

Inchange Semiconductor

Product Specification

Silicon PNP Power Transistors

2SB1393 2SB1393A

DESCRIPTION

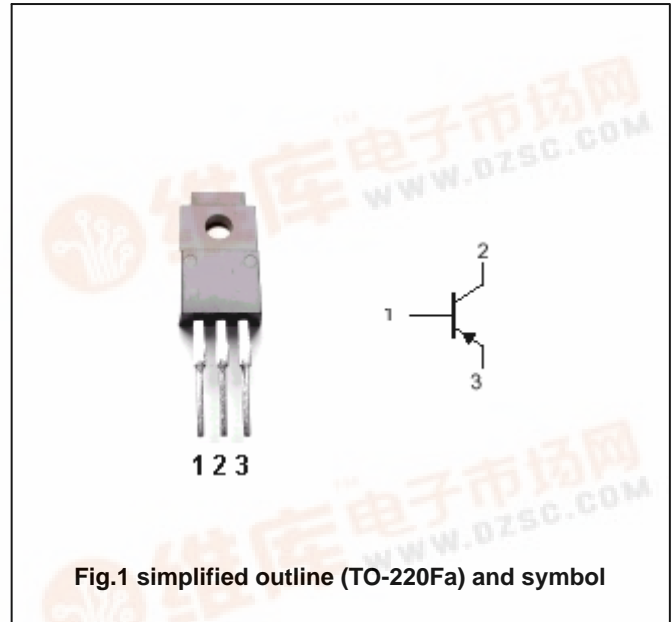
- With TO-220Fa package
- Satisfactory linearity of h_{FE}
- Low collector to emitter saturation voltage
- Complement to type 2SD1985/1985A

APPLICATIONS

- For power amplification

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SB1393	-60	V
		2SB1393A	-80	
V_{CEO}	Collector-emitter voltage	2SB1393	-60	V
		2SB1393A	-80	
V_{EBO}	Emitter-base voltage	Open collector	-5	V
I_c	Collector current (DC)		-3	A
I_{CM}	Collector current-Peak		-5	A
P_C	Collector power dissipation	$T_c=25$	25	W
		$T_a=25$	2	
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

T_j=25 unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	2SB1393	I _C =-30mA, I _B =0	-60			V
		2SB1393A		-80			
V _{CEsat}	Collector-emitter saturation voltage		I _C =-3A; I _B =-0.375A			-1.2	V
V _{BE}	Base-emitter voltage		V _{CE} =-4V; I _C =-3A			-1.8	V
I _{CES}	Collector cut-off current	2SB1393	V _{CE} =-60V; V _{BE} =0			-200	μA
		2SB1393A	V _{CE} =-80V; V _{BE} =0				
I _{CEO}	Collector cut-off current	2SB1393	V _{CE} =-30V; I _B =0			-300	μA
		2SB1393A	V _{CE} =-60V; I _B =0				
I _{EBO}	Emitter cut-off current		V _{EB} =-5V; I _C =0			-1.0	mA
h _{FE-1}	DC current gain		I _C =-1A; V _{CE} =-4V	70		250	
h _{FE-2}	DC current gain		I _C =-3A; V _{CE} =-4V	10			
f _T	Transition frequency		I _C =-0.1A; V _{CE} =-5V; f=1MHz		20		MHz

