

Silicon PNP Power Transistors

2SA1451

DESCRIPTION

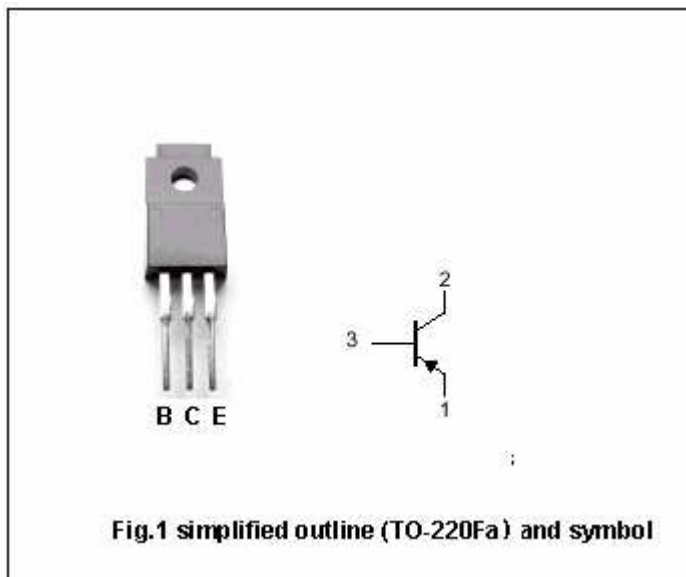
- With TO-220Fa package
- Low collector saturation voltage
- High speed switching time
- Complement to type 2SC3709

APPLICATIONS

- High current switching applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-60	V
V_{CEO}	Collector-emitter voltage	Open base	-50	V
V_{EBO}	Emitter-base voltage	Open collector	-6	V
I_C	Collector current		-12	A
I_B	Base current		-2	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°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =-50mA ; I _B =0	-50			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =-6A ; I _B =-0.3A		-0.15	-0.4	V
V _{BEsat}	Base-emitter saturation voltage	I _C =-6A ; I _B =-0.3A		-0.9	-1.2	V
I _{CBO}	Collector cut-off current	V _{CB} =-60V ; I _E =0			-10	μA
I _{EBO}	Emitter cut-off current	V _{EB} =-6V ; I _C =0			-10	μA
h _{FE-1}	DC current gain	I _C =-1A ; V _{CE} =-1V	70		240	
h _{FE-2}	DC current gain	I _C =-6A ; V _{CE} =-1V	40			
f _T	Transition frequency	I _C =-1A ; V _{CE} =-5V		70		MHz
C _{ob}	Collector output capacitance	I _E =0 ; V _{CE} =-10V ; f=1MHz		320		pF

Switching times

t _{on}	Turn-on time	I _{B1} =-I _{B2} =-0.3A V _{CC} ≈-30V ; R _L =5Ω		0.3		μs
t _s	Storage time			1.0		μs
t _f	Fall time			0.5		μs

