

Silicon NPN Power Transistors

BUT56AF

DESCRIPTION

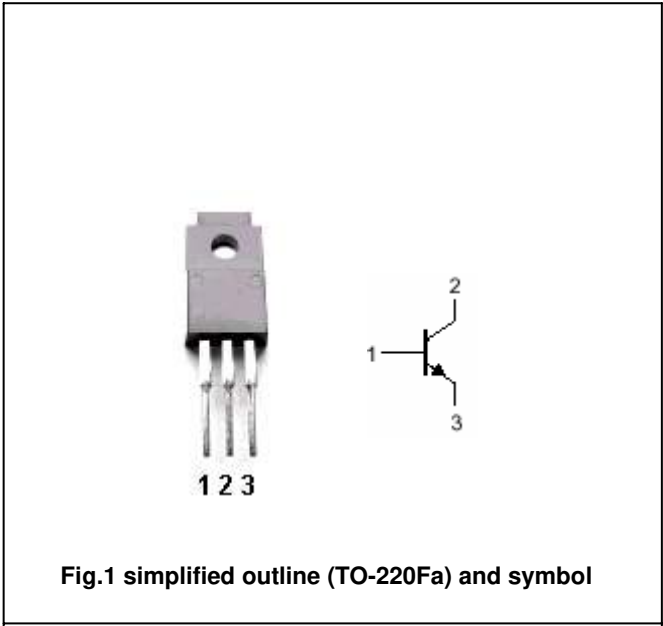
With TO-220Fa package
High voltage;high speed
High power dissipation

APPLICATIONS

Switching mode power supply

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



Absolut maximum ratings (Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	1000	V
V _{CEO}	Collector-emitter voltage	Open base	450	V
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℃	50	W
T _j	Junction temperature		150	℃
T _{stg}	Storage temperature		-65~150	℃

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CHARACTERISTICS

 $T_j=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=100\text{mA}$; $L_C=125\text{mH}$	450			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1\text{mA}$; $I_C=0$	6			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=4\text{A}$; $I_B=0.8\text{A}$			2.0	V
I_{CES}	Collector cut-off current	$V_{CE}=1000\text{V}$; $V_{BE}=0$ $T_j=150^{\circ}\text{C}$			1.0 2.0	mA
h_{FE-1}	DC current gain	$I_C=1\text{A}$; $V_{CE}=5\text{V}$	15		45	
h_{FE-2}	DC current gain	$I_C=3\text{A}$; $V_{CE}=2\text{V}$	4			
f_T	Transition frequency	$I_C=0.5\text{A}$; $V_{CE}=10\text{V}$; $f=1.0\text{MHz}$		10		MHz

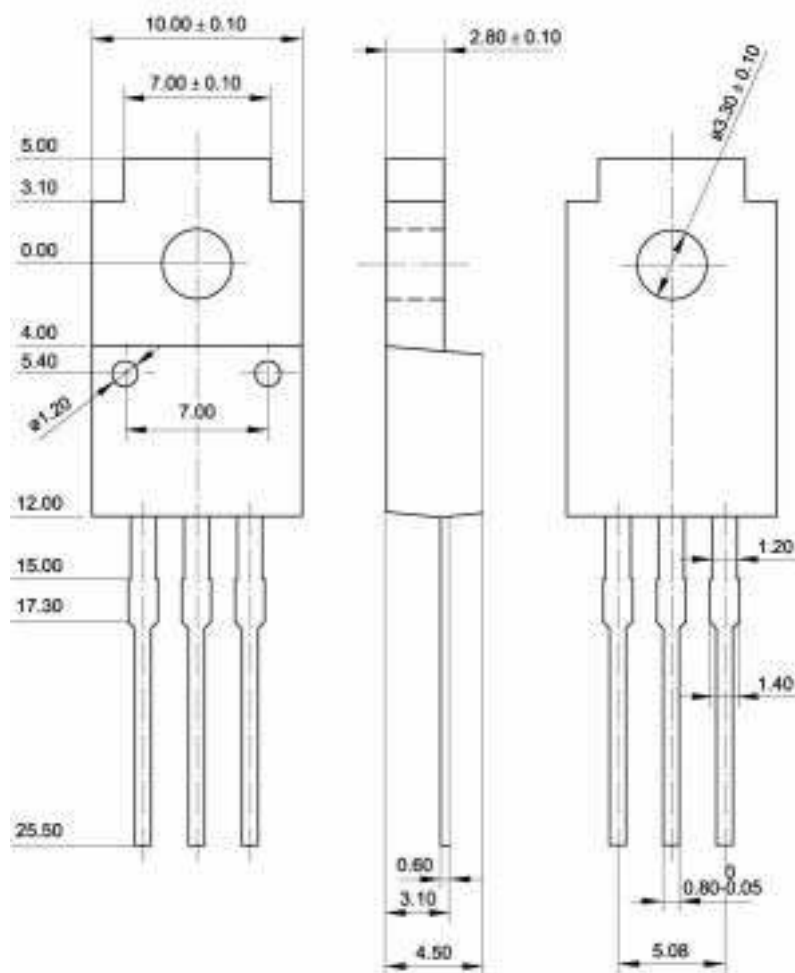
Switching times

t_{off}	Turn-off time	$I_C=4\text{A}$; $I_{B1}=-I_{B2}=1.25\text{A}$ $t_p=20\text{ }\mu\text{s}$			4	μs
t_f	Fall time				1	μs

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PACKAGE OUTLINE

Fig.2 Outline dimensions (unindicated tolerance: $\pm 0.15\text{mm}$)