

## Silicon NPN Power Transistors

2SC5287

**DESCRIPTION**

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

**APPLICATIONS**

- For switching regulator and general purpose applications

**PINNING**

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

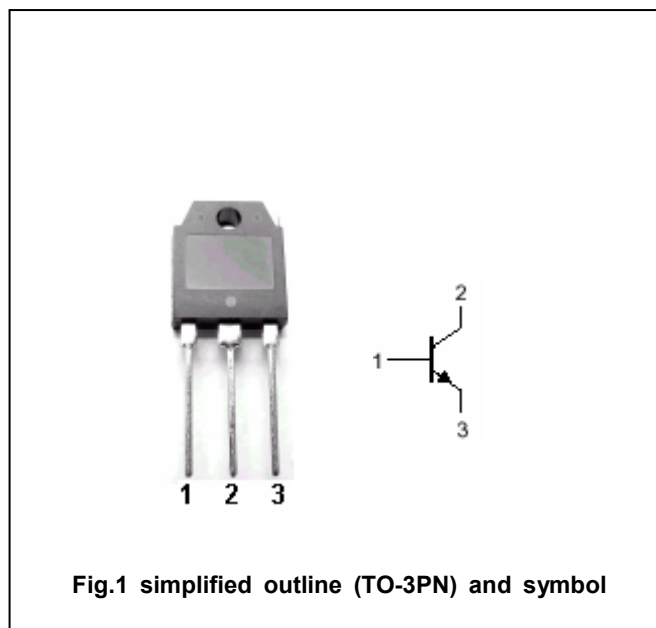


Fig.1 simplified outline (TO-3PN) and symbol

**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	550	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		5	A
$I_{CM}$	Collector current-peak		10	A
$I_B$	Base current		2.5	A
$P_C$	Collector power dissipation	$T_C=25\text{□}$	80	W
$T_j$	Junction temperature		150	□
$T_{stg}$	Storage temperature		-55~150	□

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## CHARACTERISTICS

T<sub>j</sub>=25°C 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	550			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1.8A; I <sub>B</sub> =0.36A			0.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1.8A; I <sub>B</sub> =0.36A			1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V; I <sub>E</sub> =0			100	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			100	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1.8A ; V <sub>CE</sub> =4V	10		25	
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V; f=1MHz		50		pF
f <sub>T</sub>	Transition frequency	I <sub>E</sub> =-0.35A ; V <sub>CE</sub> =12V		6		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =1.8A; R <sub>L</sub> =139Ω I <sub>B1</sub> =0.27A; I <sub>B2</sub> =-0.9A V <sub>CC</sub> =250V			0.7	μs
t <sub>s</sub>	Storage time				4.0	μs
t <sub>f</sub>	Fall time				0.5	μs

