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.
- Particulary suited for 115 and 220V switchmode applications such as switching regulators ,inverters ; DC-DC converters

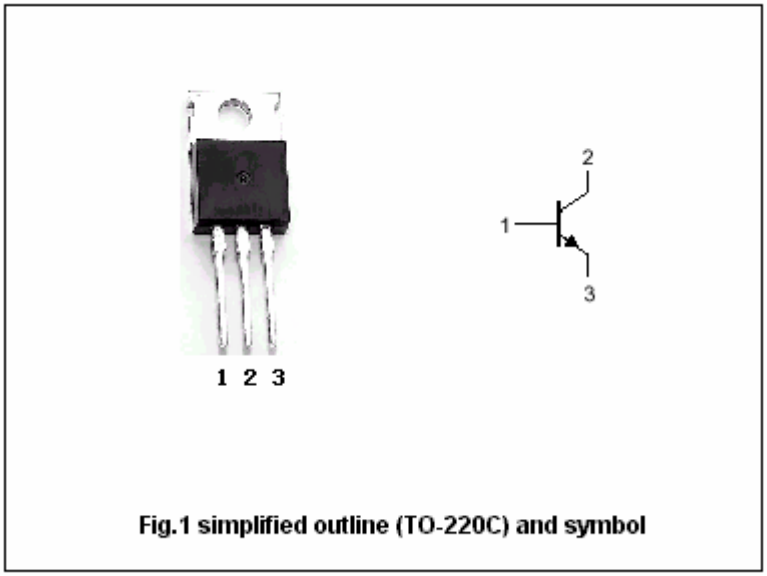

Fig.1 simplified outline (TO-220C) and symbol

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	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℃	40	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-50~150	℃

THERMAL CHARACTERISTICS

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

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CHARACTERISTICS

Tj=25℃ 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

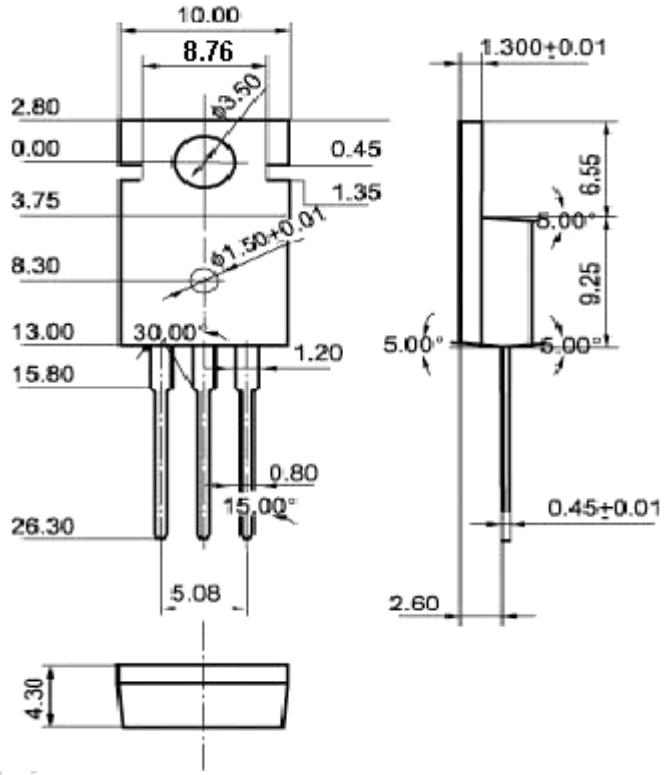

Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)

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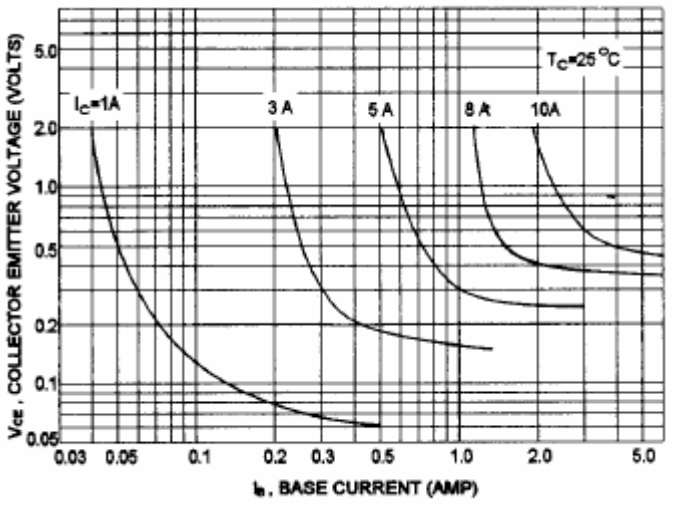

