

Silicon NPN Power Transistors

2SC4538

DESCRIPTION

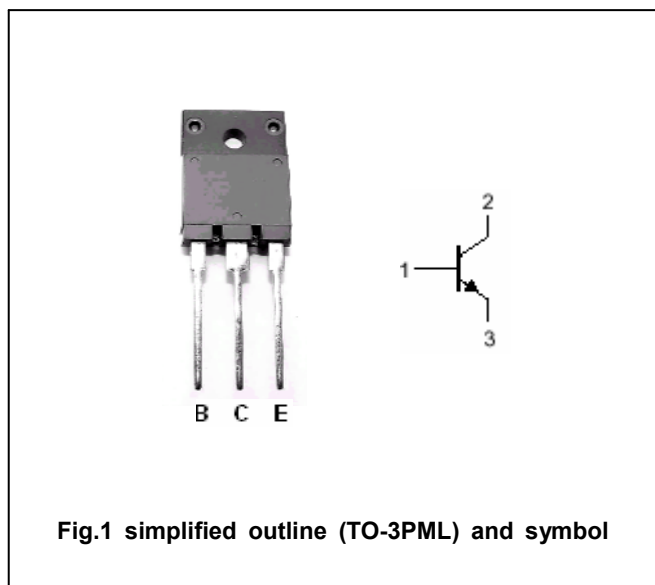
- With TO-3PML package
- High voltage ,high speed switching

APPLICATIONS

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

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	900	V
V_{CEO}	Collector-emitter voltage	Open base	800	V
V_{EBO}	Emitter-base voltage	Open collector	10	V
I_C	Collector current		5	A
I_B	Base current		3	A
P_C	Collector power dissipation	$T_c=25^\circ\text{C}$	80	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{thj-c}	Thermal resistance junction case	1.5	$^\circ\text{C}/\text{W}$

Silicon NPN Power Transistors

2SC4538

CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =1mA; I _E =0	900			V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA; I _B =0	800			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =1mA; I _C =0	10			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =2A; I _B =0.4A			1.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C =2A; I _B =0.4A			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =900V; I _E =0			1.0	mA
I _{EBO}	Emitter cut-off current	V _{EB} =10V; I _C =0			1.0	mA
h _{FE}	DC current gain	I _C =2A; V _{CE} =5V	10			

Switching times

t _{on}	Turn-on time	I _C =3A; R _L =100Ω I _{B1} =0.6A; I _{B2} =-1.2A Pw = 20μs; Duty≤2%			1.0	μs
t _{stg}	Storage time				4.0	μs
t _f	Fall time				0.8	μs

