

## Silicon PNP Power Transistors

## 2SA1659 2SA1659A

## DESCRIPTION

- With TO-220F package
- Complement to type 2SC4370/4370A
- High transition frequency  $f_T$

## APPLICATIONS

- High voltage applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

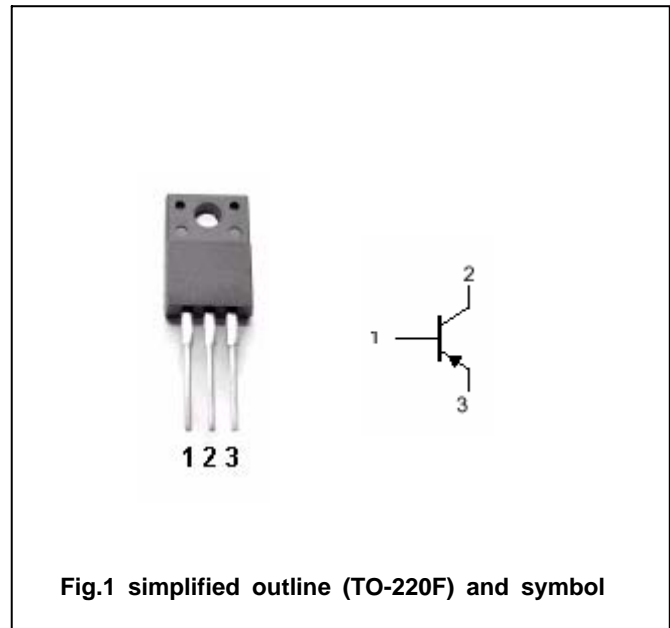


Fig.1 simplified outline (TO-220F) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2SA1659	-160	V
		2SA1659A	-180	
$V_{CEO}$	Collector-emitter voltage	2SA1659	-160	V
		2SA1659A	-180	
$V_{EBO}$	Emitter-base voltage	Open collector	-5	V
$I_C$	Collector current		-1.5	A
$I_B$	Base current		-0.15	A
$P_C$	Collector dissipation	$T_C=25$	20	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	2SA1659	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	-160			V
		2SA1659A		-180			
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-0.5A; I <sub>B</sub> =-50mA			-1.5	V	
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =-0.5A ; V <sub>CE</sub> =-5V			-1.0	V	
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-160V; I <sub>E</sub> =0			-1	μA	
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-1	μA	
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =-0.1A ; V <sub>CE</sub> =-5V	70		240		
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-0.1A ; V <sub>CE</sub> =-10V		100		MHz	
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =-10V; f=1MHz		30		pF	

◆ h<sub>FE</sub> classifications

O	Y
70-140	120-240

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PACKAGE OUTLINE

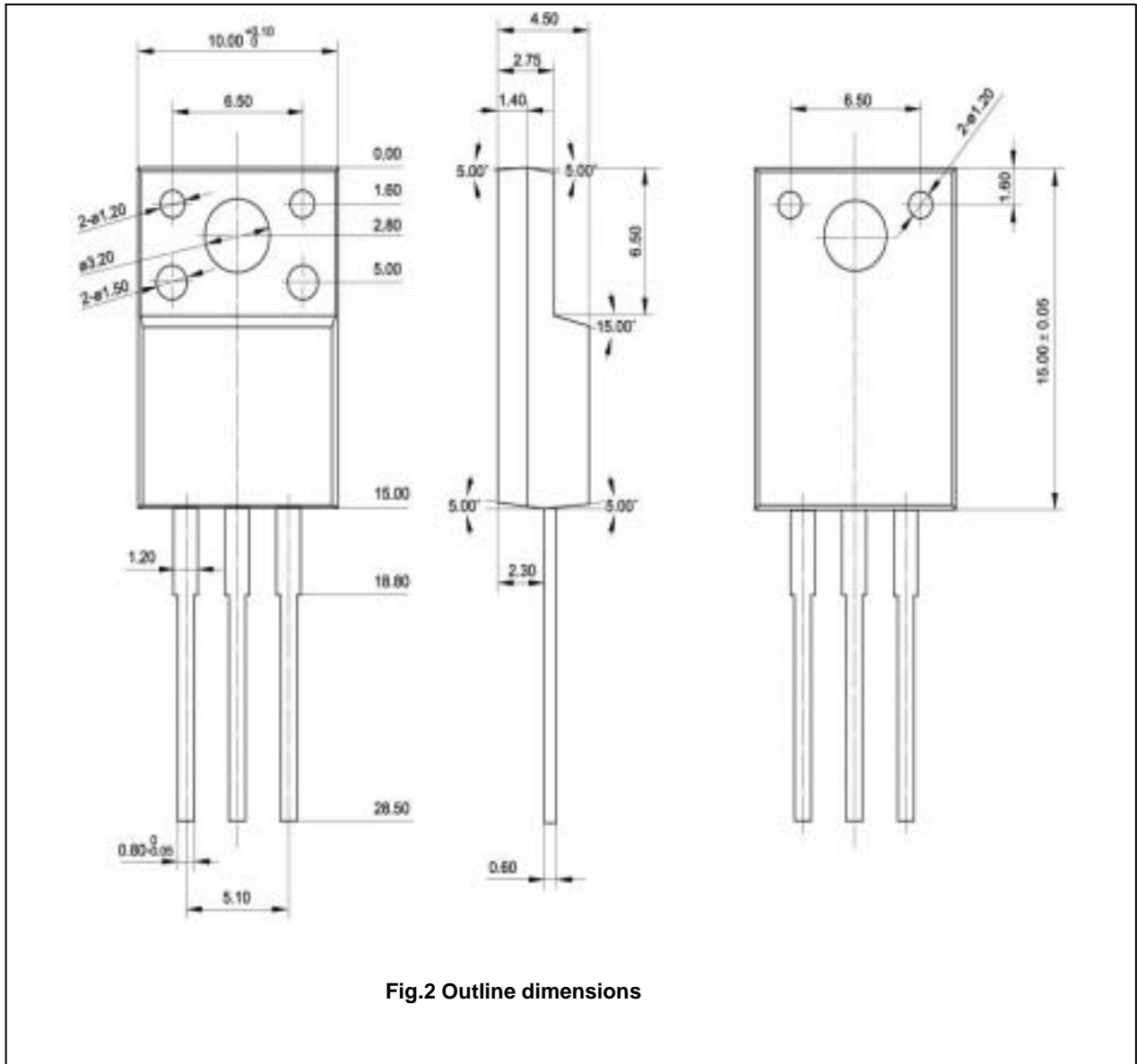


Fig.2 Outline dimensions