Fig.3 Static Characteristic

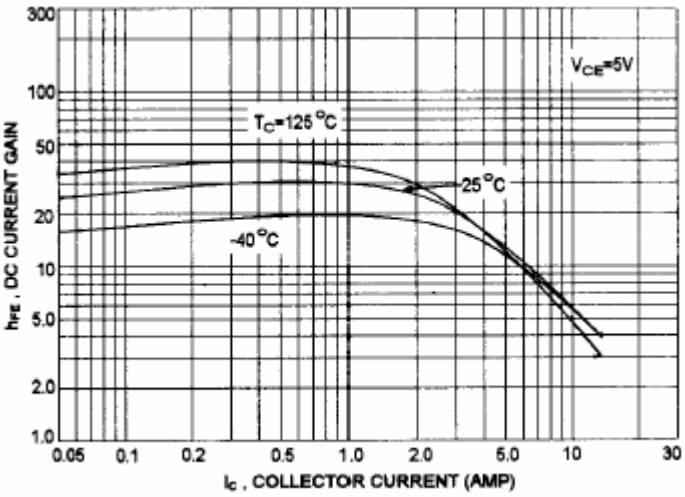

Fig.4 DC current Gain

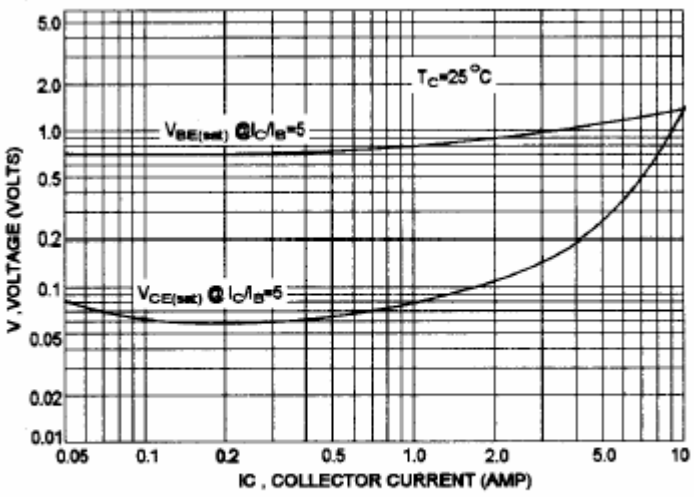

Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

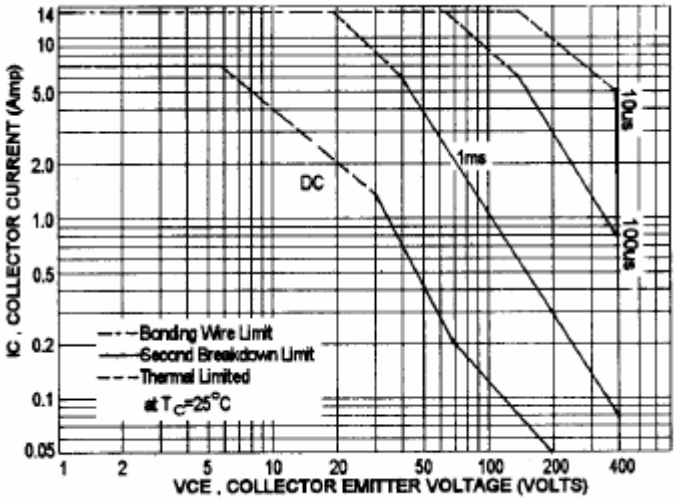

Fig.6 Safe Operating Area