

## Silicon NPN Power Transistors

## 2SD1666

## DESCRIPTION

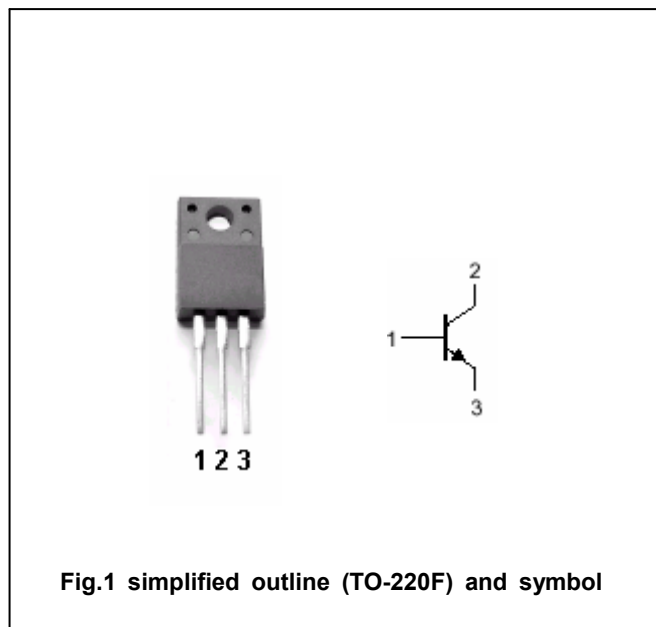
- With TO-220F package
- Complement to type 2SB1133
- High reliability
- Wide area of safe operation

## APPLICATIONS

- For low-frequency and general-purpose amplifier applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	60	V
$V_{CEO}$	Collector-emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		3	A
$I_{CM}$	Collector current-peak		8	A
$P_C$	Collector dissipation	$T_a=25^\circ\text{C}$	2	W
		$T_C=25^\circ\text{C}$	25	
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40~150	$^\circ\text{C}$

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=5mA ; R_{BE}=\infty$	60			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA ; I_E=0$	60			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA ; I_C=0$	6			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=2A ; I_B=0.2A$		0.6	1.0	V
$V_{BE}$	Base-emitter on voltage	$I_C=0.5A ; V_{CE}=5V$		0.7	1.0	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=40V ; I_E=0$			100	$\mu A$
$I_{EBO}$	Emitter cut-off current	$V_{EB}=4V ; I_C=0$			100	$\mu A$
$h_{FE-1}$	DC current gain	$I_C=0.5A ; V_{CE}=5V$	70		280	
$h_{FE-2}$	DC current gain	$I_C=3A ; V_{CE}=5V$	20			
$C_{OB}$	Output capacitance	$I_E=0 ; V_{CB}=10V ; f=1MHz$		60		pF
$f_T$	Transition frequency	$I_C=0.5A ; V_{CE}=5V$		8		MHz

