

Silicon NPN Power Transistors

2SD1985 2SD1985A

DESCRIPTION

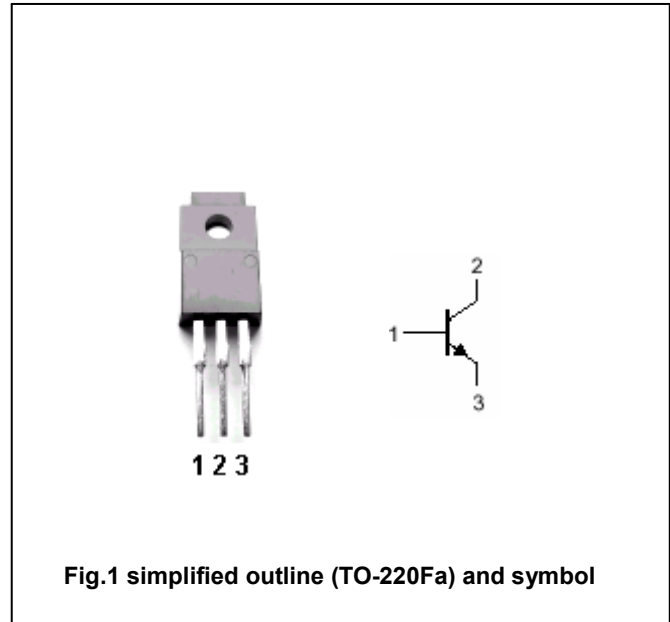
- With TO-220Fa package
- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector saturation voltage
- Complement to type 2SB1393 /1393A

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	2SD1985	60	V
		2SD1985A	80	
V_{CEO}	Collector-emitter voltage	2SD1985	60	V
		2SD1985A	80	
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current (DC)		3	A
I_{CM}	Collector current-peak		5	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	25	W
		$T_a=25^\circ\text{C}$	2	
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°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO}	Collector-emitter breakdown voltage	2SD1985	I _C =30mA, I _B =0	60			V
		2SD1985A		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	2SD1985	V _{CE} =60V; I _B =0			200	μA
		2SD1985A	V _{CE} =80V; I _B =0				
I _{CEO}	Collector cut-off current	2SD1985	V _{CE} =30V; I _B =0			300	μA
		2SD1985A	V _{CE} =60V; I _B =0				
I _{EBO}	Emitter cut-off current		V _{EB} =6V; I _C =0			1	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 =0.5A; V _{CE} =5V; f=10MHz		30		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			2.5		μs
t _f	Fall time			0.4		μs

◆ h_{FE-1} Classifications

Q	P
70-150	120-250

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PACKAGE OUTLINE

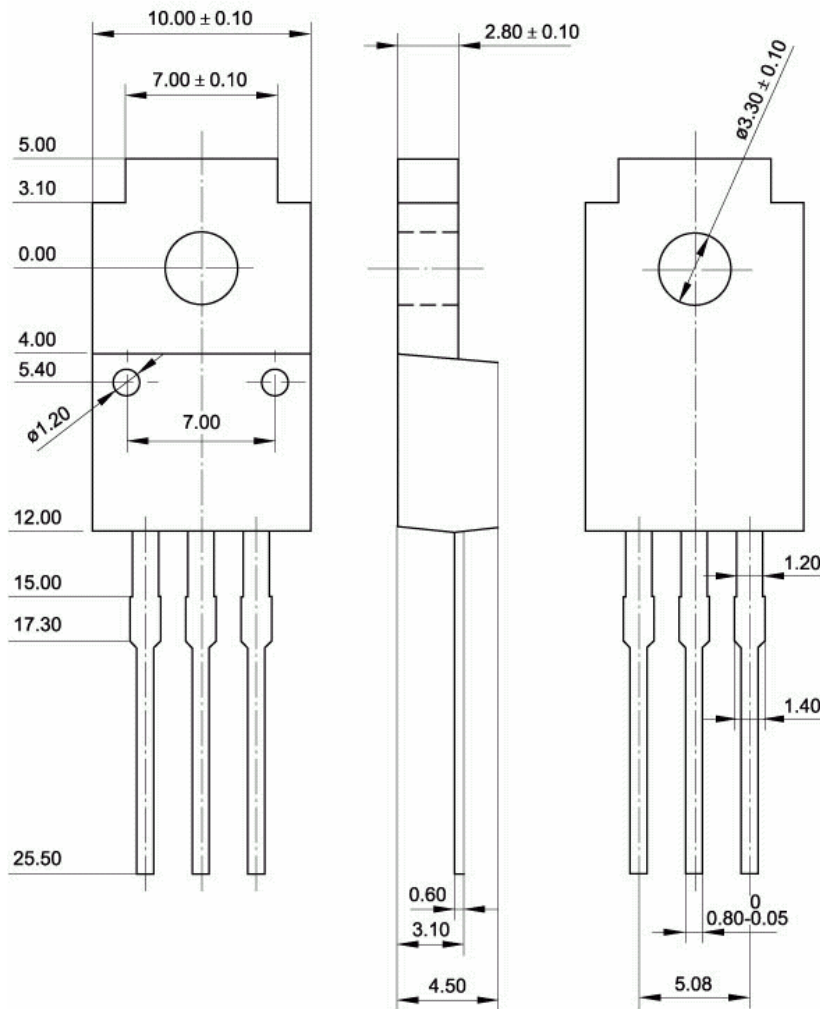


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)

