

Silicon NPN Power Transistors

2SC5101

DESCRIPTION

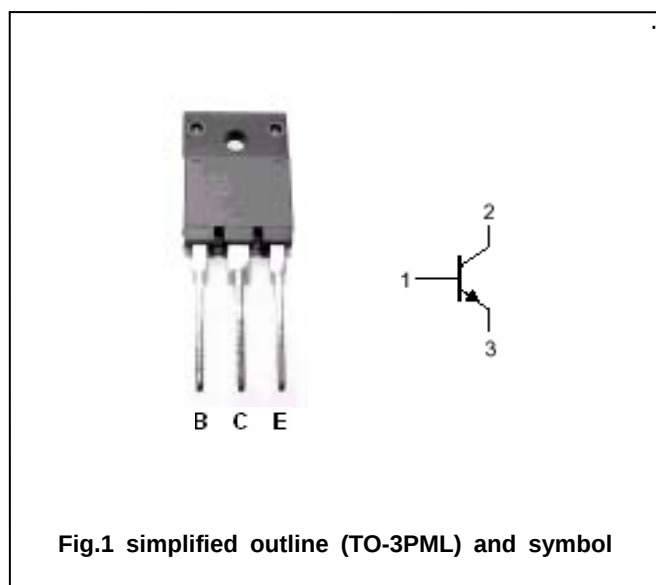
- With TO-3PML package
- Complement to type 2SA1909

APPLICATIONS

- Audio and general purpose

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	200	V
V_{CEO}	Collector-emitter voltage	Open base	140	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		10	A
I_B	Base current		4	A
P_C	Collector power dissipation	$T_c=25$	80	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

Tj=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=50mA; I_B=0$	140			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=5A; I_B=0.5A$			0.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=200V; I_E=0$			10	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=6V; I_C=0$			10	μA
h_{FE}	DC current gain	$I_C=3A; V_{CE}=4V$	50		180	
f_T	Transition frequency	$I_E=-0.5A; V_{CE}=12V$		20		MHz
C_{OB}	Output capacitance	$I_E=0; V_{CB}=10V; f=1MHz$		250		pF

Switching times

t_{on}	Turn-on time	$I_C=5A; R_L=12\Omega$ $I_{B1}=-I_{B2}=0.5A$ $V_{CC}=60V$		0.24		μs
t_s	Storage time			4.32		μs
t_f	Fall time			0.40		μs

