

Silicon NPN Power Transistors

BUW13W BUW13AW

DESCRIPTION

- With TO-247 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

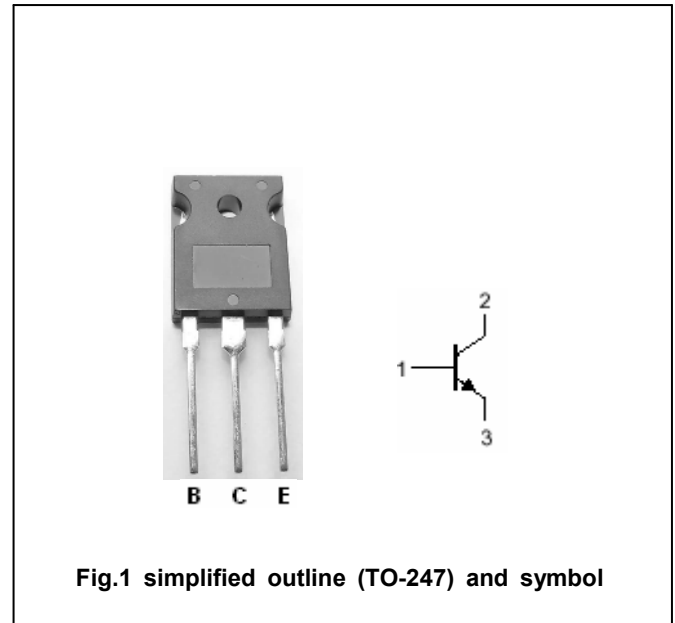


Fig.1 simplified outline (TO-247) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BUW13W	850	V
		BUW13AW	1000	
V_{CEO}	Collector-emitter voltage	BUW13W	400	V
		BUW13AW	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	$T_C=25^\circ\text{C}$	175	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-mb}$	Thermal resistance from junction to mounting base	0.7	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	BUW13W	I _C =0.1A ; I _B =0; L=25mH			V
		BUW13AW				
V _{CEsat}	Collector-emitter saturation voltage	BUW13W	I _C =10A; I _B =2A		1.5	V
		BUW13AW	I _C =8A; I _B =1.6A			
V _{BEsat}	Base-emitter saturation voltage	BUW13W	I _C =10A; I _B =2A		1.6	V
		BUW13AW	I _C =8A; I _B =1.6A			
I _{CES}	Collector cut-off current	V _{CE} =Rated V _{CE} ; 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 BUW13W I _C =10A ; I _{B1} =-I _{B2} =-2A For BUW13AW 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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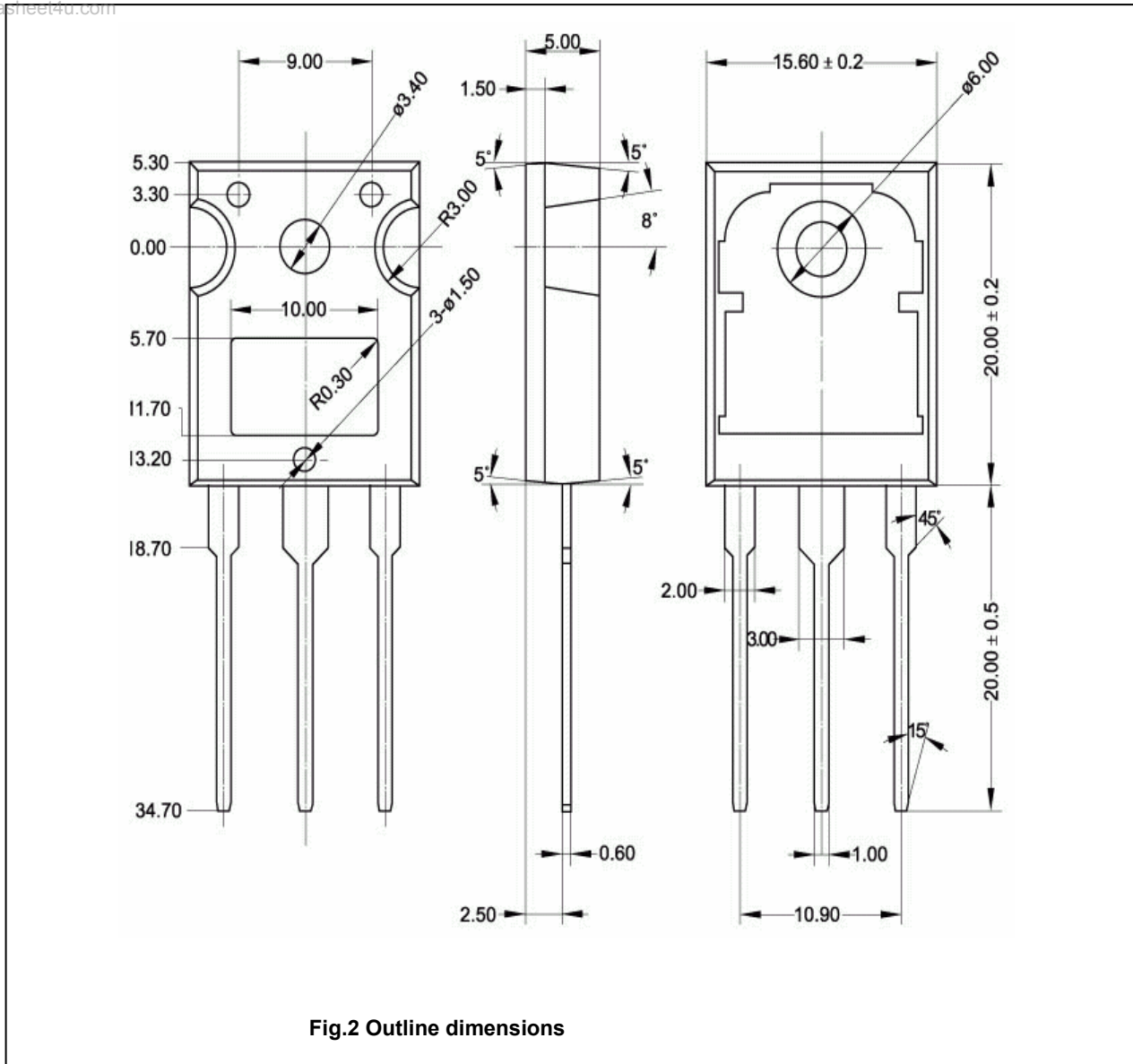


Fig.2 Outline dimensions