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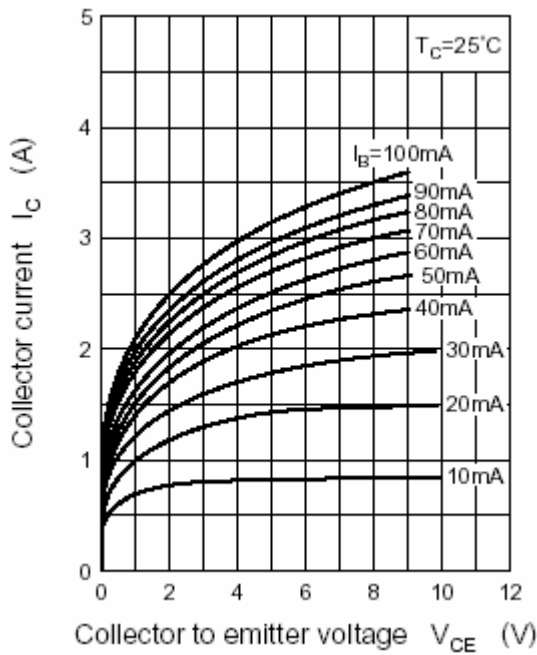


Fig.3 Static Characteristic

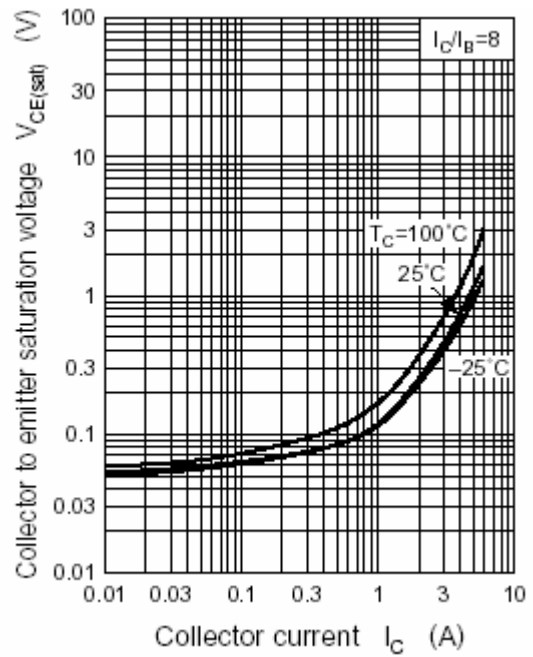


Fig.4 Collector-Emitter Saturation Voltage

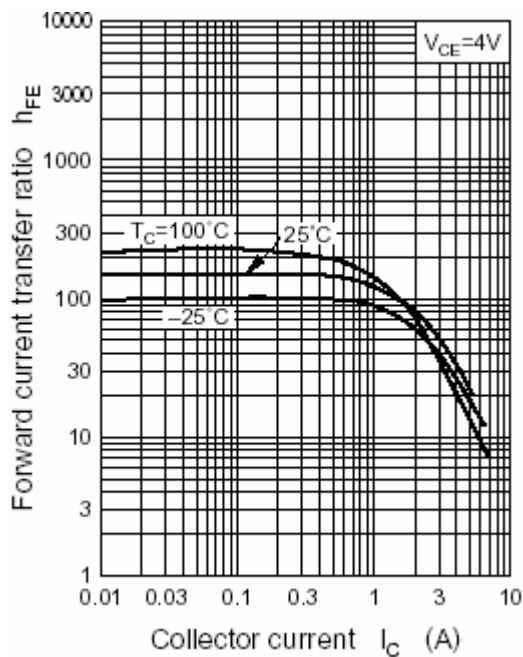


Fig.5 DC current Gain

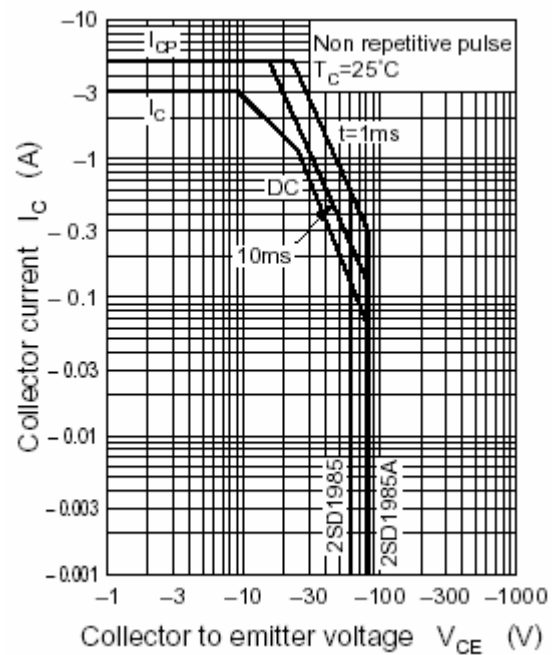


Fig.6 Safe Operating Area