

Silicon NPN Power Transistors

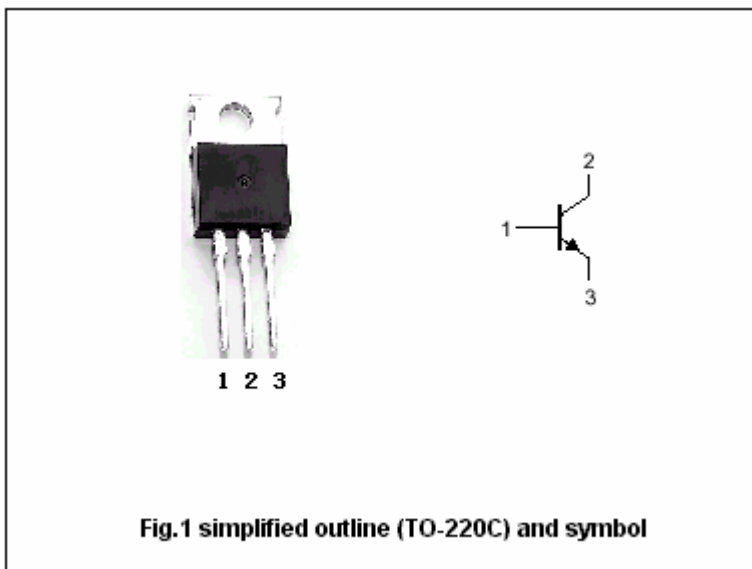
2SC4051

DESCRIPTION

- With TO-220C package
- Switching power transistor

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	600	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	450	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		3	A
I <sub>CM</sub>	Collector current-Peak		6	A
I <sub>B</sub>	Base current		1	A
I <sub>BM</sub>	Base current-Peak		2	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	40	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	3.12	°C/W

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## 2SC4051

## CHARACTERISTICS

T<sub>j</sub>=25 °C unless otherwise specified

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

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =1.5A; I <sub>B1</sub> =0.3A I <sub>B2</sub> =0.6A, R <sub>L</sub> =100Ω V <sub>BB2</sub> =4V			0.5	μs
t <sub>s</sub>	Storage time				2.0	μs
t <sub>f</sub>	Fall time				0.2	μs

