

Silicon NPN Power Transistors

2SC4004

DESCRIPTION

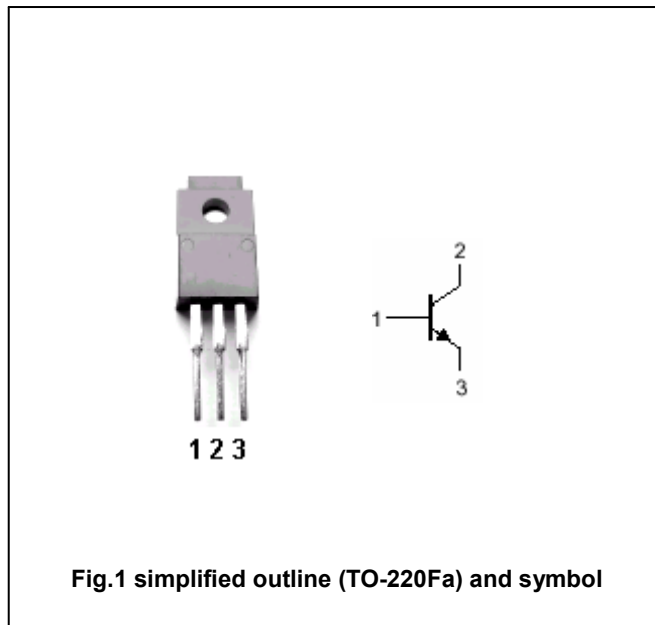
- With TO-220Fa package
- Wide area of safe operation (ASO)
- High-speed switching
- High collector to base voltage V_{CBO}

APPLICATIONS

- For high breakdown voltage high-speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	900	V
V_{CEO}	Collector-emitter voltage	Open base	800	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current (DC)		1	A
I_{CM}	Collector current-Peak		2	A
I_B	Base current		0.3	A
P_C	Collector power dissipation	$T_C=25^\circ C$	30	w
		$T_a=25^\circ C$	2	
T_j	Junction temperature		150	°C
T_{stg}	Storage temperature		-55~150	°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 =1mA, I _B =0	800			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =0.2A; I _B =0.04A			1.5	V
V _{BEsat}	Base-emitter saturation voltage	I _C =0.2A; I _B =0.04A			1.0	V
I _{CBO}	Collector cut-off current	V _{CB} =900V; I _E =0			50	μA
I _{EBO}	Emitter cut-off current	V _{EB} =7V; I _C =0			50	μA
h _{FE-1}	DC current gain	I _C =0.05A; V _{CE} =5V	6			
h _{FE-2}	DC current gain	I _C =0.5A; V _{CE} =5V	3			
f _T	Transition frequency	I _C =0.05A; V _{CE} =10V; f=1MHz		4		MHz

Switching times

t _{on}	Turn-on time	I _C =0.2A; I _{B1} =0.04A; I _{B2} =-0.04A; V _{CC} =250V			1.0	μs
t _s	Storage time				3.0	μs
t _f	Fall time				1.0	μs

PACKAGE OUTLINE

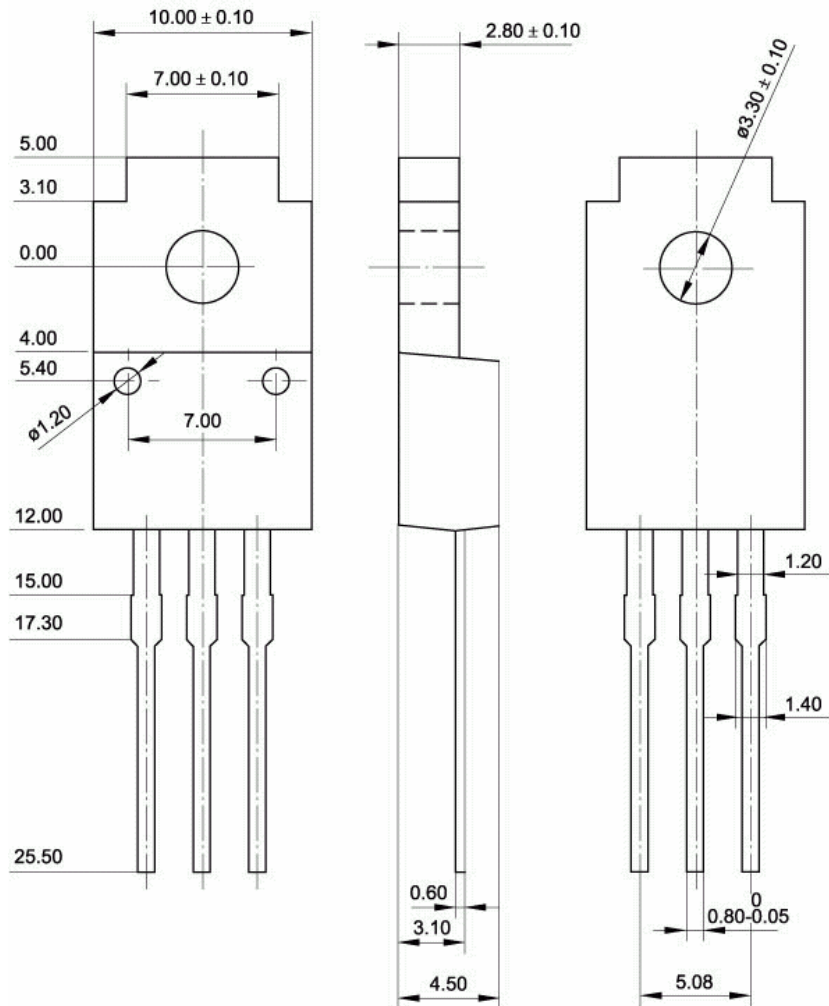


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)