◆  $h_{FE-1}$  Classifications

Q	R	S
70-140	100-200	140-280

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## PACKAGE OUTLINE

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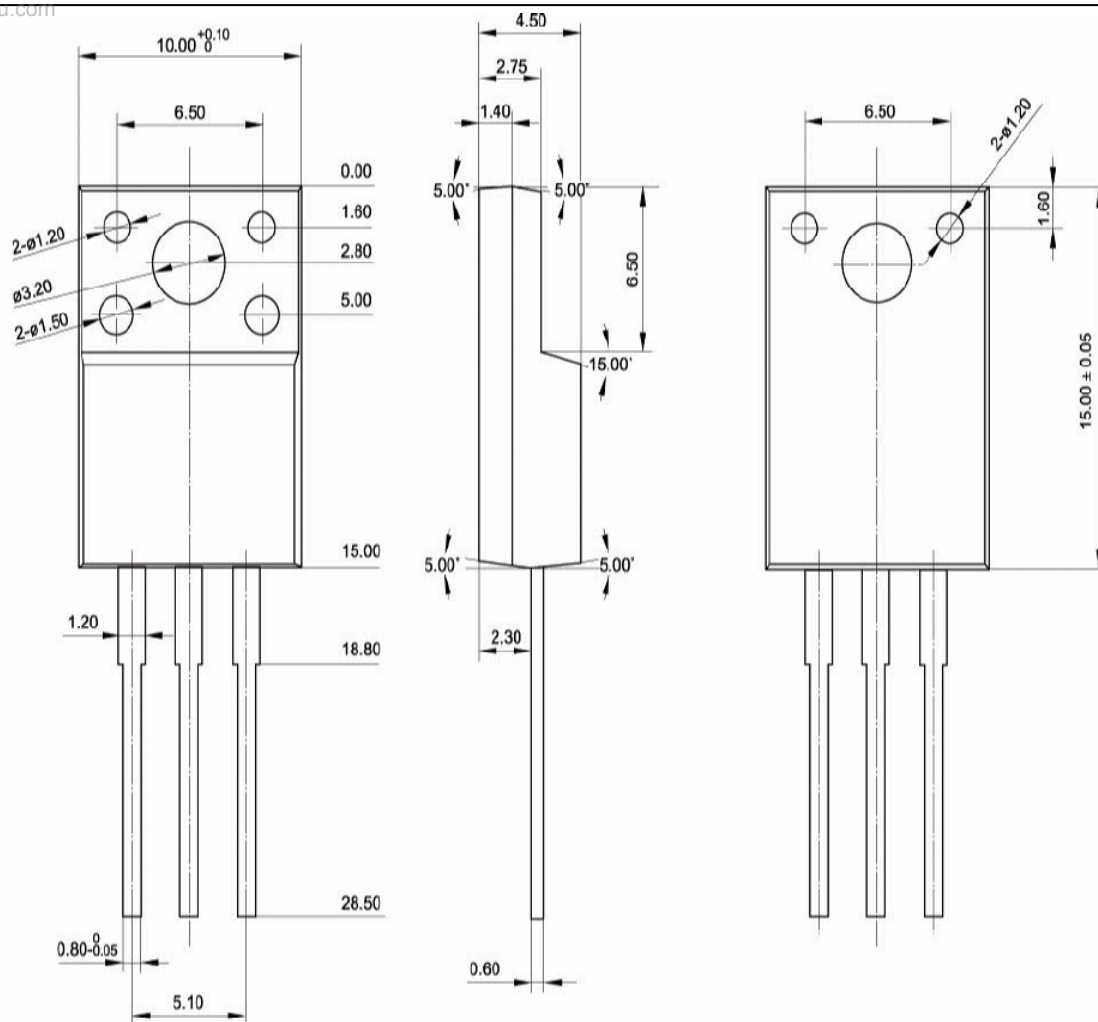


Fig.2 Outline dimensions

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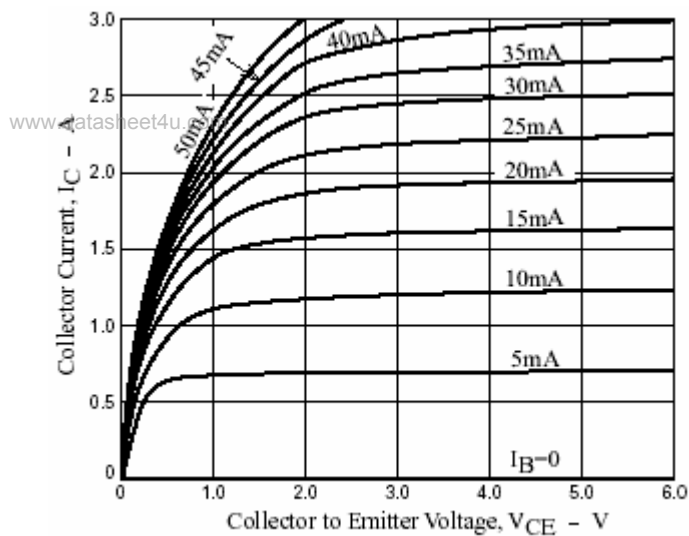


