

Silicon NPN Power Transistors

2SC3506

DESCRIPTION

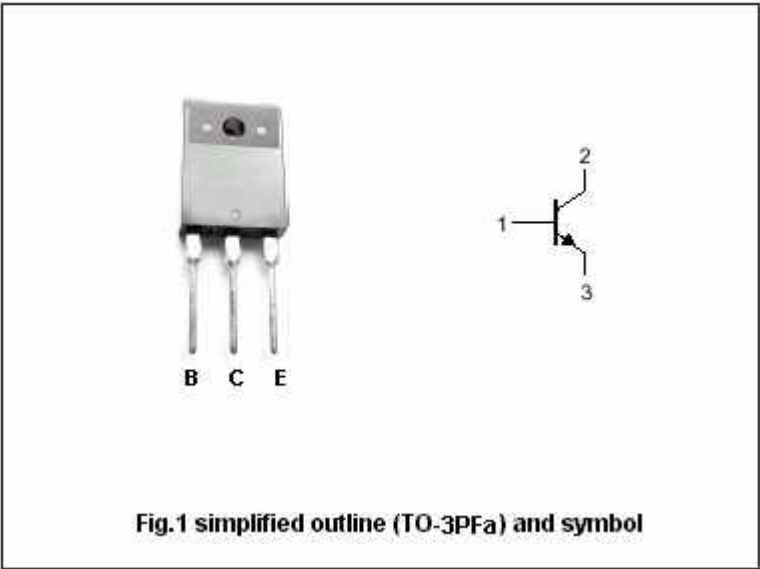
- With TO-3PFa package
- High-speed switching
- High collector-base voltage V_{CBO}
- Satisfactory linearity of forward current transfer ratio h_{FE}

APPLICATIONS

- For high-speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	1000	V
V_{CEO}	Collector-emitter voltage	Open base	800	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		3	A
I_{CP}	Collector current-peak		6	A
I_B	Base current		2	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	70	W
			3	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	$I_C=0.5A$; $L=50mH$	800			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=2A$; $I_B=0.4A$			1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=2A$; $I_B=0.4A$			1.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=1000V$; $I_E=0$			50	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V$; $I_C=0$			50	μA
h_{FE}	DC current gain	$I_C=2A$; $V_{CE}=5V$	6			
f_T	Transition frequency	$I_C=0.2A$; $V_{CE}=5V$; $f=1MHz$		4		MHz

Switching times

t_{on}	Turn-on time	$I_C=2A$; $V_{CC}=250V$ $I_{B1}=0.4A$, $I_{B2}=-0.8A$			1.0	μs
t_s	Storage time				2.5	μs
t_f	Fall time				0.5	μs

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Technical drawing of a mechanical part (Fig. 1) showing front, side, and bottom views with dimensions in millimeters and degrees.

Front View Dimensions:

- Overall width: 15.00
- Top flange width: 9.00
- Top flange thickness: 5.80
- Top flange chamfer: 45° 000"
- Top flange radius: R3.300
- Top flange hole diameter: 3-ø1.50 (光滑)
- Top flange hole spacing: 8.000
- Top flange hole diameter: 13.000
- Top flange hole diameter: 13.30
- Top flange hole diameter: 15.20
- Top flange hole diameter: 19.20
- Top flange hole diameter: 31.15
- Top flange hole diameter: 31.90
- Top flange hole diameter: 45.000"
- Top flange hole diameter: 15.000"
- Top flange hole diameter: 10.900
- Top flange hole diameter: 5.000"
- Top flange hole diameter: 5.000"
- Top flange hole diameter: 4.500
- Top flange hole diameter: 2.014
- Top flange hole diameter: 1.100

Side View Dimensions:

- Overall height: 5.00
- Top flange thickness: 3.30
- Top flange hole diameter: 2.00
- Top flange hole diameter: 5.15
- Top flange hole diameter: 4.00
- Top flange hole diameter: 3.000"
- Top flange hole diameter: 3.000"
- Top flange hole diameter: 0.600

Bottom View Dimensions:

- Overall width: 15.00
- Top flange width: 9.00
- Top flange thickness: 5.80
- Top flange chamfer: 45° 000"
- Top flange radius: R3.300
- Top flange hole diameter: 3-ø1.50 (光滑)
- Top flange hole spacing: 8.000
- Top flange hole diameter: 13.000
- Top flange hole diameter: 13.30
- Top flange hole diameter: 15.20
- Top flange hole diameter: 19.20
- Top flange hole diameter: 31.15
- Top flange hole diameter: 31.90
- Top flange hole diameter: 45.000"
- Top flange hole diameter: 15.000"
- Top flange hole diameter: 10.900
- Top flange hole diameter: 5.000"
- Top flange hole diameter: 5.000"
- Top flange hole diameter: 4.500
- Top flange hole diameter: 2.014
- Top flange hole diameter: 1.100

Fig.2 Outline dimensions (unindicated tolerance:±0.30mm)

