

Silicon NPN Power Transistors

2SD1715

DESCRIPTION

- With TO-3PFa package
- Complement to type 2SB1160
- High transition frequency  $f_T$
- Satisfactory linearity of  $h_{FE}$
- Wide area of safe operation

APPLICATIONS

- For high power amplifier applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

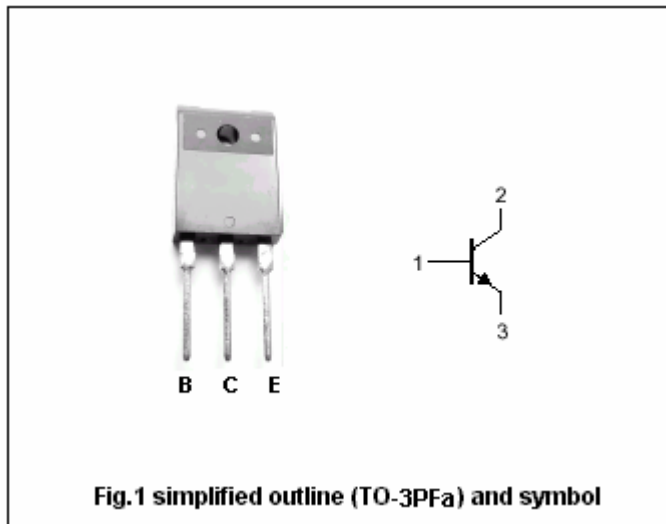


Fig.1 simplified outline (TO-3PFa) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	150	V
$V_{CEO}$	Collector-emitter voltage	Open base	150	V
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		9	A
$I_{CP}$	Collector current-peak		15	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	100	W
			3	
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

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

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =0.7A			2.0	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =7A ; V <sub>CE</sub> =5V			1.8	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =150V; I <sub>E</sub> =0			50	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =3V; I <sub>C</sub> =0			50	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =20mA ; V <sub>CE</sub> =5V	20			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	60		200	
h <sub>FE-3</sub>	DC current gain	I <sub>C</sub> =7A ; V <sub>CE</sub> =5V	20			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V; f=1MHz		140		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V		20		MHz

◆ h<sub>FE-2</sub> classifications

Q	S	P
60-120	80-60	100-200

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PACKAGE OUTLINE

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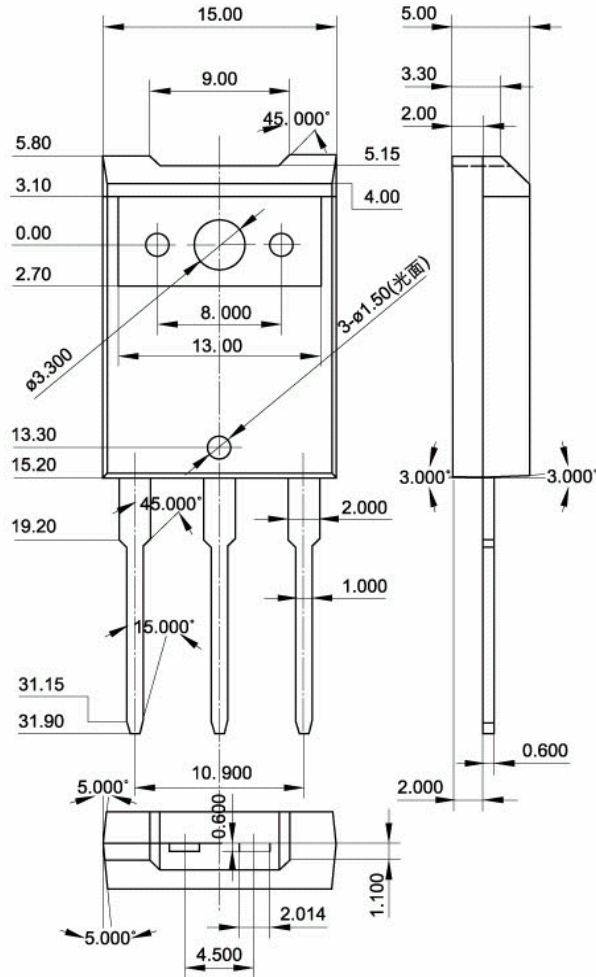


Fig.2 Outline dimensions (unindicated tolerance:±0.30mm)

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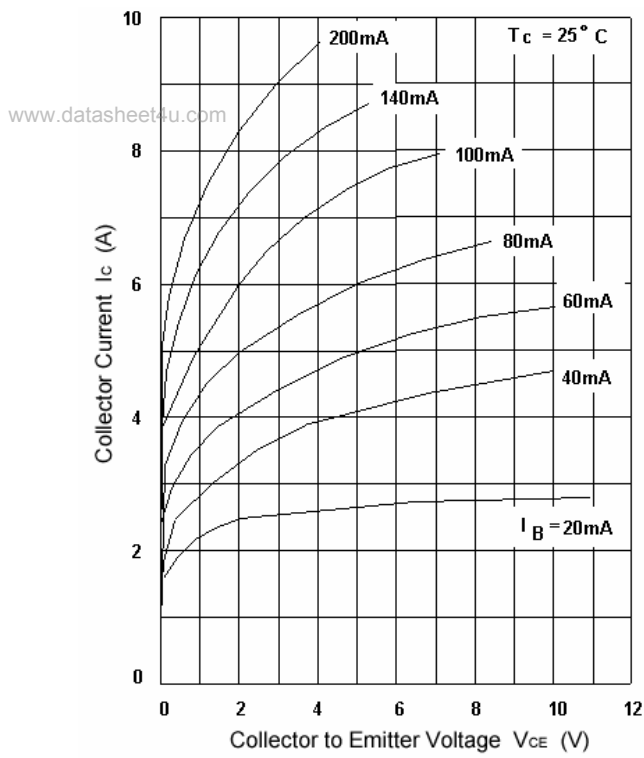