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PACKAGE OUTLINE

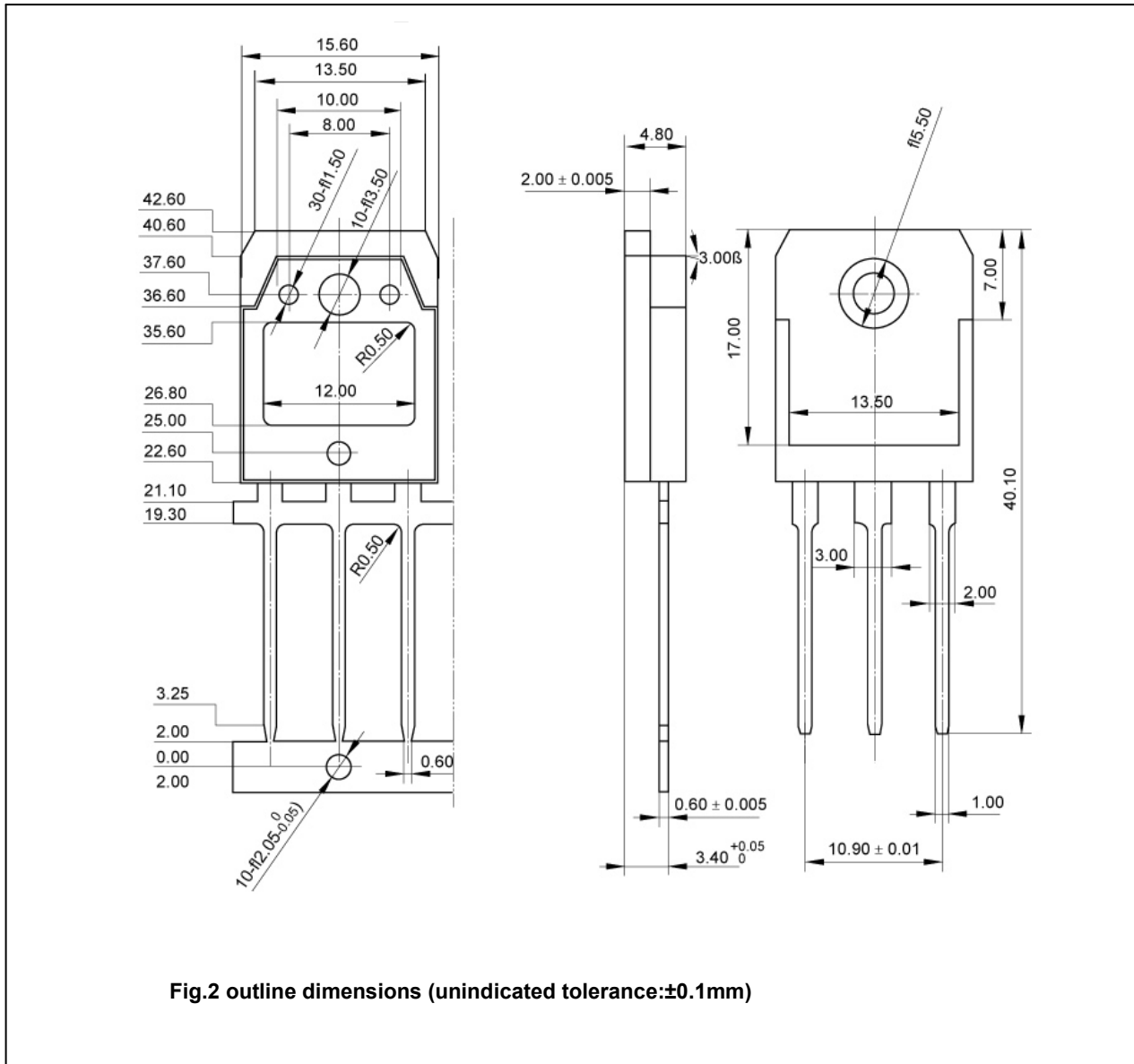


Fig.2 outline dimensions (unindicated tolerance: $\pm 0.1$ mm)

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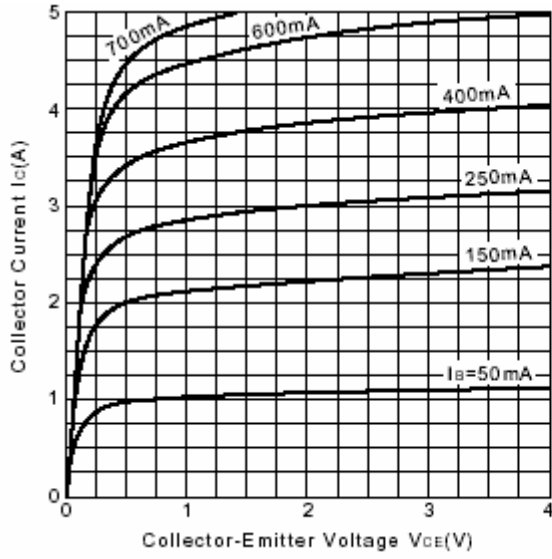


