

## Silicon NPN Power Transistors

## BUT18 BUT18A

## DESCRIPTION

- With TO-220C package
- High voltage ,high speed

## APPLICATIONS

- Converters
- Inverters
- Switching regulators
- Motor control systems

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

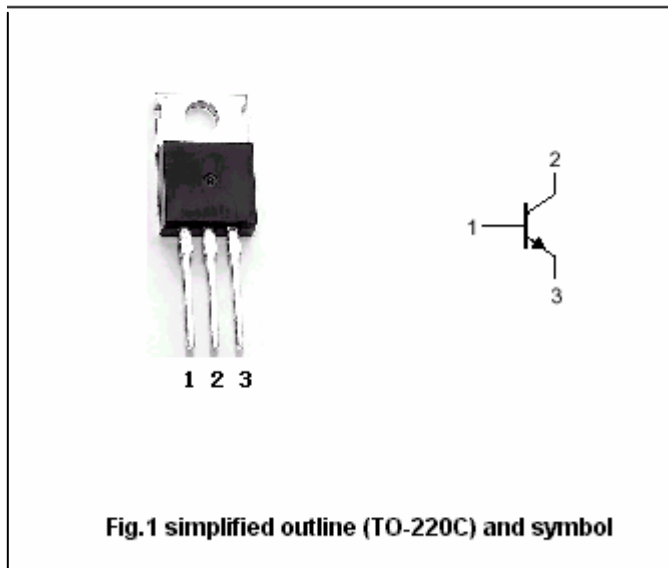


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (T<sub>c</sub>=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BUT18	850	V
		BUT18A	1000	
V <sub>CEO</sub>	Collector-emitter voltage	BUT18	400	V
		BUT18A	450	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	9	V
I <sub>C</sub>	Collector current		6	A
I <sub>CM</sub>	Collector current-peak		12	A
I <sub>B</sub>	Base current		3	A
I <sub>BM</sub>	Base current-peak		6	A
P <sub>tot</sub>	Total power dissipation	T <sub>c</sub> =25℃	110	W
T <sub>j</sub>	Junction temperature		150	℃
T <sub>stg</sub>	Storage temperature		-65~150	℃

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## 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	BUT18	I <sub>C</sub> =0.1A; I <sub>B</sub> =0; L=25mH	400			V
		BUT18A		450			
V <sub>CEsat</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =4A; I <sub>B</sub> =0.8A			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =4A; I <sub>B</sub> =0.8A			1.3	V
I <sub>CES</sub>	Collector cut-off current	BUT18	V <sub>CE</sub> =850V; V <sub>BE</sub> =0 T <sub>j</sub> =125 °C			1.0 2.0	mA
		BUT18A	V <sub>CE</sub> =1000V; V <sub>BE</sub> =0 T <sub>j</sub> =125 °C			1.0 2.0	
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =9V; I <sub>C</sub> =0			10	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =5mA; V <sub>CE</sub> =5V	10		35	
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =1A; V <sub>CE</sub> =5V	10		35	

Switching times resistive load

t <sub>on</sub>	Turn-on time		I <sub>C</sub> =4A; I <sub>B1</sub> =-I <sub>B2</sub> =0.8A V <sub>CC</sub> =250V			1.0	μs
t <sub>s</sub>	Storage time					4.0	μs
t <sub>f</sub>	Fall time					0.8	μs