◆ h_{FE} classifications

O	P	Y
50-100	70-140	90-180

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PACKAGE OUTLINE

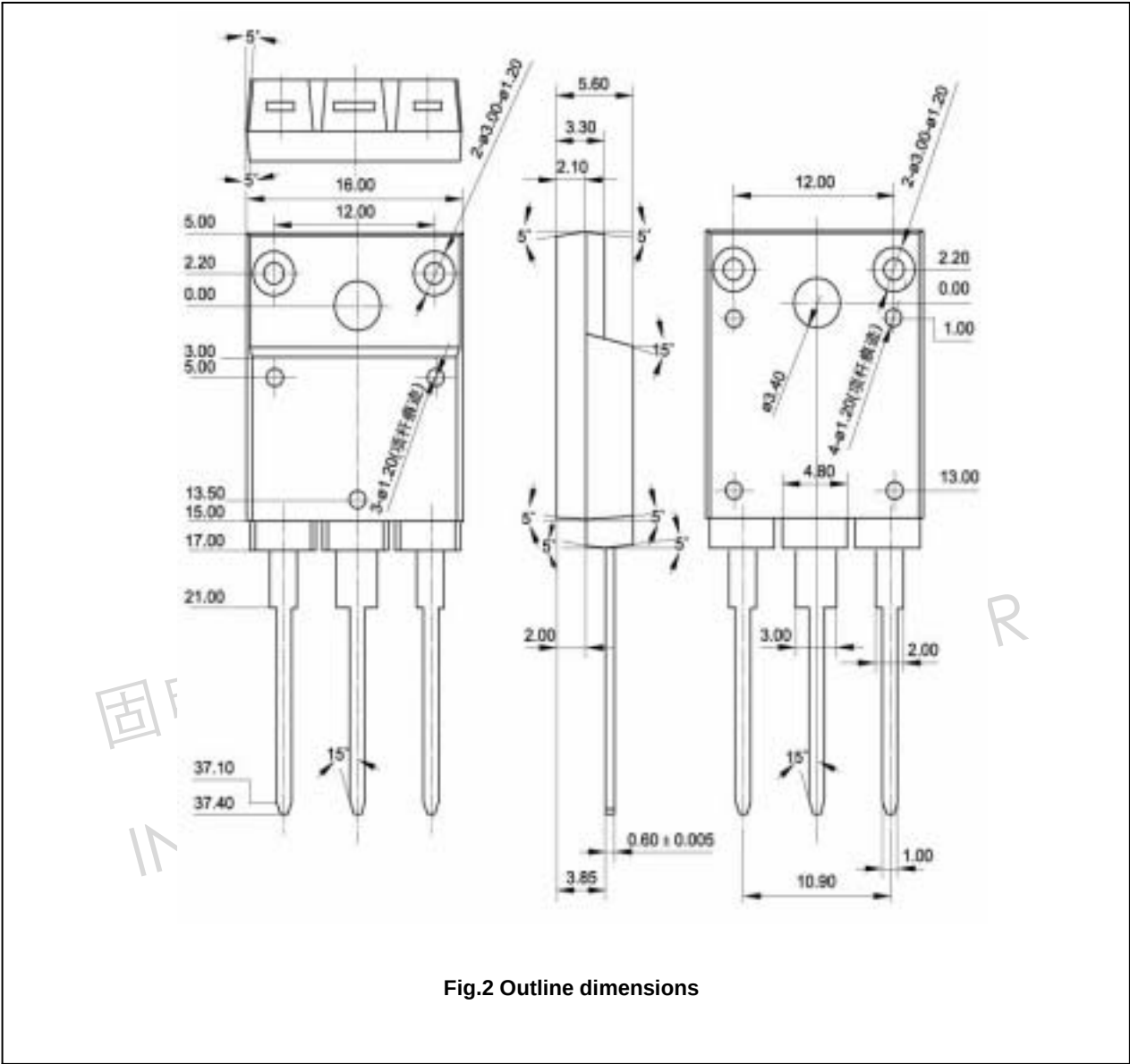


Fig.2 Outline dimensions

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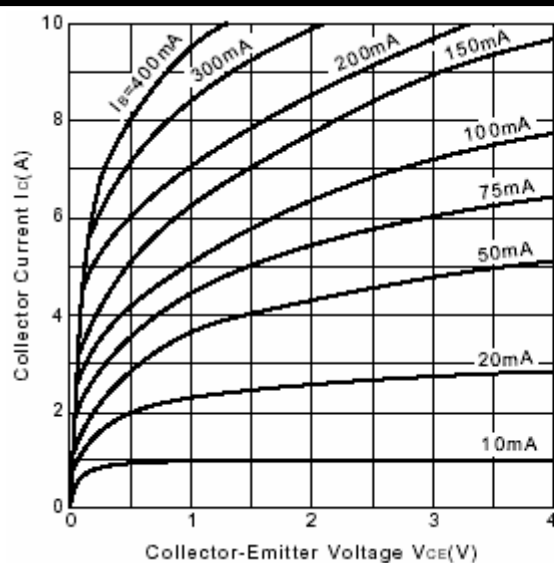


Fig.3 Static Characteristic

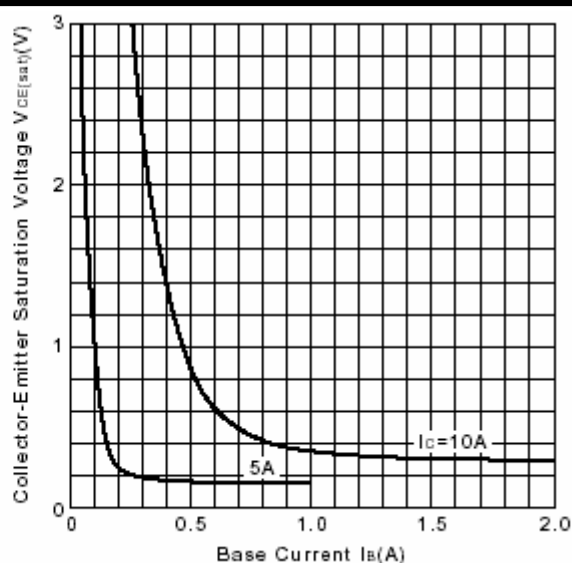
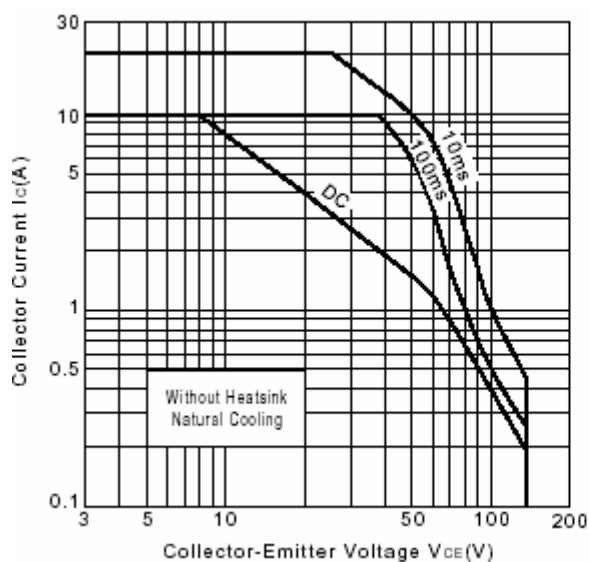
Fig.4 $V_{CE(sat)}$ - I_B Characteristics

