

Silicon NPN Power Transistors

BUT11 BUT11A

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

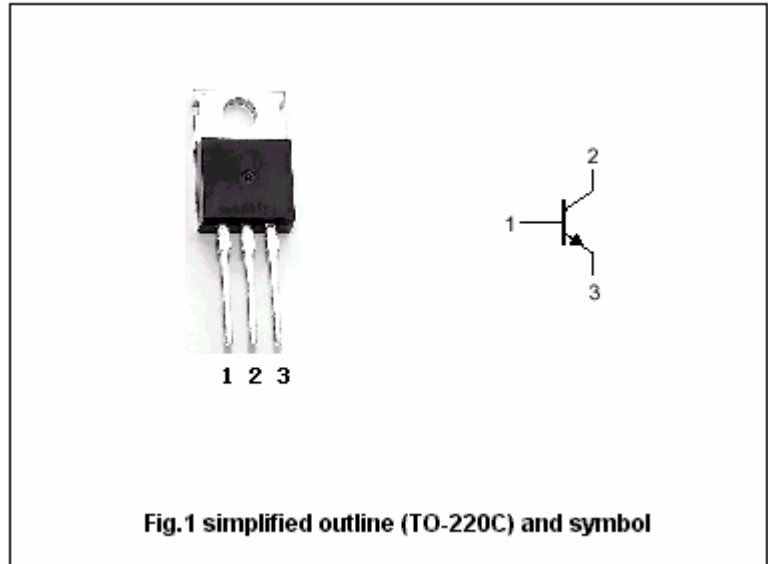


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	BUT11	850	V
		BUT11A	1000	
V _{CEO}	Collector-emitter voltage	BUT11	400	V
		BUT11A	450	
V _{EBO}	Emitter-base voltage	Open collector	7	V
I _C	Collector current (DC)		5	A
I _{CM}	Collector current-Peak		10	A
I _B	Base current		2	A
P _{tot}	Total power dissipation	T _{mb} ≤25°C	100	W
T _f	Fall time		0.8	μs
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R _{th j-mb}	Thermal resistance from junction to mounting base	1.25	K/W

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CHARACTERISTICS

T_j=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	BUT11	I _C =0.1A; I _B =0, L=25mH			V
		BUT11A				
V _{CEsat}	Collector-emitter saturation voltage	BUT11	I _C =3A; I _B =0.6A		1.5	V
		BUT11A				
V _{BEsat}	Base-emitter saturation voltage	BUT11	I _C =3A; I _B =0.6A		1.3	V
		BUT11A				
I _{CES}	Collector cut-off current	V _{CE} =Rated V _{CEs} ; V _{BE} =0 T _j =125°C			1.0 2.0	mA
I _{EBO}	Emitter cut-off current	V _{EB} =9V; I _C =0			10	mA
h _{FE-1}	DC current gain	I _C =5mA; V _{CE} =5V	10		35	
h _{FE-2}	DC current gain	I _C =0.5A; V _{CE} =5V	10		35	

Switching times resistive load

t _{on}	Turn-on time	For BUT11 I _C =3A; I _{B1} =- I _{B2} =0.6A For BUT11A I _C =2.5A; I _{B1} =- I _{B2} =0.5A			1.0	μs
t _s	Storage time				4.0	μs
t _f	Fall time				0.8	μs

Switching times inductive load

t _s	Storage time	For BUT11 I _C =3A; I _B =0.6A			1.4	μs
t _f	Fall time	For BUT11A I _C =2.5A; I _B =0.5A			0.15	μs

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PACKAGE OUTLINE

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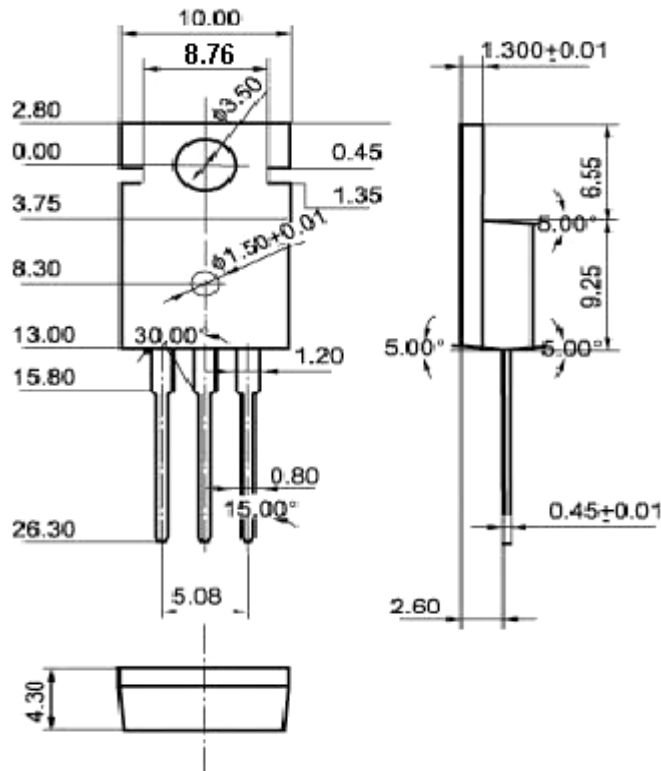


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)