Fig.3 Static Characteristic

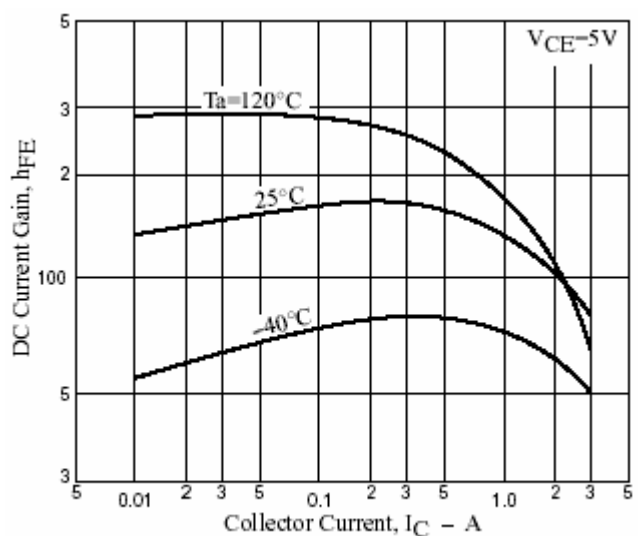


Fig.4 DC current Gain

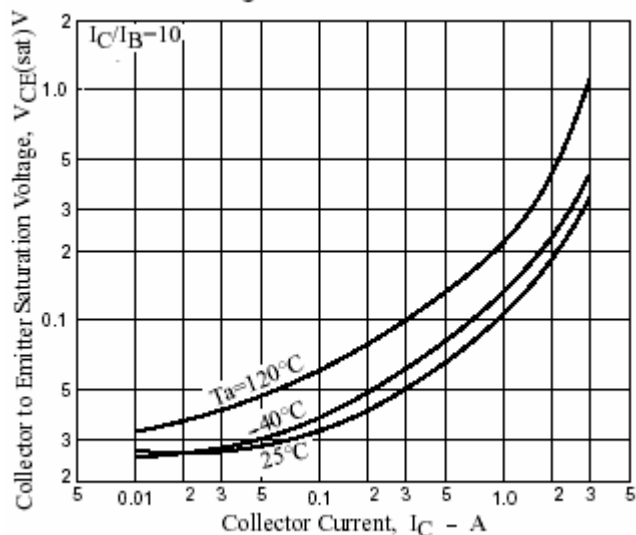


Fig.5 Collector-Emitter Saturation Voltage

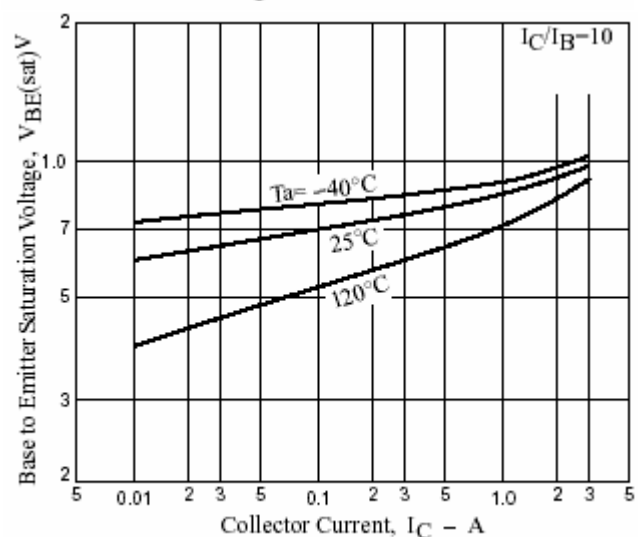


Fig.6 Base-Emitter Saturation Voltage

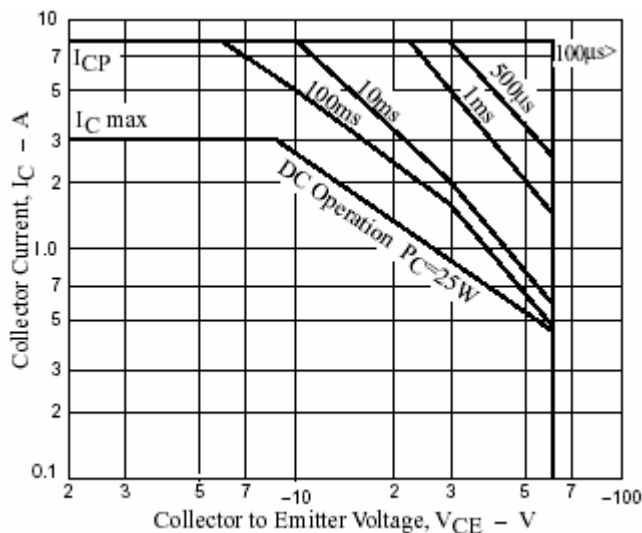


Fig.7 Safe Operating Area