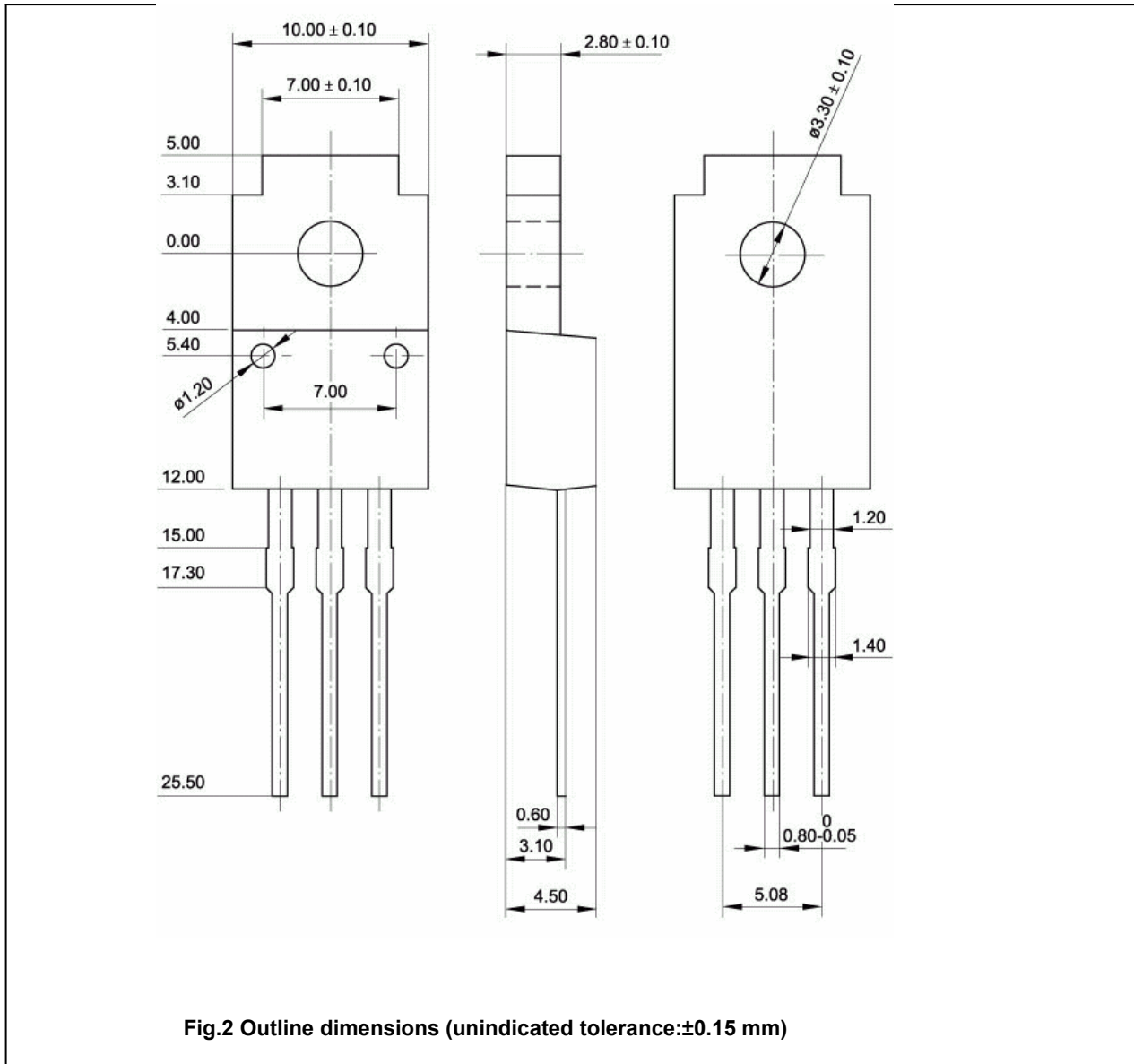
◆ h_{FE-1} Classifications

O	Y
70-140	120-240

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PACKAGE OUTLINE



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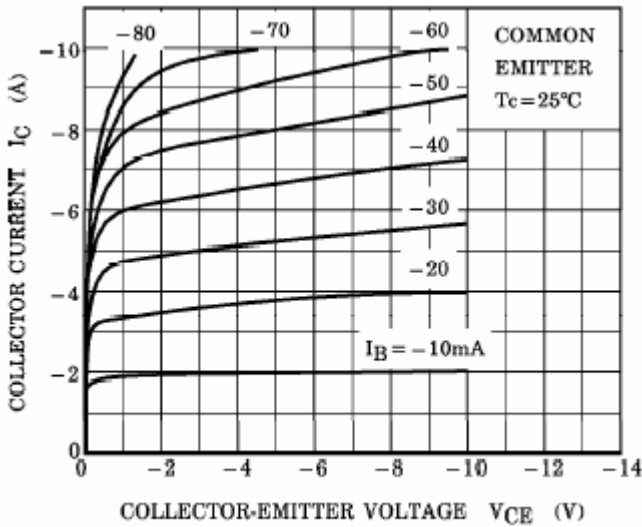


