

Silicon NPN Power Transistors

2SC4706

DESCRIPTION

- With TO-3PN package
- High voltage switching transistor

APPLICATIONS

- For switching regulator and general purpose applications

PINNING

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

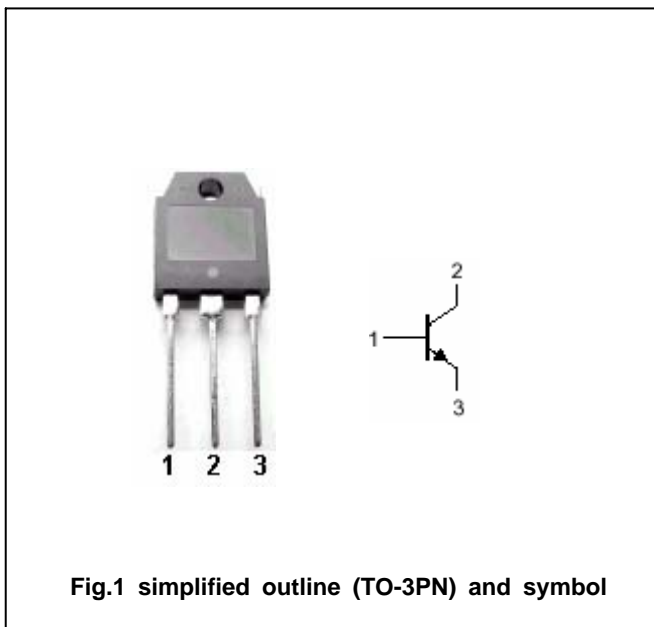


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Ta= )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	900	V
$V_{CEO}$	Collector-emitter voltage	Open base	600	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		14	A
$I_{CM}$	Collector current-peak		28	A
$I_B$	Base current		7	A
$P_C$	Collector power dissipation	$T_C=25$	130	W
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	600			V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V; I <sub>E</sub> =0			0.1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =7A ; V <sub>CE</sub> =4V	10		25	
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =1.4A			0.5	V
V <sub>BE(sat)</sub>	Base-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =1.4A			1.2	V
f <sub>T</sub>	Transition frequency	V <sub>CE</sub> =12V; I <sub>E</sub> =-1.5A		6		MHz
C <sub>OB</sub>	Collector output capacitance	V <sub>CB</sub> =10V; f=1MHz		160		pF
Switching times						
t <sub>on</sub>	Turn-on time	I <sub>C</sub> =7A; R <sub>L</sub> =35.7 I <sub>B1</sub> =1.05A; I <sub>B2</sub> =-3.5A V <sub>CC</sub> =250V			1.0	μs
t <sub>s</sub>	Storage time				5.0	μs
t <sub>f</sub>	Fall time				0.7	μs

