

## Silicon NPN Power Transistors

2SC3568

## DESCRIPTION

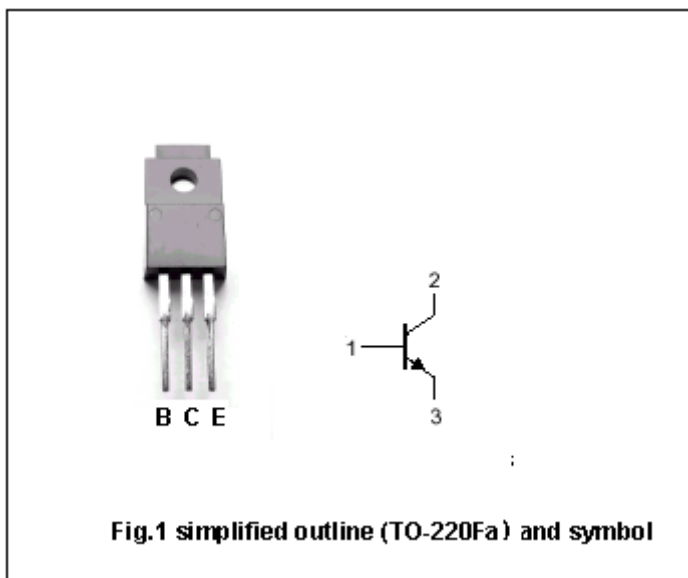
- With TO-220Fa package
- Complement to type 2SA1396
- Low collector saturation voltage
- High switching speed

## APPLICATIONS

- Switching regulator
- DC-DC converter
- High frequency power amplifier

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



## Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	150	V
$V_{CEO}$	Collector-emitter voltage	Open base	100	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current(DC)		10	A
$I_{CM}$	Collector current-peak		20	A
$I_B$	Base current (DC)		5	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	30	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

 $T_j=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-emitter sustaining voltage	$I_C=5A ; I_B=0.5A ; L=1mH$	100			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=5A ; I_B=0.5A$			0.6	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C=5A ; I_B=0.5A$			1.5	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=100V ; I_E=0$			10	$\mu A$
$I_{CEX}$	Collector cut-off current	$V_{CE}=100V ; V_{BE(OFF)}=-1.5V$ $T_a=125^\circ\text{C}$			10 1.0	$\mu A$ mA
$I_{EBO}$	Emitter cut-off current	$V_{EB}=5V ; I_C=0$			10	$\mu A$
$h_{FE-1}$	DC current gain	$I_C=0.5A ; V_{CE}=5V$	40			
$h_{FE-2}$	DC current gain	$I_C=3A ; V_{CE}=5V$	40		200	
$h_{FE-3}$	DC current gain	$I_C=5A ; V_{CE}=5V$	20			

## Switching times

$t_{on}$	Turn-on time	$I_C=5A ; I_{B1}=-I_{B2}=0.5A$ $V_{CC}\approx 50V ; R_L=10\Omega$			0.5	$\mu s$
$t_s$	Storage time				1.5	$\mu s$
$t_f$	Fall time				0.5	$\mu s$