Fig.3 Static Characteristic

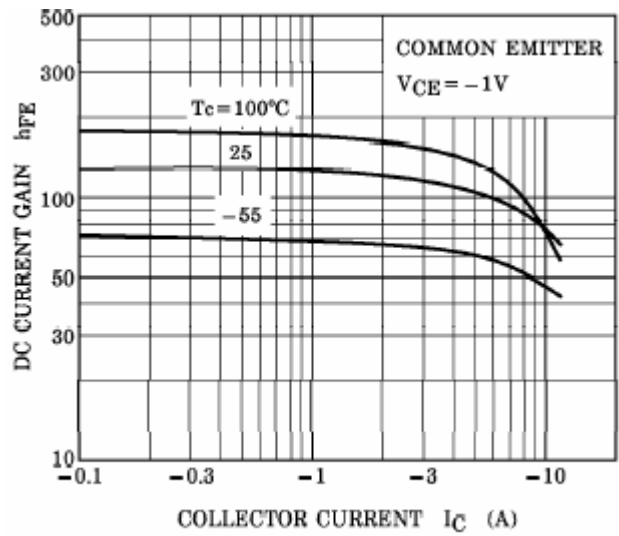


Fig.4 DC current Gain

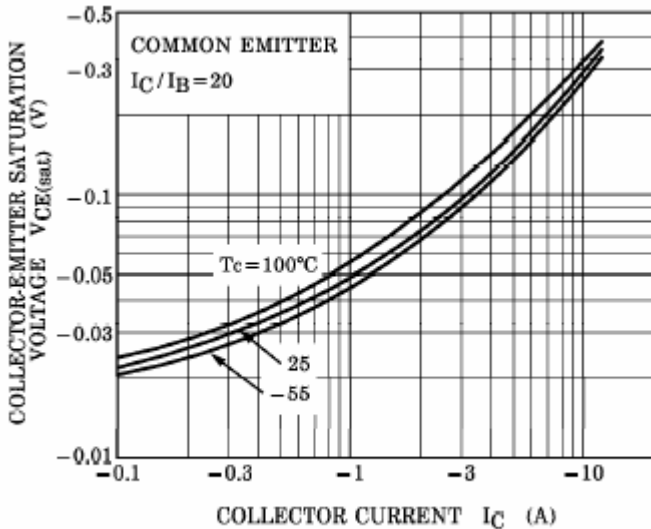


Fig.5 Collector-Emitter Saturation Voltage

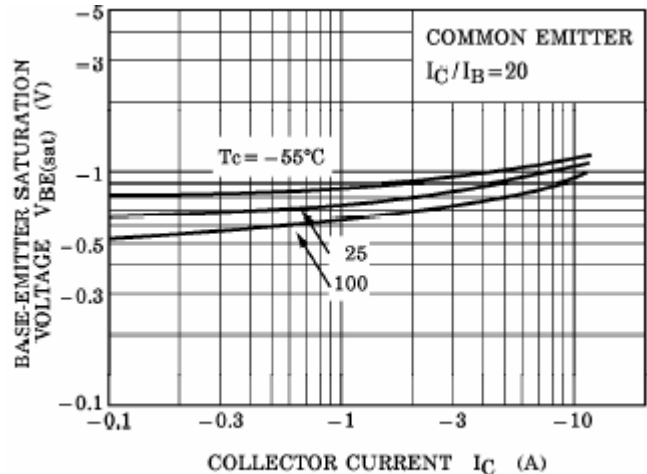


Fig.6 Base-Emitter Saturation Voltage

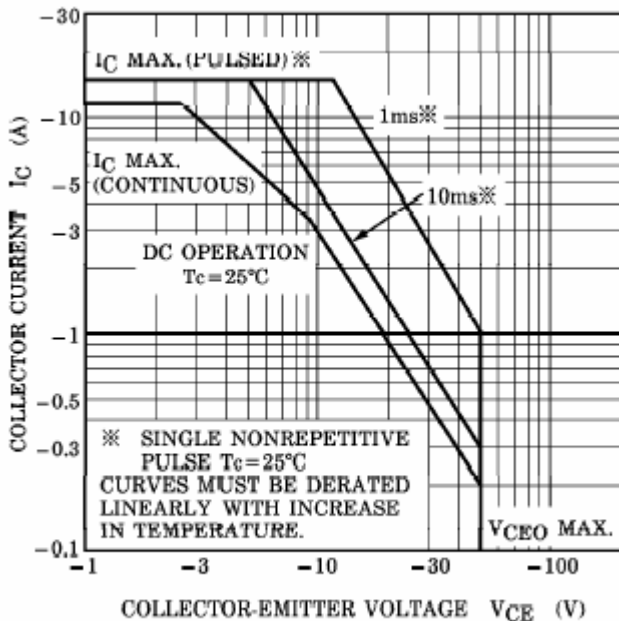


Fig.7 Safe Operating Area