Fig.5 Safe Operating Area

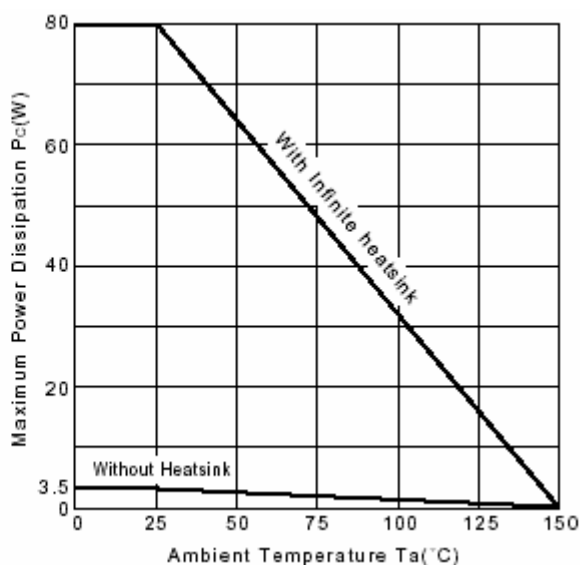
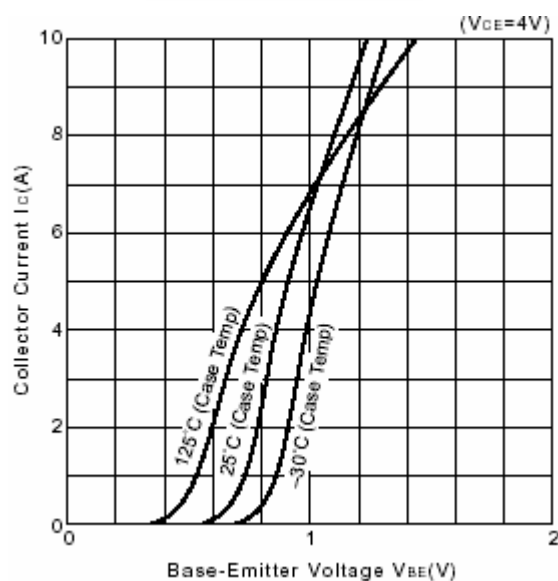
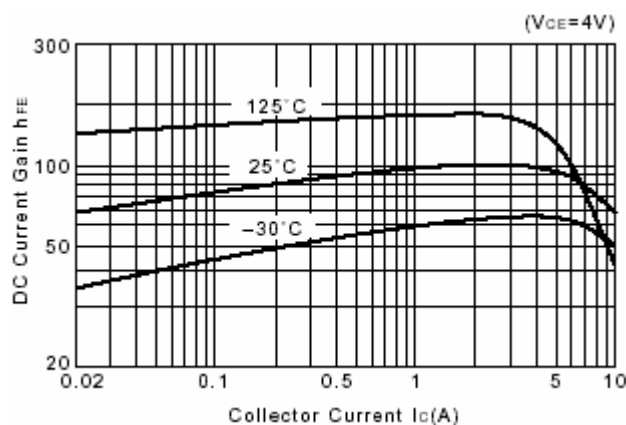
Fig.6 P_C - T_a DeratingFig.7 I_C - V_{BE} 

Fig.8 DC current Gain