Silicon NPN Power Transistors

2SC4538

PACKAGE OUTLINE

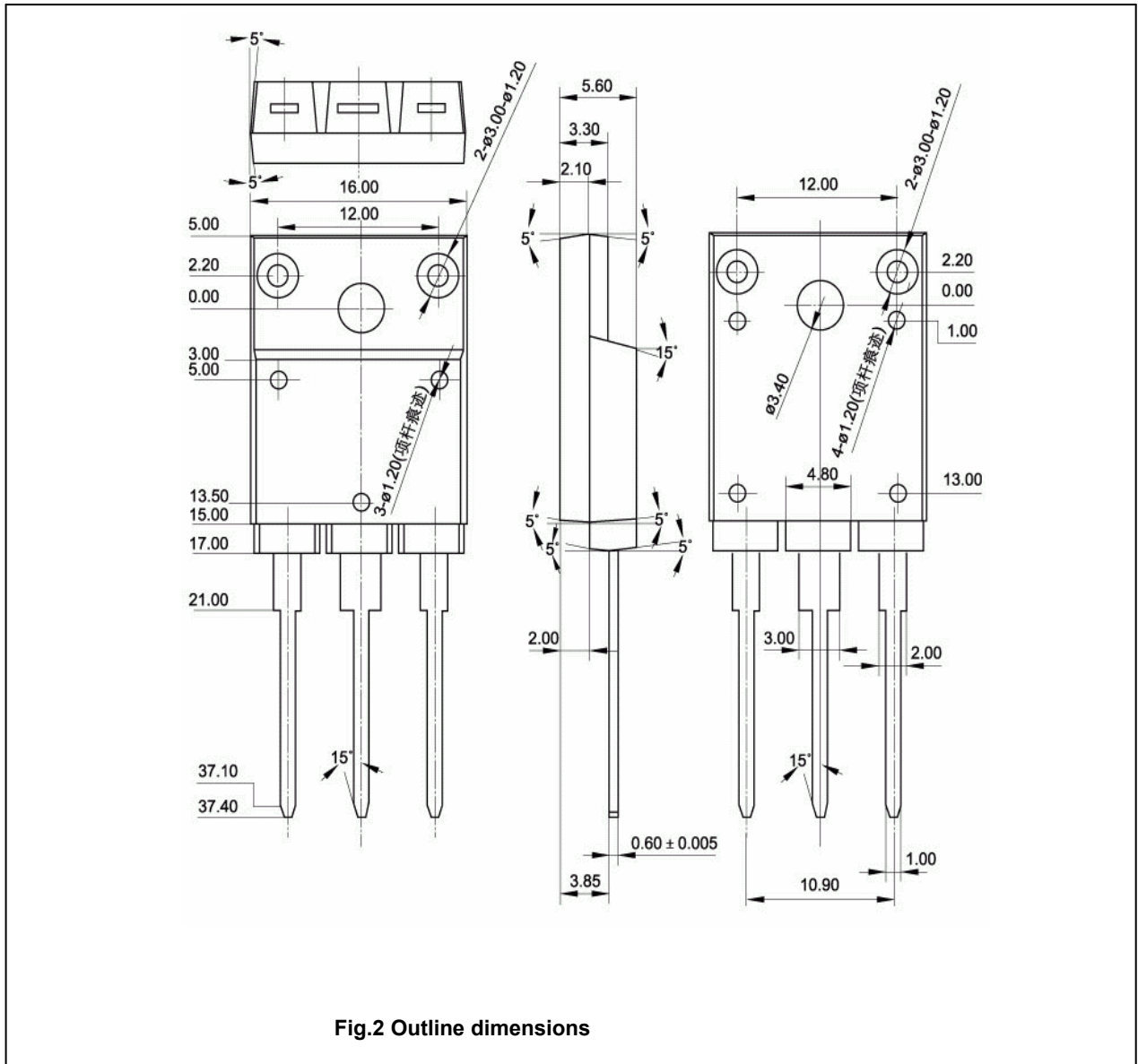


Fig.2 Outline dimensions

Silicon NPN Power Transistors

2SC4538

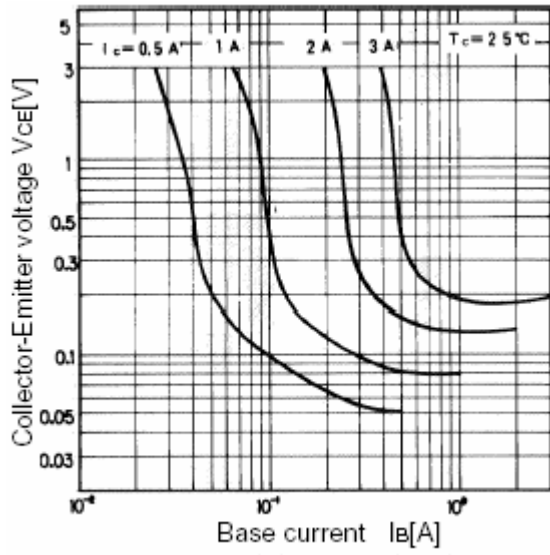


Fig.3 Static Characteristic

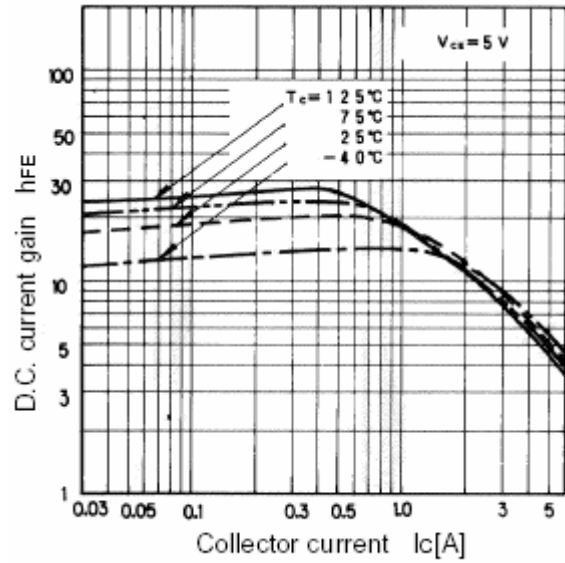


Fig.4 DC current Gain

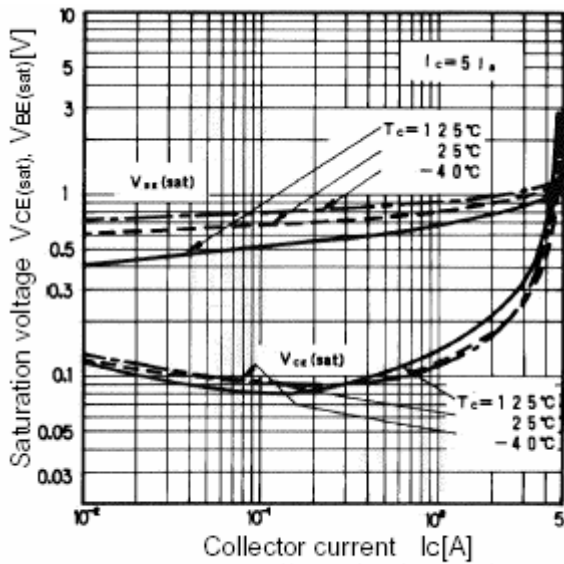


Fig.5 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

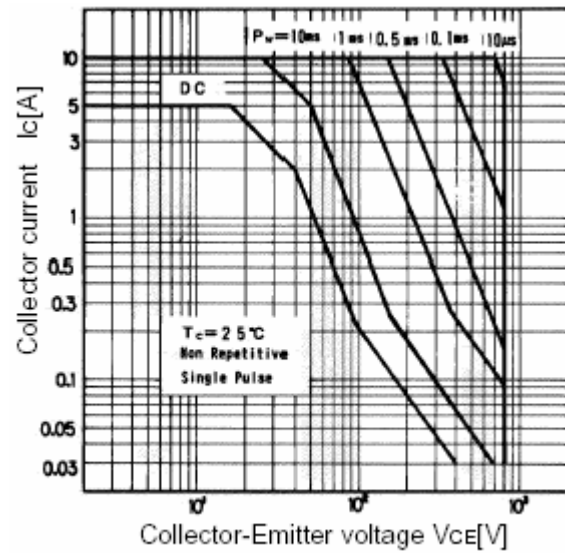


Fig.6 Safe Operating Area