

NPN BUW13 - BUW13A

HIGH VOLTAGE, HIGH SPEED POWER TRANSISTOR

The BUW13-A are silicon NPN power transistor in TO3PN package.
They are intended for use in switching regulators, motor control systems, inverters and converters.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value		Unit
			BUW13	BUW13A	
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	400	450	V
V_{CBO}	Collector-Base Voltage	$I_E = 0$	850	1000	V
V_{EBO}	Emitter-Base Voltage	$I_C = 0$	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	@ $T_C = 25^\circ$	175		Watts
T_J	Junction Temperature		150		$^\circ\text{C}$
T_{Stg}	Storage Temperature		-65 to 175		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case	0.7	$^\circ\text{C/W}$

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

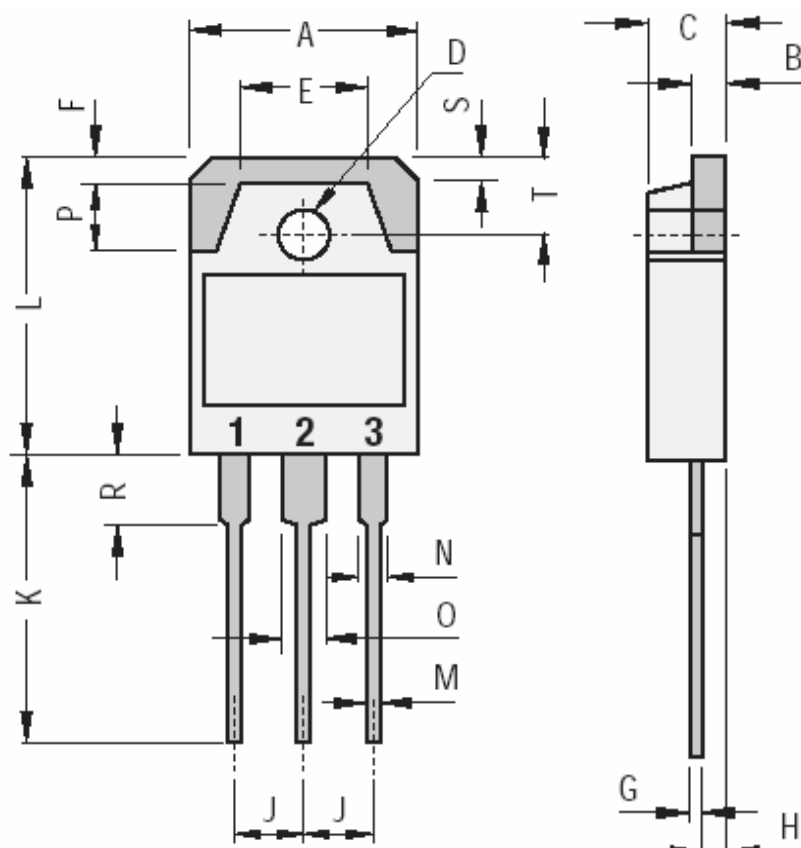
Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 100 \text{ mA}$, $I_B = 0 \text{ A}$ $L = 25 \text{ mH}$	BUW13 BUW13A	400 450	- -	- -	V
I_{CES}	Collector Cutoff Current	$V_{CE} = V_{CEMax}$ $V_{BE} = 0 \text{ V}$	BUW13 BUW13A	- -	- -	1 4	mA
			BUW13 BUW13A	- -	- -	4 10	
		$V_{CE} = V_{CEMax}$, $V_{BE} = 0 \text{ V}$ $T_{case} = 125^\circ\text{C}$	BUW13 BUW13A	- -	- -	4 10	
			BUW13 BUW13A	- -	- -	10 35	
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 9 \text{ V}$, $I_C = 0 \text{ A}$	BUW13 BUW13A	- -	- -	10 35	mA
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 10 \text{ A}$, $I_B = 2 \text{ A}$	BUW13	-	-	1.5	V
		$I_C = 8 \text{ A}$, $I_B = 1.6 \text{ A}$	BUW13A	-	-	1.6	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 10 \text{ A}$, $I_B = 2 \text{ A}$	BUW13	-	-	1.6	V
		$I_C = 8 \text{ A}$, $I_B = 1.6 \text{ A}$	BUW13A	-	-	1.6	
h_{FE}	DC Current Gain	$I_C = 20 \text{ mA}$, $V_{CE} = 5 \text{ V}$	BUW13 BUW13A	10 10	- -	35 35	-
			BUW13 BUW13A	10 10	- -	35 35	
		$I_C = 1.5 \text{ A}$, $V_{CE} = 5 \text{ V}$	BUW13 BUW13A	10 10	- -	35 35	
			BUW13 BUW13A	10 10	- -	35 35	

SWITCHING TIMES

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
t_{on}	Turn-on time	For BUW13 $I_C = 10 \text{ A}$, $I_{B1} = -I_{B2} = 2 \text{ A}$	-	1.2	1.5	μs
t_s	Storage time		-	0.6	1.1	
t_f	File time	For BUW13A $I_C = 8 \text{ A}$, $I_{B1} = -I_{B2} = 1.6 \text{ A}$	-	0.17	0.25	

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MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	16.00
B	1.90	2.10
C	4.60	5.00
D	3.10	3.30
E		9.60
F		2.00
G	0.35	0.55
H		1.40
J	5.35	5.55
K	20.00	
L	19.60	20.20
M	0.95	1.25
N		2.00
O		3.00
P		4.00
R		4.00
S		1.80
T	4.80	5.20

Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter

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