

Silicon NPN Power Transistors

2SC3972 2SC3972A

DESCRIPTION

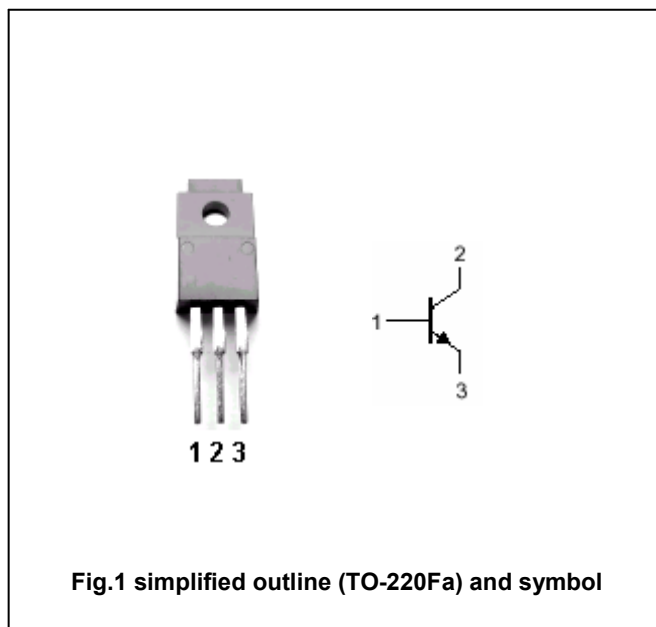
- With TO-220Fa package
- High speed switching
- High V_{CBO}
- Wide area of safe operation

APPLICATIONS

- For high breakdown voltage ,high-speed switching applications

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	2SC3972	Open emitter	800	V
		2SC3972A		900	
V_{CEO}	Collector-emitter voltage		Open base	500	V
V_{EBO}	Emitter-base voltage		Open collector	8	V
I_C	Collector current (DC)			5	A
I_{CM}	Collector current-Peak			10	A
I_B	Base current			3	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$		40	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

Tj=25°C 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		$I_C=2A$; $I_B=0.4A$			1.0	V
V_{BEsat}	Base-emitter saturation voltage		$I_C=2A$; $I_B=0.4A$			1.5	V
I_{CBO}	Collector cut-off current	2SC3972	$V_{CB}=800V$; $I_E=0$			0.1	mA
		2SC3972A	$V_{CB}=900V$; $I_E=0$				
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		$I_C=2A$; $V_{CE}=5V$	8			
f_T	Transition frequency		$I_C=0.5A$; $V_{CE}=10V$; $f=1MHz$		20		MHz

Switching times

t_{on}	Turn-on time	$I_C=2A$; $I_{B1}=0.4A$ $I_{B2}=-0.8A$; $V_{CC}=200V$			1.0	μs
t_s	Storage time				3.0	μs
t_f	Fall time				0.3	μs

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PACKAGE OUTLINE

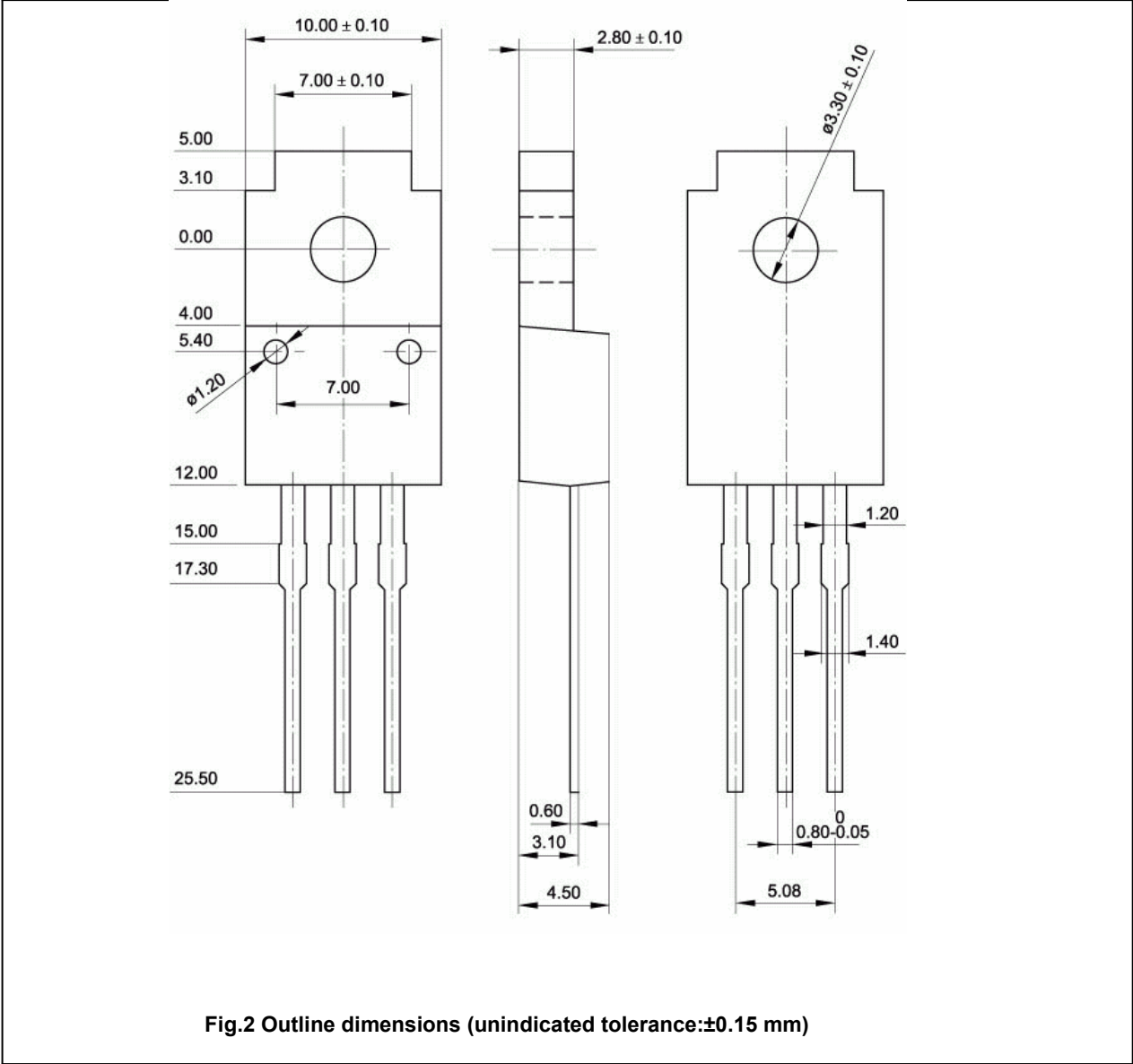


Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)

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