

Silicon PNP Power Transistors

2SA1396

DESCRIPTION

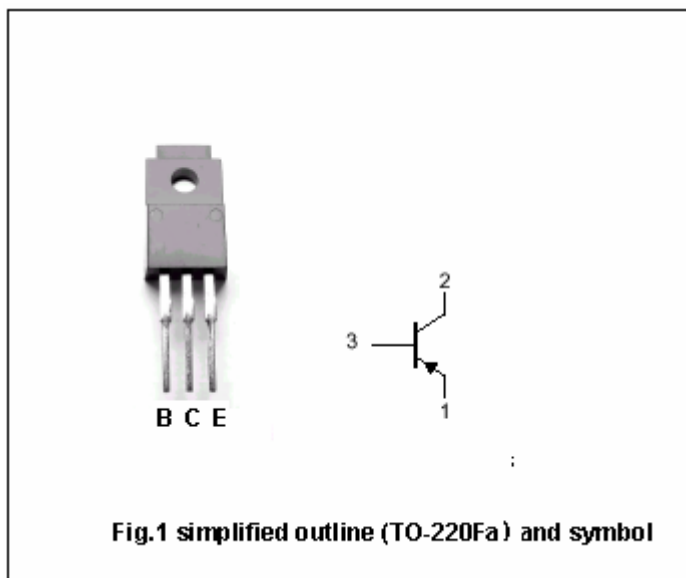
- With TO-220Fa package
- Complement to type 2SC3568
- Low collector saturation voltage
- High switching speed

APPLICATIONS

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

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-100	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 (pulse)		-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	°C
T_{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(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	μA
I _{CER}	Collector cut-off current	V _{CE} =-100V; R _{BE} =51Ω; T _a =125°C			-1	mA
I _{CEx}	Collector cut-off current	V _{CE} =-100V; V _{BE(off)} =1.5V T _a =125°C			-0.01 -1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =-5V; I _C =0			-10	μA
h _{FE-1}	DC current gain	I _C =-0.5A; V _{CE} =-5V	40		200	
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} ≈50V; R _L =10Ω			0.5	μs
t _s	Storage time				1.5	μs
t _f	Fall time				0.5	μs

