

Silicon NPN Power Transistors

2SC5386

DESCRIPTION

- With TO-3P(H)IS package
- High voltage;high speed
- Low collector saturation voltage

APPLICATIONS

- Horizontal deflection output for high resolution display,color TV
- High speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

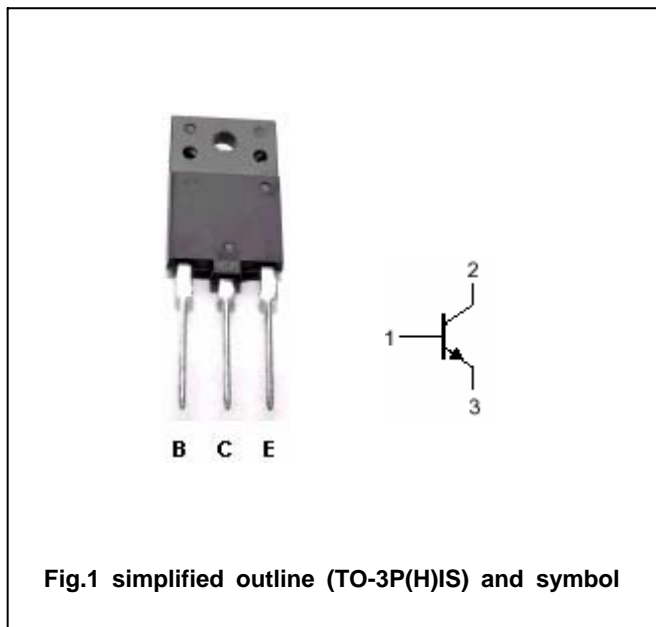


Fig.1 simplified outline (TO-3P(H)IS) and symbol

Absolute maximum ratings(Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1500	V
$V_{CEO}$	Collector-emitter voltage	Open base	600	V
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		8	A
$I_{CM}$	Collector current-Peak		16	A
$I_B$	Base current		4	A
$P_C$	Total power dissipation	$T_C=25$	50	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
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =6A; I <sub>B</sub> =1.5A			3.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =6A; I <sub>B</sub> =1.5A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =1500V; I <sub>E</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			10	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	15		35	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =6A ; V <sub>CE</sub> =5V	4.3		7.5	
C <sub>ob</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz		105		pF
f <sub>T</sub>	Transition frequency	I <sub>E</sub> =0.1A ; V <sub>CE</sub> =10V		1.7		MHz

## Switching times

t <sub>s</sub>	Storage time	I <sub>CP</sub> =5A; I <sub>B1(end)</sub> =1.0A f <sub>H</sub> =64kHz		2.5	3.5	μs
t <sub>f</sub>	Fall time			0.15	0.3	μs

