

Silicon NPN Power Transistors

2SC2438

DESCRIPTION

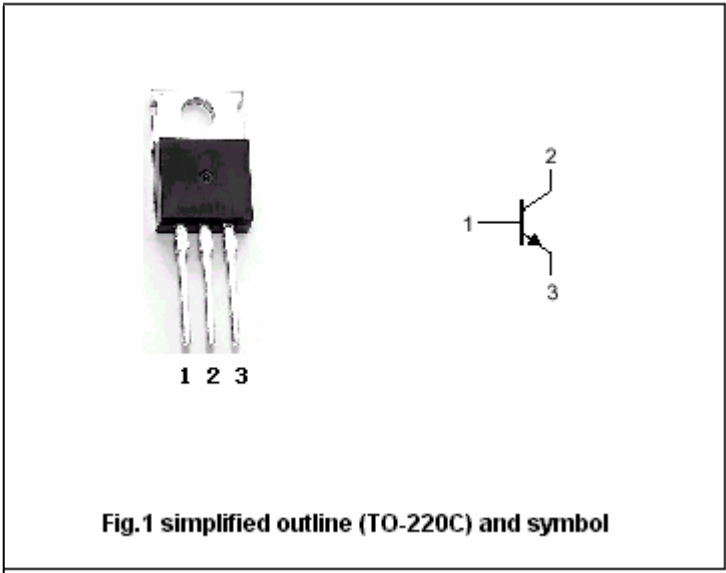
- With TO-220C package
- Low collector saturation voltage
- High reliability

APPLICATIONS

- Switching regulators
- Ultrasonic generators
- High frequency inverters
- General purpose power amplifiers

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	150	V
V_{CEO}	Collector-emitter voltage	Open base	80	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		7	A
I_B	Base current		2	A
P_C	Collector power dissipation	$T_C=25$	50	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-C}$	Thermal resistance junction case	2.5	/W

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA ; I _B =0	80			V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =100 μ A ; I _E =0	150			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =100 μ A ; I _C =0	7			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A; I _B =0.4A			0.5	V
V _{BEsat}	Base-emitter saturation voltage	I _C =4A; I _B =0.4A			1.2	V
I _{CBO}	Collector cut-off current	V _{CB} =150V ; I _E =0			100	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =7V; I _C =0			100	μ A
h _{FE}	DC current gain	I _C =4 A ; V _{CE} =1V	30			

Switching times

t _{on}	Turn-on time	I _C =4A; I _{B1} =0.4A I _{B2} =-0.4A; R _L =5 Ω			0.5	μ s
t _s	Storage time				2.5	μ s
t _f	Fall time				0.3	μ s

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PACKAGE OUTLINE



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

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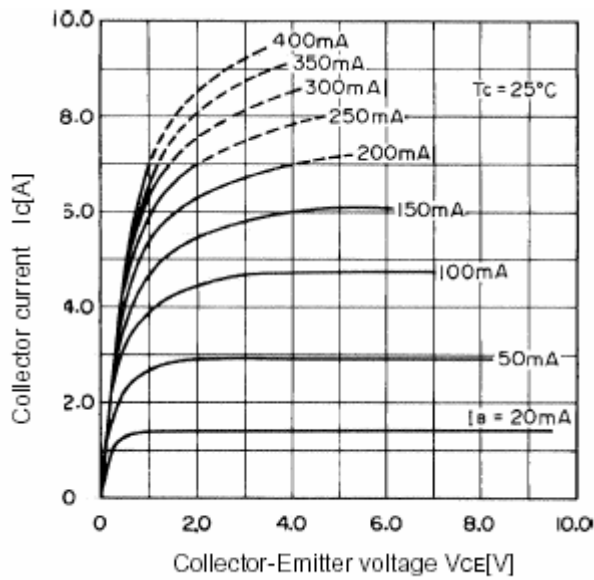


Fig.3 Static Characteristic

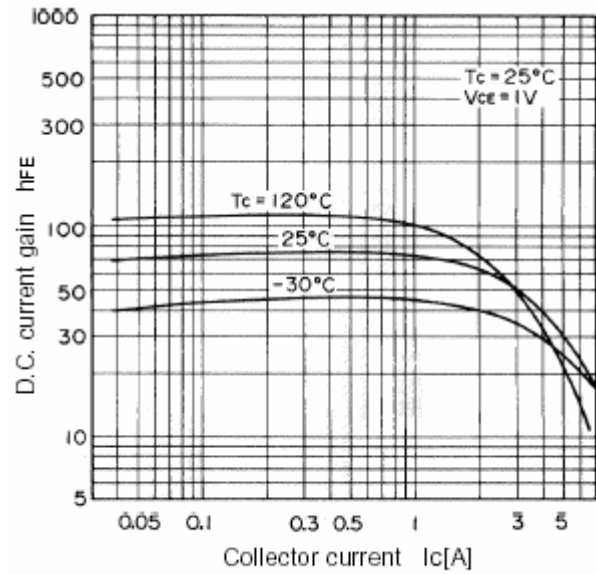


Fig.4 DC current Gain

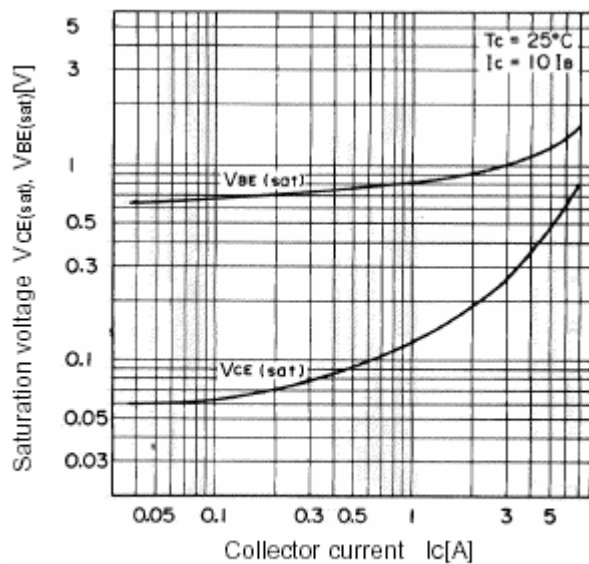
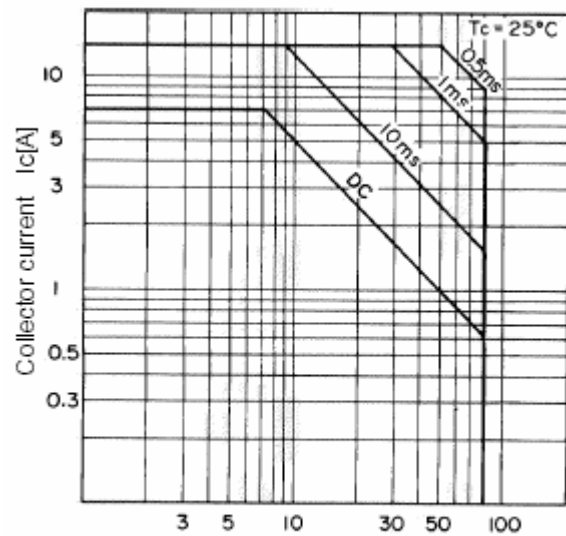
Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

Fig.6 Safe Operating Area