

Silicon NPN Power Transistors

2SC3973 2SC3973A

DESCRIPTION

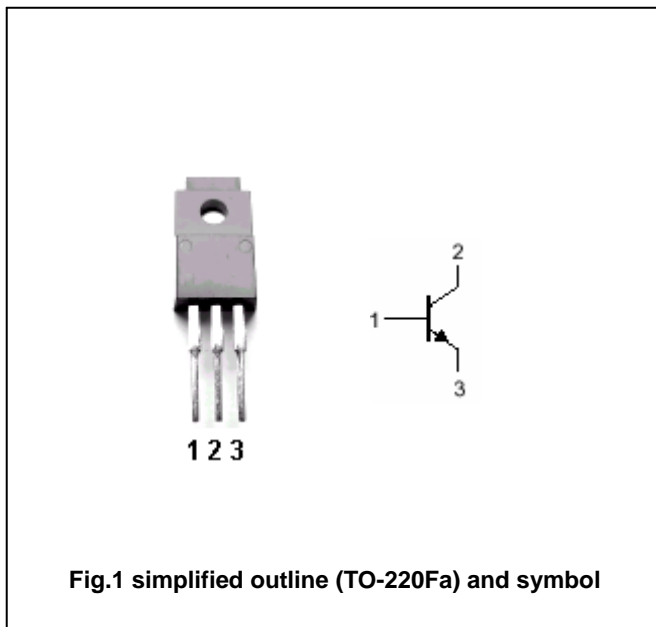
- With TO-220Fa package
- High breakdown voltage
- High speed switching
- Wide area of safe operation

APPLICATIONS

- For high breakdown voltate ,high-speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolute maximum ratings (Ta=25)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	2SC3973	800	V
		2SC3973A	900	
V _{CEO}	Collector-emitter voltage	Open base	500	V
V _{EBO}	Emitter-base voltage	Open collector	8	V
I _C	Collector current (DC)		7	A
I _{CM}	Collector current-Peak		15	A
I _B	Base current		4	A
P _C	Collector power dissipation	T _C =25	45	W
		T _a =25	2	
T _j	Junction temperature		150	
T _{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

