

## Silicon NPN Power Transistors

## BUW11 BUW11A

## DESCRIPTION

- With TO-3PN 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

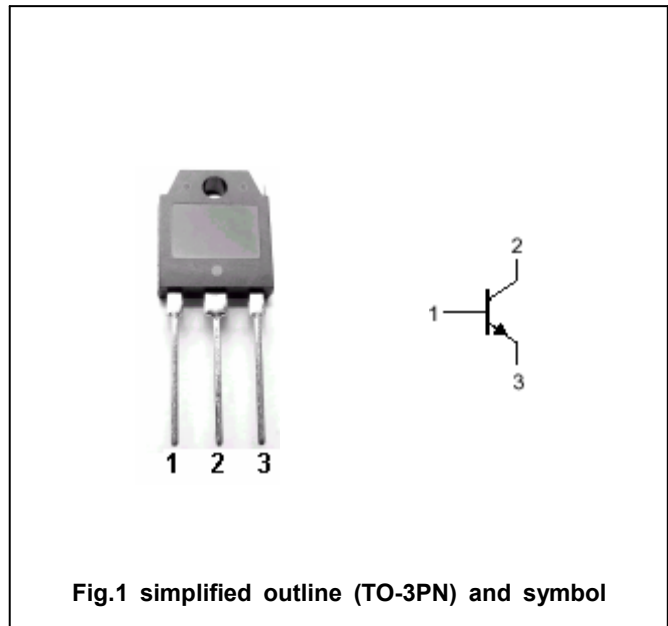


Fig.1 simplified outline (TO-3PN) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	BUW11	850	V
		BUW11A	1000	
$V_{CEO}$	Collector-emitter voltage	BUW11	400	V
		BUW11A	450	
$V_{EBO}$	Emitter-base voltage	Open collector	9	V
$I_C$	Collector current		5	A
$I_{CM}$	Collector current-peak		10	A
$I_B$	Base current		2	A
$I_{BM}$	Base current-peak		4	A
$P_T$	Total power dissipation	$T_C=25^\circ\text{C}$	100	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	1.25	K/W

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

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SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	BUW11	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0; L=25mH	400			V
		BUW11A		450			
V <sub>CEsat</sub>	Collector-emitter saturation voltage	BUW11	I <sub>C</sub> =3A; I <sub>B</sub> =0.6A			1.5	V
		BUW11A	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.5A				
V <sub>BEsat</sub>	Base-emitter saturation voltage	BUW11	I <sub>C</sub> =3A; I <sub>B</sub> =0.6A			1.4	V
		BUW11A	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.5A				
I <sub>CES</sub>	Collector cut-off current		V <sub>CE</sub> =Rated V <sub>CEs</sub> ; V <sub>BE</sub> =0 T <sub>j</sub> =125°C			1.0 2.0	mA
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =9V; I <sub>C</sub> =0			10	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =5mA ; V <sub>CE</sub> =5V	10		35	
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V	10		35	

Switching times resistive load

t <sub>on</sub>	Turn-on time	For BUW11F I <sub>C</sub> =3A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.6A  For BUW11AF I <sub>C</sub> =2.5A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.5A			1.0	μs
t <sub>s</sub>	Storage time				4.0	μs
t <sub>f</sub>	Fall time				0.8	μs

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PACKAGE OUTLINE

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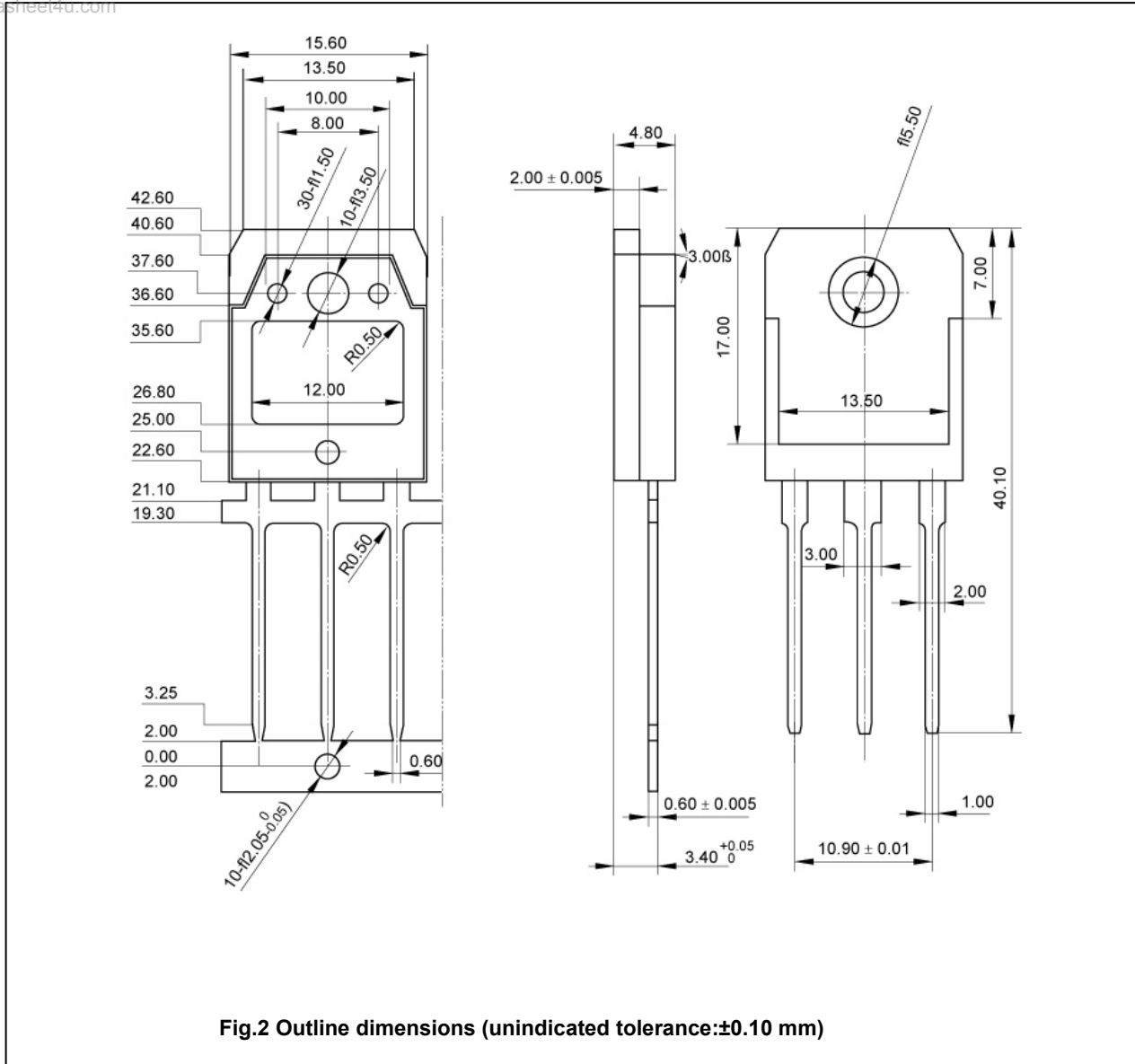


Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)