Fig.3 Static Characteristic

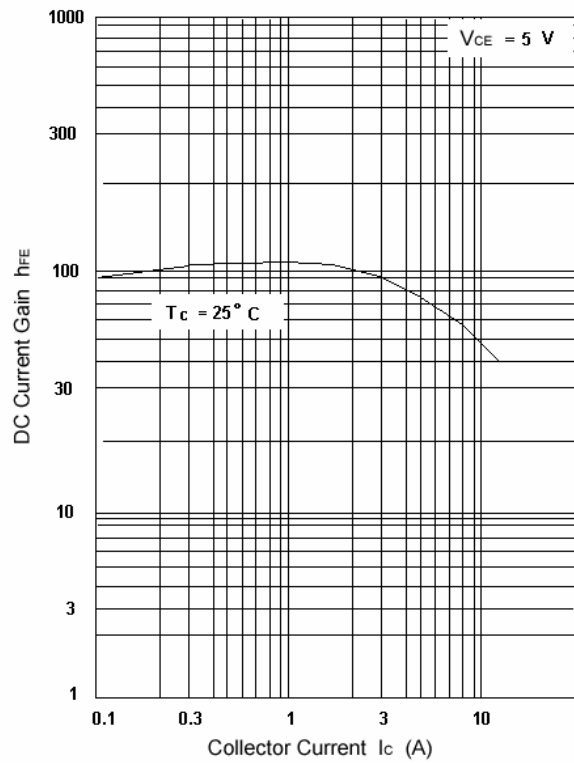


Fig.4 DC current Gain

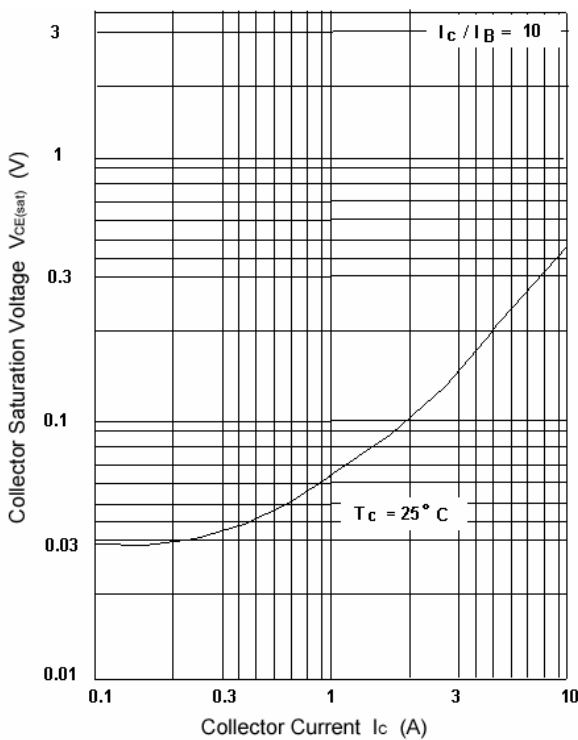


Fig.5 Collector-Emitter Saturation Voltage

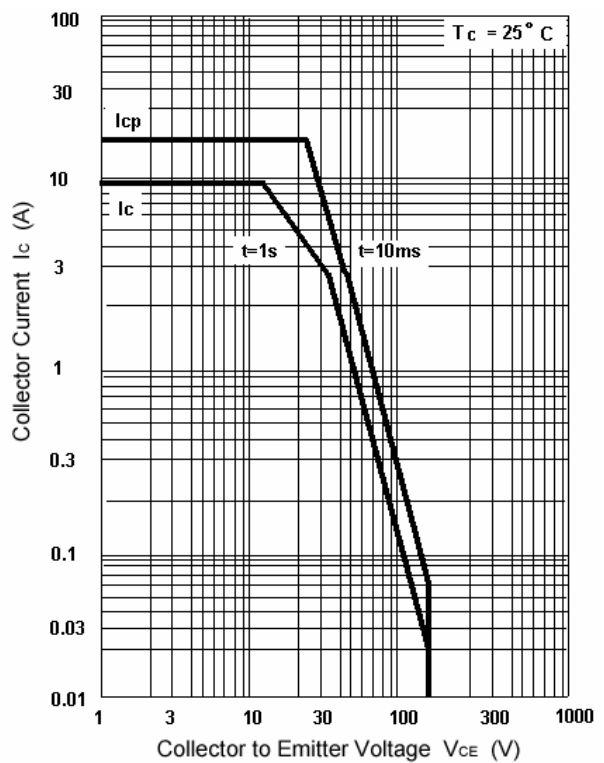


Fig.8 Safe Operating Area