

Silicon NPN Power Transistors

BUT12 BUT12A

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

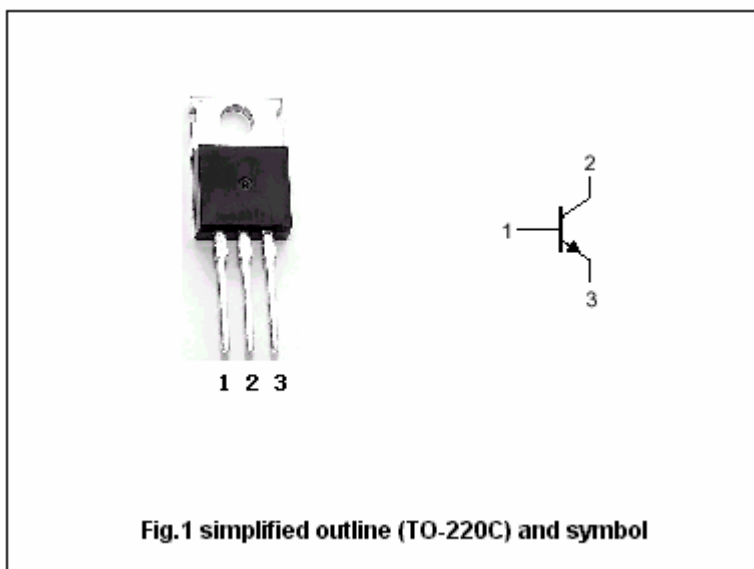


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	BUT12	850	V
		BUT12A	1000	
V _{CEO}	Collector-emitter voltage	BUT12	400	V
		BUT12A	450	
V _{EBO}	Emitter-base voltage	Open collector	9	V
I _C	Collector current		8	A
I _{CM}	Collector current-peak		20	A
I _B	Base current		4	A
I _{BM}	Base current-peak		6	a
P _{tot}	Total power dissipation	T _{mb} ≤ 25°C	100	W
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	K/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	BUT12	I _C =0.1A; I _B =0, L=25mH	400			V
		BUT12A		450			
V _{CEsat}	Collector-emitter saturation voltage	BUT12	I _C =6A; I _B =1.2A			1.5	V
		BUT12A	I _C =5A; I _B =1A				
V _{BEsat}	Base-emitter saturation voltage	BUT12	I _C =6A; I _B =1.2A			1.5	V
		BUT12A	I _C =5A; I _B =1A				
I _{CES}	Collector cut-off current		V _{CE} =Rated V _{CEs} ; V _{BE} =0 T _j =125°C			1.0 3.0	mA
I _{EBO}	Emitter cut-off current		V _{EB} =9V; I _C =0			10	mA
h _{FE-1}	DC current gain		I _C =10mA; V _{CE} =5V	10		35	
h _{FE-2}	DC current gain		I _C =1A; V _{CE} =5V	10		35	

Switching times resistive load

t _{on}	Turn-on time	For BUT12 I _C =6A; I _{B1} = I _{B2} =1.2A For BUT12A I _C =5A; I _{B1} = I _{B2} =1A			1.0	μs
t _s	Storage time				4.0	μs
t _f	Fall time				0.8	μs