◆  $h_{FE-2}$  Classifications

M	L	K
40-80	60-120	100-200

PACKAGE OUTLINE

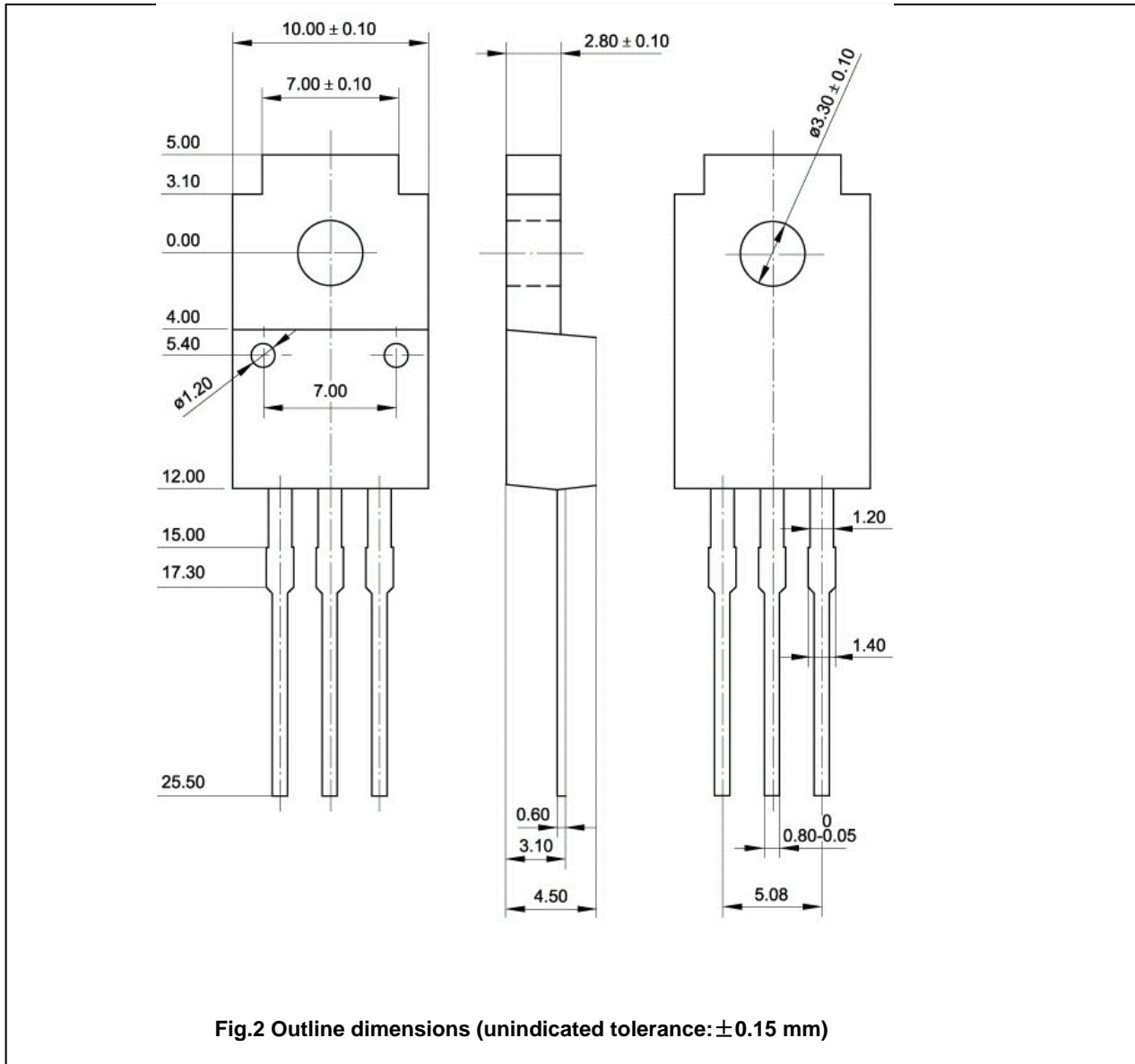


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)

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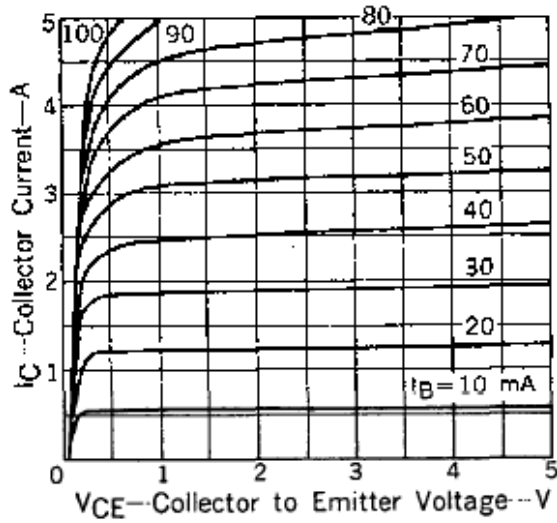