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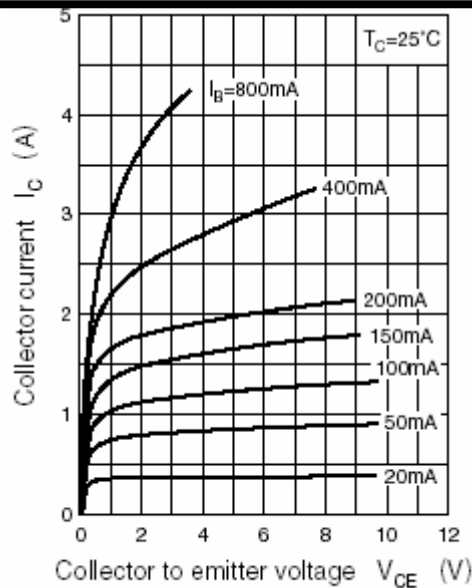


Fig.3 Static Characteristic

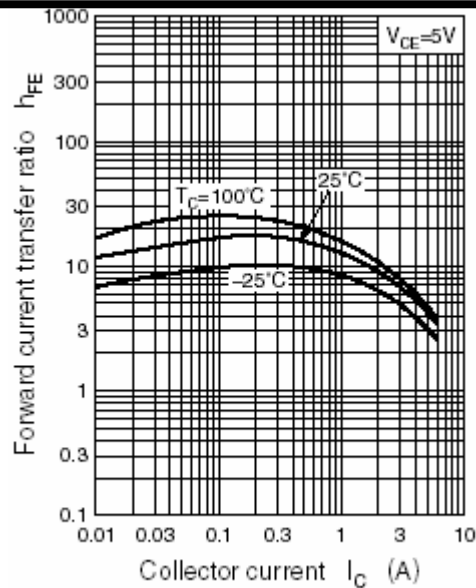


Fig.4 DC current Gain

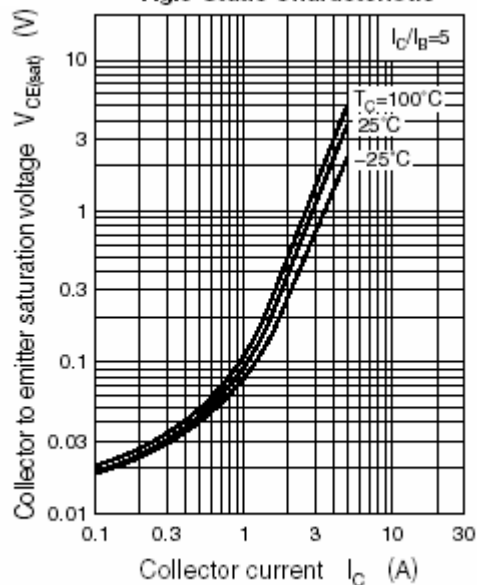


Fig.5 Collector-Emitter Saturation Voltage

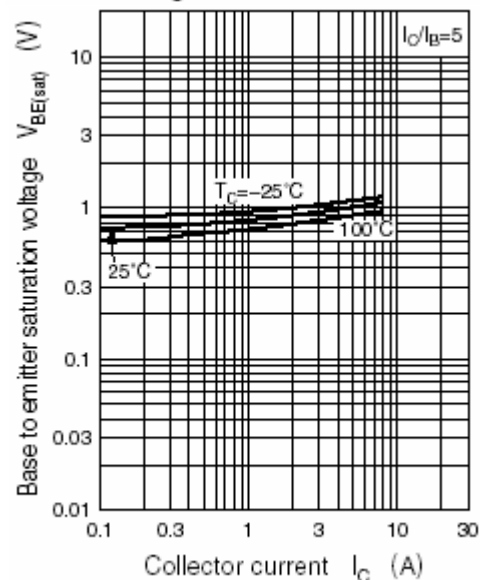


Fig.6 Base-Emitter Saturation Voltage

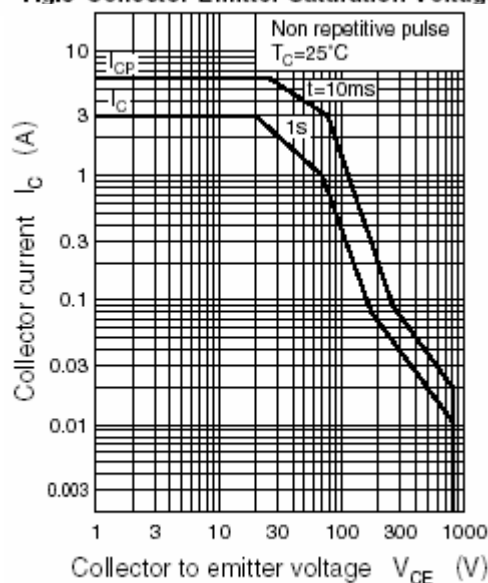


Fig.7 Safe Operating Area