

Silicon NPN Power Transistors

BUT76 BUT76A

DESCRIPTION

With TO-220C package  
 High voltage;high speed  
 High power dissipation

APPLICATIONS

Switching mode power supply  
 Motor control and relay driver

PINNING

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

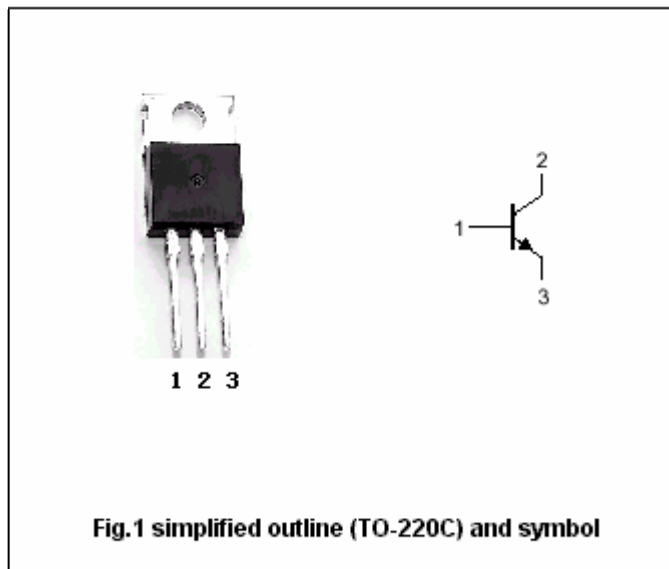


Fig.1 simplified outline (TO-220C) and symbol

Absolut maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BUT76	850	V
		BUT76A	1000	
V <sub>CEO</sub>	Collector-emitter voltage	BUT76	400	V
		BUT76A	450	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		12	A
I <sub>CM</sub>	Collector current-peak		20	A
I <sub>BM</sub>	Base current-peak		6	A
P <sub>tot</sub>	Total power dissipation	T <sub>C</sub> =25°C	110	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to mounting case	1.13	K/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	BUT76	I <sub>C</sub> =500mA ;L <sub>C</sub> =125mH			V
		BUT76A				
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA ;I <sub>C</sub> =0	6			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	BUT76	I <sub>C</sub> =6A ;I <sub>B</sub> =1.2A		1.5	V
		BUT76A				
V <sub>BEsat</sub>	Base-emitter saturation voltage	BUT76	I <sub>C</sub> =6A ;I <sub>B</sub> =1.2A		1.6	V
		BUT76A				
I <sub>CES</sub>	Collector cut-off current	BUT76	V <sub>CE</sub> =850V; V <sub>BE</sub> =0 T <sub>j</sub> =150°C		0.5 2.0	mA
		BUT76A				
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =8A ; V <sub>CE</sub> =3V	3.2			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ;V <sub>CB</sub> =10V;f=1MHz		150		pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ;V <sub>CE</sub> =10V		7		MHz

## Switching times resistive load

t <sub>on</sub>	Turn-on time	For BUT76 I <sub>C</sub> =6A ;I <sub>B1</sub> =-I <sub>B2</sub> =1.2A;V <sub>CE</sub> =150V  For BUT76A I <sub>C</sub> =5A ;I <sub>B1</sub> =-I <sub>B2</sub> =1A;V <sub>CE</sub> =150V			1.0	μs
t <sub>s</sub>	Storage time				3.0	μs
t <sub>f</sub>	Fall time				0.8	μs

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PACKAGE OUTLINE

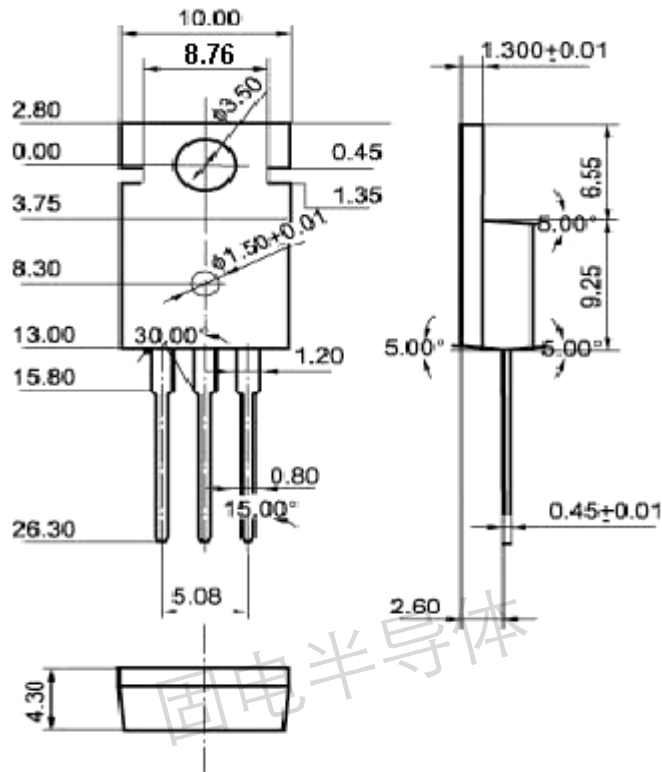


Fig.2 Outline dimensions (unindicated tolerance:±0.10mm)