Fig.3 Static Characteristic

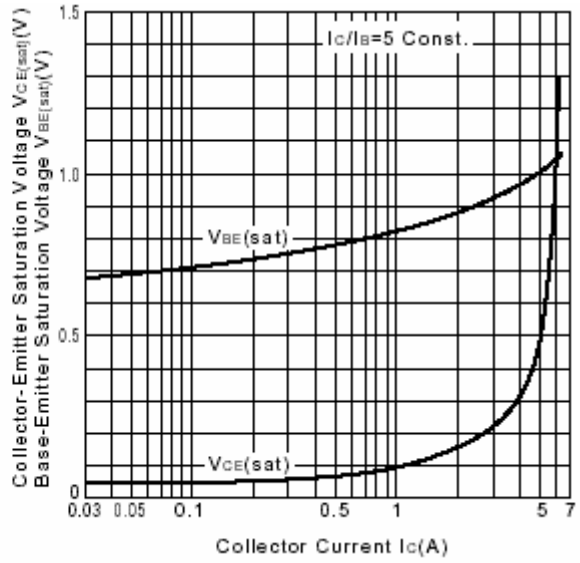


Fig.4 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

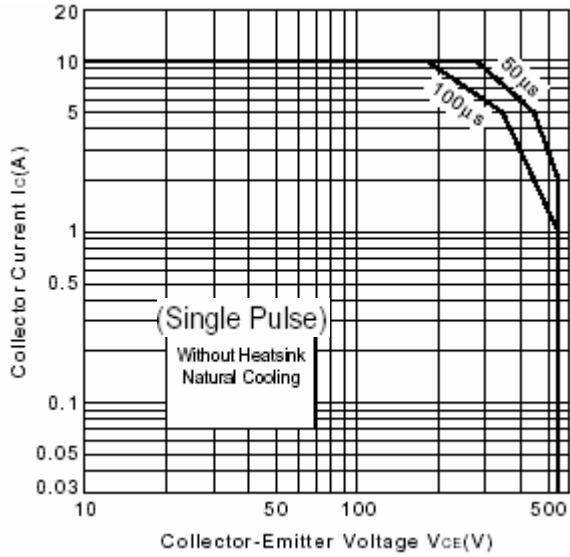


Fig.5 Safe Operating Area

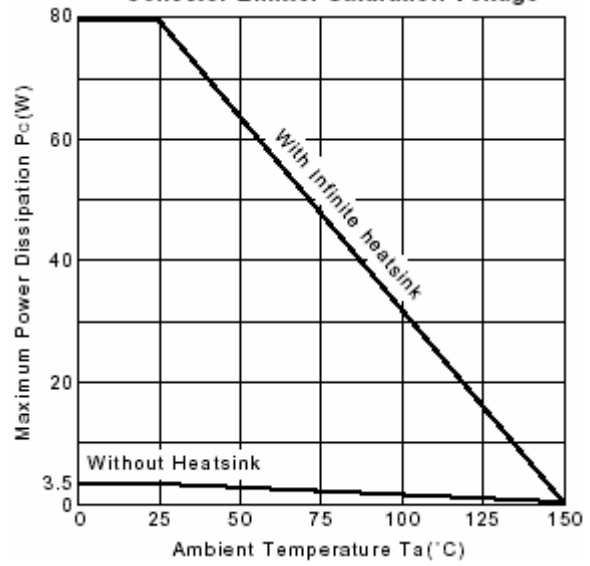


Fig.6 Power Derating

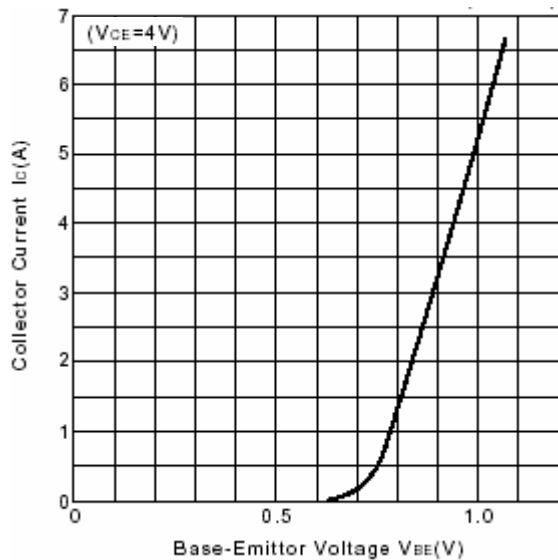


Fig.7  $I_c - V_{BE}$

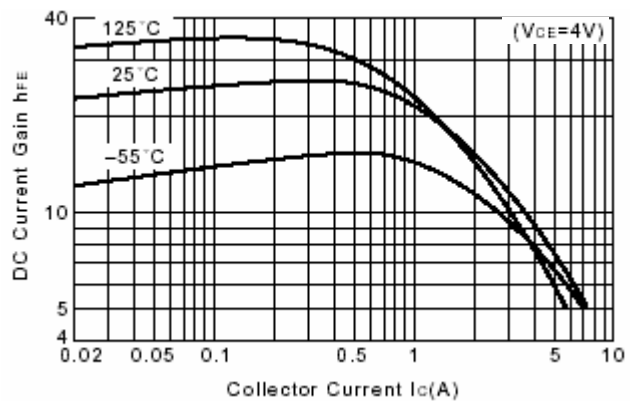


Fig.8 DC current Gain