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PACKAGE OUTLINE

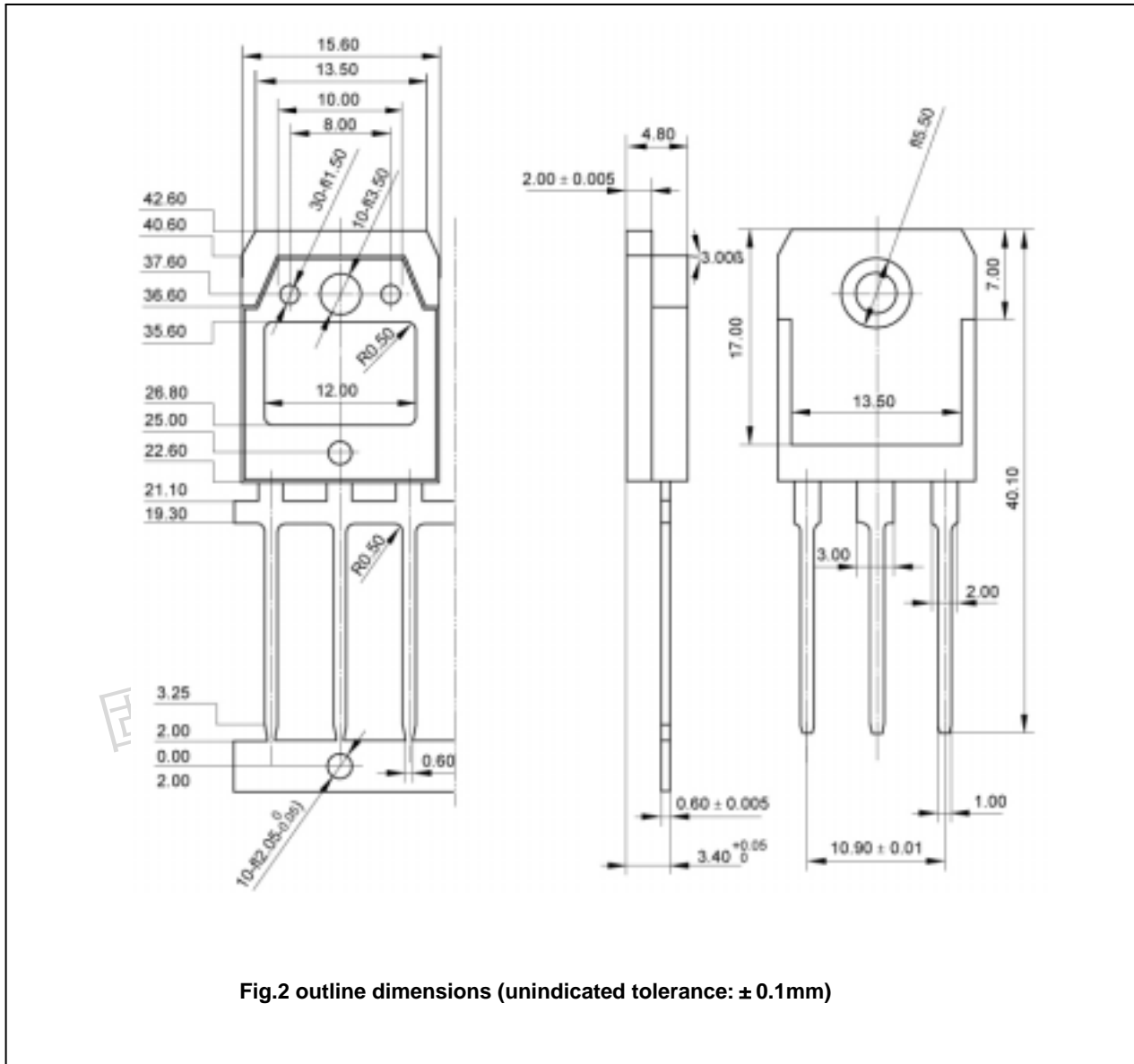


Fig.2 outline dimensions (unindicated tolerance: ± 0.1mm)

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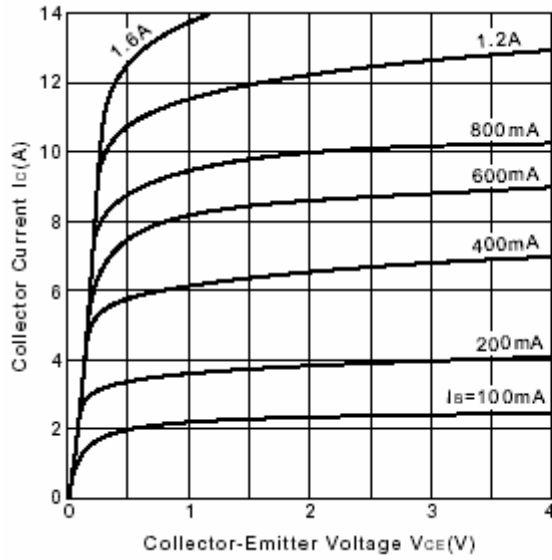


