

Silicon NPN Power Transistors

BUW13F BUW13AF

DESCRIPTION

- With TO-3PFa package
- High voltage;high speed

APPLICATIONS

- Converters
- Inverters
- Switching regulators
- Motor control systems

PINNING (See Fig.2)

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

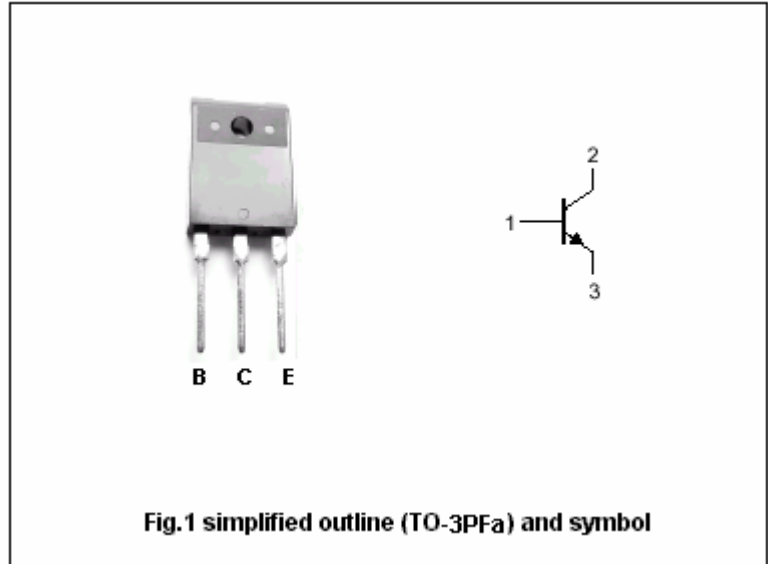


Fig.1 simplified outline (TO-3PFa) and symbol

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BUW13F	850	V
		BUW13AF	1000	
V_{CEO}	Collector-emitter voltage	BUW13F	400	V
		BUW13AF	450	
V_{EBO}	Emitter-base voltage	Open collector	9	V
I_C	Collector current		15	A
I_{CM}	Collector current-peak		30	A
I_B	Base current		6	A
I_{BM}	Base current-peak		9	A
P_T	Total power dissipation	$T_c=25^\circ\text{C}$	50	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-a}$	Thermal resistance from junction to ambient	35	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	BUW13F	I _C =0.1A ; I _B =0; L=25mH	400			V
		BUW13AF		450			
V _{CEsat}	Collector-emitter saturation voltage	BUW13F	I _C =10A; I _B =2A			1.5	V
		BUW13AF	I _C =8A; I _B =1.6A				
V _{BEsat}	Base-emitter saturation voltage	BUW13F	I _C =10A; I _B =2A			1.6	V
		BUW13AF	I _C =8A; I _B =1.6A				
I _{CES}	Collector cut-off current		V _{CE} =Rated V _{CEs} ; V _{BE} =0 T _j =125 °C			1.0 4.0	mA
I _{EBO}	Emitter cut-off current		V _{EB} =9V; I _C =0			10	mA
h _{FE-1}	DC current gain		I _C =20mA ; V _{CE} =5V	10		35	
h _{FE-2}	DC current gain		I _C =1.5A ; V _{CE} =5V	10		35	

Switching times resistive load

t _{on}	Turn-on time	For BUW13F I _C =10A ; I _{B1} =-I _{B2} =-2A For BUW13AF I _C =8A ; I _{B1} =-I _{B2} =-1.6A			1.0	μs
t _s	Storage time				4.0	μs
t _f	Fall time				0.8	μs

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PACKAGE OUTLINE

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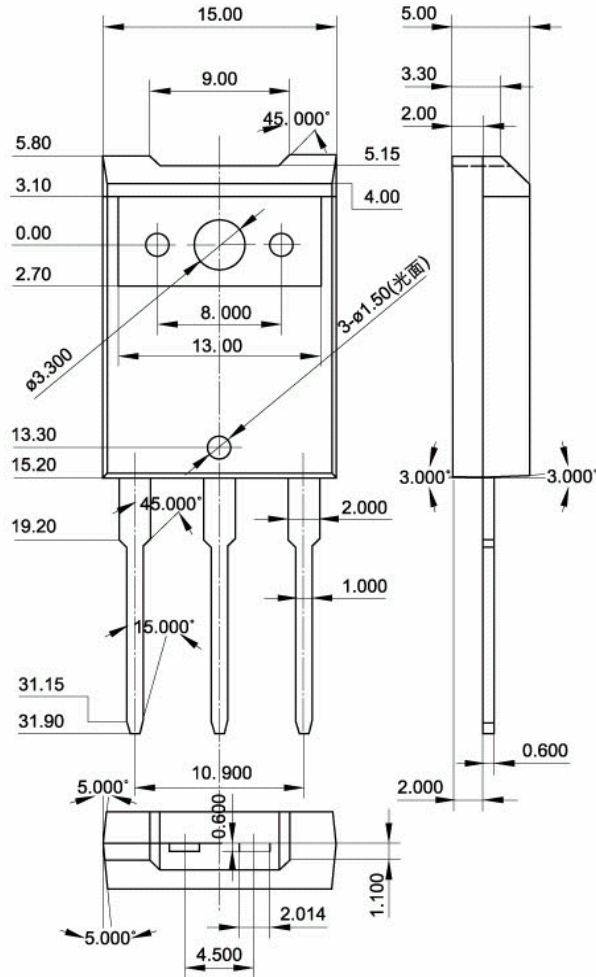


Fig.2 Outline dimensions(unindicated tolerance:±0.30mm)