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PACKAGE OUTLINE

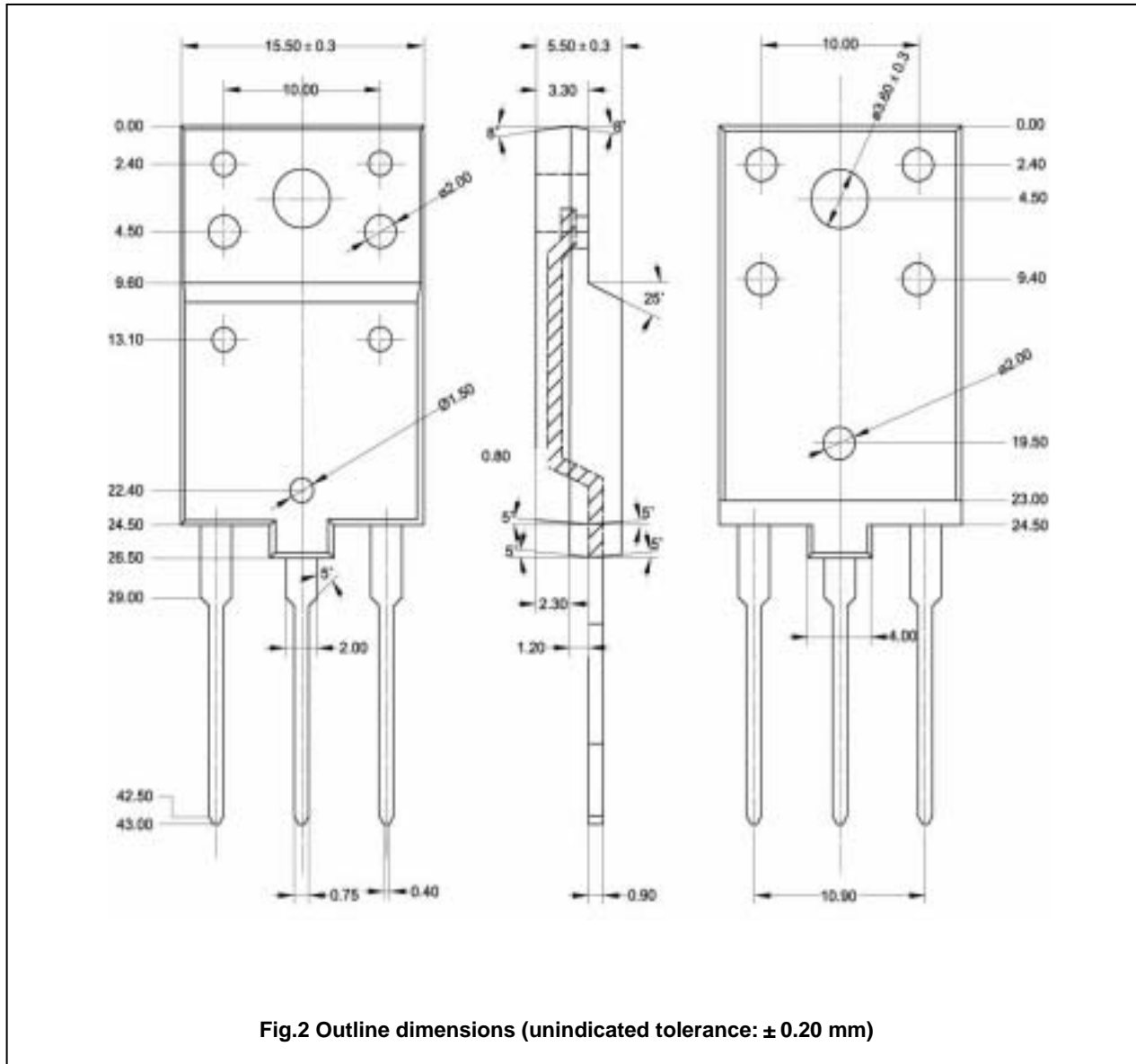


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.20$  mm)

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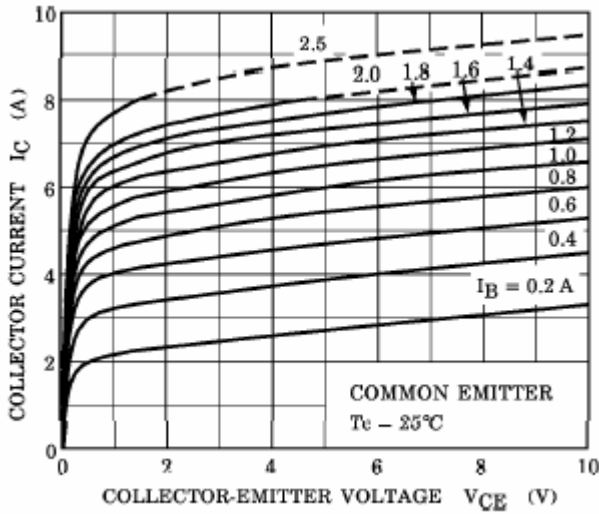