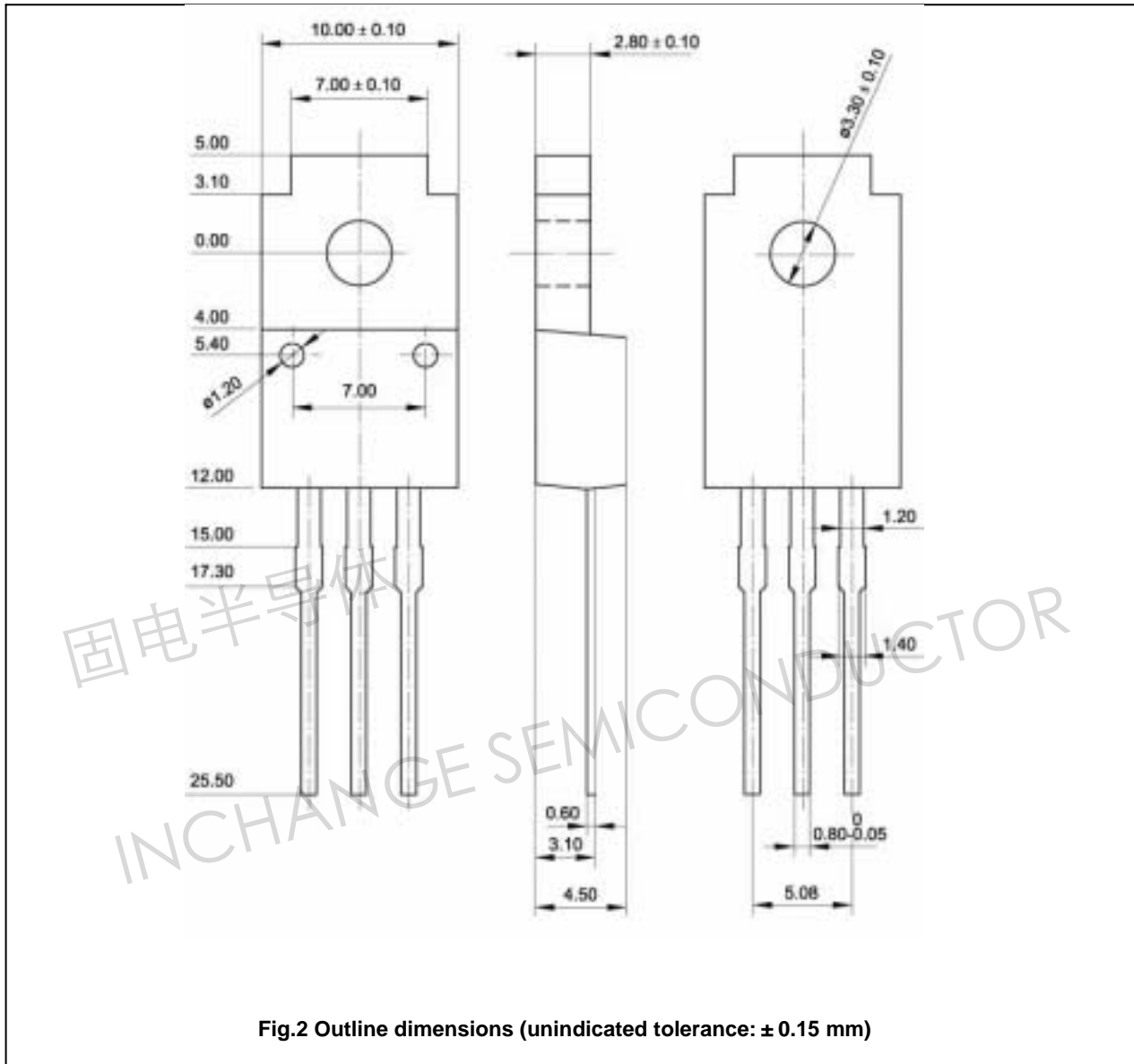
Switching times

t _{on}	Turn-on time	I _C =-1A; I _{B1} =-0.1A I _{B2} =0.1A; V _{CC} =-50V		0.5		μs
t _s	Storage time			1.2		μs
t _f	Fall time			0.3		μs

◆ h_{FE-1} Classifications

Q	P
70-150	120-250

PACKAGE OUTLINE



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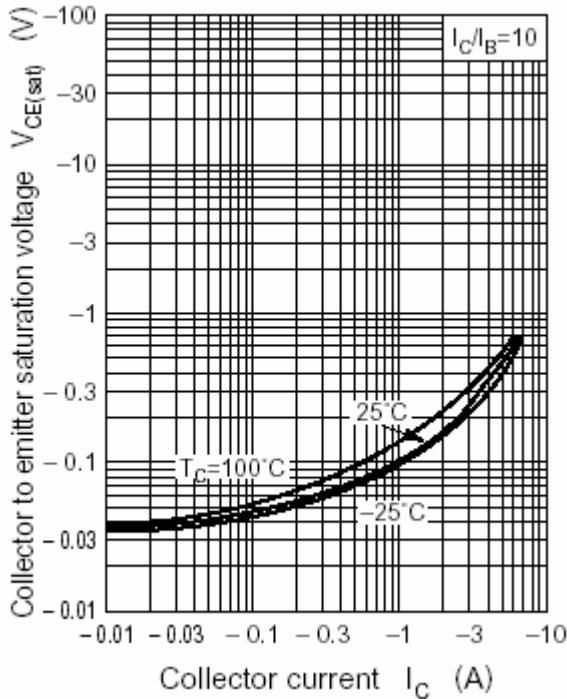