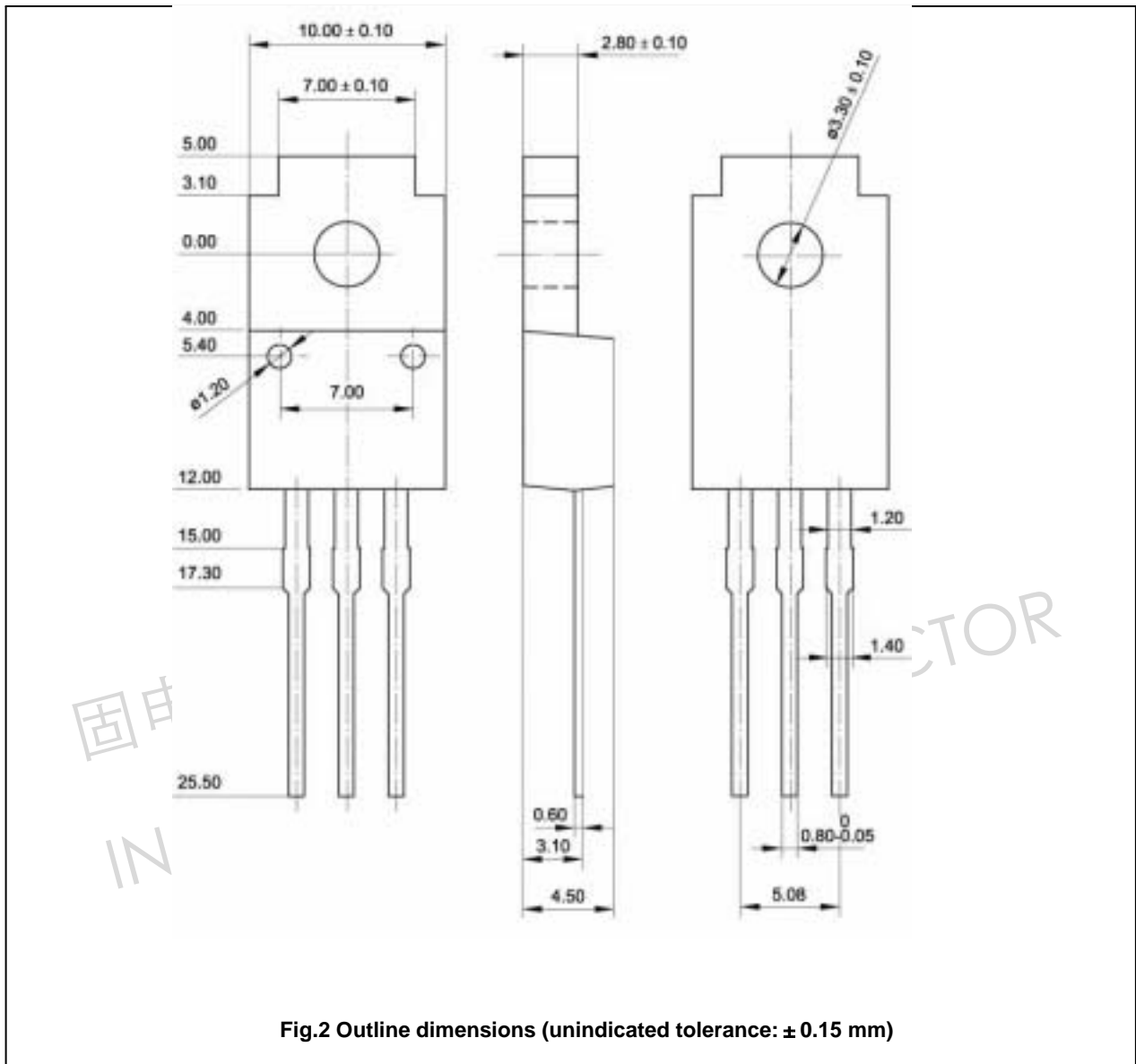
T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA, I _B =0	500			V	
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A; I _B =0.8A			1.0	V	
V _{BEsat}	Base-emitter saturation voltage	I _C =4A; I _B =0.8A			1.5	V	
I _{CBO}	Collector cut-off current	2SC3973	V _{CB} =800V; I _E =0			0.1	mA
		2SC3973A	V _{CB} =900V; I _E =0				
I _{EBO}	Emitter cut-off current	V _{EB} =5V; I _C =0			0.1	mA	
h _{FE-1}	DC current gain	I _C =0.1A; V _{CE} =5V	15				
h _{FE-2}	DC current gain	I _C =4A; V _{CE} =5V	8				
f _T	Transition frequency	I _C =0.5A; V _{CE} =10V		20		MHz	
Switching times							
t _{on}	Turn-on time	I _C =4A; I _{B1} =0.8A I _{B2} =-1.6A; V _{CC} =200V			1.0	μs	
t _s	Storage time				3.0	μs	
t _f	Fall time				0.3	μs	

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PACKAGE OUTLINE



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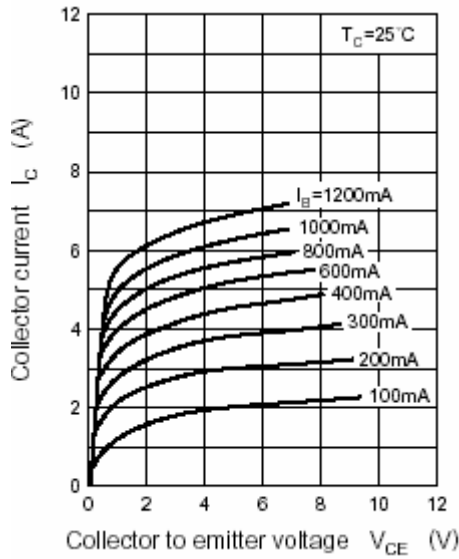