Fig.3 Static Characteristic

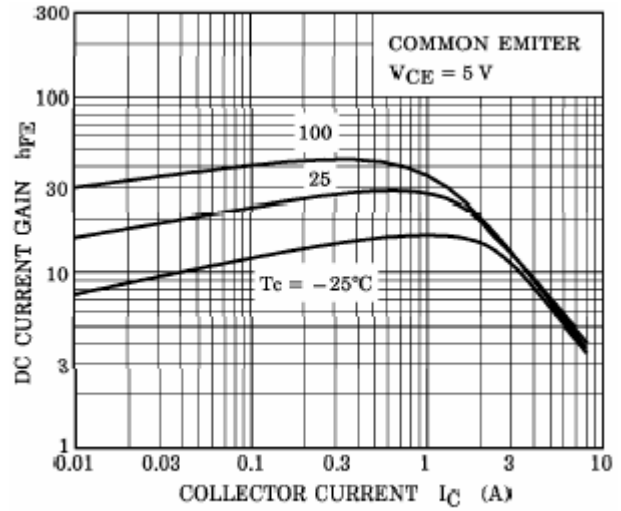


Fig.4 DC current Gain

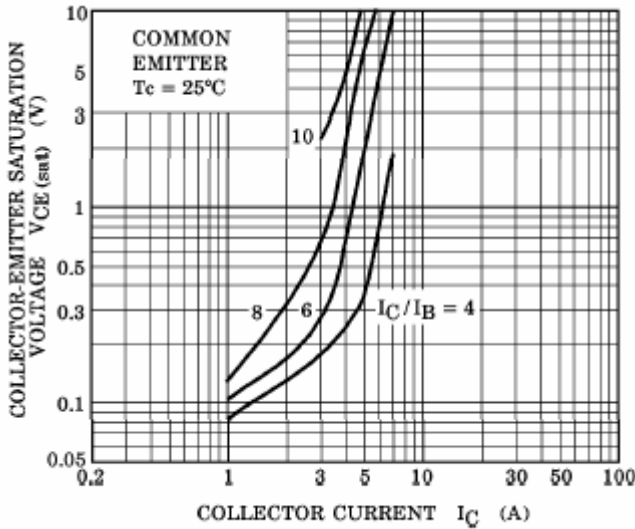


Fig.5 Collector-Emitter Saturation Voltage

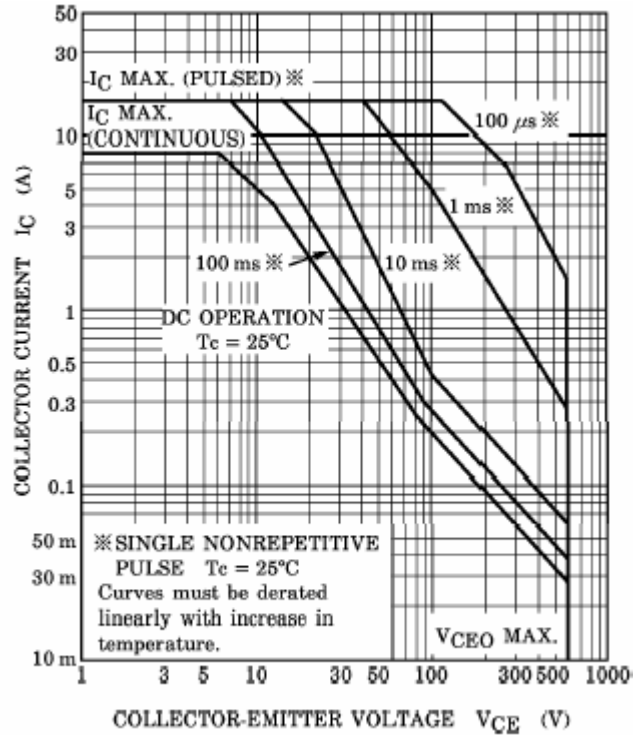


Fig.6 Safe Operating Area