Fig.3 Static Characteristic

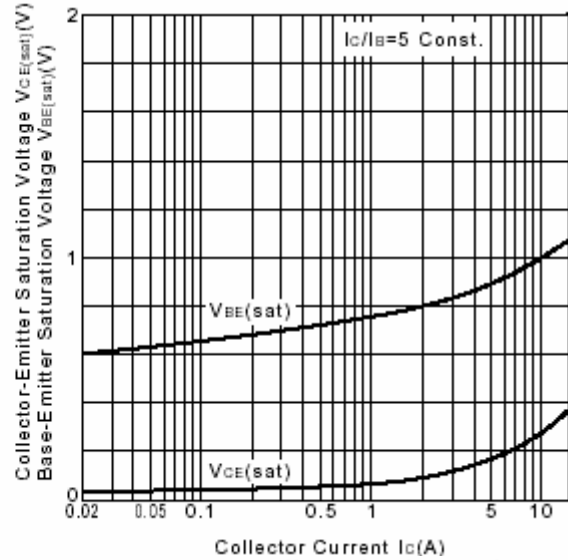


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emittor Saturation Voltage

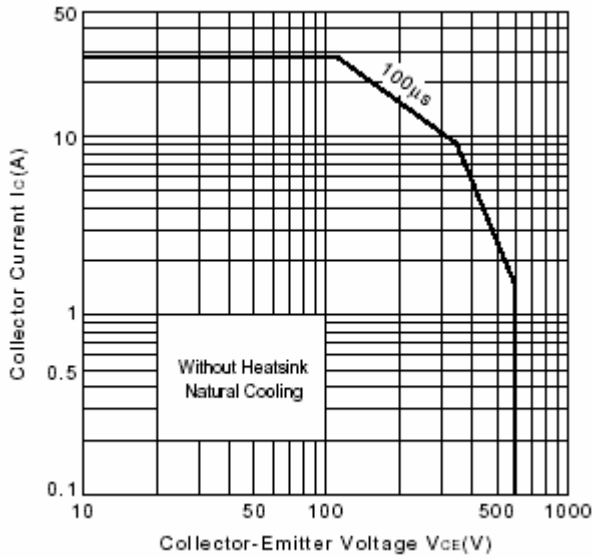


Fig.5 Safe Operating Area

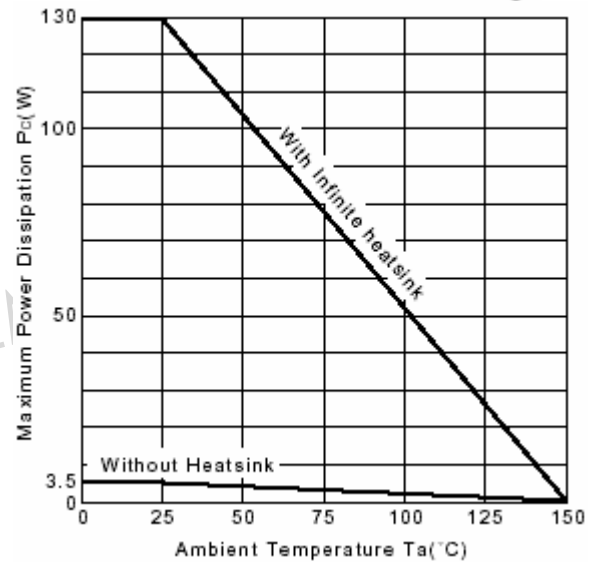


Fig.6 Pc-Ta Derating

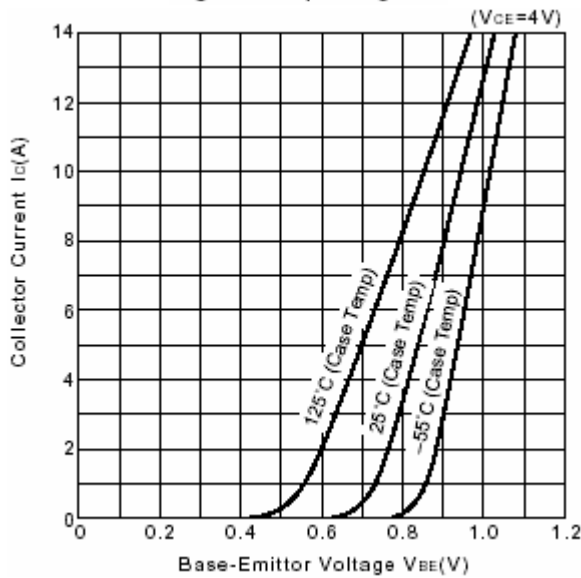


Fig.7  $I_c - V_{BE}$

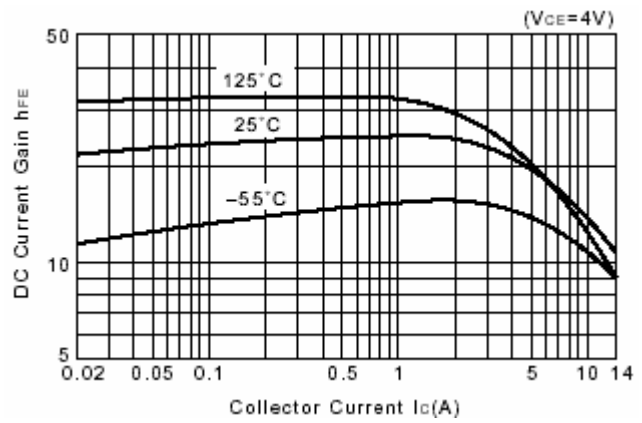


Fig.8 DC current Gain