Fig.3 Static Characteristic

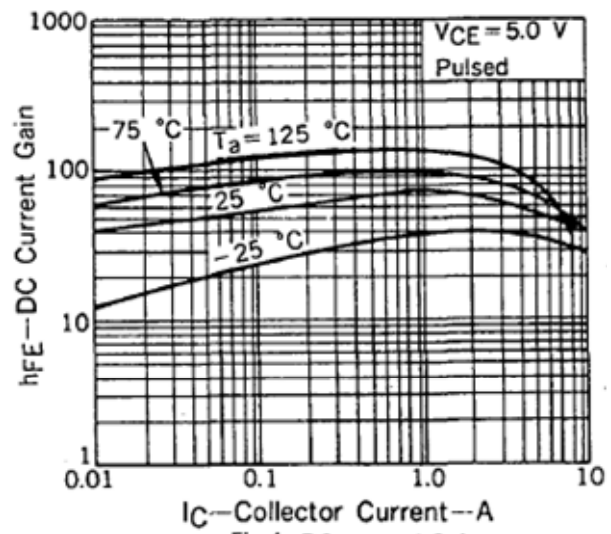


Fig.4 DC current Gain

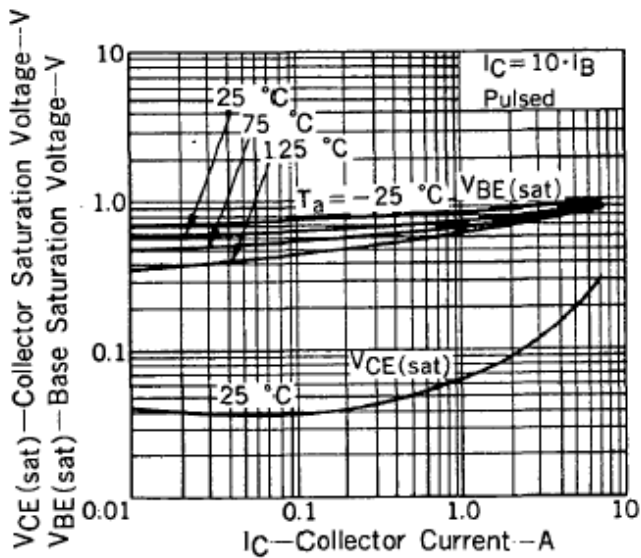


Fig.5 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

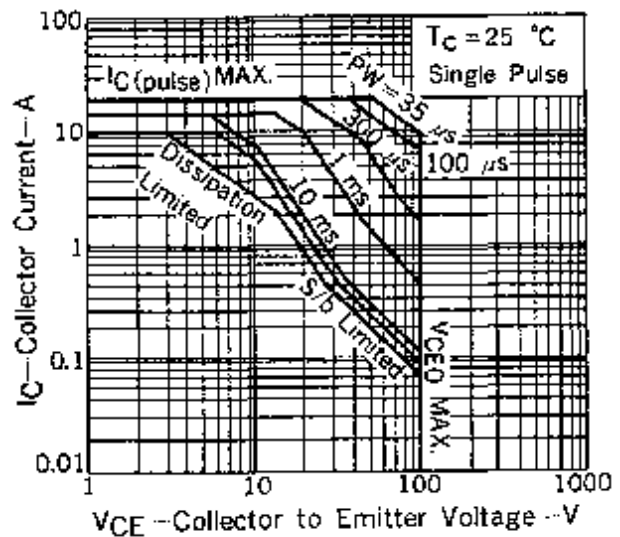


Fig.6 Safe Operating Area