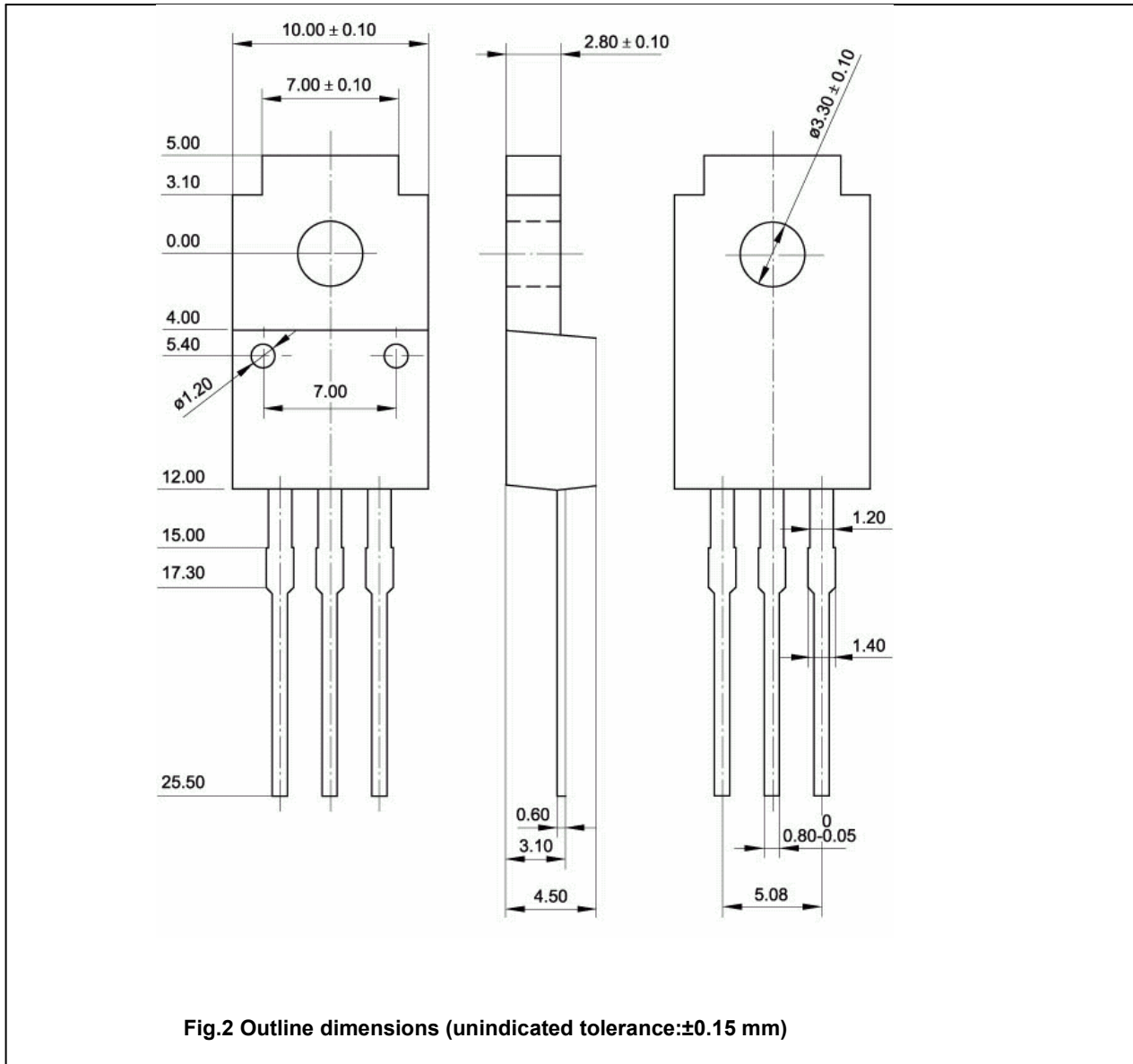
◆ h_{FE-2} Classifications

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

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PACKAGE OUTLINE



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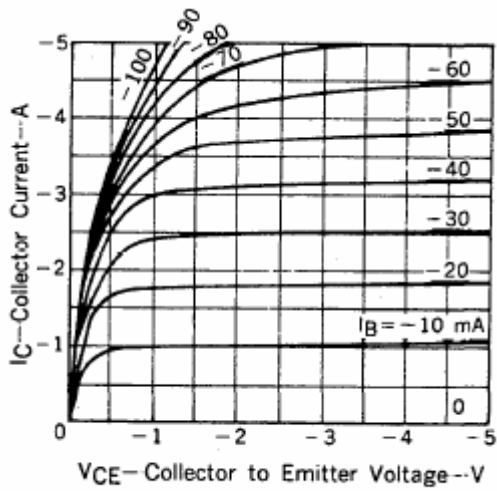


Fig.3 Static Characteristic

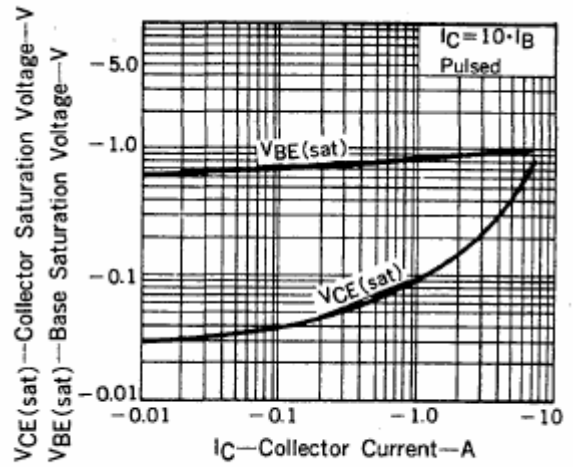


Fig.4 Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

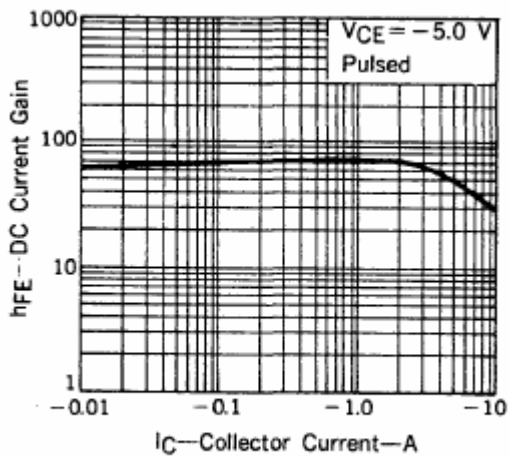


Fig.5 DC current Gain

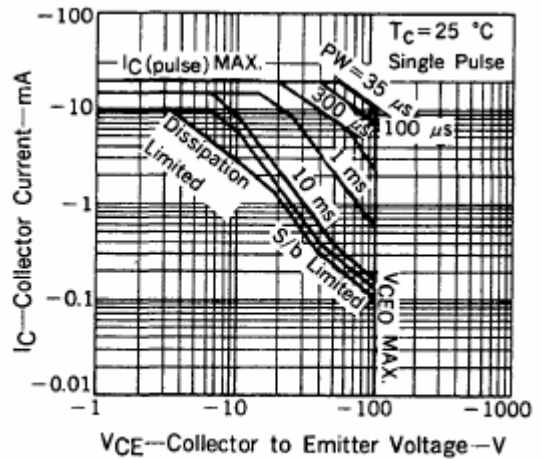


Fig.6 Safe Operating Area