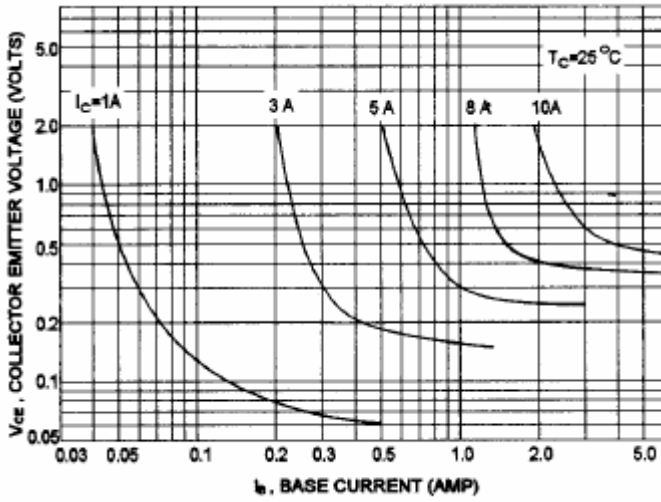


Fig.3 Static Characteristic

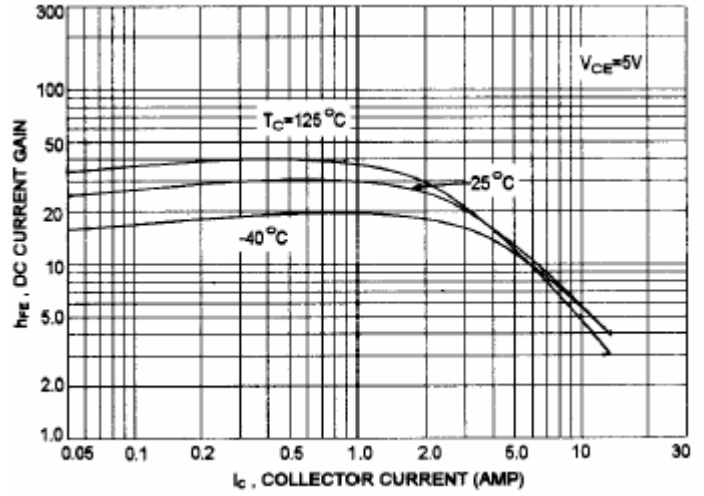


Fig.4 DC current Gain

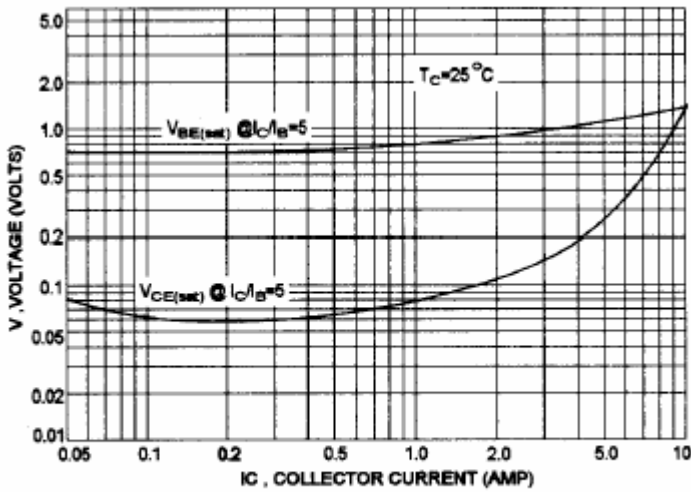


Fig.5

Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

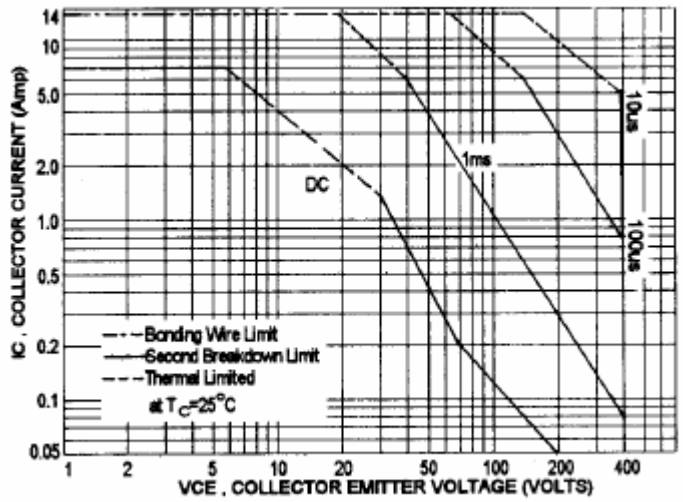


Fig.6 Safe Operating Area