

Silicon NPN Power Transistors

2SC3870

DESCRIPTION

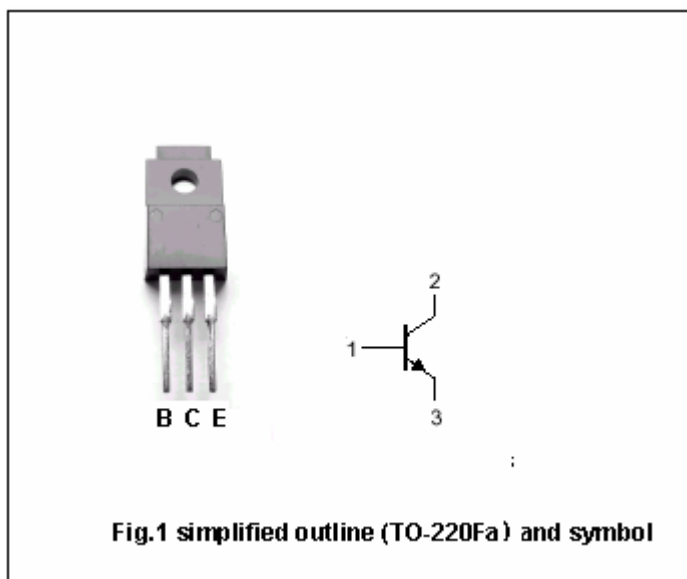
- With TO-220Fa package
- High breakdown voltage
- Wide area of safe operation

APPLICATIONS

- For 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	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current (DC)		7	A
I_{CM}	Collector current (pulse)		15	A
I_B	Base current (DC)		3	A
P_C	Collector power dissipation	$T_a=25^\circ\text{C}$	2	W
		$T_C=25^\circ\text{C}$	40	
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
$V_{CE(SUS)}$	Collector-emitter sustaining voltage	$I_C=10mA ; I_B=0$	400			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=3A ; I_B=0.6A$			1.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=3A ; I_B=0.6A$			1.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=500V ; I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V ; I_C=0$			100	μA
h_{FE-1}	DC current gain	$I_C=0.1A ; V_{CE}=5V$	15			
h_{FE-2}	DC current gain	$I_C=3A ; V_{CE}=5V$	8			
f_T	Transition frequency	$I_C=0.5A ; V_{CE}=10V$		30		MHz

Switching times

t_{on}	Turn-on time	$I_C=3A ; I_B=0.6A ; I_{B2}=-1.2A$ $V_{CC}=150V$			0.7	μs
t_s	Storage time				2.0	μs
t_f	Fall time				0..3	μs

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PACKAGE OUTLINE

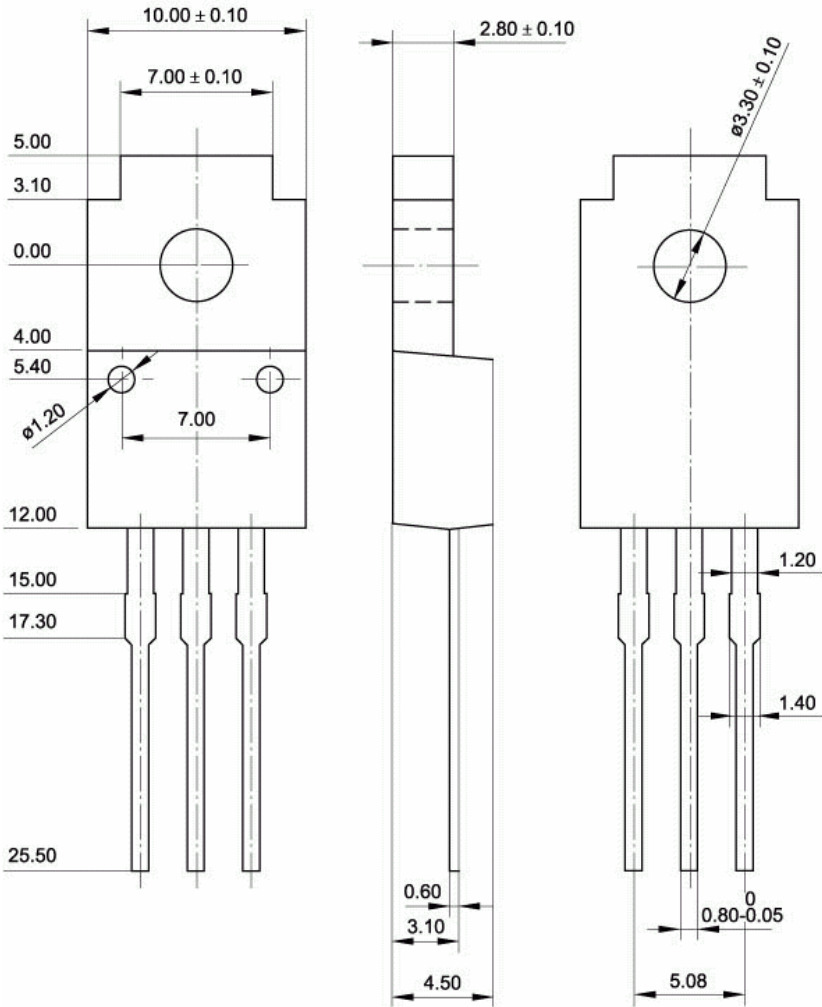


Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)