Fig.3 Static Characteristic

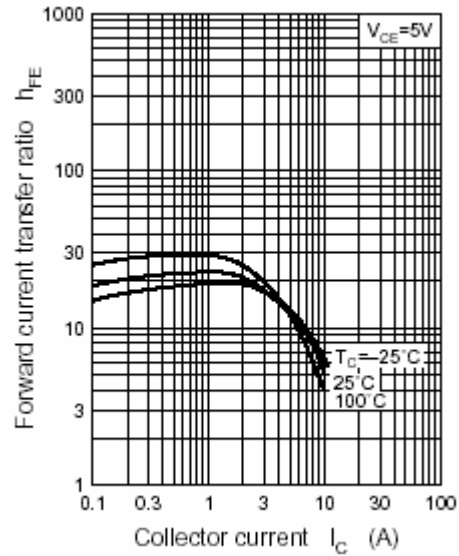


Fig.4 DC current Gain

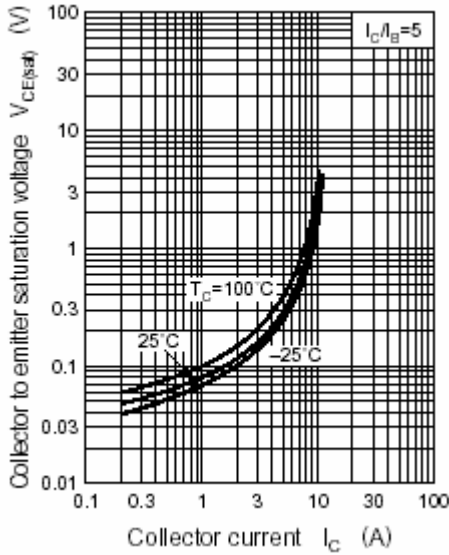


Fig.5 Collector-Emitter Saturation Voltage

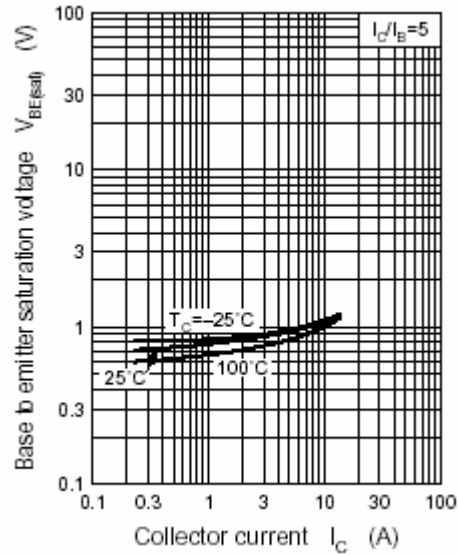


Fig.6 Base-Emitter Saturation Voltage

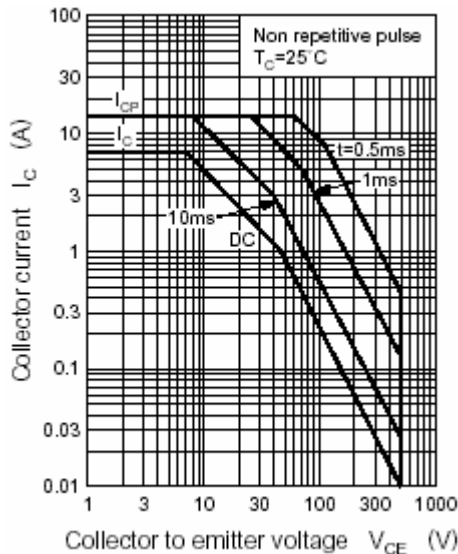


Fig.7 Safe Operating Area