

Silicon NPN Power Transistors

BUT56 BUT56A

DESCRIPTION

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

APPLICATIONS

- Switching mode power supply

PINNING

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

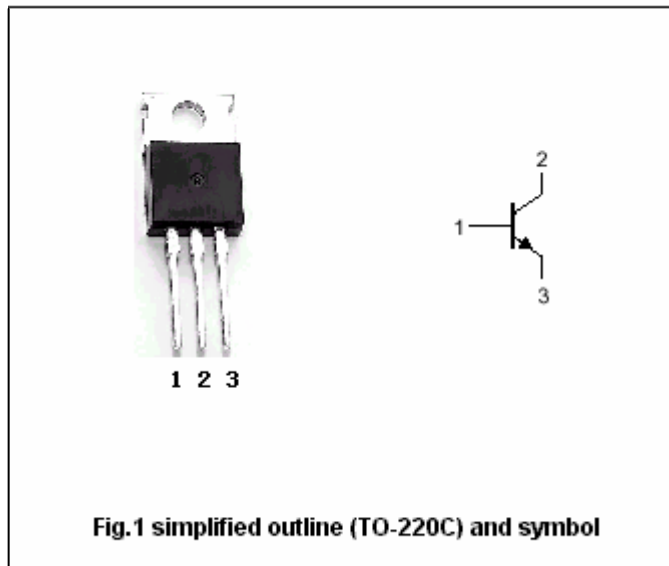


Fig.1 simplified outline (TO-220C) and symbol

Absolut maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	BUT56	800	V
		BUT56A	1000	
V _{CEO}	Collector-emitter voltage	BUT56	400	V
		BUT56A	450	
V _{EBO}	Emitter-base voltage	Open collector	6	V
I _C	Collector current		8	A
I _{CM}	Collector current-peak		10	A
I _{BM}	Base current-peak		4	A
P _{tot}	Total power dissipation	T _C =25°C	100	W
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to mounting case	1.25	K/W

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	BUT56	I _C =100mA ; L _C =125mH	400			V
		BUT56A		450			
V _{(BR)EBO}	Emitter-base breakdown voltage		I _E =1mA ; I _C =0	6			V
V _{CEsat}	Collector-emitter saturation voltage		I _C =4A ; I _B =0.8A			5.0	V
V _{BEsat}	Base-emitter saturation voltage		I _C =4A ; I _B =0.8A			2.0	V
I _{CES}	Collector cut-off current	BUT56	V _{CE} =800V; V _{BE} =0 T _j =150 °C			1.0 2.0	mA
		BUT56A	V _{CE} =1000V; V _{BE} =0 T _j =150 °C			1.0 2.0	
h _{FE-1}	DC current gain		I _C =1A ; V _{CE} =5V	15		45	
h _{FE-2}	DC current gain	BUT56	I _C =4A ; V _{CE} =5V	5.5			
		BUT56A	I _C =3A ; V _{CE} =2V	4			
f _T	Transition frequency		I _C =0.5A ; V _{CE} =10V; f=1.0MHz		10		MHz

Switching times

t _{off}	Turn-off time	I _C =4A ; I _{B1} =-I _{B2} =1.25A t _p =20µs			4	µs
t _f	Fall time				1	µs

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PACKAGE OUTLINE

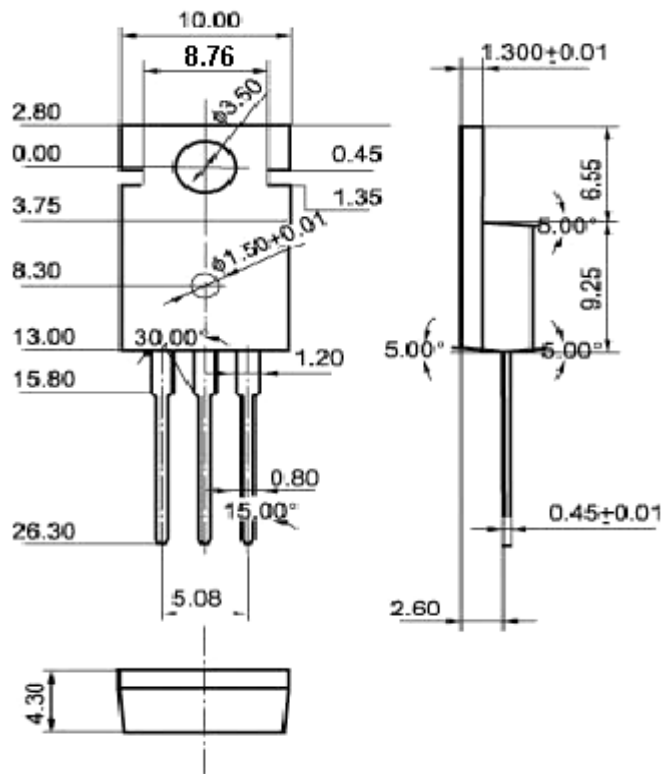


Fig.2 Outline dimensions (unindicated tolerance: ± 0.10 mm)