



## NPN BUW48

### HIGH CURRENT SWITCHING TRANSISTOR

The BUW48 is silicon NPN power transistor in TO3PN package. They are intended for use in switching regulators, motor controls, high frequency and efficiency converters. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	$I_B = 0$	60	V
$V_{CBO}$	Collector-Base Voltage	$I_E = 0$	120	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0$	7	V
$I_C$	Collector Current		30	A
$I_{CM}$	Collector Current Peak	$t_p = 10 \text{ ms}$	45	A
$I_B$	Base Current		8	A
$I_{BM}$	Base Current Peak		12	A
$P_t$	Total Power Dissipation	@ $T_C = 25^\circ$	150	Watts
$T_J$	Junction Temperature		175	$^\circ\text{C}$
$T_{Stg}$	Storage Temperature		-65 to +175	$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	1	$^\circ\text{C/W}$



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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C = 200 \text{ mA}$ , $I_B = 0 \text{ A}$ $L = 25 \text{ mH}$	60	-	-	V
$V_{EBO}$	Emitter-Base Voltage	$I_C = 0 \text{ A}$ , $I_E = 50 \text{ mA}$	7	-	-	V
$I_{CEX}$	Collector Cutoff Current	$V_{CE} = 60 \text{ V}$ , $V_{BE} = -1.5 \text{ V}$	-	-	1	mA
		$V_{CE} = 60 \text{ V}$ , $V_{BE} = -1.5 \text{ V}$ $T_{case} = 125^\circ\text{C}$	-	-	3	
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5 \text{ V}$ , $I_C = 0 \text{ A}$	-	-	1	mA
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 20 \text{ A}$ , $I_B = 2 \text{ A}$	-	-	0.6	V
		$I_C = 40 \text{ A}$ , $I_B = 4 \text{ A}$	-	-	1.4	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C = 40 \text{ A}$ , $I_B = 4 \text{ A}$	-	-	2.1	
$f_T$	Transition frequency	$V_{CE} = 60 \text{ V}$ , $I_C = 1 \text{ A}$ $f = 15 \text{ MHz}$	-	8	-	MHz

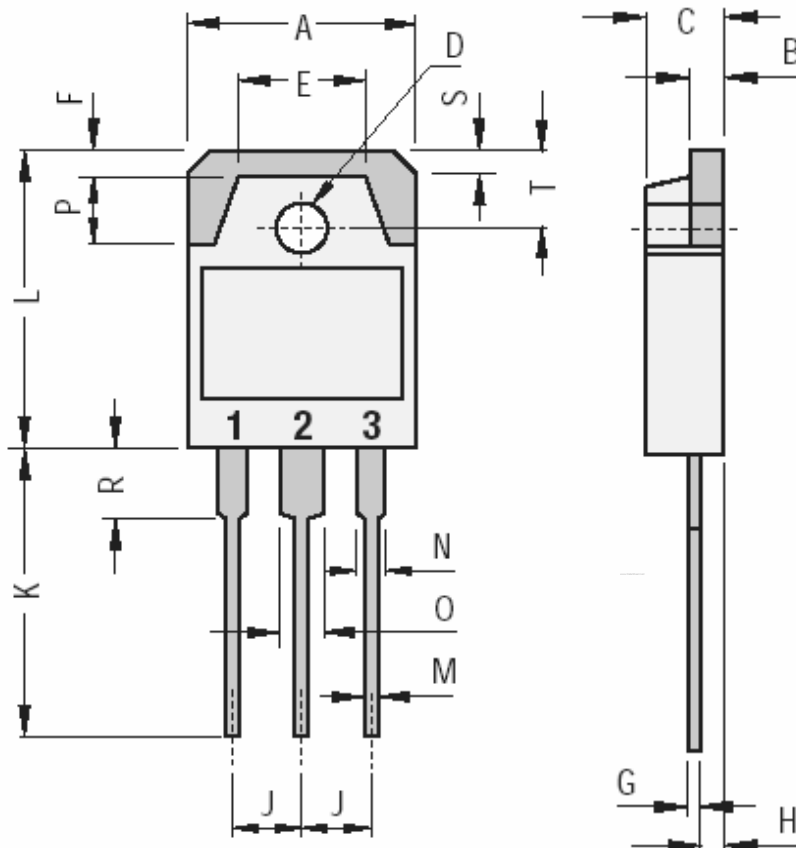
### SWITCHING TIMES

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$t_{on}$	Turn-on time	$I_C = 40 \text{ A}$ , $I_{B1} = -I_{B2} = 4 \text{ A}$ $V_{CC} = 60 \text{ V}$	-	1.2	1.5	$\mu\text{s}$
$t_s$	Storage time		-	0.6	1.1	
$t_f$	File time		-	0.17	0.25	

(\*) Pulse Duration = 300  $\mu\text{s}$ , Duty Cycle  $\leq 1.5\%$

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### 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
Package	Collector

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