Fig.3 Collector-Emitter Saturation Voltage

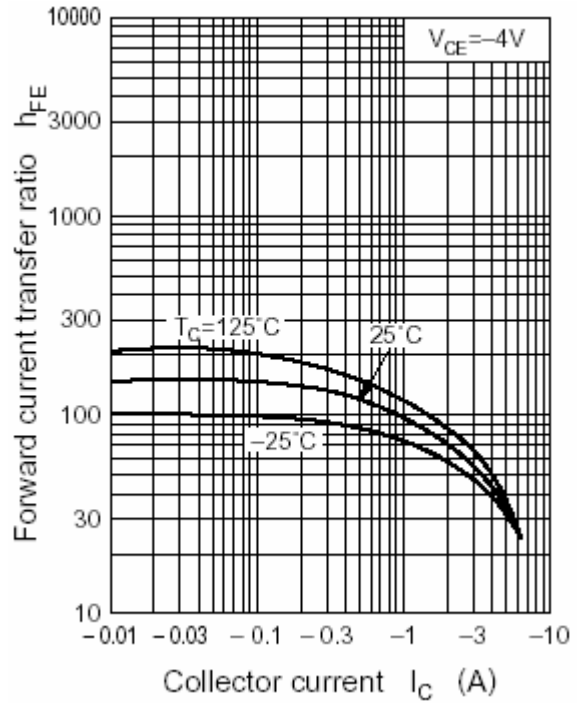


Fig.4 DC current Gain

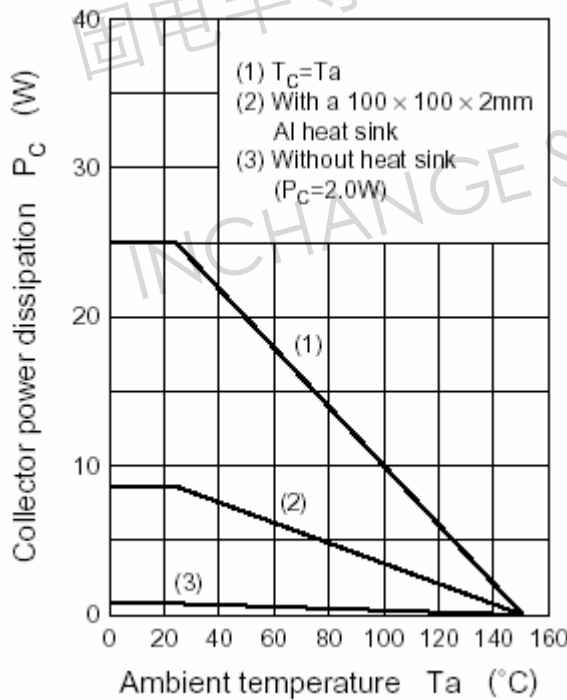


Fig.5 P_C - T_a Derating

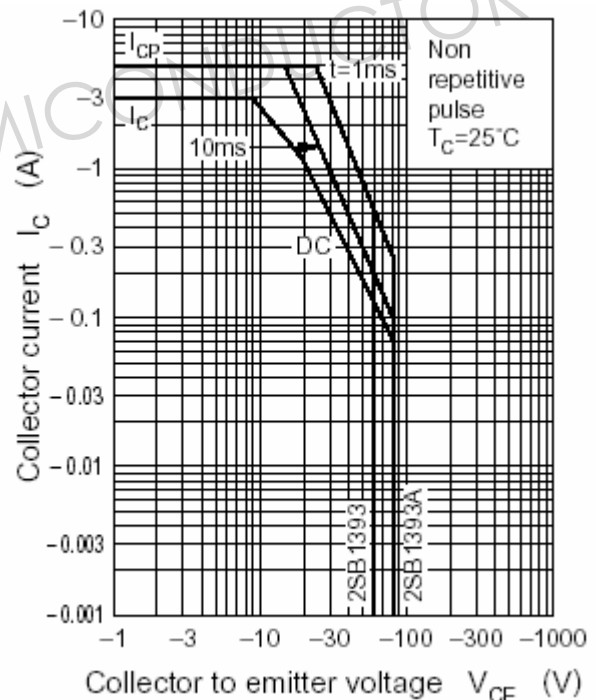


Fig.6 Safe Operating Area