

Silicon NPN Power Transistors

BUT56 BUT56A

DESCRIPTION

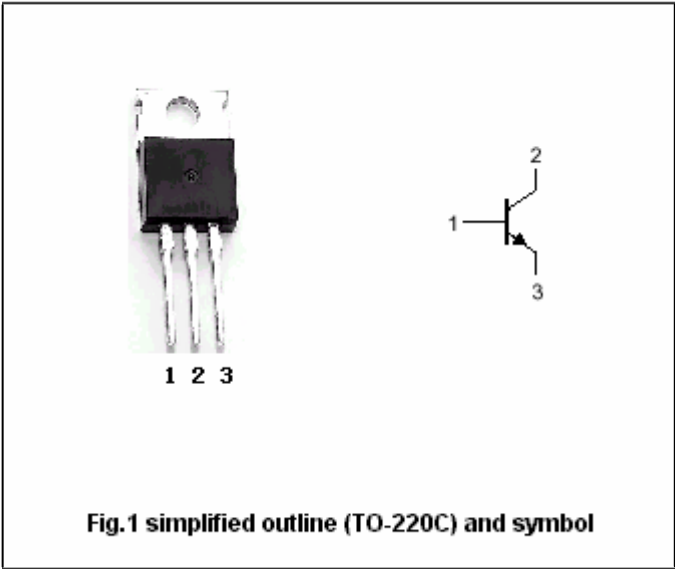
- With TO-220C package
- High voltage;high speed
- High power dissipation

APPLICATIONS

- Switching mode power supply

PINNING

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



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	$T_C=25^{\circ}C$	100	W
T_j	Junction temperature		150	$^{\circ}C$
T_{stg}	Storage temperature		-65~150	$^{\circ}C$

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	$V_{CE}=800V ; V_{BE}=0$ $T_j=150^{\circ}C$			1.0 2.0	mA
		BUT56A	$V_{CE}=1000V ; V_{BE}=0$ $T_j=150^{\circ}C$			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		$I_C=4A ; I_{B1}=-I_{B2}=1.25A$ $t_p=20 \mu s$			4	μs
t_f	Fall time					1	μs

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PACKAGE OUTLINE

