

Silicon NPN Power Transistors

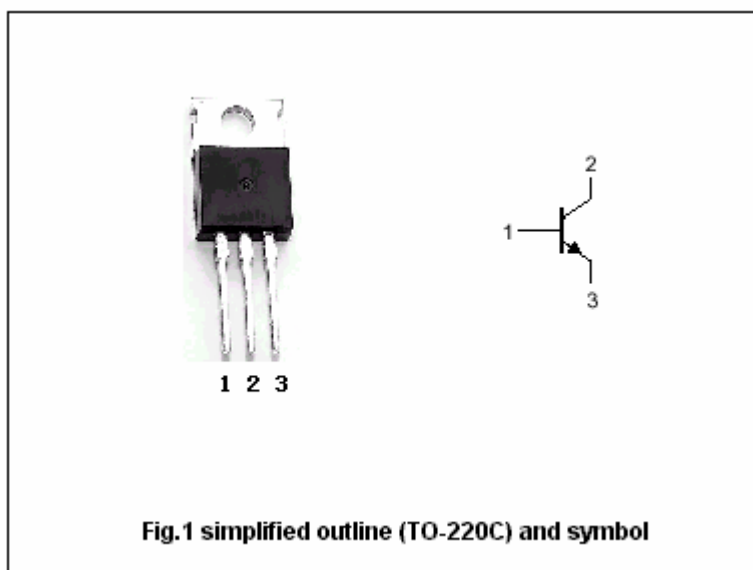
2SC4051

DESCRIPTION

- With TO-220C package
- Switching power transistor

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	600	V
V_{CEO}	Collector-emitter voltage	Open base	450	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		3	A
I_{CM}	Collector current-Peak		6	A
I_B	Base current		1	A
I_{BM}	Base current-Peak		2	A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	40	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-C}$	Thermal resistance junction to case	3.12	$^\circ\text{C}/\text{W}$

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	I _C =0.1A ; I _B =0	450			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =1.5A; I _B =0.3A			1.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C =1.5A; I _B =0.3A			1.5	V
I _{CBO}	Collector cut-off current	At rated volatge			0.1	mA
I _{CEO}	Collector cut-off current					
I _{EBO}	Emitter cut-off current	At rated volatge			0.1	mA
h _{FE-1}	DC current gain	I _C =1.5A ; V _{CE} =5V	10			
h _{FE-2}	DC current gain	I _C =1mA ; V _{CE} =5V	5			
f _T	Transition frequency	I _C =0.3A ; V _{CE} =10V		20		MHz

Switching times

t _{on}	Turn-on time	I _C =1.5A; I _{B1} =0.3A I _{B2} =0.6A, R _L =100Ω V _{BB2} =4V			0.5	μs
t _s	Storage time				2.0	μs
t _f	Fall time				0.2	μs

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PACKAGE OUTLINE

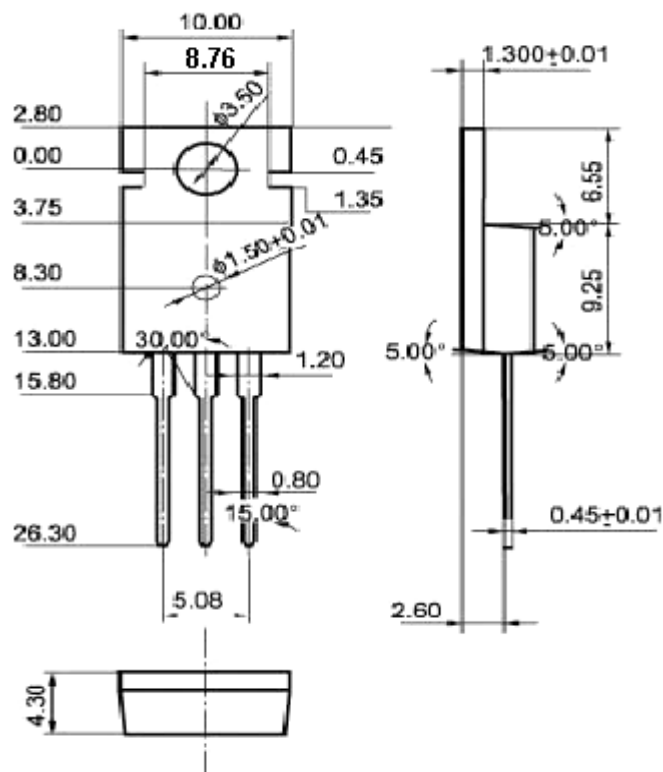


Fig.2 Outline dimensions (unindicated tolerance: ± 0.10 mm)