



## 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	
$V_{CE0}$	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	$^\circ\text{C/W}$

## NPN BUW13 - BUW13A

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

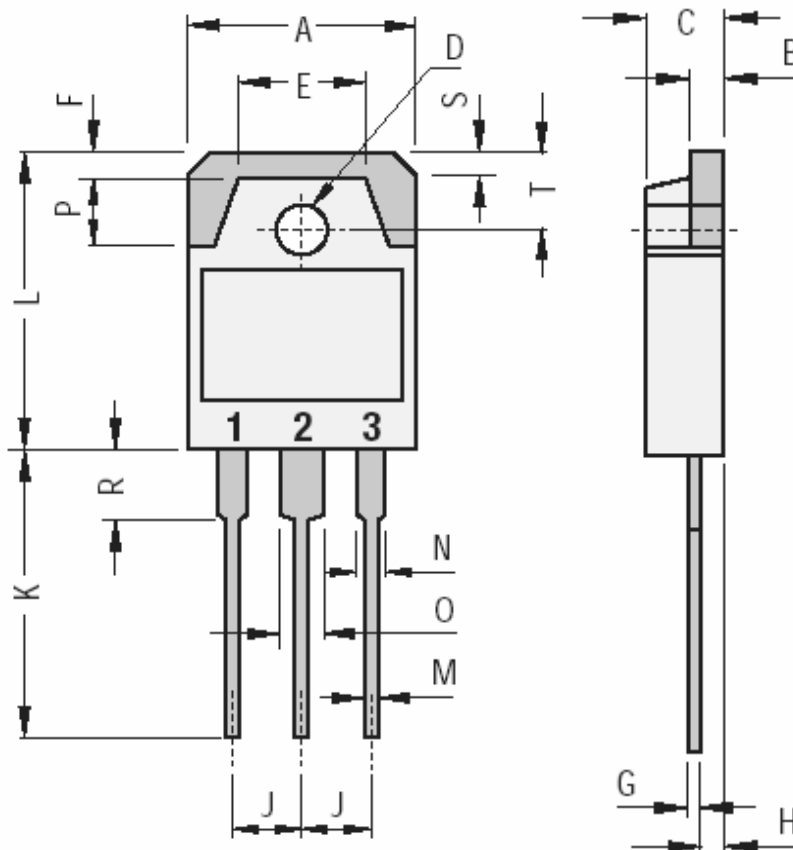
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 100 \text{ mA}$ , $I_B = 0 \text{ A}$ $L = 25 \text{ mH}$	BUW13	400	-	-	V
			BUW13A	450	-	-	
$I_{CES}$	Collector Cutoff Current	$V_{CE} = V_{CEMax}$ $V_{BE} = 0 \text{ V}$	BUW13	-	-	1	mA
			BUW13A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

### 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	$\mu\text{s}$
$t_s$	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	

## NPN BUW13 - BUW13A

### MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	1600
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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